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The Dynamics of Emotions in Protests*

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Abstract

This paper investigates the role of emotions during protest participation. While multidisciplinary research considers negative triggers a crucial factor for protesting, few studies causally test whether negative emotions initiate protesting and motivate continued protest behavior. Addressing these gaps, we present a model that explains when and why emotions matter throughout protest participation. Online experiments in the US (total $N = 1{,}603$) show that, surprisingly, neither negative nor positive emotions motivate individuals to start protesting (vs. issue salience). However, protesting decreases negative and increases positive emotions. The latter motivates protesters to continue protesting. Results hold among political and demographic predispositions as well as across several negative and positive emotions (e.g., anger). The finding that positive emotions motivate protesters to continue protesting helps explain why movements decline or endure. Ultimately, as sustained mobilization facilitates protest success, emotions are central in protesting, even if they do not cause initial protest participation.

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Introduction

Most people protest for a cause. They are disappointed with their government, angry about a policy proposal, or afraid of the planet's future. Accordingly, few doubt that people take to the streets because they are dissatisfied and aim to change a situation. Multidisciplinary research considers negative triggers—whether emotional or reasoned discontent—a primary motivator for people to *start* protesting (e.g., Gurr, 1971; Jasper, 1998; Young, 2021). However, it remains little understood whether this effect is causal and whether such negative drivers also motivate them to *continue* protesting (e.g., van Zomeren et al., 2012). Yet, understanding what motivates people throughout protest campaigns is crucial: It helps explain how protest movements decline and endure and how they ultimately attain the policy successes that often result from sustained mobilization. Our contribution is to elucidate when emotions in protest matter and why.

Two gaps emerge. First, despite valuable theorizing and correlational evidence on emotions as motivators of protest, causal evidence remains inconclusive. Previous work suggests that, besides negative emotions, positive ones similarly increase the likelihood of protesting (Greenaway et al., 2016; Wlodarczyk et al., 2017). Problematically, only a few studies manipulate these emotions exogenously. The experimental designs that do, often compare the effect of emotion about an issue to a pure control (e.g., Greenaway et al., 2016; Young, 2019, 2021), rather than to a control group where the issue is equally salient. This hinders isolating an emotion's effect from issue salience (i.e., the extent to which someone is aware of an issue at a given time). As emotions and factual issues increasingly fuse in the current political climate, it is vital to test if emotions predict protest participation beyond mere issue salience.

Second, while most research focuses on the effect of emotions on protest participation, some work has examined how protesting affects emotions (e.g., Cologna et al., 2021; Tausch and Becker, 2013; van Zomeren et al., 2012). To our knowledge, however, little research has theorized how emotions motivate individuals *throughout* their protest participation (but see van Zomeren et al., 2012). We consider this an essential gap because we expect that protesting explains individuals' endurance in a movement depending on how protesting affects their emotions.

In this paper, we advance the discussion of whether emotions motivate individuals to start protesting to a general theory of when and why emotions matter *throughout* their protest participation. Assuming that emotions frame how individuals perceive a situation, we argue that feeling negative about a situation increases the perceived gains of protesting (i.e., the outlook of a better situation) and decreases the perceived costs. This motivates them to *start* protesting. But if an emotion about a situation motivates individuals to start protesting, attempted changes to the situation through protest should affect the emotion, too. Intuitively, if anger at a policy proposal drives individuals to protest, contributing to preventing the policy's implementation should make them less angry.[1] In contrast, seeing that people take action can reinforce protesters' positive emotions, such as their hope for a more climate-friendly future, and thus create a positive incentive to *continue* protesting. This reasoning suggests differential effects depending

[1]Note that this expectation does not require that the protest fulfills its goal. The mere belief that one's actions contribute toward the protest's goals should suffice to reduce negative and increase positive emotions, respectively. We base this reasoning on Emotion Regulation Theory (Gross, 2014) in the theory section.

on an emotion's valence, such that protesting reduces negative but increases positive emotions. Moreover, if emotions predict protesting, a reduction in (negative) emotions implies that individuals will stop protesting. Contrarily, an increase in (positive) emotions will motivate them to endure.

We highlight that this theory has a central and practical implication: If protesting reduces the negative emotions that initially motivated individuals to protest, it undermines its own cause. However, protest movements might sustain themselves if they simultaneously generate positive emotions. Since protest movements are more likely to be successful if they mobilize individuals across several events (Chenoweth et al., 2011), testing this prediction is vital.

We conduct two pre-registered online experiments to test a.) whether emotions predict an individual's willingness to *start* protesting, b.) how protesting affects emotions, c.) and how possibly altered emotions predict protesters' inclination to *keep* protesting. We conduct these tests among white liberals in the United States (US). Study 1 ($N = 931$) randomly primes respondents to feel guilty about racial injustice (negative emotion condition), hopeful about this issue (positive emotion condition), or primes the issue only (issue salience condition) and then measures their willingness to participate in race-related protests.

Contradicting previous literature and our hypotheses, we find that neither negative nor positive emotions predict protest participation. We reason that compared to being made aware of an issue (i.e., in the issue salience condition), emotional triggers do not offer an added incentive. Study 2 ($N = 672$) invites respondents in the treatment condition to protest against racial inequality (vs. pure control) and subsequently measures their emotions and readiness to engage in future protest. Consistent with our expectations, protesting (vs. not protesting) reduces negative but increases

positive emotions. Furthermore, mediation analyses show that a decline in negative emotions mediates a negative effect of protesting on future mobilization. However, a simultaneous growth of positive emotions concurrently mediates a positive effect of protesting on future mobilization, resulting in a net increase in protesters' willingness to protest again.

Together, we find that emotions matter in explaining protests' demobilization and future mobilization by providing protesters with incentives (i.e., positive emotions) to keep protesting. This extends previous literature on why people *start* protesting (e.g., Chenoweth and Ulfelder, 2017) by explaining why they *keep* protesting. Future research could investigate whether these endogenous emotional dynamics of protests explain why some movements continue even after the initial trigger is remedied (e.g., Rasler, 1996) and how protest organizers can build positive emotions to remain mobilized.

We proceed as follows. We first review common explanations for why people start and keep protesting. We then review previous research on negative and positive emotions in political behavior and protesting before we develop our argument of when and why they should matter. Next, we present two studies testing our theory before we discuss implications and avenues for future research.

Protesting as an Emotional Event?

Various factors explain why people protest (e.g., Chenoweth and Ulfelder, 2017; Dahlum and Wig, 2021; Kuran, 1991; Leuschner and Hellmeier, 2023). The most influential theories stress the importance of resources to mobilize (e.g., McCarthy and Zald, 1977), political opportunities to protest (McAdam, 1999; Fearon and D., 2003), relative deprivation to motivate protesters (e.g.,

Gurr, 1971), and modernization processes that set off societal transformations (e.g., Welzel et al., 2003). Moreover, studies find that protests erupt amid prevailing grievances against policies (Gurr, 1971) or outrageous events that make injustices salient (e.g., Hess and Martin, 2006; Rød, 2019).

While these studies suggest that many people protest because they care (or at least acknowledge the importance of) an issue, they point out that emotions matter, too. Accordingly, people protest because they are, for example, dissatisfied with, annoyed by, or angry about a current situation. And indeed, multidisciplinary theories consider negative emotions a central driver of protest (Gurr, 1971; Lichbach, 1995; Jasper, 1998; Landmann and Rohmann, 2020; van Stekelenburg and Klandermans, 2013; Young, 2021). Lichbach, for example, writes about people's motivations to protest: "*[...] deprived people become frustrated, [...] frustrated people become angry, and [...] angry people often strike out at those responsible for their frustrations*" (Lichbach, 1995, 4).

Interestingly, the relevance of positive emotions seems less obvious. To our knowledge, the most-discussed positive emotion is hope. Intuitively, one may assume that individuals are more likely to protest if they expect (i.e., hope) their action to change a situation for the better. However, the evidence is mixed, such that some scholars find a positive correlation between hope and protest (Greenaway et al., 2016; Wlodarczyk et al., 2017) and others do not (Cohen-Chen and Van Zomeren, 2018; Hasan-Aslih et al., 2019; van Zomeren et al., 2019; van Zomeren, 2021). Arguably, people who already feel positive about a situation or expect it to be positive in the future have little incentive to become active. In line with this perspective, research finds that individuals become more supportive of their government if they feel positive about their life (Esaiasson et al., 2020) and less politically engaged if overly

confident in the system (Cichocka et al., 2018).

But even for negative emotions, the empirical evidence is not as strong as the prevailing theoretical intuition would suggest. This is due to at least three methodological issues. First, negative emotions are often approximated with measures of societal inequality (De Juan and Wegner, 2019) or ethnic marginalization (e.g., Cederman et al., 2010) rather than explicit emotion measures. Second, measuring protest participation in surveys is difficult. Items asking whether participants have participated in actions in the past (Solak et al., 2022; Thomas and McGarty, 2018) or would be willing to participate in actions (Miller et al., 2009; Solak et al., 2022) evoke recall or intention biases. More generally, social desirability bias likely motivates individuals to over-report their activism. In the present paper, we address the first limitation with explicit emotion measures and the second with participation measures that reduce social desirability concerns (see the methods section).

The third limitation requires more discussion. Experimental designs often compare the effect of an induced emotion to a pure control condition (e.g., Greenaway et al., 2016; Young, 2019, 2021). Doing so promises useful as it allows for a strong treatment and a clean control condition. Problematically, as such treatments often evoke emotion *about an issue*, the treatment conflates issue salience with emotion, making it impossible to disentangle these effects. As many people may also be motivated because they care about an issue or are at least aware of it, this is important to differentiate. Some designs allow doing so as they compare the effects of emotions about an issue with a condition in which the issue was salient (e.g., Banks et al., 2019). Thus, additional research on the effect of negative and positive emotions on individuals' willingness to start protesting is needed, preferably while accounting

for the raised limitations.

However, considering this link in the opposite direction may be equally important. In the remainder of this section, we review the few studies examining the effect of protesting on emotions and explain why examining this link may be essential to understand. Most of this work suggests that protesting evokes positive emotions. Some studies suggest that engaging in or identifying with collective action movements makes participants feel more positive, particularly more hopeful (Cologna et al., 2021; Klar and Kasser, 2009; Marlon et al., 2019; Páez et al., 2015). The theoretical rationale is often that protesting provides a sense of community, strengthens identity, and builds self-efficacy (e.g., van Zomeren, 2021). These gains make protesters hopeful to reach their goals. However, as emotions and these adjacent concepts are not yet empirically disentangled, conclusions regarding protest's effects on positive emotions are intricate.

The evidence is even more sparse regarding the effects of protesting on negative emotions. To our knowledge, only two studies examine the effect of protesting on negative emotions. Their results suggest that protesting increases positive emotions and, particularly in the case of perceived protest failure (Tausch and Becker, 2013), could reinforce feelings of anger (van Zomeren et al., 2012). Though important contributions, Tausch and Becker (2013) do not provide a theoretical framework that explicates whether their findings apply to other emotions than those tested, and van Zomeren and colleagues (2012) do not empirically test their proposed dynamic between anger and protest. While it may seem intuitive that protesting fuels such negative emotions, this could be due to accompanying experiences (e.g., perceived failure, ignorant elites, police violence) rather than protesting itself. As we theorize below, we think that protesting will reduce negative emotions

because protesters feel that they are taking action against a dissatisfying situation.

Together, research on emotions and protest behavior mostly studies how emotions affect protesting; empirical work in the opposite direction is much rarer. Moreover, no work to date considers the interplay between emotions and protest throughout protesting, which leaves untouched how emotions affected by protesting predict future protest participation. This is a relevant research gap for various disciplines. However, we emphasize that this issue is of tremendous practical relevance: if protesting undermines its emotional cause (i.e., reduces the emotions that motivated the behavior), any protest movement is eventually set to phase out, even amid beneficial conditions. Conversely, if protesting builds its driver (i.e., evokes emotions that motivate future protesting), protest movements are more likely to sustain themselves if they promote such emotional experiences, even amid adverse conditions. As protest movements are more likely to be successful the longer they last (Chenoweth et al., 2011), this reasoning implies that protest organizers need to understand and promote their participants' emotional experiences.

Theory: When and Why Emotions Matter

This section builds a theory of when and why emotions matter for mobilizing individual protest behavior. We understand emotions as relatively short-lived experiential, physiological, and behavioral reactions to distinct stimuli (e.g., a snake, a policy proposal). In contrast to affect—immediate and valence-based responses to stimuli—emotions take longer to arise (see Bakker et al., 2021; Lodge and Taber, 2013; Marcus, 2000). Researchers continue to debate the extent to which affect (i.e., positive vs. negative feelings)

can be meaningfully disentangled into distinct emotions (e.g., anger, fear). To accommodate this debate, we phrase a theory of positive vs. negative emotions but acknowledge the possibility for variation within positive or negative emotions, respectively.[2] While this allows us to introduce and test a broad theory, we invite explorations of heterogeneous effects for future research.[3]

We propose that emotions frame how costly an individual perceives their participation to be. We consider protesting a central way for citizens to express their dissatisfaction with a given situation. Individuals join a protest movement (i.e., a series of protest events) because they are dissatisfied with that situation. However, an individual's participation in any protest event is costly. Costs comprise resource demands (e.g., time, money), inconvenience (e.g., rain), and potential dangers (e.g., repression by the police). Hence, we assume that individuals become more likely to join a protest the larger the anticipated success of changing an aversive situation gets compared to the costs of protesting.

Based on this understanding, we sequence our theory of emotions in protest participation into three steps with separate hypotheses. We emphasize that even though our theory describes how emotions matter *throughout* an individual's protest participation, its single steps are independent of each other. Hence, downstream hypotheses can be supported even if hypotheses

[2]We also note that some emotions (e.g., nostalgia) have positive and negative valence (e.g., Versteegen, 2023).

[3]For example, Young (2019) suggests that the effect of emotions on protest behavior depends on the specific emotion. She finds that experimentally induced fear decreases the intention to dissent, challenging our argument that negative emotions generally spark intentions to protest.

at earlier steps remain unsupported.

The first step theorizes the role of emotions on an individual's readiness to *start* protesting. We expect that feeling negative about an issue should motivate protest engagement. Individuals who are dissatisfied with a situation have something to gain from protesting, which aims to change the current situation. Simultaneously, we expect that positive emotions do not have such motivating effects. If an individual feels positive about an adversarial situation or expects it to change for the better soon, there is little incentive to engage in costly protest. The added benefit of protesting is small, while the costs of protesting remain. Thus, positive emotions should reduce an individual's willingness to start protesting.

- H1a: Negative emotions increase initial protest participation.
- H1b: Positive emotions decrease initial protest participation.

The second step theorizes how individuals' protest behavior will affect their negative emotions and subsequent readiness to *keep* protesting. We expect that protesting reduces negative emotions because it promises to change a currently dissatisfying situation into a desired one. This reasoning is rooted in Emotion Regulation Theory (Gross, 2014), which states that people apply various techniques to "change an existing emotion into a desired emotion" (Tamir, 2016, p. 199). One of these techniques is *situation modification* (Gross, 2014, 2015; Quoidbach et al., 2015), in which individuals turn a situation evoking the current emotion into one that allows for a desired emotion. Crucially, the theory suggests that individuals do not need to factually change the situation—it suffices if they think they alter a situation to reduce their negative emotion (Baumeister et al., 2007). It follows that a protest does not need to be successful for a negative emotion to be reduced. Suppose that

someone joins a climate protest because they fear climate change. Even if their protest does not attain stricter climate policies, the feeling that they are taking action against the worrying situation should reduce their fear.[4]

As reductions in negative emotions about an issue imply reductions in the perceived benefit of protesting against it, an individual's willingness to keep protesting should decrease. Together, we postulate that an individual's protest participation undermines the initial motivation as it reduces negative emotions.

- H2a: Protesting decreases negative emotions.
- H2b: Negative emotions increase participation.
- H2c: The negative effect of protesting on future protest participation is mediated by a decrease in negative emotions.

The third step theorizes the mechanism for positive emotions. Building on the theoretical work mentioned above (Jasper, 1998; van Zomeren, 2021), we expect that protesting increases positive emotions. From an emotion regulation perspective (Gross, 2014), an individual's (intended) modification of a dissatisfying situation into a better future helps them turn a previously negative emotion into a more pleasant one. As individuals experience that they "do something" and can contribute to the better, they feel positive that

[4]The expectation that protesting reduces negative emotions about an issue does not infer that people do not feel negative while protesting. That is, people can simultaneously be outraged while marching and still start to feel less negatively about the protest issue.

this activity is actually effective (Cologna et al., 2021; Marlon et al., 2019).[5]

Thus, we argue that the positive emotions evoked through protesting increase the perceived benefits of protesting. Therefore, we expect that arising positive emotions increase future participation. Together, we postulate that an individual's protest behavior predicts future protest behavior as it builds positive emotions.

- H3a: Protesting increases positive emotions.
- H3b: Positive emotions increase future protest participation.
- H3c: The positive effect of protesting on future protest participation is mediated by an increase in positive emotions.

To summarize, we argue that negative and positive emotions play complementary roles in an individual's willingness to *start* and *keep* protesting. First, we expect negative (but not positive) emotions to increase the perceived benefits of protesting (Hypotheses 1a and 1b). Second, regardless of why an individual started to protest, we expect that taking action against an unsatisfactory situation reduces negative emotions, decreasing the willingness to engage in further protest (Hypotheses 2a-2c). Third, and equally independent of initial protest motivation, we expect that protesting increases positive emotions, which increases the likelihood of future protest (Hypotheses 3a-3c). If supported, this theory suggests that negative emotions motivate

[5]We realize that the extent to which protesting evokes positive emotions likely depends on the protest's characteristics (e.g., Tausch and Becker, 2013). For example, unsuccessful or suppressed protests may be less likely to increase positive emotions and also evoke anger. However, even if protesting would increase some negative emotions, this does not imply that protests do not also evoke positive emotions.

an individual to *start* protesting, and positive emotions incentivize them to *keep* doing so. Figure 1 summarizes our theory.

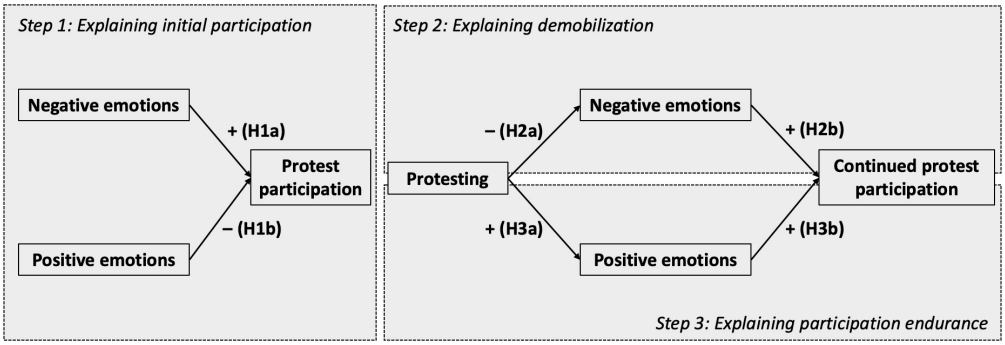


Figure 1: A three-step theory of emotions in protest.

Data and Methods

We conduct two pre-registered experiments between March and April 2023 to test our arguments.[6] We understand them as a test of our general theory of when and why emotions matter in individual protest participation. To attain the best possible internal validity, we constrict the evidence in three regards.

[6]See the pre-registrations for Study 1 here and for Study 2 here. Both studies were reviewed by and conducted in accordance with the authors' responsible review board and the American Political Science Association's *Principles and Guidance for Human Subjects Research* (see the section A 'Ethical Considerations' for further information.

First, we situate both studies in the context of racial protests in the US. Protests against racial injustices have recently been prominent in democracies worldwide. These protests were particularly salient in the US[7], where racial issues are decisive for politics (Sides et al., 2019) and recently contributed to the most significant protest movement in its history (Buchanan et al., 2020). While online experiments are inherently limited in external validity, studying this highly relevant case and issue allows us to draw practically meaningful conclusions, nonetheless.

Second, we examine guilt and hope as primary operationalizations of negative and positive emotions. We do so because an emotion induction in Study 1 requires us to manipulate distinct emotions to attain the cleanest treatment possible. We choose *guilt* (i.e., the feeling that oneself or one's group acted immorally or failed to act (Harvey and Oswald, 2000)) because it is prevalent among white Americans concerning racial injustices (Chudy et al., 2019). Feeling guilty predicts various prosocial behaviors, such as climate protests (Haugestad et al., 2021), the intention to participate in collective action (Mallett et al., 2008; Shepherd et al., 2013; Selvanathan et al., 2018; Solak et al., 2022), or support for affirmative action (Swim and Miller, 1999; Iyer et al., 2003). We choose *hope* (i.e., the expectation that a positive future will be realized (Leshem and Halperin, 2021)) because movements protesting racial inequality or climate inaction were widely seen as a source of hope that a better future is attainable (e.g., Baskin-Sommers et al., 2021; Gopinath, 2020; Johnson, 2020). Thus, guilt and hope seem prominent in US-racial protests and protest movements more generally. Nevertheless, given our interest in negative and positive emotions and the ongoing debate about emotions' distinctness (see our discussion in the theory section, and see Bakker

[7]For an overview of racism-related protests, see Figure B1

et al., 2021; Lodge and Taber, 2013; Marcus, 2000), we assess a variety of emotions in both studies. In doing so, we can test the generalizability of our results despite targeted emotion manipulations.

Third, we limit our sample to white liberals. This population is likely to feel guilty (as whites) and hopeful (as liberals) about racial inequality and the reduction thereof (Harmon and Tavernise, 2020; Fisher and Rouse, 2022). These are crucial prerequisites for Study 2 (where we ask participants to protest against racial inequality in the US) as it prevents systematic selection out of treatment, which would bias the results. Thus, the sample constraints ensure that participants comply in both studies.

Together, we conduct two studies on the role of emotions in racial protest in the US, sampling from liberal white Americans. In Study 1, we prime participants' feelings of guilt vs. hope vs. issue salience regarding racial inequality and test if these emotions affect individuals' willingness to start protesting. In Study 2, we randomly assign participants to a protest treatment (vs. pure control) to examine if protesting affects guilt and hope (as negative and positive emotions) and the downstream consequences for an individual's motivation to protest again.

Participants

We applied the same sampling criteria for both studies and limited data collection to non-Hispanic white liberals in the US. We recruited a convenience sample[8] on the crowdsourcing platform CloudResearch, which has been shown to sample respondents with good attention and effort (Hauser and Schwarz, 2016).

[8]While these self-selected samples are not representative, we note that the primary aim of our studies was to provide internally valid causal tests.

Following an a-priori power analysis and accounting for dropouts, we collected N = 1,200 participants in Study 1 and N = 900 participants in Study 2. We excluded participants if they failed attention checks or did not meet the sample selection criteria of being white and liberal. For Study 1, the final sample consisted of 931 participants (63% female, M_{Age} = 41.3, SD_{Age} = 12.4). For Study 2, the final sample consisted of 670 respondents (53% female, M_{Age} = 42.8, SD_{Age} = 12.8).[9] Tables B1 and C1 give an overview of both samples.

Experimental treatments

Study 1: Manipulating guilt and hope

To test the effects of negative and positive emotions on an individual's willingness to protest, we induced guilt and hope concerning racial inequality in the US. To ensure that any effects can be attributed to the induced emotion and not just the issue, it was vital that the conditions induce a targeted emotion (i.e., guilt or hope) and are compared to a condition where the issue was salient but no emotion induced.

Participants were randomly assigned to one of three conditions. In the guilt condition, participants were asked to write a text about a situation when they had felt guilty because they, as a white person, were privileged compared to a Black person. If they could not think of an example from

[9]We excluded 230 respondents from the initial sample of 900 respondents as they did not meet the sampling criteria, failed attention checks, or did not finish the survey. The number of excluded respondents seems high, but we prefer to keep a smaller and sufficiently powered sample where every respondent has shown good attention throughout the survey.

their own life, they should imagine a situation of racial inequality that made them feel guilty. In the hope condition, participants read that there were good reasons to be hopeful that the inequality between white and Black Americans would decrease soon, as suggested by recent data.[10] We asked them to write why they hoped this inequality would decline. If they could not come up with a reason, they should imagine a situation that made them hopeful that these issues would improve.

In the control condition, participants were asked to note two things they knew about racial inequality in the US. Thus, respondents thought about the issue of racial inequality as in the hope and guilt conditions but without a particular emotional connotation. This allowed us to distinguish between emotionality and issue salience.

Study 2: Manipulating protest participation

To test the effects of protest participation on negative and positive emotions, as well as their downstream effects on future mobilization, we conducted a second survey experiment.[11] We manipulated whether participants could protest against racial inequality.

We first primed all participants with racial inequality in the study by letting them read an adapted excerpt of a New York Times article (Badger

[10]We debriefed all participants and pointed out that the data mentioned in the treatment conditions was fictional.

[11]While a field experiment could increase external validity by replicating a more realistic protest scenario, ensuring random treatment assignment and compliance among participants seemed unfeasible. Instead, we opted for an online setting to conduct the experiment with the highest possible internal validity.

et al., 2018). This text describes racial inequality between white and Black Americans in the job market. The prime is essential as it exposes both conditions to the issue of racial inequality, allowing us to control for issue salience.

We then randomly assigned respondents to one of two conditions. In the protest condition, participants were asked to write a text about themselves participating in a protest against racial inequality. A writing-as-treatment prompt takes advantage of people's tendency to consider imagined events as true (Shidlovski et al., 2014) and is often used to induce emotions (e.g., Wildschut et al., 2014) or behavior (e.g., Mutter et al., 2020). Compared to observational designs of real-life protest participation, this online task reduces efforts and potential dangers. To ensure proper participation, participants were encouraged to write at least 100 words. Participants in the control condition did not engage in any activity between the guilt prime and the outcome variables.

Note that the treatment prompt asked participants to *envision* themselves protesting instead of taking part in an actual protest event on the streets. This is the first study to simulate protest participation by asking respondents to envision protesting. To ensure that this treatment was successful, we checked participants' compliance and analyzed the written texts from participants in the treatment condition (Figure C1 and Table C3).

The treatment asked respondents to envision themselves while engaging in street protests:

Considering the prevailing racial discrimination and inequality Blacks are facing in the US, many people participate in protests against these issues. People take to the streets and make their voices heard.

In the text box below, please envision yourself participating in such a protest. What do you need to participate? What will you do? How often will you do it? How is the atmosphere? Who are the other protesters? What would protest success look like?

Measurements

Negative and positive emotions

In both studies, we measured participants' levels of guilt and hope after the treatment. We used the Positive and Negative Affect Schedule (PANAS, Watson et al., 1988), and asked respondents to indicate to what extent they felt each emotion on a 5-point Likert scale (ranging from 1 (not at all) to 5 (extremely)). In Study 1, these measures served as manipulation checks. In Study 2, we used them as measures for the mediators (Hypotheses 2c and 3c) between protest participation and willingness to protest. Besides guilt and hope, Study 1 assessed eight other emotions (5 negative: angry, resentful, disgusted, sad, anxious; 3 positive: happy, proud, compassionate). Study 2 assessed the same emotions except for fear.

Outcome: Willingness to protest

Both studies used the same measures to assess participants' willingness to protest. As direct questions about one's willingness to protest most likely evoke social desirability bias[12], we asked respondents to indicate their readiness to participate in five different protest scenarios that are commonly understood as reasons to stay away from a protest. These scenarios allow us to measure participants' motivation to mobilize while providing them with socially acceptable reasons to demobilize, thus reducing social desirability bias. Another (and behavioral) measure would have been to let participants write a text in which they protest (e.g., Bonilla and Tillery, 2020). As we expected this to measure grit rather than willingness to protest, we did not include such a measure.[13]

The five protest scenarios were: First, rain, which is a low threshold but a bothersome circumstance when protesting (e.g., Madestam et al., 2013; Wasow, 2020). Second, few other protesters, which increases the individual cost for a protester and signals that a large part of the public does not

[12]Early feedback indicated that results from such direct questions on whether respondents would want to participate in future protest would be highly confounded with social desirability bias. Therefore, we deviate from the pre-registration and report only the item on protest scenarios as an outcome measure.

[13]We did not include a behavioral measure as all conditions were required to write a text (except for the control condition in Study 2). Pilot studies showed that participants' attention and willingness to write another text after the treatment text decreased considerably, resulting in more dropouts. Thus, asking respondents to write another text might measure grit instead of willingness to protest.

support the protest event. Third, many protesters, who make it less necessary for an additional protester to join, following collective action theory (Ostrom, 2009, 188). Fourth, the presence of many police officers, which is most likely a deterrent for others in the context of a racial inequality protest in the US. Police officers in the US use more violence against racial protests and Black protesters (compared to non-racial protests and white protesters) (Davenport et al., 2011), and the presence of police may demonstrate that it is necessary that police are present as there may be a risk of violence. Fifth, government concessions, which decrease the incentives to protest further (DeNardo, 1985).

The wording of these five scenarios is as follows: Willingness to protest if *it's raining*; *few protesters participate*; *many protesters show up*; *there are many police officers present*; *the government already announced that it will give in to most of the protesters' demands* (ranging from 1 (not at all) to 5 (To a great extent)). The items were presented in randomized order. We summarized these five items into an index (Study 1 $\alpha = .90$; Study 2 $\alpha = .90$) measuring protest mobilization.

Other measures: Demographics and political attitudes

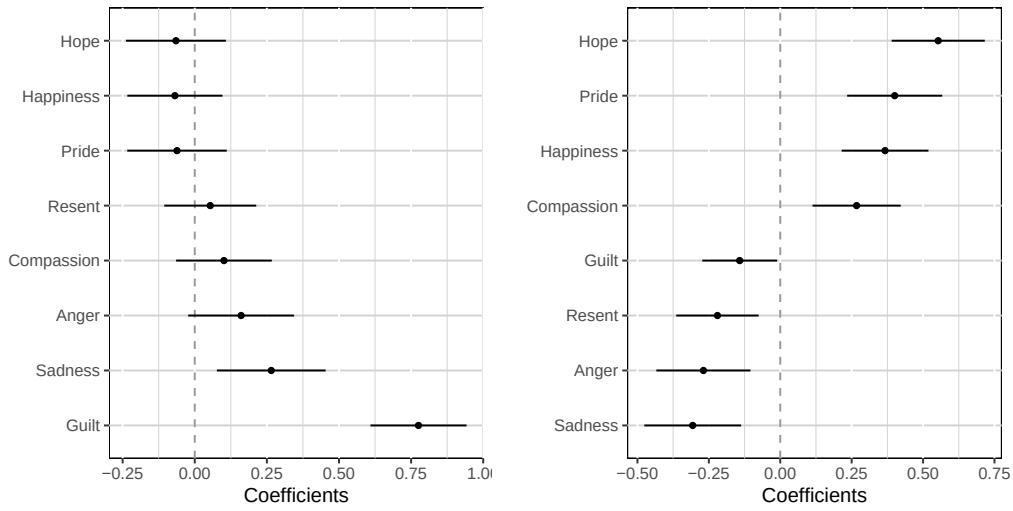
We assessed demographics (gender, age, highest education) to ensure that these were equally distributed across the two conditions (see Tables B4, B5, and C2). In both studies, we additionally gauged ethnicity, partisanship (1 (Strong Democrat) – 7 (Strong Republican), and ideology (1 (Very liberal) – 5 (Very conservative)) to verify that the sample only included white liberals, as intended by our pre-registration. We also measured former protest participation, asking "Have you previously supported a protest or any related protest activity in one of the four following forms: signed a petition, attended

a lawful protest, rallied or marched?" and political efficacy (three items, e.g., "Political parties are only interested in my vote, not in my opinion", 1 (None at all) – 5 (A great deal), Study 1 $\alpha = 0.80$, Study 2 $\alpha = 0.87$). Finally, Study 1 assessed perceived protest legitimacy (three items, e.g., "Protests are a legitimate form of political participation", both 1 (None at all) – 5 (A great deal), $\alpha = 0.79$) and a single item-measure assessing perceptions of racial discrimination ("How much racial discrimination is there in the United States today?", 1 (None at all) – 5 (A great deal)).

Results Study 1: Initial Protest Participation

Study 1 tests the effect of emotions on initial protest participation. Table B1 provides summary statistics. The treatments successfully induced the targeted emotion (see Figure 2 for an overview, and see Table B2 and B3 for mean differences). As intended, respondents in the guilt condition felt significantly more guilty than the control group (0.77 points on a 1-5 scale), and respondents in the hope condition felt significantly more hopeful (0.55 points) than in the control condition. Tables B8 and B9 confirm that the treatments affected respondents homogeneously in almost all regards. Higher-educated respondents tended to feel less guilty after the guilt induction than other respondents and more liberal respondents reported a higher change in hope after the hope induction.

However, both treatments also evoked other emotions. Specifically, the guilt treatment significantly increased feelings of sadness (0.27 points, compared to the control condition). In contrast, the hope condition significantly increased all positive emotions and decreased all negative emotions. While this feeds into debates on the distinctness of single negative and positive emo-



(a) Guilt treatment (b) Hope treatment

Figure 2: Manipulation check: Coefficient plots for the effect of the guilt and hope treatments on emotions compared to the control condition.

tions, respectively (see Bakker et al., 2021; Lodge and Taber, 2013; Marcus, 2000), it implies that we need to interpret our results as compound treatment effects that include other positive and negative emotions, apart from guilt and hope.

Table 1 shows the average treatment effects on respondents' willingness to protest. Contradicting our theoretical expectations, neither the guilt nor the hope treatment affected participants' willingness to protest. This pattern is consistent among all five protest scenarios (see Tables B10 and B11). Interestingly, the coefficients are very close to zero. Even in the upper bound of the 97.5% confidence interval, the estimated change in willingness to protest is only 0.19 points (on a scale from 1 to 5). Thus, compared to being made aware of an issue, neither a negative nor a positive emotion significantly altered participants' willingness to protest.

To probe the robustness of these findings, we test whether respondents' priors might explain why the treatments are not mobilizing. In an ex-

Table 1: Average treatment effects of emotions on protest intention (index)

	Willingness to protest	
	(1)	(2)
Guilt treatment	0.03	
	(0.08)	
Hope treatment		0.05
		(0.08)
Constant	2.59***	2.59***
	(0.06)	(0.06)
Observations	620	633
R^2	0.0002	0.001
Note:	*p<0.05; **p<0.01; ***p<0.001	

ploratory analysis, we test for heterogeneous treatment effects on the outcome among measured covariates (see Tables B12 and B13). Only two groups indicate distinct treatment effects. First, respondents who considered protests a legitimate form of political participation were generally more likely to protest than others. The more legitimate respondents thought protests to be, the less relevant the guilt treatment. These results suggest that if respondents had a high willingness to protest prior to the treatment, the emotion-inducing treatments did not alter respondents' (already high) willingness to protest. Second, exposed to the hope treatment, the more liberal respondents were, the more willing they became to protest. This is in line with the manipulation check, where more liberal respondents experienced a greater change in their feelings of hope after the hope treatment. For both groups, the effects are significant but very small and point in the same direction as the main results. Thus, the successful emotion inductions did not change respondents' willingness to protest. Even groups that experienced a strong increase in emotionality (i.e., lower-educated respondents in the guilt condition) were

not affected differently than other groups.

Overall, these results contradict the expectation that induced emotionality motivates protest participation. We do not find evidence for our hypothesis that guilt would increase the likelihood of initial protest participation (Hypothesis 1a) or that hope would decrease it (Hypothesis 1b). We reason that in contrast to most previous studies (e.g., Young, 2019),[14] we explicitly control for issue salience by asking the control condition to also think about racial inequality. This design rules out that effects occur because we compare one group being aware vs. one group being unaware of the issue (i.e., an issue salience effect). Thus, this design is a conservative test of our theory. Merely thinking of racial inequality could already evoke negative emotions, which might affect respondents' willingness to protest. However, given the strong priors from previous literature (e.g., Lichbach, 1995), we would have expected that an additional emotion induction would further increase protest participation.

We conclude that emotional triggers are not strong predictors of protest participation. In the next step, we test whether emotions become essential factors for continued protesting, regardless of the reason for initial protest participation.

[14]Young (2019) designs a strong and effective fear treatment by asking participants to describe fears around politics or non-political issues. This treatment design has the disadvantage that one group is encouraged to think about a protest issue, whereas the other group is not.

Results Study 2: Continued Protest Participation

Study 2 tests the effect of protesting on emotions and their consequence on continued protest participation. We test the treatment effects of protest participation on guilt and hope (Hypotheses 2a and 3a), on continued protest participation, and finally a mediation of the treatment effect on the outcome through guilt and hope (Hypotheses 2b, 2c, 3b, and 3c). Since guilt and hope operationalize negative and positive emotions, we examine the generalizability of our findings to other emotions with the same valence.

Table C1 provides summary statistics (see Table C2 for a balance table). Before testing the treatment effects, we evaluate whether the manipulation of protest participation was successful. Results suggest that the overwhelming majority of respondents could envision themselves protesting. On average, respondents wrote 119 words ($SD_{Words} = 41$) and showed good effort. A qualitative inspection of the treatment texts shows that participants successfully engaged in the writing exercise and wrote lively about their protest experience. Therefore, we are confident that the treatment assignment was successful and simulated street protest participation in an online setting. We present our results including all participants.[15]

Next, Table 2 shows the effect of the protest treatment on guilt and hope. In line with Hypothesis 2a, protesting significantly decreased feelings of guilt among participants. On a scale from 1 to 5, participants in the treatment condition reported 0.38 points less guilt than participants in the control condition. Additionally, protesters reported significantly higher levels

[15]Table C6 shows that results remain comparable when excluding participants who failed the manipulation checks (n = 9).

of hope (0.77 points), which is in line with Hypothesis 3a.

Table 2: Average treatment effects of protesting on mediators guilt and hope

	Guilt	Hope
	(1)	(2)
Protest treatment	-0.39^{***}	0.76^{***}
	(0.08)	(0.09)
Constant	2.03^{***}	2.30^{***}
	(0.05)	(0.06)
Observations	670	670
R^2	0.03	0.10
Note:	*p<0.05; **p<0.01; ***p<0.001	

Table 3 displays the effect of protesting on subsequent willingness to protest (therefore continued protest participation). Participants who protested were 0.42 points (on a scale from 1 to 5) more likely to protest again than others.

Table 3: Average treatment effects of protesting on willingness to protest

	Willingness to protest
Protest treatment	0.42^{***}
	(0.08)
Constant	2.32^{***}
	(0.05)
Observations	670
R^2	0.04
Note:	*p<0.05; **p<0.01; ***p<0.001

So far, we found that protesting reduces individuals' guilt and increases their hope, which aligns with our argument that protesting alters emotions. Next, we examine the effect of protest participation on willingness to protest

when mediated through guilt and hope. This gives us insights into the mechanism driving protesters' increased likelihood to protest again.[16] We conduct a mediation analysis, using the "mediation" package in R (Tingley et al., 2014) and following methodology developed by Imai et al. (2011) and Imai and Yamamoto (2013).

Table 4 confirms that guilt and hope significantly mediate the relationship between protest participation and willingness to protest. The effect of protest participation on subsequent protest willingness through guilt is estimated at -0.08 (this corresponds to the ACME of guilt). Combining the indirect and direct effect of the protest treatment on willingness to protest, the total effect of protesting on subsequent protest participation is 0.42 points. Thus, protesters were more likely to protest again than others despite the demobilizing effect of guilt. A look at hope explains this overall mobilizing total effect: The indirect effect of the treatment on the outcome when mediated through hope is 0.10 points. Thus, the increase of hope through protesting increases the protesters' subsequent likelihood to protest. Around 20% of the total effects are mediated through guilt and hope, respectively.

Thus, individuals tend to become less guilty when protesting, which, in turn, demobilizes them. Simultaneously, however, protesting also increases their hope, predicting future mobilization. This is in line with Hypotheses 2b, 2c, 3b, and 3c. Figure 3 summarizes the results of this mediation analysis and the effects of guilt and hope on initial protest participation tested in Study 1.

Together, these results show that protesting regulated protesters' emotions, which significantly affected their willingness to protest in the future.

[16]Table C4 shows the relationship between measured feelings of guilt and hope on respondents' willingness to protest.

Table 4: Study 2: Mediation analysis

	Coefficient		CI Lower 95%	CI Upper 95%
Guilt				
Indirect effect (ACME)	-0.08	***	-0.13	-0.04
Direct effect (ADE)	0.50	***	0.34	0.66
Total effect	0.42	***	0.26	0.58
Proportion of total effect through mediator	-0.19	***	-0.38	-0.09
Hope				
Indirect effect (ACME)	0.10	***	0.04	0.16
Direct effect (ADE)	0.32	***	0.16	0.5
Total effect	0.42	***	0.27	0.57
Proportion of total effect through mediator	0.23	***	0.09	0.45

Note:
5000 simulations. * p<0.05; ** p<0.01; *** p<0.001

These two within-individual processes are not contradictory but complementary: Protesting can simultaneously reduce one's guilty feelings and make one more hopeful. However, as the total effect of the protest participation treatment on the outcome (the sum of the indirect and direct effect) is 0.42 points, we conclude that the mobilizing effect of increased hope overruns the demobilizing effect of reduced guilt. To evaluate the robustness of these results, we conduct exploratory analyses testing alternative explanations, heterogeneous treatment effects, and the generalizability of the effects on other negative and positive emotions.

Heterogeneous treatment effects

We evaluate whether the results hold across groups that vary in political or demographic characteristics. Results are reported in Table C7. First, in terms of political characteristics, results could be driven by perceived political efficacy (e.g., van Zomeren, 2021). The protest treatment might have increased participants' perceived political efficacy, which explains their increased willingness to protest (Oser et al., 2022). Model 1 shows that the protest treatment did not affect respondents' self-reported self-efficacy and

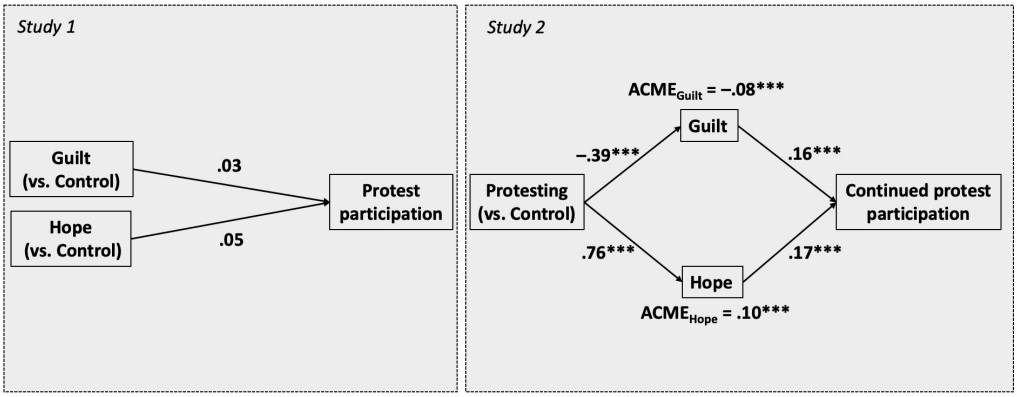


Figure 3: Mediation plot
Note: ACME = Average Causal Mediation Effect.
** $p < .0.05$; ** $p < 0.01$; *** $p < 0.001$*

the average treatment effect is not dependent on efficacy.

Further, we look at differences in the average treatment effect, conditional on attitudes toward affirmative action (Model 2) and ideology (Model 3). Attitudes toward affirmative action and liberal ideology might have affected respondents' compliance with the treatment. The models do not indicate heterogeneous effects.

Respondents' previous protest experience may drive the results. Experienced protesters might be most able to envision themselves protesting, strengthening their treatment compared to inexperienced protesters (24% of the sample state to have never participated in any protest, including petitions). Model 4 includes all forms of protesting and does not suggest any effect heterogeneity. When looking at differences between respondents who have experience with participating in street protests and others in Model 5, the results suggest that the average treatment effect becomes insignifi-

cant among experienced protesters but holds among inexperienced protesters. Figure C2 shows that experienced protesters have an overall higher willingness to protest that is little affected by the treatment. This could suggest that there is a ceiling effect among experienced protesters, who have a preconfined idea of how willing they are to protest, regardless of new triggers.

Second, regarding demographics, we test for heterogeneous treatment effects on a series of demographics associated with a higher likelihood to protest, which could imply a higher receptivity to the treatment and thus a conditional treatment effect. Accounting for age (Model 6), gender (Model 7), and education (Model 8) does not alter our main results, which increases confidence in our findings.

These results show that protesting affects emotions, subsequently shaping protesters' willingness to protest again. Decreased feelings of guilt and increased hope explain an increased willingness to protest. Results hold across different groups but differences between the treatment and control group decrease among participants who have a generally high willingness to protest. Next, we test whether these results generalize to other emotions.

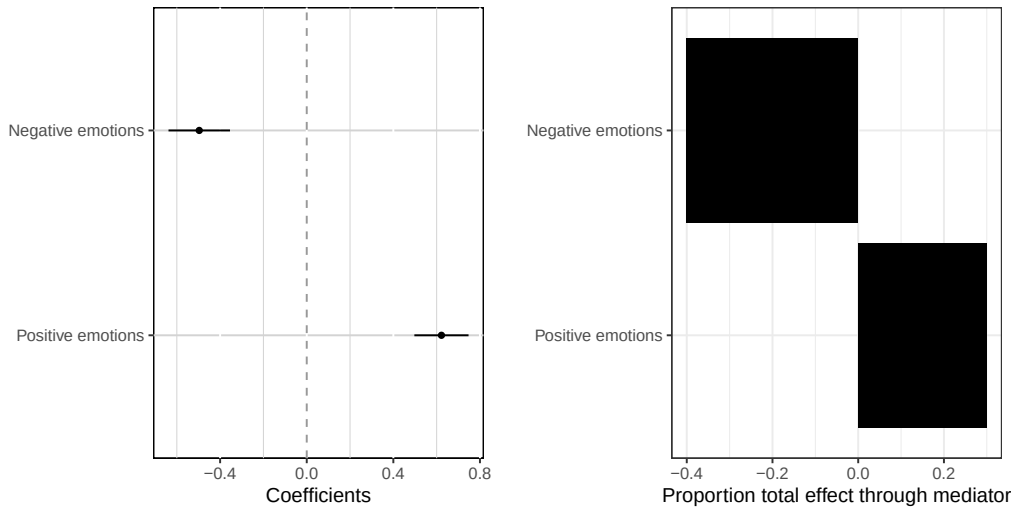
Generalizability

This paper studies how emotions matter throughout protest participation. To increase internal validity, we designed Study 2 to create variation in respondents' feelings of guilt and hope after protesting. However, as laid out above, we expect our results concerning protesters' emotional regulation of guilt and hope to hold for a broader cluster of negative and positive emotions. We test the generalizability of our findings in a series of exploratory analyses.

A confirmatory factor analysis suggests that guilt shares the same valence

as other negative emotions and hope as other positive emotions. Specifically, guilt, anger, resentment, and sadness are explained by one factor, and hope, happiness, pride, and compassion by another (see Figures C3 and C4, and Table C8).

Figure 4a shows that protest participation significantly decreased negative but increased positive emotions. This is in line with our results for guilt and hope and follows our theoretical expectations. Moreover, the negative and positive emotions mediate a considerable proportion of the effect of protest participation on further protest (see Figure 4b, and see Table C9 for regression coefficients). The decrease in negative emotions is estimated to mediate 45% of the total effect, and the increase in positive emotions mediates 33% of this effect (Figures C5a and C5b show the estimates disaggregated by the eight measured emotions.).



(a) (b)

Figure 4: (a) Coefficient plots for the effect of treatment on positive and negative emotions. (b) Proportions of total effect through positive and negative emotion mediators.

Given this evidence, we conclude that the emotional dynamics concern-

ing guilt and hope generalize to negative and positive emotions more broadly. Overall, protest participation decreased negative and increased positive emotions. We showed that this emotion regulation affects protesters' willingness to protest again. In the next section, we discuss the findings' implications for our understanding of protests, mobilization, and the link between political behavior and emotions.

Discussion and Conclusion

This paper examined when and why emotions matter throughout protest participation. We departed from the expectation that people join protests because they feel negative about a situation but that "doing something" about it would reduce the negative emotion and hence the initial trigger. Simultaneously, protesting could evoke positive emotions, which would motivate future mobilization.

We tested our theory with two online experiments in the US. Our results revealed some unexpected findings. Contrary to both our theoretical expectations and a large body of literature (e.g., Landmann and Rohmann, 2020; Solak et al., 2022; Young, 2019, 2021), neither did negative emotions increase an individual's willingness to protest, nor did positive emotions decrease it (compared to issue salience). While more research is needed to replicate our findings across various protest contexts, the null effects of emotions on protest participation challenge a long-standing assumption about what motivates individuals to protest (e.g., Lichbach, 1995; Gurr, 1971).

Further, we showed that protesting reduces negative emotions (i.e., guilt) and increases positive emotions (i.e., hope). Mediation analyses suggested that people who protested did not demobilize despite their negative emo-

tions being reduced. Instead, they were more likely to protest again because they gained positive incentives from protesting. This endogenous emotional dynamic of protest sheds new light on the effects of protest and advances the discussion on sustained mobilization (e.g., Hellmeier and Vüllers, 2023; Leuschner and Hellmeier, 2023; Steinert-Threlkeld, 2017; Steinert and Dworschak, 2023). In particular, finding that protest generates its own incentives to continue protesting could explain why protests continue when the initial reason is remedied (e.g., Rasler, 1996).

We emphasize three main limitations that invite future research. First, our evidence is limited to one country, one protest context (i.e., racial inequality), and an online convenience sample of liberal whites. Our results do not yet allow for generalizations. However, we have little reason to expect that these within-individual dynamics vary across individuals, causes, or democratic countries. Previous research shows that other protest issues are similarly emotional (van Zomeren et al., 2019) and it would be interesting to test for our proposed emotional dynamic throughout such protests. Moreover, studying how emotions frame the costs of protesting seems important in authoritarian countries where factors like state repression raise the costs of participating.

Second, we remind that our evidence is constrained to a fictional online protest. In the present paper, we prioritized internal over external validity, aiming to contribute a first general theory of how protest participation and emotions inform each other throughout a protest movement. Nevertheless, we urge future research to test the dynamics proposed here in the field. Preferably, such studies would use longitudinal data to assess an individual's emotions before and after their initial protest participation.

Third, we acknowledge that our experiments focused on two emotions

only. While our results suggest that the findings generalize to a broader cluster of negative and positive emotions, we do not mean to neglect ongoing discussions about the diverging effects of distinct emotions (e.g., Frijda et al., 1989; Cowen and Keltner, 2017). Future research can trace these dynamics to other emotions, and anger seems a fruitful point to start (Young, 2021).

In response to our question of when and why emotions matter in protest, we conclude that emotions may be less critical for an individual's motivation to start protesting but become relevant for determining their endurance. Specifically, they may matter for explaining their demobilization (i.e., a reduction of negative emotions) and future mobilization (i.e., an increase in positive emotions). Is it contradictory if emotions matter more for whether individuals continue protesting than for whether they start? Not necessarily, as the relative importance of issue salience and emotions may shift: Even if people are initially not particularly emotional about an issue, their mere disagreement with a situation may suffice to motivate them to take action. However, once engaged, the noise of the streets amplifies the emotional aspect of protesting, increasing the relative importance of feelings compared to the underlying issue being protested. That is, it is on the streets *when* emotions matter, and it is for keeping them march *why* they matter.

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A Ethical Considerations

Both studies were conducted in compliance with the American Political Science Association's *Principles and Guidance for Human Subjects Research* and the researchers' responsible Ethics Review Board. US-based participants were recruited online via the platform CloudResearch. Before participation, participants were informed that they would participate in a research study, what their participation entailed, that they could terminate participation at any time, that the study was anonymous, that the study would not pose any physiological or psychological harm, and that the anonymized data was intended for publication in scientific journals. Participants received 1$ compensation for their participation, which was expected to average 10 minutes. While we did not deceive participants, we manipulated their emotions. However, our primes did not deviate from what participants are exposed to in everyday life. After the study, participants were informed about the study's purpose and the random assignment. Participants received contact details if they had concerns or questions. The data was fully anonymized and due to the large sample size, the risk of participant identification is minute.

B Online Appendix: Study 1

Racial Protests Matter

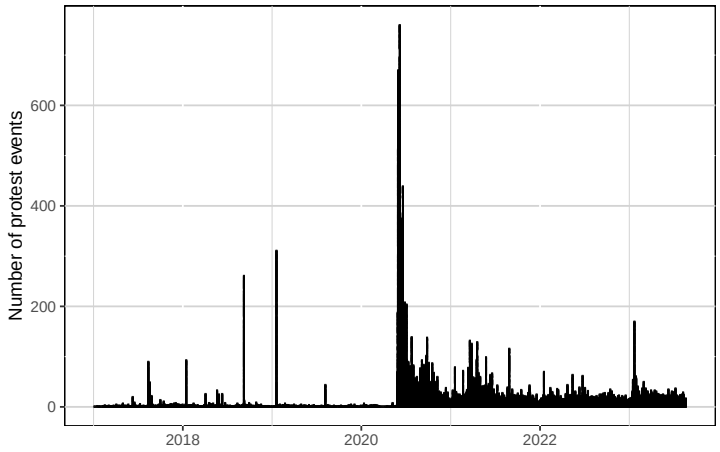


Figure B1: The number of protest events in the US related to the issue of racism. Data source: Crowd Counting Consortium (2023).

Study 1 – Procedure

The procedure was as follows. First, participants read and agreed to an informed consent, which introduced them to their rights following American Psychiatric Association (APA) guidelines. Second, we asked respondents about their attitudes toward the legitimacy of protests, their political efficacy, gender, age, and education. Third, we randomly assigned participants to one of three conditions, in which we asked respondents to either write a short text about a situation in which they felt guilty as a white person (guilt treatment), a situation that gave them the incentive to feel hopeful about racial inequality (hope treatment) or to write down two facts that they know about racial inequality in the US. Fourth, participants indicated how guilty or hopeful they felt and responded to questions regarding their willingness to protest further and a series of control variables. We included two attention checks and a manipulation check before respondents were fully debriefed, thanked, and released.

Study 1 – Descriptive Statistics

Survey item summary

Table B1: Survey item summary

Statistic	N	Mean	St. Dev.	Min	Max
Happiness	931	2.75	1.03	1	5
Hope	931	2.98	1.11	1	5
Pride	931	2.35	1.10	1	5
Anger	931	2.08	1.12	1	5
Resent	931	1.82	0.97	1	5
Disgusted	931	2.12	1.19	1	5
Sad	931	2.32	1.15	1	5
Compassion	931	3.59	1.02	1	5
Guilt	931	1.92	1.05	1	5
DV: Rain	931	2.51	1.18	1	5
DV: Concession	931	2.53	1.28	1	5
DV: Police	931	2.54	1.18	1	5
DV: many	931	3.05	1.29	1	5
DV: few	931	2.46	1.14	1	5
DV: Willingness to protest	931	2.62	1.03	1.00	5.00
Future protest	931	3.02	1.28	1	5
Political efficacy	931	2.37	0.93	1.00	5.00
Previous: petition	931	0.68	0.47	0	1
Previous: protest	931	0.35	0.48	0	1
Previous: civil disobedience	931	0.08	0.27	0	1
Previous: other	931	0.24	0.42	0	1
Female	931	0.63	0.48	0	1
Age	931	41.35	12.40	20	85
Education	931	4.46	1.36	1	8
Ethnicity	931	1.00	0.00	1	1
Partisanship	931	2.44	1.25	1	4
Ideology	931	2.09	0.79	1	4
Democrat	931	0.70	0.46	0	1

Table B2: Summary statistics for emotions in the *guilt* treatment group

Statistic	N	Mean	St. Dev.	Min	Max
Guilt	298	2.49	1.20	1	5
Anger	298	2.28	1.20	1	5
Resent	298	1.93	1.05	1	5
Disgust	298	2.37	1.27	1	5
Sadness	298	2.60	1.22	1	5
Happy	298	2.58	1.08	1	5
Pride	298	2.17	1.11	1	5
Compassion	298	3.57	1.07	1	5
Hope	298	2.75	1.12	1	5

Table B3: Summary statistics for emotions in the *hope* treatment group

Statistic	N	Mean	St. Dev.	Min	Max
Guilt	311	1.57	0.77	1	4
Anger	311	1.85	0.98	1	5
Resent	311	1.66	0.87	1	5
Disgust	311	1.79	0.99	1	5
Sadness	311	2.03	0.99	1	5
Happy	311	3.01	0.93	1	5
Pride	311	2.64	1.06	1	5
Compassion	311	3.73	0.93	1	5
Hope	311	3.37	1.02	1	5

Table B4: Balance table: Guilt treatment

	Type	Mean control	SD control	Mean treatment	SD treatment	Mean difference
Racial inequality attitude	Contin.	3.78	0.95	3.83	0.92	0.05
Political efficacy	Contin.	2.30	0.90	2.41	0.94	0.12
Previous petition	Binary	0.65	0.48	0.70	0.46	0.11
Previous protest	Binary	0.35	0.48	0.35	0.48	-0.01
Previous disobedience	Binary	0.07	0.25	0.08	0.28	0.06
Previous other	Binary	0.20	0.40	0.28	0.45	0.17
Gender	Contin.	1.67	0.52	1.68	0.52	0.02
Age	Contin.	40.87	12.20	42.22	12.90	0.11
Education	Contin.	4.41	1.37	4.51	1.35	0.07
Partisanship	Contin.	2.42	1.24	2.40	1.23	-0.02
Ideology	Contin.	2.09	0.79	2.09	0.78	0.00

Table B5: Balance table: Hope treatment

	Type	Mean control	SD control	Mean treatment	SD treatment	Mean difference
Racial inequality attitude	Contin.	3.78	0.95	3.67	0.96	-0.12
Political efficacy	Contin.	2.30	0.90	2.40	0.94	0.11
Previous petition	Binary	0.65	0.48	0.70	0.46	0.11
Previous protest	Binary	0.35	0.48	0.36	0.48	0.02
Previous disobedience	Binary	0.07	0.25	0.08	0.28	0.06
Previous other	Binary	0.20	0.40	0.23	0.42	0.07
Gender	Contin.	1.67	0.52	1.65	0.51	-0.04
Age	Contin.	40.87	12.20	41.01	12.10	0.01
Education	Contin.	4.41	1.37	4.45	1.35	0.03
Partisanship	Contin.	2.42	1.24	2.51	1.26	0.08
Ideology	Contin.	2.09	0.79	2.08	0.81	-0.00

Study 1 - Manipulation check

Table B6: Manipulation of the guilt treatment on reported emotions

	Guilt	Happiness	Hope	Pride	Compassion	Anger	Resent	Sadness
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Guilt treatment	0.78***	−0.07	−0.07	−0.06	0.10	0.16	0.05	0.27**
	(0.08)	(0.08)	(0.09)	(0.09)	(0.08)	(0.09)	(0.08)	(0.10)
Constant	1.71***	2.65***	2.82***	2.24***	3.47***	2.12***	1.88***	2.34***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)
Observations	620	620	620	620	620	620	620	620
R^2	0.12	0.001	0.001	0.001	0.002	0.005	0.001	0.01

Note: *p<0.05; **p<0.01; ***p<0.001

Table B7: Manipulation of the hope treatment on reported emotions

	Guilt	Happiness	Hope	Pride	Compassion	Anger	Resent	Sadness
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Hope treatment	−0.14*	0.37***	0.55***	0.40***	0.27***	−0.27**	−0.22**	−0.31***
	(0.07)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.07)	(0.09)
Constant	1.71***	2.65***	2.82***	2.24***	3.47***	2.12***	1.88***	2.34***
	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)	(0.06)
Observations	633	633	633	633	633	633	633	633
R^2	0.01	0.03	0.07	0.03	0.02	0.02	0.01	0.02

Note: *p<0.05; **p<0.01; ***p<0.001

Conditional manipulation check: Guilt

Table B8: Conditional *guilt* treatment effect on feeling guilty

	Guilty						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Guilt treatment (T)	0.57	0.58*	1.20***	0.63***	1.67***	0.95***	−0.05
	(0.53)	(0.23)	(0.29)	(0.14)	(0.29)	(0.24)	(0.34)
Protest legitimacy	0.17*						
	(0.08)						
T:Protest legitimacy	0.05						
	(0.12)						
Political efficacy		0.02					
		(0.07)					
T:Political efficacy		0.08					
		(0.09)					
Age			−0.01				
			(0.005)				
T:Age			−0.01				
			(0.01)				
Female				−0.14			
				(0.12)			
T:Female				0.23			
				(0.18)			
Education					0.09*		
					(0.04)		
T:Education					−0.20**		
					(0.06)		
Ideology						−0.17*	
						(0.07)	
T:Ideology						−0.08	
						(0.11)	
Racial inequality							0.17**
							(0.06)
T:Racial inequality							0.21*
							(0.09)
Constant	0.98**	1.68***	2.01***	1.81***	1.31***	2.08***	1.06***
	(0.37)	(0.16)	(0.20)	(0.10)	(0.20)	(0.16)	(0.23)
Observations	620	620	620	620	620	620	620
R^2	0.13	0.12	0.14	0.12	0.13	0.14	0.18
Note:							*p<0.05; **p<0.01; ***p<0.001

Conditional manipulation check: Hope

Table B9: Conditional *hope* treatment effect on feeling hopeful

	Hope						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Hope treatment (T)	−0.61	0.49*	0.87**	0.55***	0.52	1.16***	−0.19
	(0.50)	(0.23)	(0.29)	(0.14)	(0.28)	(0.23)	(0.33)
Protest legitimacy	−0.14						
	(0.08)						
T:Protest legitimacy	0.27*						
	(0.12)						
Political efficacy		0.14*					
		(0.06)					
T:Political efficacy		0.02					
		(0.09)					
Age			0.01*				
			(0.005)				
T:Age			−0.01				
			(0.01)				
Female				0.09			
				(0.12)			
T:Female				0.01			
				(0.17)			
Education					−0.04		
					(0.04)		
T:Education					0.01		
					(0.06)		
Ideology						0.31***	
						(0.07)	
T:Ideology						−0.29**	
						(0.10)	
Racial inequality							−0.13*
							(0.06)
T:Racial inequality							0.20*
							(0.09)
Constant	3.43***	2.49***	2.32***	2.76***	2.99***	2.17***	3.32***
	(0.36)	(0.16)	(0.20)	(0.10)	(0.20)	(0.16)	(0.24)
Observations	633	633	633	633	633	633	633
R^2	0.07	0.08	0.08	0.07	0.07	0.09	0.07

Note: *p<0.05; **p<0.01; ***p<0.001

Study 1 – Robustness Tests

Table B10: Average *guilt* treatment effects across protest scenarios

	Few protesters	Many protesters	Granted concession	Police presence	Rain
	(1)	(2)	(3)	(4)	(5)
Guilt treatment	0.004	0.09	0.03	0.03	−0.01
	(0.09)	(0.10)	(0.10)	(0.10)	(0.09)
Constant	2.46***	2.99***	2.47***	2.56***	2.48***
	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)
Observations	620	620	620	620	620
R^2	0.0000	0.001	0.0002	0.0002	0.0000

Note: *p<0.05; **p<0.01; ***p<0.001

Table B11: Average *hope* treatment effects across protest scenarios

	Few protesters	Many protesters	Granted concession	Police presence	Rain
	(1)	(2)	(3)	(4)	(5)
Hope treatment	−0.003	0.09	0.15	−0.08	0.09
	(0.09)	(0.10)	(0.10)	(0.10)	(0.10)
Constant	2.46***	2.99***	2.47***	2.56***	2.48***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Observations	633	633	633	633	633
R^2	0.0000	0.001	0.003	0.001	0.001

Note: *p<0.05; **p<0.01; ***p<0.001

Table B12: Conditional *guilt* treatment effect on willingness to protest

	Willingness to protest (index)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Guilt treatment (T)	1.01*	0.37	0.67*	0.09	0.12	0.01	0.07
	(0.49)	(0.23)	(0.28)	(0.14)	(0.28)	(0.23)	(0.32)
Protest legitimacy	0.58***						
	(0.08)						
T:Protest legitimacy	−0.23*						
	(0.11)						
Political efficacy		0.18**					
		(0.06)					
T:Political efficacy		−0.15					
		(0.09)					
Age			−0.002				
			(0.005)				
T:Age			−0.02*				
			(0.01)				
Female				0.13			
				(0.12)			
T:Female				−0.10			
				(0.17)			
Education					0.01		
					(0.04)		
T:Education					−0.02		
					(0.06)		
Ideology						−0.35***	
						(0.07)	
T:Ideology						0.01	
						(0.10)	
Racial inequality							0.41***
							(0.06)
T:Racial inequality							−0.02
							(0.08)
Constant	0.11	2.17***	2.66***	2.51***	2.53***	3.33***	1.04***
	(0.34)	(0.16)	(0.20)	(0.09)	(0.19)	(0.16)	(0.22)
Observations	620	620	620	620	620	620	620
R^2	0.11	0.01	0.02	0.002	0.0004	0.07	0.14

Note: *p<0.05; **p<0.01; ***p<0.001

Table B13: Conditional *hope* treatment effect on willingness to protest

	Willingness to protest (index)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Hope treatment (T)	−0.17	−0.16	0.37	0.001	0.17	0.49*	0.09
	(0.47)	(0.23)	(0.30)	(0.14)	(0.29)	(0.22)	(0.32)
Protest legitimacy	0.58***						
	(0.08)						
T:Protest legitimacy	0.05						
	(0.11)						
Political efficacy		0.18**					
		(0.06)					
T:Political efficacy		0.08					
		(0.09)					
Age			−0.002				
			(0.005)				
T:Age			−0.01				
			(0.01)				
Female				0.13			
				(0.12)			
T:Female				0.08			
				(0.17)			
Education					0.01		
					(0.04)		
T:Education					−0.03		
					(0.06)		
Ideology						−0.35***	
						(0.07)	
T:Ideology						−0.21*	
						(0.10)	
Racial inequality							0.41***
							(0.06)
T:Racial inequality							0.0004
							(0.08)
Constant	0.11	2.17***	2.66***	2.51***	2.53***	3.33***	1.04***
	(0.34)	(0.16)	(0.21)	(0.10)	(0.20)	(0.16)	(0.22)
Observations	633	633	633	633	633	633	633
R^2	0.17	0.04	0.01	0.01	0.001	0.13	0.14
Note:							*p<0.05; **p<0.01; ***p<0.001

C Online Appendix C: Study 2

Study 2 Procedure

The procedure was as follows. First, participants read and agreed to an informed consent, which introduced them to their rights following American Psychiatric Association (APA) guidelines. Second, we framed guilt among all participants following an approach originally developed by Sniderman and

Carmines (1997) and newly applied by Chudy et al. (2019) with an adapted excerpt of an article by The New York Times (Badger et al., 2018). Third, participants were randomly assigned to one of two experimental conditions, in which the opportunity to participate in a protest against racial inequality and discrimination was varied. Fourth, participants indicated how guilty or hopeful they felt, and responded to questions regarding their willingness to further protest and a series of control variables. We included two attention checks and a manipulation check before respondents were fully debriefed, thanked, and released.

Study 2 – Descriptive Statistics

Survey item summary

Table C1: Survey item summary

Statistic	N	Mean	St. Dev.	Min	Max
Happiness	670	2.09	1.07	1	5
Hope	670	2.62	1.17	1	5
Pride	670	2.04	1.18	1	5
Anger	670	2.45	1.22	1	5
Resentment	670	1.87	1.08	1	5
Disgusted	670	2.47	1.33	1	5
Sad	670	2.66	1.28	1	5
Compassion	670	3.54	1.09	1	5
Guilt	670	1.86	1.08	1	5
DV: Rain	670	2.34	1.18	1	5
DV: Concession	670	2.38	1.29	1	5
DV: Police	670	2.49	1.25	1	5
DV: many	670	2.97	1.33	1	5
DV: few	670	2.35	1.16	1	5
DV: Willingness to protest	670	2.50	1.05	1.00	5.00
Future protest	670	2.99	1.31	1	5
Affirmative action	670	4.79	1.58	1	7
Political efficacy	670	2.33	1.05	1.00	5.00
Previous: petition	670	0.73	0.45	0	1
Previous: protest	670	0.36	0.48	0	1
Previous: civil disobedience	670	0.09	0.28	0	1
Previous: other	670	0.24	0.43	0	1
Female	670	0.53	0.50	0	1
Age	670	42.79	12.76	20	85
Education	670	4.43	1.35	1	7
Ethnicity	670	1.00	0.00	1	1
Partisanship	670	2.25	1.15	1	4
Ideology	670	1.97	0.74	1	4

Table C2: Balance table

	Type	Mean control	SD control	Mean treatment	SD treatment	Mean difference
Affirmative action	Contin.	4.76	1.59	4.83	1.58	0.04
Political efficacy	Contin.	2.33	1.08	2.34	1.02	0.01
Previous petition	Binary	0.71	0.45	0.75	0.43	0.09
Previous protest	Binary	0.31	0.46	0.42	0.49	0.23
Previous disobedience	Binary	0.09	0.28	0.09	0.28	0.00
Previous other	Binary	0.22	0.42	0.26	0.44	0.09
Gender	Contin.	1.54	0.52	1.57	0.54	0.05
Age	Contin.	43.02	12.84	42.48	12.66	-0.04
Education	Contin.	4.37	1.35	4.51	1.35	0.10
Ethnicity	Contin.	1.00	0.00	1.00	0.00	-0.00
Partisanship	Contin.	2.28	1.14	2.21	1.16	-0.07
Ideology	Contin.	1.98	0.73	1.95	0.76	-0.04

Study 2 - Manipulation check

We take several steps to check whether our manipulation worked. First, a manipulation check assessed the extent to which respondents in the treatment condition could envision themselves protesting. Only 9 respondents answered "Not at all". Most respondents ($N = 108$) answered that they could envision themselves "quite a bit". We have a further indication that the treatment was conducted in a meaningful matter: On average, respondents in the treatment condition wrote 119 words. This is above the number of words we suggested in the prompt. Figure C1 shows the distribution of the number of words written and that only a few respondents wrote less than 100 words. Table C3 shows the 20 most common words in the treatment texts, which range from "protest" to "atmosphere", to "peaceful". The most common words used fit the task of describing oneself while protesting. We additionally re-run the mediation analysis while excluding participants who could not envision themselves protesting in Table C6. Results remain highly comparable. The proportion of the total effect mediated through guilt increases to 42%. Uncertainty around the estimate for hope as a mediator increases.

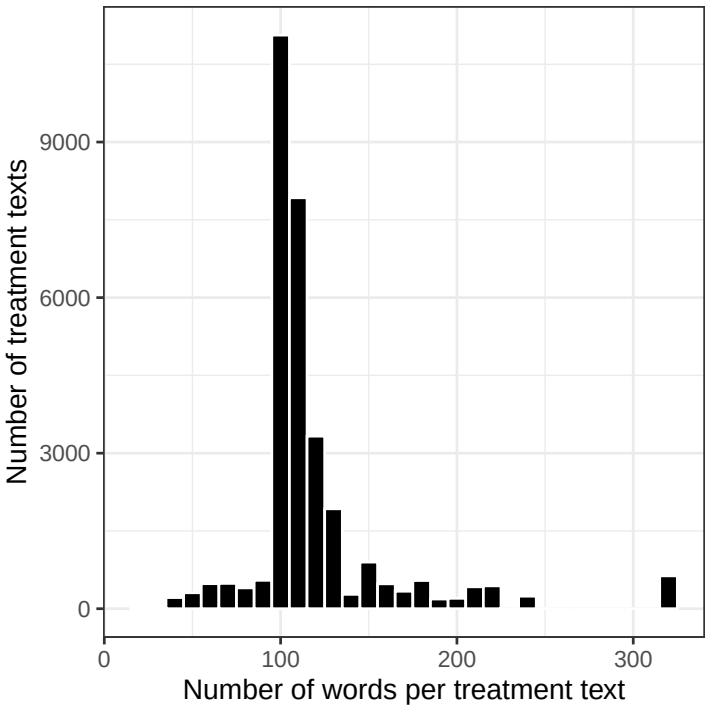


Figure C1: Distribution of the number of words respondents wrote in the protest treatment

Table C3: 20 most common words in respondents protest treatment text, after excluding stopwords and punctuation

	word	n
1	protest	450
2	people	351
3	need	202
4	like	165
5	participate	139
6	make	136
7	success	134
8	sign	132
9	atmosphere	126
10	protests	118
11	think	112
12	black	106
13	protesters	92
14	change	85
15	one	85
16	probably	84
17	don't	82
18	get	81
19	want	81
20	peaceful	80

Study 2 - Effect of mediators on outcome

Table C4 shows that both guilt and hope positively and significantly affected protest readiness by around 0.16 points (in line with Hypotheses 2b and 3b). Thus, individuals were more willing to engage in the five costly protest scenarios if they felt more guilty or hopeful, respectively.

Table C4: Mediator effect on willingness to protest (index)

	Willingness to protest	
	(1)	(2)
Guilt	0.16***	
	(0.04)	
Hope		0.17***
		(0.03)
Constant	2.21***	2.05***
	(0.08)	(0.10)
Observations	670	670
R^2	0.03	0.04
Note:	*p<0.05; **p<0.01; ***p<0.001	

Study 2 – Robustness Tests and Extensions

Comparing protest scenarios

Table C5 shows that the positive effect of the protest treatment on the outcome of willingness to protest holds true across all five scenarios. Across all five scenarios, participants who had protested were more willing to protest than participants from the control condition. Protesting particularly increased the willingness to protest when many protesters were on-site and in the case of heavy police presence. Granted concessions from the government had the smallest effect on participation. Together, participants who have already protested are more willing to take up costs to protest than non-protesters.

Table C5: Average protest treatment effects on willingness to protest across protest scenarios

	Few protesters	Many protesters	Granted concession	Police presence	Rain
	(1)	(2)	(3)	(4)	(5)
Protest treatment	0.41***	0.53***	0.25*	0.51***	0.40***
	(0.09)	(0.10)	(0.10)	(0.10)	(0.09)
Constant	2.17***	2.74***	2.27***	2.27***	2.17***
	(0.06)	(0.07)	(0.07)	(0.06)	(0.06)
Observations	670	670	670	670	670
R^2	0.03	0.04	0.01	0.04	0.03

Note: *p<0.05; **p<0.01; ***p<0.001

Table C6: Mediation analysis when excluding respondents that failed the manipulation check

	Coefficient		CI Lower 95%	CI Upper 95%
Guilt				
Indirect effect (ACME)	-0.071	***	-0.12	-0.034
Direct effect (ADE)	0.636	***	0.48	0.794
Total effect	0.565	***	0.41	0.723
Proportion of total effect through mediator	-0.126	***	-0.24	-0.055
Hope				
Indirect effect (ACME)	0.073	*	0.0056	0.14
Direct effect (ADE)	0.492	***	0.3247	0.66
Total effect	0.565	***	0.4072	0.72
Proportion of total effect through mediator	0.129	*	0.0099	0.27

Note:
5000 simulations. * p<0.05; ** p<0.01; *** p<0.001

Heterogeneous treatment effects

Table C7: Average treatment effects, conditional on political and demographic characteristics

	Willingness to protest							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment (T)	0.31	0.23	0.03	0.56***	0.43***	0.64*	0.44***	0.44
	(0.20)	(0.24)	(0.22)	(0.16)	(0.09)	(0.28)	(0.12)	(0.28)
Political efficacy	0.08							
	(0.05)							
T:Political efficacy	0.05							
	(0.08)							
Affirmative action		0.25***						
		(0.03)						
T:Affirmative action		0.04						
		(0.05)						
Ideology			−0.47***					
			(0.07)					
T:Ideology			0.20					
			(0.10)					
Previous protest (any)				0.94***				
				(0.11)				
T:Previous protest (any)				−0.23				
				(0.18)				
Previous protest					1.13***			
					(0.10)			
T:Previous protest					−0.31*			
					(0.15)			
Age						−0.002		
						(0.004)		
T:Age						−0.01		
						(0.01)		
Female							0.29**	
							(0.11)	
T:Female							−0.04	
							(0.16)	
Education								0.004
								(0.04)
T:Education								−0.004
								(0.06)
Constant	2.14***	1.13***	3.27***	1.63***	1.97***	2.39***	2.17***	2.31***
	(0.13)	(0.15)	(0.15)	(0.10)	(0.06)	(0.19)	(0.08)	(0.18)
Observations	670	670	670	670	670	670	670	670
R^2	0.05	0.20	0.12	0.16	0.25	0.04	0.06	0.04

Note: *p<0.05; **p<0.01; ***p<0.001

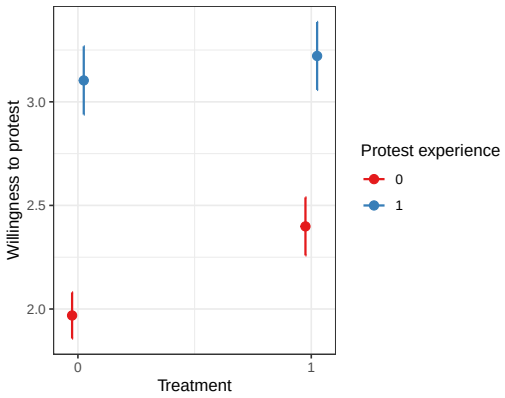


Figure C2: Interaction effect of the protest treatment on willingness to protest, conditional on previous protest experience. Based on Model 5 in Table C7

Generalizability

The scree plots below show that both negative and positive emotions are satisfactorily explained by one factor, respectively. While Figure C3 (negative emotions) indicates that a second factor does not explain additional variance, Figure C4 (positive emotions) suggests a potential second factor. Table C8 suggests this could be due to compassion, which loads relatively weakly on the positive factor. It is reasonable that compassion potentially also loads on the negative factor, given that it means to warmly engage with suffering (Singer and Klimecki, 2014). As the overall model fit is satisfactory and the results replicate when analyzing the emotions separately (Figure C5b), we deem this appropriate.

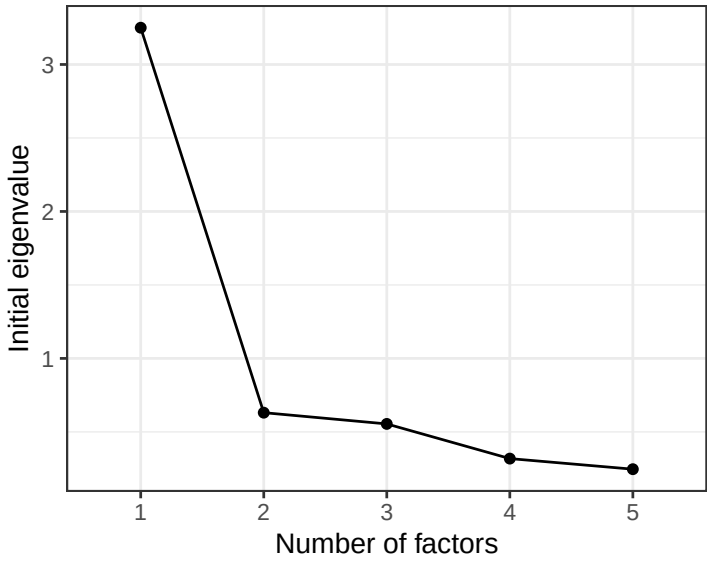


Figure C3: Scree plot for negative emotions. Based on the unreduced correlation matrix

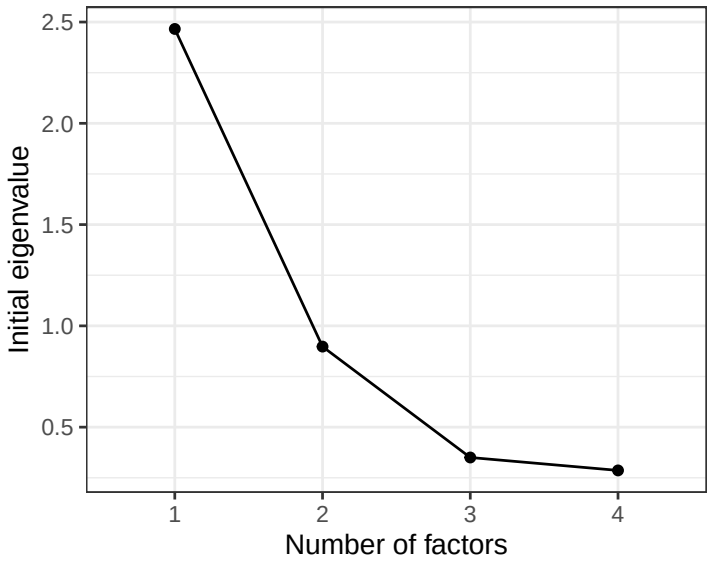


Figure C4: Scree plot for positive emotions. Based on the unreduced correlation matrix

Table C8: Factor loadings

	Model			
	Estimate	Std. Err.	z	p
	Factor Loadings			
Negative emotions				
Guilt	0.65	0.04	16.66	.000
Anger	1.05	0.04	26.89	.000
Resentment	0.64	0.04	15.97	.000
Disgust	1.15	0.04	27.07	.000
Sadness	0.92	0.04	22.88	.000
Positive emotions				
Happiness	0.92	0.04	25.75	.000
Pride	0.98	0.04	24.32	.000
Hope	0.87	0.04	21.22	.000
Compassion	0.27	0.04	6.21	.000
	Residual Variances			
Guilty	0.73	0.04	17.05	.000
Anger	0.38	0.03	11.72	.000
Resent	0.76	0.04	17.18	.000
Disgust	0.44	0.04	11.50	.000
Sadness	0.62	0.04	15.26	.000
Pride	0.44	0.04	11.15	.000
Hope	0.61	0.04	14.55	.000
Compassion	1.12	0.06	18.20	.000
	Residual Covariances			
Hope w/Compassion	0.25	0.04	6.82	.000
Sadness w/Compassion	0.24	0.03	6.89	.000
	Latent Variances			
Negative emotions	1.00^{+}			
Positive emotions	1.00^{+}			
	Latent Covariances			
Negative emotions w/Positive emotions	-0.41	0.04	-11.09	.000
	Fit Indices			
χ^2(df)	270.89(24)			.000
CFI	0.92			
TLI	0.88			
RMSEA	0.12			

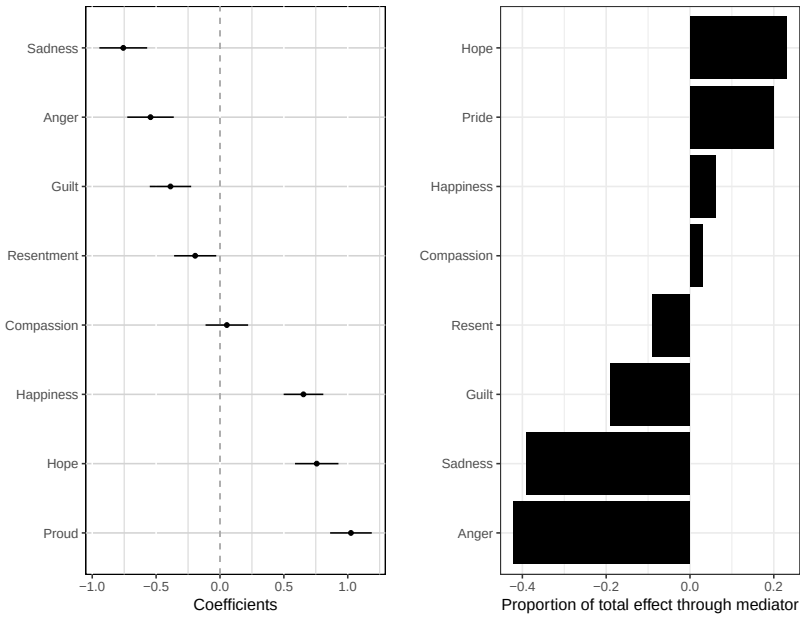
$^{+}$Fixed parameter

Table C9: Mediation analysis across positive and negative emotions

	Coefficient		CI Lower 95%	CI Upper 95%
Negative emotions				
Indirect effect (ACME)	-0.19	***	-0.26	-0.12
Direct effect (ADE)	0.61	***	0.46	0.76
Total effect	0.42	***	0.27	0.58
Proportion of total effect through mediator	-0.45	***	-0.83	-0.25
Positive emotions				
Indirect effect (ACME)	0.1	***	0.07	0.21
Direct effect (ADE)	0.3	***	0.12	0.46
Total effect	0.4	***	0.27	0.58
Proportion of total effect through mediator	0.3	***	0.16	0.61

Note:
5000 simulations. * p<0.05; ** p<0.01; *** p<0.001

To ensure that these findings are consistent across individual emotions, we disaggregate the estimates to the eight measured emotions in Figures C5a and C5b. All positive emotions (pride, hope, happiness), except for compassion, increase significantly, whereas all negative emotions (resentment, guilt, anger, sadness) decrease. A mediation analysis across all measured emotions in Figure C5b shows that the broad pattern applies here as well. Full regression results are displayed in Table C10. Anger and sadness mediate around 40% of the total effect, meaning that protesting reduces these emotions and predicts subsequent demobilization. Compared to hope, pride has a similar mediation effect. The proportion of the total effect that is explained through pride is 0.21. Happiness and compassion do not significantly mediate the effect of protest participation on future protest mobilization. Resentment mediates only around 9% of the total effect.



(a) (b)

Figure C5: (a) Coefficient plots for the effect of treatment on emotions. (b)Proportions of total effect through emotion mediators

Table C10: Mediation analysis across emotions

	Coefficient		CI Lower 95%	CI Upper 95%
Sadness				
Indirect effect (ACME)	-0.16	***	-0.23	-0.10
Direct effect (ADE)	0.59	***	0.41	0.75
Total effect	0.42	***	0.26	0.57
Proportion of total effect through mediator	-0.39	***	-0.73	-0.22
Anger				
Indirect effect (ACME)	-0.18	***	-0.25	-0.11
Direct effect (ADE)	0.60	***	0.44	0.75
Total effect	0.42	***	0.27	0.58
Proportion of total effect through mediator	-0.42	***	-0.78	-0.22
Resentment				
Indirect effect (ACME)	-0.04	*	-0.08	-0.0048
Direct effect (ADE)	0.46	***	0.30	0.6170
Total effect	0.42	***	0.27	0.5772
Proportion of total effect through mediator	-0.09	*	-0.22	-0.0101
Compassion				
Indirect effect (ACME)	0.01		-0.03	0.059
Direct effect (ADE)	0.41	***	0.26	0.555
Total effect	0.42	***	0.27	0.574
Proportion of total effect through mediator	0.03		-0.08	0.138
Happiness				
Indirect effect (ACME)	0.02		-0.03	0.077
Direct effect (ADE)	0.40	***	0.23	0.566
Total effect	0.42	***	0.27	0.576
Proportion of total effect through mediator	0.06		-0.07	0.216
Pride				
Indirect effect (ACME)	0.08	*	0.007	0.17
Direct effect (ADE)	0.34	***	0.155	0.51
Total effect	0.42	***	0.266	0.57
Proportion of total effect through mediator	0.20	*	0.017	0.48

Note:

5000 simulations. * p<0.05; ** p<0.01; *** p<0.001

Appendix References

Singer, Tania, and Olga M Klimecki. 2014. "Empathy and Compassion." Current Biology 24(18): R875–R878.