

# The Activist’s Trade-off: Climate Disruption Buys Salience at a Cost

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## Abstract

Disruptive non-violent protest in the name of climate action is on the rise, with more and more movements turning to non-normative actions in the hopes of creating policy change. So far, research has found mixed results regarding the effects of disruptive tactics on public opinion. This study is the first to measure effects on salience (awareness of climate change as a problem) side by side with other policy-relevant climate attitudes. In two pre-registered survey experiments, I expose participants in Denmark and the UK to real-world media content showing climate protesters blocking a road (Study 1) and disrupting a sporting event (Study 2). I find a 10–14% increase in respondents naming climate change as a top problem in their country ( $p < 0.01$ ). I also show null effects on many climate attitudes, with the exception of a limited backlash effect on opinions about the policy targeted by the action. Thus, I confirm the existence of an activist’s dilemma: actions that increase issue salience (by getting climate stories in the media) also have small backlash effects on their message.

## Introduction

Activists who want to create climate policy change face a conundrum: should they use non-disruptive protests such as marches or publicity campaigns, or disruptive actions such as illegal road blocks or interrupting public meetings? Disruptive protests appear to generate far more media attention, at least per participant, but they risk alienating the general public or drawing focus to the movement’s controversial methods, not its message (Feinberg et al., 2020). As a result, they may increase the salience of the issue they highlight, moving it up on the public’s agenda, but achieve no or negative opinion change.

Understanding the effect of disruptive protests in democracies has recently become intensely relevant as disruptive climate activism has spiked, especially in Europe with movements such as Extinction Rebellion, Fridays for Future, Ende Gelände and the A22 network of movements (e.g. Just Stop Oil, Letzte Generation). In response, several countries in Europe have cracked down with tighter laws around protests and law enforcement practices (Alkousaa and Jabkhiro, 2023; Anderson, 2023; Bateman, 2023). Meanwhile, global temperatures are on track to increase by at least 1.5 C by 2040, a change that is projected to expose one billion people to drought (World Resources Institute, 2023). By 2070, in the absence of mass migration, one third of the world’s population is projected to be living in areas that are essentially uninhabitable, experiencing mean annual temperatures currently found in the Sahara (Xu et al., 2020).

Disruptive climate actions are costly to the organizations, companies and citizens they target, and to the protesters themselves. Activists risk career consequences, harassment from bystanders, potentially rough treatment by police, arrest, fines and in some cases jail time. Disruption also imposes costs on society, as it takes up significant law enforcement resources; in its first year and a half of existence, Just Stop Oil is said to have cost 20 million pounds in policing in London alone (BBC, 2023). Likely as a result of this, disruptive climate groups and tactics are wildly unpopular (e.g. YouGov 2023a,b; RTL 2023; Spiegel 2023). In order to understand whether disruptive action is “worth it”, a key question is how it influences the public’s attitudes about climate change and climate policy. This understanding is key for climate movements to make strategic decisions, but also for the legislative, executive and judicial branches of governments as they respond to disruption.

Below, I define disruptive protest and outline what we know so far about its effect on public opinion. Next, I contribute theory about the potential mechanism for the effects of disruptive activism on (climate) policy. Because much of the literature on disruption and public opinion has been rooted in social and environmental psychology, it has focused on outcomes such as identification with activists, support for the disruptive organization or action, and support for related organizations. Based on theory about how the public opinion effects of movements might feed into the political system and policy-making, I argue that issue salience and policy support are also key public opinion outcomes. I then introduce a survey experiment design that addresses some of the gaps in our knowledge.

In this paper, I answer the research question: “does consuming media content about disruptive climate protest increase the salience of climate change, and does this come at the cost of negative effects on other policy-relevant climate attitudes?” This study is the first to measure both outcomes at once, allowing us to evaluate both sides of the activist’s dilemma—showing what it is that activists gain when they take actions that risk backlash. Using pre-registered survey experiments on large representative samples of Danish and UK residents, I show that reading a news feature about disruptive climate protest significantly increases the salience of climate change, while having null effects on attitudes such as climate concern, satisfaction with government action, and behavioral intentions. I also find small backlash effects on the main message of the two protests studied (opposition to new highways and to new oil and gas extraction). Combined, these findings help us understand the likely impact of disruptive protests on climate policy-making.

Besides complementing existing research on disruption and public opinion, this paper also contributes to the literature on non-violent disruption and resistance success. A key idea in this literature is that peaceful tactics (including but not limited to disruption) are associated with higher movement success rates than violent methods (Chenoweth and Stephan, 2011). This finding is regularly cited by movement leaders as a justification for peaceful disruption. However, it is based on so-called civil resistance campaigns, which are aimed at achieving regime change, the end of a foreign occupation, or secession. Therefore, it does not mean that disruption is the best strategy for achieving social or economic goals such as deep cuts in a nation’s greenhouse gas emissions, especially in democracies. First, when socio-economic campaigns consider non-violent disruption, the most common alternative is not violence, but rather non-disruptive activism. Second, these goals could be reached via a change in governmental policy, which in democracies hinges on public opinion and public engagement with the issue. For those reasons, it is helpful to complement the study of non-violent civil resistance with research about disruptive campaigns aimed at policy change in democracies.

## Defining non-violent disruptive actions

“Disruption” is defined here as the perceived breaking of societal norms on how to behave, or how to influence politics (cf. Shuman et al. 2023). It often leads to tension or outright interpersonal conflict, either with bystanders or police. Norm-breaking and the resulting conflict are key to our theory, as they bring a higher likelihood of being reported in the media, and a heightened potential for backlash. Disruption is not dependent on the actual scale of disturbance of economic or social life. For example, a registered march in a city can cause great inconvenience, but because it is a socially accepted form of protest, this physical disturbance is not as likely to generate either media attention or backlash. I further define “non-violence” as actions that do not involve (inciting) violence to people or permanent property damage. Because violence is almost never a norm-compliant form of political influence in democracies, “violent non-disruptive” actions are a largely hypothetical category that I do not consider here.<sup>1</sup>

By this definition, non-violent disruption covers many, but not all, of the tactics that Sharp (1973) labels as “nonviolent intervention” in his seminal work on movement methods (e.g. hunger strikes, sit-ins, nonviolent invasion, seeking imprisonment). For example, Sharp’s category includes selective patronage, where a movement encourages customers to buy only from certain retailers. This intervention does not break any societal norms and therefore, I do not count it as disruptive. Disruption is also not (entirely) synonymous with civil disobedience. Civil disobedience by definition involves breaking the law (Delmas and Brownlee, 2023), whereas disruptive actions may or may not be illegal. At the same time, civil disobedience does not necessarily involve breaking majority norms (for example, in the case of unlawful actions against an unpopular regime).

Table 1 illustrates which tactics could fall into the definition of non-violent disruptive actions. Of course, it omits some important nuances. First, actions of the same type can vary in their level of disruptiveness and violence. For example, the currently popular “art attacks” have sometimes caused costly damage to casings and frames, and other times no damage at all. Second, the perceived acceptability (and so disruptiveness) of a tactic can vary based on the actors, the target and the cause. Badullovich et al. (2024) find that acts of civil disobedience for climate change can be judged as acceptable by almost no-one or almost everyone, depending not only on the tactic but also on the target. People also see controversial protest actions as more acceptable if they share an ideology with the protesters (Reimer et al. 2022, see also Naunov 2024).

Some disruptive actions, such as strikes or blockades of polluting industrial facilities, are not aimed at visibility. Instead, they are focused on other pathways to societal change, such as putting economic pressure on companies or hindering the functioning of government (Piven, 2014). However, many of these “direct” actions do have public opinion change as a secondary objective and are combined with at least some media outreach effort. If these actions reach the media, I expect them to have consequences similar to more public-facing actions (with the nuance that corporate or state targets may trigger less backlash than actions in public places affecting ordinary citizens, Badullovich et al. 2024).

## Literature review: evidence on disruption and public opinion

So far, existing studies on the public opinion impact of non-violent disruptive protests have mostly looked at support for the disruptive organization and other, related organizations. One theory

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<sup>1</sup>See Adams (2018); Shuman et al. (2021) for others who define property damage as violence. See Barberá et al. (2019) for examples of the extremely low acceptability of both property damage and violence to persons as political tactics.

Violent	Industrial sabotage, blowing up pipelines, riots, vandalism, chants inciting violence, terrorism
Non-violent disruptive	Building site and factory blockades, SUV tire deflating, road and airport runway blockades, interrupting public events, sit-ins/occupations, school strikes, hunger strikes
Non-disruptive	Lawsuits, environmental complaints, petitions, letter-writing campaigns, permitted marches, handing out flyers, (online) ad campaigns

Table 1: Examples of activist tactics, classified by whether they involve disruption (norm-breaking) or violence.

is that disruption will cause members of the public to de-identify with the protesters, and this negative effect might spill over to their attitudes about the movement as a whole. Alternatively, we might see a “radical flank effect”, where extreme tactics still backfire on support for the disruptive organization itself, but increase support for another, moderate faction of the movement. Some studies have also included effects on issue attitudes, as de-identification might in theory extend to the entire cause of the movement (Feinberg et al., 2020; Klandermans, 2002).

Two main approaches have been used: survey experiments and natural experiments around real-world actions. In survey experiments, subjects are provided with descriptions of disruptive and non-disruptive actions. Compared to moderate tactics, Feinberg et al. (2020) find that extreme tactics diminish support for both the movement behind them and the cause. On the other hand, Simpson et al. (2022) conclude that extreme actions have a positive radical flank effect on other movements. Bugden (2020) finds that reading about a fictitious capitol building sit-in for the climate has small positive effects on movement support among Democrats and null effects among Republicans. Gonzatti et al. (2023) find null effects on climate attitudes and negative effects on protest support in a survey experiment on climate road blockades and “art attacks” in Germany.

A few studies have investigated the real-world effect of disruptive climate protests. Three different studies all look at the effects of a huge traffic-blocking action by Extinction Rebellion in April 2019 in London. YouGov (2019) polled British residents just before and after the action and found that mentions of “the environment” as a top three issue jumped from 17% to 24%. Kenward and Brick (2024) show that environmental concern increased slightly, while other attitudes were unchanged. They also include an experiment, treating some respondents with real media coverage of the protests. Here, they find largely null effects on attitudes, with some positive effects of exposure to coverage created by the movement itself. Kountouris and Williams (2023) find mixed effects of the action on various environmental attitudes. Most effects are null, but there is a positive effect on support for climate change policy and a negative effect on willingness to pay for green consumer goods. They also find very large effects on search activity for “climate change”.

Focusing on a different action, Özden and Ostarek (2022) polled British people before and after the 2022 blockade of the M25 motorway around London by Just Stop Oil (which was concurrent with COP 27 in Egypt). They find that support for the more moderate movement Friends of the Earth increased by 2.5%, suggesting a small radical flank effect. Ostarek et al. (2024) show that after the movement Animal Rising disrupted the UK’s Grand National horse race in 2023, awareness of the action was linked to both increased thoughts about animal welfare and decreased support for the group’s animal rights messages. Finally, Brehm and Gruhl (2024) investigate changes in

climate concern after 17 protests in Germany. They find that both demonstrative (strikes) and confrontational (civil disobedience) actions increase concern, with the latter having a somewhat larger estimated effect.

In sum, we see that support for the disruptive movement or protest generally goes down, while support for other movements goes up. Effects on issue attitudes see a mix of null, positive and (in one case—Feinberg et al. 2020) negative findings. In addition, an interesting pattern is that observational studies appear less likely to find negative effects. This raises questions about expressive responding. Perhaps survey respondents treated with information about protests use some of the survey questions to express to the researchers their opposition to the protest tactics themselves, while observational study respondents do not utilize the survey questions in this way.

## **Theory: disruption, salience and attitude backlash**

In democracies, the public has an impact on policy through elections, either by choosing politicians whose preferences align with their own, or by sanctioning politicians whose behavior in office does not line up with their preferences. While the correlation between policy and public preferences is far from perfect, it is substantial for many issues, including climate change (Lax and Phillips, 2012; Rasmussen et al., 2019; Vandeweerd et al., 2016). Experiments have helped establish the causal effect of public opinion on politicians' choices (Butler et al., 2011; Rasmussen and Otjes, 2024; Sevenans, 2021).

We can expect that the public's preferences on an issue will be more strongly represented in policy when voters are paying attention to that issue. This type of issue attention is also called "salience"; salient issues are ones that are at the top of people's minds. Observational evidence shows that higher-salience issues tend to see better representation of public preferences in policy (Giger and Lefkofridi, 2014; Rasmussen et al., 2019), and that people tend to vote for parties that are competent on the issues salient to them (Bélanger and Meguid, 2008). Salience, in turn, is heavily influenced by media; there is a strong correlation between what issues are being covered in the media, and what issues are salient to the public (Barberá et al., 2019; King et al., 2017; McCombs and Shaw, 1972; Cohen, 1963). Literature on priming effects suggests that increasing the salience of an issue through media content can change people's political decisions, by aligning their choices with their opinion on the issue (Iyengar et al., 1982; Krosnick and Kinder, 1990).

Increased issue salience is an especially desirable outcome for activists when most people share the movements' opinions about the issue, but think little about it, see it as low priority compared to other issues, or act in ways that contradict these supportive opinions. Hayward (2020) writes that the main pathway for influence from disruptive activism is to break the "motivated ignorance" of its audience—reminding people of causes that they support in principle, but that they are uncomfortable considering in their daily life. For example, 87% of Europeans agree that governments are too slow in acting on climate change and the environment (European Investment Bank, 2023). But only 16% choose climate change as one of the top three issues facing their country, ranking it well below, for example, immigration (24%) and the war in Ukraine (35%, Eurobarometer 2024). Globally, the pattern is the same: 89% of poll respondents want their governments to do more on climate change, and 17% mention it as a top issue (Andre et al., 2024; Ipsos, 2024).

For the climate issue in Europe, then, increases in salience should lead to more ambitious policy, as people's voting behavior and demands on politicians start to align with their on average quite progressive climate attitudes. Indeed, upticks in climate salience are the likely reason why both Fridays for Future protests and natural disasters result in small increases in green voting behavior

(Fabel et al., 2022; Baccini and Leemann, 2021; Hazlett and Mildemberger, 2020; Kronborg et al., 2024)—though it is difficult to pin down the mechanism with observational data only. Among US states, higher search activity for climate change is associated with more enacted climate policies (Bromley-Trujillo and Poe, 2020). In sum, political movements that fight for issues like climate change could try to move public opinion further in their desired direction, but they also benefit from just pushing their target issues up on the public’s agenda.

This is where activists face a potential trade-off. Compared to non-disruptive protests, disruptive actions are more effective at generating media coverage (Myers and Caniglia, 2004; Amenta et al., 2009). They typically involve drama, surprise, and emotional overtones—all elements that increase the news value of a story (Harcup and O’neill, 2001). Wouters (2013) finds that disruptive protests in Belgium have three times higher odds of being covered on TV than non-disruptive ones (all else equal). In a UK case study, Scheuch et al. (2024) find that disruptive protests at sports events by Just Stop Oil and Animal Rising (involving two and approx. one hundred activists, respectively) each generated about as much media coverage as a non-disruptive 45,000-person march organized by Extinction Rebellion. Media coverage of an action is, in turn, likely to boost salience of the issue, activating some of the cause’s potential supporters. At the same time, as we have seen above, the norm-breaking involved in disruptive protests might lead to backlash on issue attitudes.

The idea that awareness raising is important for movements is, of course, not new (Gamson, 1975; Sobieraj, 2011). Feinberg et al. (2020) coined the term “activist’s dilemma” to describe precisely this problem with disruptive protest. However, they and other researchers studying disruption’s public opinion effects do not measure its awareness-raising effects, and do not theorize how awareness might affect vote choice or representation. As a result, we are likely to miss the most important positive effect of disruptive action, making it difficult to weigh the costs and benefits.

## **Current study: the effect of disruptive protest in media**

Evidence on the effects of real-world disruptive climate protests is mixed. Moreover, the available studies leave a few gaps in our understanding of disruption effects, which I address in this study. Most importantly, only YouGov (2019) has directly measured salience as an outcome. Its comparison of “most important problem” measures before and after a large action could be both upward and downward biased by other newsworthy events in the same three-week period. Moreover, no study has assessed both salience and climate attitude effects at the same time. In this study, I focus on the effect of disruption on climate salience, policy-relevant climate attitudes, and behaviors. I leave out measures of movement support, as it is less clear how such support by itself will influence policy-making on climate change.

At a methodological level, experimental studies on disruption have so far rarely used real media content as a treatment, typically relying on text-only vignettes. Exposure through the media is how the vast majority of citizens will hear about these protests (if they hear about them at all), so it is worth further investigating the effect of consuming actual media content about disruptive actions. For example, real media articles often include photos of people with banners, signs or T-shirts, highlighting the message of the protest. At the same time, images of disruption might have higher shock value, and so cause more de-identification, than text-only descriptions. In this study, I use pre-registered survey experiments to randomly expose some participants in Denmark and the UK to media content about a disruptive climate protest.

In Study 1, the action that participants learned about was a recent blockade of a highway exit by six members of the newly-founded Danish climate movement Nødbremsen (“Emergency Brake”).

It was disruptive in that it was unregistered, and activists did not leave the site when asked to by police, leading to five arrests. The action was the first of a two-week series of blockades targeting the Danish government’s plan to build and expand highways across the country. Blocking roads is a common disruptive action type in the climate movement, currently seen across Western Europe. It also mirrors the real-world actions that have been studied in the literature on climate disruption so far, helping us build on existing knowledge by comparing the current findings to previous results.

In Study 2, I presented participants with an article about a protest that had happened one year previously (April 2023). In it, two members of UK movement Just Stop Oil tried to climb on the tables during two simultaneous matches at the World Snooker Championship. One protester succeeded, and poured orange powder paint over the table, forcing play to be suspended. The other activist was stopped by the referee. The protest was part of a string of sporting event disruptions by both Just Stop Oil and animal rights movement Animal Rebellion, targeting the Wimbledon tennis tournament, an international cricket game and the Grand National horse race.

In Denmark, both the road blockade I study and some of the other blockades in the action series received fairly broad media coverage. In the UK, the snooker disruption was covered extensively (see Appendix A for an analysis of articles covering the protests). This is in line with previous findings that disruption passes the gates of media more easily than other protest types. Coverage of the Danish action was almost exclusively neutral in tone. This can be tied back to the fact that Denmark has a very non-polarized media landscape (Pew Research Center, 2018). In the UK, ten out of the 14 articles I retrieved in the media analysis had a neutral tone; two cited negative reactions but were neutral otherwise; and two were overtly negative.

In the control conditions of these studies, participants read no media content. That is because seeing no climate-related content is the likely counterfactual to seeing media coverage of disruptive protests. As noted above, non-disruptive actions are far less likely to be covered by media. Looking at activism around US presidential campaigns, Sobieraj (2011) finds that the typical non-disruptive event gets no coverage. Groups like Nødbremsen and Just Stop Oil do not have the mass mobilization capacity to stage non-disruptive protests of a size that is even somewhat likely to receive media attention—at least in the short term. Therefore, for these groups, the choice is between getting covered for disruption, or not getting covered at all.

## Methods

### Design and sample

Study 1 consists of a panel survey (n=503) fielded in two waves at the end of 2023. Respondents were Danish residents who were part of an opt-in survey panel from survey company YouGov. Study 2 is a panel survey (n=847) fielded in April 2024 via recruitment platform Prolific among a representative sample of UK residents. Respondents were invited to a survey on political issues (Study 1) or current affairs (Study 2). Appendix B contains further information about precise fielding times, retention and representativeness.

In both studies, wave 1 measured pre-treatment attitudes; wave 2 included the media treatment plus re-measurements of attitudes. The two-wave set-up boosts the statistical power of this design significantly, as it allows us to essentially control for all stable differences between participants on the outcomes. In Study 1, the disruptive protest happened between the two survey waves, but as we will see below, most participants had not heard about the events. Pre-registrations of the design, hypotheses and analyses can be found [here](#) and [here](#). Both studies were IRB approved.

## Treatment

The treatment was administered at the beginning of wave 2 to a randomly selected half of participants. It consisted of an excerpt of a real news article about either the Nødbremsen road blockade or the Just Stop Oil snooker disruption, published respectively by TV2 Kosmopol and Sky News.<sup>2</sup> The treatments reproduced the layout of a news article as well as possible. They included an outlet logo and two photos of the action, one of which showed the protesters’ main slogan. They also featured a headline (“Climate activists blocked morning traffic” and “Just Stop Oil protesters arrested after halting play at World Snooker Championship”) and subtitle.

The content of the articles covered basic details about what happened, when and where. They then moved on to explain the message of the action, using the following quotes from the organizations:

(Study 1) We, as a climate campaign, are escalating our methods because the government is knowingly escalating the climate collapse we are in, among other things by building these 15 new motorways, as part of the Agreement on Infrastructure Plan 2035.

(Study 2) [We are] demanding that the government immediately stop all new UK fossil fuel projects and are calling on UK sporting institutions to step into in civil resistance against the government’s genocidal policies.

In addition, the Study 1 article contained a brief justification by the movement of their tactics. Treated participants spent on average 67 seconds (Study 1) and 70 seconds (Study 2) reading the article. The treatment page concluded with a link to the article on the newspaper’s website. Appendix C documents the text and images in the treatment.

The treatment articles share their neutral tone with the majority of pieces published about the protests (see Appendix A for an analysis). However, they differ from the typical article in that they were cut down in length, without removing information about the message of the action. As a result, a proportionally larger share of them is dedicated to repeating the protesters’ message. If reading additional, non-message-related content—usually further information about how the protest played out—weakens the effect of media content on opinions, then the effects in this study could be overestimations.

## Manipulation check

At the end of wave 2, all respondents in Study 1 were asked about the issue that the organization Nødbremsen was trying to bring attention to with their recent road blockades. Answers referring to climate change or highway building were counted as correct. All respondents in Study 2 were asked about the name of the organization behind the snooker tournament disruption (Just Stop Oil), and if they did not recall it correctly, they were asked about the main message. Control participants were first asked whether they had heard about the actions at all, and if they said no, they did not receive further manipulation check questions. Appendix D shows manipulation check wordings and rules for coding answers as correct.

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<sup>2</sup><https://web.archive.org/web/20240227070736/https://www.tv2kosmopol.dk/hvidovre/klimaaktivister-spaerrede-morgentrafikken> and <https://web.archive.org/web/20240226195309/https://news.sky.com/story/just-stop-oil-protesters-stop-play-at-world-snooker-championship-12859678>



A coder who was blind to condition rated 67% (Study 1) and 95% (Study 2) of answers by treated participants as correct, respectively. In Study 1, treated participants who answered correctly had spent more time ( $p < .1$ ) on the article on average: 88 seconds, versus 24 seconds for treated participants who answered wrong. In Study 2, the difference in article reading time between participants giving right and wrong answers was smaller and not significant (70 versus 50 seconds,  $p = .25$ ).

Among control participants, 11% (Study 1) and 38% (Study 2) answered correctly. Some may have simply guessed, as Extinction Rebellion (in Denmark) and Just Stop Oil (in the UK) were responsible for the majority of disruptive protests in 2023. These numbers are somewhat reassuring, as they confirm that the treatment would have been new information for the majority of treated respondents (in addition to priming everyone with the information, even treated respondents who knew about the action). However, the higher awareness rate in Study 2's control group suggests that its treatment effects might be underestimations compared to the effect of hearing about the action for the first time.

## Outcomes

I measured five relevant climate attitudes, and I pre-registered hypotheses for main effects of the treatment on each.<sup>3</sup> These five main outcomes were:

- salience of climate change, i.e. mentioning climate or the environment among the top three most important issues facing the country today (binary, 0 or 1)
- agreement with the action's policy message, i.e.:
  - opposition to the Danish government's plan to build new highways (scale 1-5), or
  - opposition to new UK oil and gas extraction (scale 1-5)
- dissatisfaction with current government action on climate change\* (scale 1-7)
- concern about climate change, measured as a two-item scale:
  - climate change is one of the greatest threats facing humanity\* (scale 1-7)
  - I worry about the effects of climate change in my lifetime in this country\* (scale 1-7)
- intentions to take climate-related political action in the next year, measured as a two-item scale:
  - donating to [the Danish Society for Nature Conservation/Friends of the Earth] or similar (scale 1-7)
  - going on a peaceful protest march for the climate\* (scale 1-7)

Items marked with \* are adopted from Kenward and Brick (2024) in order to replicate their results. As secondary outcome measures, I asked respondents about two costly climate policies that were not targeted by the action: a carbon tax and a national climate impact reduction target

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<sup>3</sup>In Study 1, I formulated the pre-registered hypotheses in a positive direction, but I registered two-tailed tests, as it was unclear from existing literature which direction the effects might go. In study 2, hypotheses reflected the direction of effects found in Study 1.

(adopted from Concito 2022, scale 1-5). In Study 2, I also asked about a policy that was close, but not identical, to the message of the action: support for regulations that would make it more difficult to profit from fossil fuel investments. I did not pre-register hypotheses on these secondary attitudes, as they are less likely to be influenced. Full outcome question wordings, a codebook for the salience question, and distributions of the outcome variables in wave are available in Appendix E.

For each of the individual outcomes, as pre-registered, I estimated a regression model with the treatment as the (only) predictor and the difference in the outcome between wave 2 and wave 1 as the dependent variable. This allows us to see whether treated respondents changed their attitudes *differentially* from the control group; this identifies the effect of the treatment. Subtracting previous attitudes enables us to estimate effects much more precisely, as we can control for the stable characteristics of each respondent that cause them to score low or high on each outcome.<sup>4</sup> Comparing the treatment to the control group allows us to take into account the fact that in the time between the two waves, various other events might have moved average climate attitudes for all respondents.

### **Moderators: political orientation and pre-treatment attitudes**

At the start of wave 1, respondents were asked about their voting intention. This can be used as a potential moderator of the media treatment’s effect. In Study 1 (Denmark), I split responses between left-wing and right-wing parties, coded based on their known allegiance with the so-called “red bloc” (left) and “blue bloc” (right). In Study, 2 (UK), I divide respondents into left-wing, center, and right-wing voters. In both countries, some voters (resp. 26% and 22%) fell into an “undecided/other” category. Appendix H contains further descriptives and details. In Study 2 (UK), I also measured left-right ideology self-placement.

Besides political orientation, I also investigate whether the effects are moderated by existing climate attitudes, measured pre-treatment. That is, I see whether the disruption treatment is polarizing by moving people with more conservative and more progressive attitudes further towards their respective ends of the scale. I also check whether any effects on salience are specific to people with more conservative or more progressive climate attitudes; an increase in salience only among climate-conservative respondents would be a less desirable outcome from the movement’s perspective.

## **Results**

Figure 1 shows the results of the main, pre-registered analyses: the effect of the disruption article treatment on each of the five outcome variables (rescaled from 0 to 1 for comparability). The largest effect of the treatment is on salience, with an additional 14 percentage points of respondents mentioning climate or the environment in Study 1 ( $SE = 0.05$ ,  $p < .01$ , Cohen’s  $d = .30$ ), and an additional 10 percentage points in Study 2 ( $SE = .03$ ,  $p < .001$ , Cohen’s  $d = .26$ ). There is also a smaller backlash effect on support for the policy message of the action. The effect amounts to a marginally significant decrease of .16 points on the 5-point scale for opposition to new highways in Study 1 ( $SE = 0.08$ ,  $p < .1$ , Cohen’s  $d = -0.14$ ). There is a significant decrease of .14 points for opposition to new oil and gas projects in Study 2 ( $SE = 0.06$ ,  $p < .05$ , Cohen’s  $d = -0.10$ ).

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<sup>4</sup>In the case of a two-wave panel, first-differencing the outcomes gives the same treatment effect estimates as

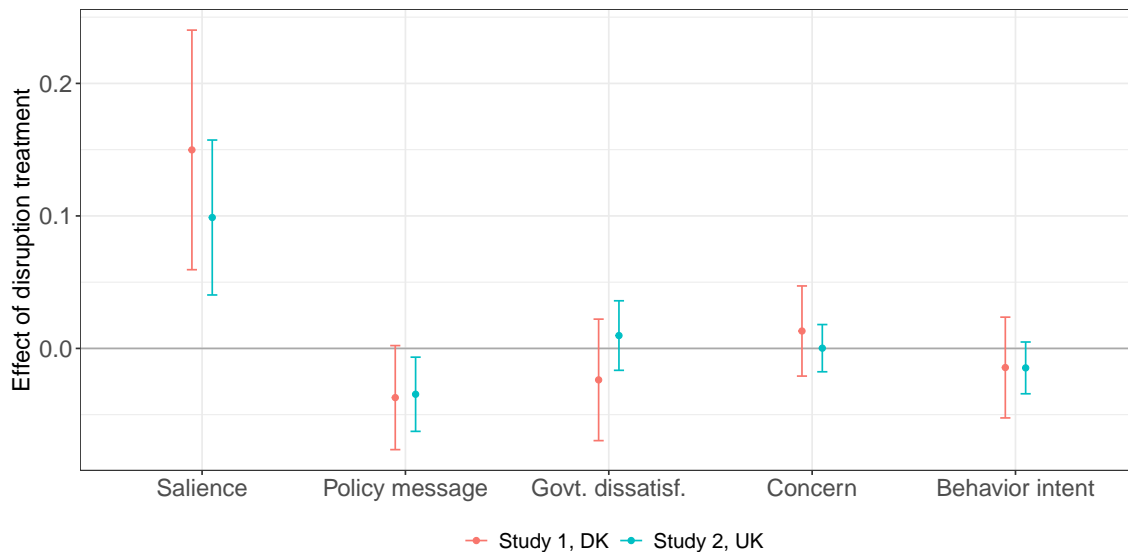


Figure 1: Effect of exposure to a media article about disruptive climate protest on salience of climate change, agreement with the policy message of the protest (opposition to building new highways in DK and to new oil/gas extraction in the UK), dissatisfaction with the government, concern about climate change, and intention to take political action for the climate. All variables rescaled 0–1.

Effects on dissatisfaction with government action, climate concern, and behavioral intentions were not substantively or statistically significant. The backlash effect also does not spill over to other policies. Support for other costly climate policies is not affected (effect on 5-point scale, Study 1: 0.02,  $SE = 0.06$ ,  $p = 0.71$ , Study 2:  $-0.01$ ,  $SE = 0.05$ ,  $p = 0.88$ ). In Study 2, I measured support for a policy that is very close to the message of the action: regulations making it harder to profit from fossil fuels. I found no backlash there ( $-0.07$ ,  $SE = 0.06$ ,  $p = 0.21$ ). Appendix F shows means by condition for both waves, plus regression results, for all outcome variables. It also presents Bayes factors as an alternative to the null hypothesis significance tests.

As a robustness check for Study 1, I run regressions using survey weights (an approach recommended by Solon et al. 2015).<sup>5</sup> Here, the effect on salience is noticeably larger (19%). The effect on highway opposition is slightly larger (.17 on the five-point scale) and reaches conventional significance levels ( $p < .05$ , see Appendix G).

## Polarization and heterogeneous treatment effects

One concern might be that the findings above—in particular the small or null effects on opinions—disguise a polarizing effect, where some respondents are negatively affected and others positively. For instance, right-wing participants may assume that climate demonstrators have political identities that are distant from their own, and either ignore their message or experience a boomerang

adding respondent fixed effects.

<sup>5</sup>Population weights were not available for Study 2.

effect (Merkley and Stecula, 2021; Hart and Nisbet, 2012). In the analyses below I show that there is limited evidence for this. Appendix H shows detailed results for all analyses in this section. They are relatively underpowered and therefore not preregistered.

First, I interact the media treatment with respondents' voting intention. I find no significant interaction effects between the media treatment and left- versus right-wing voting intention, with one exception. In Study 2, there is a significant difference between the (slightly positive) effect of the treatment on left-wing respondents' dissatisfaction with the government compared to the (slightly negative) effect on right-wing respondents (effect sizes: .17 and  $-.27$  on a 7-point scale, interaction:  $-0.44$ ,  $SE = 0.21$ ,  $p < 0.05$ ). This pattern is compatible with polarization, though neither subgroup effect is itself significantly different from zero.

In Study 2, I also measure left-right ideology, and find no significant interaction effects between it and the media treatment. Figure 2 shows the estimated effect of the treatment in Study 2, conditional on ideology. We see that the positive effect on salience and the backlash effect on the policy message reach significance thresholds for right-wing but not left-wing respondents. The difference between these two subgroup effects, however, is not statistically significant. Appendix H shows that the general absence of moderation by political orientation here is not likely to be due to ceiling effects, where some left-wing respondents could not be influenced positively because they were already at the top of the outcome scales.<sup>6</sup>

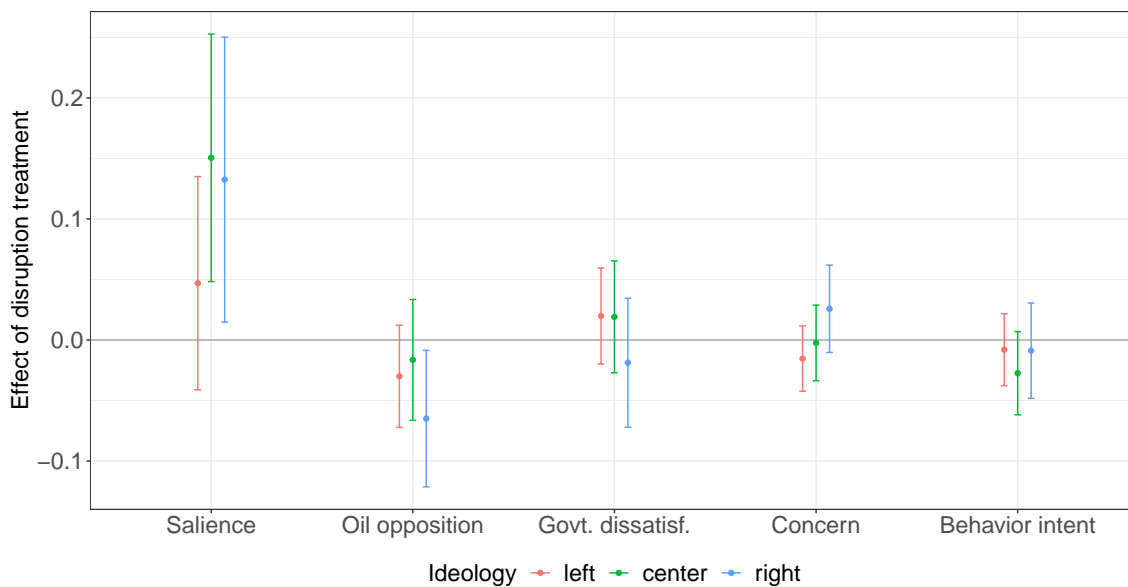


Figure 2: Effect of exposure to climate disruption article on main outcome variables (rescaled 0–1), conditional on respondent's ideology, Study 2.

For each outcome, I also test interaction effects between the treatment and wave 1 responses to the outcome (e.g. letting the effect of the treatment on highway opposition vary by pre-treatment highway opposition). This analysis tests the argument that disruptive protest is most likely to push

<sup>6</sup>The exception to this is salience, where effects on left-wing respondents were indeed limited by the fact that many already mentioned climate as a top-three issue to begin with.

away people who are already unconvinced about the cause, leading to a more polarized distribution of opinions. I find no such interactions, with the exception of a small *negative* interaction between pre-existing climate concern and the effect of the treatment on concern in Study 1 (interaction:  $-0.16$ ,  $SE = 0.06$ ,  $p < 0.01$ ). In this case, rather than being polarizing, the treatment had a more positive effect on those who had more negative pre-existing opinions.

Finally, we could look at effects on salience specifically, to see what types of respondents are most likely to become more attentive to climate change or the environment. In Study 1 I find no interactions between the treatment and any of the other climate attitudes (from wave 1). In Study 2, salience was more likely to increase among respondents with stronger climate concern (interaction:  $0.03$ ,  $SE = 0.02$ ,  $p < 0.1$ ), support for climate policies ( $0.06$ ,  $SE = 0.03$ ,  $p < 0.05$ ) and support for fossil fuel regulations ( $0.05$ ,  $SE = 0.02$ ,  $p < 0.05$ ). This suggests that salience is increased either evenly across people with different climate attitudes, or somewhat more among those who are more convinced. While movements might ideally want to increase salience only for the most convinced respondents, a uniform effect is still desirable in this case, since for each of the attitudes, more respondents were on the positive than on the negative half of the scale.

## Discussion

In this paper, I evaluated the effects of exposing survey participants to real media content about disruptive climate protests. I show that exposure has a large effect on salience, with an additional 10–14% of respondents naming climate or the environment as a top issue facing the country. This is a remarkable jump, especially in Denmark, where 40% of respondents already mentioned these topics pre-treatment. This confirms findings by YouGov (2019) and Kountouris and Williams (2023), showing large spikes in public interest in climate change after a major Extinction Rebellion protest in London. As of today, if the salience of climate change were to increase by 10%, in Europe, that would make it the public’s second most important issue after the war in Ukraine (Eurobarometer, 2024).

I also show evidence for a small backlash effect on opinions about the policy targeted in the message of the protest. Notably, the backlash is limited to the specific message of the action. No other attitudes on climate change are affected, even if they are closely related to the message (as with the item on regulating fossil fuels in study 2). This might indicate expressive responding: some participants may have used the message-specific items to mark their opposition to the protests’ tactics. They may not have felt the need to further express opposition through the other attitudinal items, which were less related (and appeared later in the survey). Seen in this way, the findings are compatible with earlier research on disruption. We have seen mixed effects on general attitudes towards the movement’s issue, with null effects being typical. Attitudes towards the specific message of the protest, however, are perhaps closer to support for the protesters themselves, which is almost always negatively affected.

These findings confirm the trade-off that climate activists face: disruptive actions generate media coverage, which moves climate change up on the public agenda, but it also alienates at least some of the audience from the protest’s message. Most likely, consuming media about a *non-disruptive* climate protest similarly increases the salience of climate change, with less risk of attitude backlash. However, previous research has shown that it is far easier to get media attention for disruptive protests, especially in proportion to the number of participants. Therefore, the most likely counterfactual to seeing coverage of a disruptive protest is seeing no climate protest coverage at all.

While the focus of this study is on public opinion, it is also possible that media coverage of (disruptive) climate actions influences politicians directly. In terms of agenda effects, we know that US politicians tend to talk on social media about topics that recently received media attention (Barberá et al., 2019). In Belgium, protests are followed by a rise of their issue on the legislative and governmental agenda, mediated by media coverage (Walgrave and Vliegenthart, 2012). German politicians were more likely to talk about climate and the environment after the first global Fridays for Future strike, especially if there were more or larger protests in their region (Schürmann, 2023; Fabel et al., 2022). These findings suggest that the salience effects of disruptive climate protests will hold for politicians as well; whether they will experience backlash effects is less clear.

I find little evidence for polarization. This is in line with the emerging literature on disruptive protest effects (Bugden, 2020; Kenward and Brick, 2024; Feinberg et al., 2020; Shuman et al., 2021). Treatment effects are largely not significantly different between left- and right-wing respondents. This is true despite strong ideological sorting of climate opinions in Denmark (Chan and Tam, 2023): the country scores either highest or second-highest in Europe for predictability of a person’s climate opinion based on their ideology. Moreover, respondents with less progressive existing climate attitudes are not affected more negatively.

The null findings on polarization contrast with US poll results from the Annenberg Public Policy Center (2022), where respondents were asked about “disruptive non-violent actions including shutting down morning commuter traffic and damaging pieces of art”. 70% of Republicans, but only 27% of Democrats say that those actions decrease their support for efforts to address climate change. In other words, there is a large difference between partisans’ self-reports and actual polarizing effects. The lack of polarization also goes against societal narratives about disruption—for example, disruptive groups are regularly accused of being polarizing in newspaper coverage (Dablander et al., 2024).

Disruptive climate protests are now common in Europe. In Denmark, road blockades were used regularly by climate organization Extinction Rebellion in the four years leading up to this study. In the UK, the snooker protest being studied was part of a series of interruptions of sporting events by activists. While choosing common protest types makes results more generalizable, it also means that many respondents will have been “pre-treated” with awareness of previous, similar actions from before the study period (and, especially in Study 2, with awareness of the action itself). More generally, several years’ worth of disruptive climate protest has likely raised baseline levels of climate salience. As a result, any effects on the public will be probably be weaker now than they would have been five years ago, when climate-related disruption was just emerging in most countries. Moreover, it is likely more and more difficult to receive media attention for the same types of action. From the perspective of the activists, this would mean that more and more creative, and most likely also more disruptive and riskier actions will be needed to achieve the salience effects we find here.

## Future research

This study finds surprisingly similar results using two rather different actions in two different countries. Further research could investigate what characteristics of a disruptive protest can change its effects. For example, Wouters (2019) finds small gains in movement support if a protest has more diverse participants and is more unified in its message (but sees no effect of protest size). Another aspect that is often discussed is the strength of the (symbolic) connection between the political message of the action and its target, location or design. In this paper, I find that effects are remarkably similar between two actions with quite different degrees of connection. Message-

specific backlash effects were no larger for the (tenuously connected) snooker disruption than for the (more clearly connected) highway exit blockade. Lastly, journalists may also decide to employ more negative or more positive frames, compared to the neutral tone of this study’s articles (cf. Dablander et al. 2024). This could color the effect of the coverage on opinions.

The political attitudes measured here are not the only outcomes of interest for a movement (Shuman et al., 2023). For example, we might be interested in disruption’s effects on mobilization for the radical flank of a movement. When someone protests at great personal cost, this could be an effective way of communicating their commitment to the cause, in turn persuading other (potential) participants to do more (Yang et al., 2023). Another outcome of interest is continued participation for activists. Disruptive protests are resource-intensive for climate activists, who (even when not using disruptive tactics) are known to experience burnout (Ray, 2020). At the same time, participation could also reinforce social ties within and identification with the movement (Haugestad et al., 2021). Even if disruption is, by some measures, effective, future research could help us understand whether it is a sustainable form of protest as far as its participants are concerned.

Finally, future studies could investigate the durability of these effects. Salience boosts, in particular, could be short-lived. This means that activists seeking to harness the attention-grabbing power of disruption may have to do so ahead of elections, referenda and other important political moments in order to see benefits.

## Conclusion

In this study, I set out to measure the trade-off between the awareness-raising effects of disruptive climate protests, and their potential negative effects on attitudes relevant to policy-making. I show that exposing people to media content about disruptive climate protest has large effects on the salience of climate change. It also comes at the cost of (limited) opinion backlash, where people are somewhat pushed away from the specific policy demand of the protesters. Other policy-relevant climate attitudes, such as concern, dissatisfaction with government action, and support for other costly climate policies were unaffected. More research is needed to understand how long the salience effect might last, and whether the message-specific opinion backlash is (partly) due to expressive responding.

Disruptive activism often has a high price for participants, targeted citizens or organizations, and authorities. The findings in this paper suggest that whether disruptive protest is “worth it” depends on the downstream effects of increased climate salience. In Europe and worldwide, a large chunk of the public is supportive of climate action while also being inattentive to the topic. Theory and evidence suggest that in this case, increasing salience could result in more ambitious climate policy, because it tightens the connection between policy and public opinion. The size of these downstream effects is still relatively uncertain. Nonetheless, including salience reveals large positive effects of disruptive activism, and measuring these side by side with effects on policy-relevant attitudes is needed to paint a full picture of the trade-off activists face.

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