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# Framing, emotions, and morality: Understanding media influence on moral attitudes towards the unvaccinated during COVID-19

Eetu Marttila <sup>a</sup> and Aki Koivula <sup>b</sup>

<sup>a</sup>Department of Social Research, University of Turku, Turku, Finland; <sup>b</sup>INVEST Flagship Research Center, University of Turku, Turku, Finland

## ABSTRACT

During the COVID-19 pandemic, non-compliance with health measures became a moralized issue. This study examines how news framing influences moral attitudes towards the unvaccinated and the mediating role of emotional reactions. Using an experiment ( $N = 456$ ), we evaluated the effects of episodic and thematic framing on emotional responses and moral attitudes to unvaccinated individuals. Compared to the control group, episodic frame significantly reduced anger and disgust, increased sympathy, and reduced the strength of moral attitudes towards the unvaccinated. Thematic frame had no significant effect compared to the control group. Mediation analysis confirmed that changes in moral attitudes were driven by shifts in emotional reactions. These findings highlight the powerful role of news framing in shaping public opinion during health crises.

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## KEYWORDS

Moral attitudes; emotions; news framing; COVID-19; vaccination; survey experiment

## 1. Introduction

When the COVID-19 pandemic began in 2020, many national governments implemented public health measures to contain the spread of the virus. During the pandemic, the public frequently condemned those who did not comply with health advice, such as not wearing masks or getting vaccinated (Bor, Jørgensen, Lindholt, et al., 2023; Claudy et al., 2022). Although moralizing health behavior can motivate collective action (Ellemers & van den Bos, 2012; van Zomeren et al., 2011), moral issues are often divisive (Skitka et al., 2021). Moreover, moralizing compliance can increase polarization and lead to the stigmatization of non-compliant individuals in society (Prosser et al., 2020; van Zomeren et al., 2012). For instance, discriminatory attitudes towards the non-compliant were prevalent in several Western countries (Bor, Jørgensen, & Petersen, 2023), with non-compliant individuals sometimes deemed unworthy of healthcare services or deserving of punishment for their behavior (Kasper et al., 2022).

The influence of the media on public opinion is widely acknowledged (e.g., Valkenburg et al., 2016). During a crisis, the news media play a crucial role in conveying messages and information from decision-makers and experts to the public (An & Gower, 2009; Pan & Meng, 2016). However, different media outlets often frame the same event or issue in divergent ways based on their unique interests and conventions (Lecheler & de Vreese, 2019). Research in framing theory has demonstrated that news framing has a significant impact on public opinion and attitudes (de Vreese, 2005), with even subtle changes in coverage profoundly affecting people's views and behaviors (Chong & Druckman, 2007). Therefore, understanding the role of the news media in shaping moral attitudes toward non-compliant behaviors during the pandemic is crucial.

**CONTACT** Eetu Marttila  eesama@utu.fi  Department of Social Research, University of Turku, Turku 20014, Finland  
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The precise mechanisms of framing effects are debated (Lecheler & de Vreese, 2019), but research has suggested that incidental emotional responses may be one explanation (Schuck & Feinholdt, 2015). Research in the moral domain has also suggested that emotions and morality are closely intertwined (e.g., Haidt, 2003; Rhee et al., 2019) and that emotional reactions are associated with increase and decrease in the strength of moral attitudes (Skitka et al., 2021). However, the effects of framing on moral attitudes and the role that emotions play in this process are not well understood (Clifford, 2019). In particular, the emotional responses that framing elicits could significantly influence how people form moral attitudes, but current evidence on the effects of framing in the context of highly polarized issues is mixed (see Ciuk & Rottman, 2021).

The objective of this study is to understand the relationship between news framing, emotional responses, and moralization of the unvaccinated during the pandemic. To examine the effects of news framing, we conducted a between-subject survey experiment in Finland during the COVID-19 pandemic in 2021. Participants ( $N = 456$ ) were randomly assigned to a control group or one of two treatment groups. Both treatment groups read a similar news story about chronically ill individuals who refused vaccination due to fear of side effects. The first treatment group received an episodic frame, focusing on a specific individual's personal experiences, while the second group received a thematic frame, emphasizing broader statistical and societal contexts. After reading the news article, participants' emotional responses and moral attitudes were measured.

## 2. Literature review

### 2.1. Moralization, emotions, and non-compliance with health-related behaviors

Previous research has provided multiple definitions on what moral attitudes are and how they are developed (see Ellemers et al., 2019). In general, moral attitudes are considered a distinct dimension of attitudes, separate from mere preferences (e.g., one's favorite ice cream flavor) or normative conventions (e.g., shaking hands when meeting new people) (Skitka et al., 2021). Where preferences and conventions are thought to be either personal choices or sociocultural beliefs about the normal way of doing things within a group of people or community (Skitka, 2010), moral attitudes are often framed as a matter of wrong or right, thought to be universally applicable, and experienced as objectively true (Skitka & Morgan, 2014; Skitka et al., 2005).

In the field of moral psychology, the functionalist approach to morality has emerged as a significant theoretical framework in recent decades (Graham et al., 2011, 2013). The functionalistic model emphasizes the essential role of morality in regulating social life and interpersonal relationships (Haidt & Kesebir, 2010). According to functionalistic model, humans have an innate ability to detect and respond to a range of moral issues, allowing for the rapid recognition of actions that threaten the community (Graham et al., 2013; Haidt, 2003). For example, witnessing someone cheat at a game or harm a child often triggers immediate moral condemnation, reflecting our instinctive ability to protect social cohesion.

Moral attitudes also differ from non-moral attitudes in that they are linked with strong emotional reactions (Rhee et al., 2019; Tangney et al., 2007), and individuals tend to have stronger positive and negative emotional reactions to moralized issues (Skitka et al., 2021). The relationship between morality and emotions has been a topic of extensive scholarly debate. According to the functionalist model of morality, emotions may be thought as alarm system, which is activated when we notice behavior that violates moral norms (Haidt, 2003). Specifically, when confronted with a potential moral transgression, individuals first experience an immediate emotional reaction, which is subsequently followed by more deliberate moral reasoning (Graham et al., 2011; Haidt & Kesebir, 2010). In earlier research on moral emotions, a distinction between other-focused and self-conscious emotions is often made (Rudolph & Tscharaktschiew, 2014; Tangney et al., 2007). Classical examples of other-focused negative emotions are guilt, contempt, and disgust, while shame, embarrassment, and guilt are commonly cited as self-conscious negative emotions (Haidt, 2003). Additionally, there are other-

focused positive emotions, such as sympathy and gratitude, as well as self-focused positive emotions, such as pride (Tangney et al., 2007). Each of these emotions can be elicited by specific moral violations and can influence the intensity of moral attitudes toward oneself or others.

Harming others or engaging in free-riding behaviors are often regarded as fundamental violations of moral principles within communities (Graham et al., 2013). During the pandemic, perceived harm to oneself was a primary reason for morally condemning unvaccinated individuals (Bor, Jørgensen, Lindholt, et al., 2023). Also, the unvaccinated were commonly viewed as “cheaters” who were avoiding their responsibility in the collective effort to control the epidemic (Bor, Jørgensen, & Petersen, 2023). This perspective is consistent with a long history of moralizing health and disease (e.g., Brandt & Rozin, 1997). The unvaccinated were not only perceived as free-riders but also as a moral threat, as their behavior violated key moral codes related to managing contagious diseases (Graham et al., 2011). Additionally, humans are quick to morally judge others not only when they are directly impacted, but also when they perceive potential harm to others (Haidt, 2012). Such perceived moral transgressions typically elicit other-focused emotional responses, including anger directed toward those deemed responsible for the harmful actions sympathy for individuals considered vulnerable to potential harm.

In some societies, compliance with health behaviors, such as wearing a mask or getting vaccinated, became not only a moral issue but also a politically divisive one (Wagner & Eberl, 2024). However, in the context of Finnish society, there was no significant political polarization regarding health behaviors, nor was there widespread distrust toward health experts, scientific institutions, or political authorities (Malinen & Koivula, 2024; Väliverronen, 2022). This was reflected in high vaccination rate and high trust towards the vaccines both before and during the COVID-19 pandemic (Malinen & Koivula, 2024; Väliverronen et al., 2020; Väliverronen & Jallinoja, 2021).

## 2.2. News framing, emotions, and moral attitudes

Earlier studies have confirmed news media’s role in shaping the public opinion (e.g., Lecheler & de Vreese, 2019). One important way the news media affects the public opinion is by its conventions of framing social and political issues (D’Angelo, 2017; de Vreese, 2005). At its core, the concept of framing refers to a process of selecting and highlighting an issue from a certain perspective (Entman, 1993). As an effect of framing, individuals either gain a new conceptual understanding or reorient their existing beliefs about an issue (Chong & Druckman, 2007; Lecheler & de Vreese, 2019). Current research supports the notion that framing affects individuals’ attitudes and opinions on a wide range of topics, including climate change (Hart, 2011), immigration (Lecheler et al., 2015; Simonsen & Bonikowski, 2022), policy preferences (Boukes, 2021; Gross, 2008; Lecheler & de Vreese, 2012), and moral attitudes (Ciuk & Rottman, 2021; Clifford, 2019).

Previous research has identified two types of news frames that can be considered fundamental and built into the principles of journalism: *issue-specific frames* and *generic frames* (de Vreese, 2005; Lecheler & de Vreese, 2019). Whereas issue-specific frames are applied with regards to a specific issue, generic frames are commonly used in news writing on a wide range of topics (D’Angelo, 2017; de Vreese, 2005). Further, the earlier studies have recognized *episodic* and *thematic frames* as two frequently deployed types of generic news frames (de Vreese, 2005). As Iyengar (1991, 1996) describes, episodic news frame involves presenting issues through specific incidents, such as sharing the personal story of an individual vaccine refuser, allowing for individualized examples. In contrast, the thematic news frame conveys issues in a more abstract manner, embedding them within a broader societal context, often supported by statistical background information (Iyengar, 1991, 1996).

Compared with thematic frames, episodic frames tend to have a stronger capacity to shift individuals’ attitudes to align with the opinion implied by the content of the frame (Aarøe, 2011; Gross, 2008; Springer & Harwood, 2015). Also, episodic frames often portray larger societal problems as individual ones, which could negatively affect opinions that concern groups portrayed by the framing (Iyengar, 1991). However, recent studies have noticed that personalized stories can also in some

situations decrease identity-based polarized attitudes (Boyer et al., 2024) and create sympathy towards groups portrayed by the frames (Gross, 2008).

The different effects of episodic and thematic frames have been explained by different mechanisms. In general, early models in the field of framing research focused mainly on the cognitive aspects of framing (see Schuck & Feinholdt, 2015), but in recent years there has been growing interest in the role of emotions in framing effects (Lecheler & de Vreese, 2019). Specifically, episodic frames are more emotionally engaging than thematic frames (Gross, 2008) and tend to activate more intense negative and positive emotions, such as sympathy, pity, anger, and disgust (Aarøe, 2011). As we know, moral attitudes are strongly linked to emotions (Rhee et al., 2019), and emotions elicited by framing have been shown to increase the amount of moralization toward the issue at hand (Clifford, 2019).

Although not widely studied, framing has also been shown to affect levels of moralization (Clifford, 2019). To our knowledge, only one study has explicitly assessed the effects of episodic and thematic framing in the moral domain. In their study, Ciuk and Rottman (2021) found that episodic frames increased the strength of moral attitudes, but only when individuals did not have strong pre-existing opinions about the issue described by the framing. Conversely, when the framing described an already highly polarized issue, no significant difference was found between episodic and thematic frames.

### 2.3. *The current research*

Previous studies have shown that media has an important role in affecting public opinion and altering the views towards different groups of people (Lecheler & de Vreese, 2019). News articles often use different frames to emphasize certain aspects of social and political issues while ignoring others (D'Angelo, 2017; de Vreese, 2005). In this study we explore how two commonly used framing techniques—episodic and thematic frames—affect the strength of emotional responses and moral attitudes toward the unvaccinated during the COVID-19 pandemic.

To study the effects of frames, we conducted a between-subject design survey experiment. The participants ( $N = 4$ ) of the experiment were randomly assigned to a control group or one of two treatment groups. The first treatment group was exposed to a news story with an episodic frame, while the second treatment group was exposed to a news story with a thematic frame (see next chapter for details).

Following the earlier literature on news framing effects, we expect that both treatments significantly reduce the strength of moral attitudes towards the unvaccinated (Ciuk & Rottman, 2021). Additionally, we expect that the effect of episodic frame is larger than the thematic frame. Consequently, we hypothesize that:

- H1a: Compared to the control group, exposure to episodic or thematic frame significantly reduces the strength of moral attitudes towards the unvaccinated
- H1b: The effect of episodic frame on moral attitudes is significantly larger than the effect of thematic frame

In addition, we expected that exposure to both episodic and thematic frames can elicit emotional reactions, and that episodic framing increases positive emotions towards the people portrayed in the frame (Aarøe, 2011; Gross, 2008). Drawing on literature on morality and emotions (Haidt, 2003; Hutcherson & Gross, 2011), we are interested on the basic negative and positive other-focused emotions, which are relevant in the context of moral reasoning. Also, previous studies suggest that emotional responses to framing are the mechanisms that explain changes in attitudes (Clifford, 2019; Feinberg et al., 2019). Thus, we hypothesize that:

- H2a: Compared to the control group, exposure to episodic or thematic frames significantly reduces anger and disgust while increasing sympathy and gratitude toward the unvaccinated.

- H2b: The effect of episodic frame on emotional reactions is significantly larger than the effect of thematic frame.
- H3: Decreased anger and disgust and increased sympathy and gratitude form an indirect link that explains the effect of framing on the strength of moral attitudes.

### 3. Methods

#### 3.1. Participants

We obtained our data from the Digital Age in Finland survey, which was collected in December 2021. The study population consists of Finnish-speaking adults born between 1943 and 1999 (Koivula et al., 2020). The experiment was conducted at the end of the survey. Separate informed consent from respondents who wanted to participate the experiment were obtained. Out of 543 individuals that participated the survey, 482 participants successfully completed the experimental section.

To prevent any potential in-group bias, we excluded 26 unvaccinated respondents from our sample. After this, the final sample size was 456 participants. The sample closely mirrors the age, gender, and regional distribution of the Finnish population, aligning well with the demographics of the 1943–1999 cohort. The sample includes a slightly higher proportion of highly educated participants, a factor to consider when interpreting our findings (see Appendix A, Table A1). It should also be noted that at the time of the data collection COVID-19 situation in Finland was rapidly getting worse, which can affect vaccination-related attitudes (see Appendix B).

#### 3.2. Experiment design

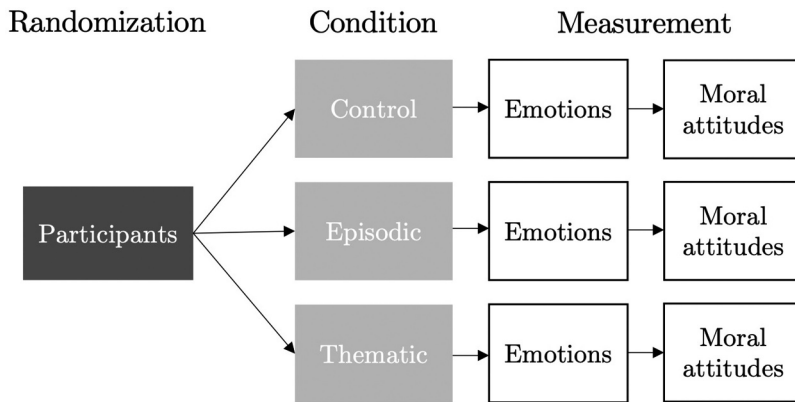
The experiment was based on a between-person design, in which participants were assigned to different treatments but received similar measurements afterward (Charness et al., 2012). The sample was randomly divided into a control group and two treatment groups. To assess the possibility of pretreatment bias (Druckman & Leeper, 2012; Stantcheva, 2023), all groups received a brief, basic summary of the COVID-19 vaccination coverage and its impact on healthcare capacity in Finland. Both treatment groups were exposed to a similar news story about chronically ill individuals who refused to take the vaccination due to fear of side effects. After this, both non-treated and treated groups answered same set of questions measuring emotional responses and moral attitudes towards the unvaccinated.

We analyzed the success of randomization by comparing the differences of treatment groups in a wide range of background variables, which were measured before the experiment. The results show that there were no statistically significant differences between the groups in terms of age, gender, education, or regional distribution. We also compared the vaccination uptake and the attitudes toward vaccines. The results showed minor differences in vaccination uptake and attitudes between the groups, which were accounted for in further analyses. Furthermore, we carried out additional analyses to explore variations in outcomes between the experimental groups, focusing on health status, media interest, and political trust as possible confounding variables. The results revealed no significant differences between the groups for these factors. Detailed comparison of groups is provided in Appendix A, Table A1.

The experiment design is illustrated in [Figure 1](#). The measures are detailed in the next Chapter.

#### 3.3. Frame design

To design the frames, we conducted thorough qualitative research on Finnish news media in October—November 2022. We reviewed a wide range of news articles from the major Finnish news sources, such as YLE and Helsingin Sanomat, focusing on vaccination-related themes, narratives and framing techniques used in news reporting. We found that both episodic and thematic frames (Iyengar, 1991)



**Figure 1.** Overview of the experimental procedure.

were commonly used in news articles that reported about COVID-19 vaccination coverage. For example, we found several articles that interviewed those who refuse to take the vaccination. Moreover, our analysis helped us identify key themes and moral arguments that were present in the vaccination-related news articles, ensuring that our survey items were also relevant and reflective of public discourse.

Based on a review of Finnish news media, we constructed two distinct news articles. Both articles provided an overview of Finland’s vaccination coverage and highlighted that severe side effects from COVID-19 vaccines are highly uncommon. They also included information about the groups most susceptible to vaccine-related fears and hesitations.

The episodic frame centered on an individual story, presenting the personal experience of a 38-year-old female diagnosed with multiple sclerosis. The article detailed her fears of potential side effects worsening her condition, which led her to decide against vaccination despite being in a high-risk group. Through this narrative, the episodic frame emphasizes personal fears and uncertainties related to vaccine hesitancy.

The thematic frame, by contrast, took a broader perspective. It emphasized vaccine hesitancy using references to scientific research and expert opinions. The article detailed factors driving resistance, such as distrust in authorities, concerns about long-term effects, and past suspicions about vaccines exacerbating chronic conditions.

Original news articles were written in Finnish. We present the original and English-translated material in Appendix A.

### 3.4. Measures

#### 3.4.1. Moral attitudes

We measured the degree of moralization using a six-item battery of moral statements, such as “It is morally justified to visit bars and restaurants without receiving the vaccine.” Participants responded to the items on a 5-point Likert scale ( $0 = \textit{not at all}$ ,  $5 = \textit{very much}$ ). The measure was grounded in behaviors that were widely discussed and seen as moralized issues in the Finnish news media. Specifically, the statements addressed whether it is morally right to remain unvaccinated and to engage in various social activities without vaccination.

Our approach builds on literature that suggests that the most common way to measure moral behavior is to assess individuals’ moral judgment about a specific action (Rhee et al., 2019). In practice, moral judgment is defined as “an individual’s judgment about the rightness, appropriateness, or permissibility of an action made in response to a stimulus at a particular point of time” (Abend, 2013). Earlier research has shown that presenting real-world scenarios and asking individuals to judge

how morally right or wrong certain actions or behaviors are is an effective way to measure moral attitudes (Rhee et al., 2019).

Table 1 shows the initial statements. We conducted principal-component analysis (PCA) to assess correlations and loadings between the statements. The results showed that all variables measuring moral attitudes retained a single component with an eigenvalue value of 4.45, which explained 74.2% of the variables' total variance. Based on the PCA solution, we computed a composite variable that we reversed ( $M = 4.11$ ,  $SD = 1.02$ ) for further modelling of strength of moral attitudes by the framing treatment, so that higher values indicate stronger moral attitudes towards the unvaccinated. The reliability of the items was very high, as indicated by McDonald's omega coefficient ( $\omega = 0.92$ ).

### 3.4.2. Emotions

We measured participants' emotional reactions towards the unvaccinated across four dimensions: disgust, anger, gratitude, and sympathy. Using a 5-point Likert scale ( $0 = not\ at\ all$ ,  $5 = very\ much$ ), we asked participants to report their emotions regarding unvaccinated individuals by responding to statements like "When thinking about the Finns who refuse to get the COVID-19 vaccination, how much do you feel: disgust?"

Our frames were not designed to elicit specific emotions. Thus, our goal was to measure basic other-focused negative and positive emotions (e.g., Haidt, 2003; Tangney et al., 2007). These emotions have been associated with either framing or moralized attitudes in several studies. For example, disgust and anger have consistently been found to be associated with moral attitudes (Haidt, 2003) and to mediate the effects of framing (Aarøe, 2011; Ciuk & Rottman, 2021). Previous research has also suggested that positive emotions, such as gratitude and sympathy, deserve more attention (Schuck & Feinholdt, 2015).

Table 1 shows the items measuring emotions.

### 3.4.3. General attitudes toward and experiences of vaccination

As noted above, the analysis of randomization showed differences between the experimental groups in terms of vaccination attitudes. These attitudes measure respondents' general attitude towards the COVID-19 vaccines. We controlled for these attitudes in all further analyses assessing differences between groups. We measured attitudes toward COVID-19 vaccines using five variables that we combined in the final analysis: "Corona vaccines are safe," "Corona vaccines are a good way to protect oneself from the severe form of corona disease," "I'm concerned about the side effects of corona

**Table 1.** Descriptive information of variables measuring emotions and moral attitudes with the factor loadings from principal-component analysis.

|   | M     | SD    | Factor loadings* |
|---|-------|-------|------------------|
| <i>Emotions</i>   |       |       |                  |
| <i>When you think about Finns who have refused the COVID-19 vaccine, to what extent do you feel . . .</i> |       |       |                  |
| Disgust   | 2.848 | 1.383 |                  |
| Anger   | 2.539 | 1.351 |                  |
| Gratitude   | 1.116 | 0.456 |                  |
| Sympathy  | 1.552 | 0.882 |                  |
| <i>Moral attitudes</i>  |       |       |                  |
| <i>I believe it is morally acceptable to . . .</i>  |       |       |                  |
| abstain from taking the COVID-19 vaccine,   | 1.676 | 1.035 | 0.357            |
| attend public events (such as concerts and sports events) without being vaccinated,                       | 1.449 | 0.849 | 0.436            |
| visit bars and restaurants without being vaccinated,  | 1.414 | 0.850 | 0.429            |
| visit friends without being vaccinated,   | 1.855 | 1.118 | 0.427            |
| use public transportation without being vaccinated,   | 1.796 | 1.079 | 0.438            |
| access healthcare and welfare services without being vaccinated.  | 1.675 | 1.034 | 0.353            |

\*Principal component analysis with varimax rotation

vaccines” (reversed), and “Corona vaccines are hardly useful” (reversed), ( $1 = \text{strongly disagree}$ ,  $5 = \text{strongly agree}$ ;  $\alpha = 0.84$ ,  $M = 4.29$ ,  $SD = 0.84$ ).

### 3.5. Analysis procedure

We performed the analyses using Stata 17 software. Initially, we utilized distinct ordinary least squares (OLS) to estimate the framing effects in terms of moral attitudes and emotions, considering control variables. We presented the outcomes of the OLS models as unstandardized coefficients for both framing treatments when compared to the control group. To assess the variation in effect sizes between episodic and thematic framing, we carried out Wald tests and reported F statistics. By using the `coefplot` command (Jann, 2014), we visualized the marginal means for outcome variables.

Afterward, we concentrated on the mediating effects of emotions on moral attitudes. To do so, we constructed parallel mediation models and presented estimates for each one: framing’s total effect without considering the impact of emotions, the direct effect of framing with the impact of emotions, and the indirect effect of framing through emotions. To estimate the indirect effects, we used the delta method to compute the standard errors. We conducted the mediation analysis using the `khb` command, which can handle linear and non-linear models (Breen et al., 2013).

## 4. Results

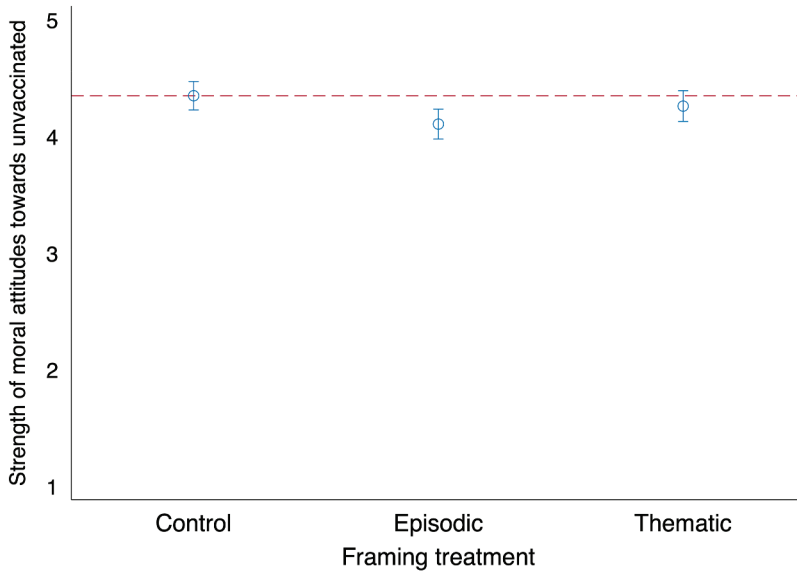
Table 2 presents the first model predicting moral attitudes based on framing treatment. The results indicate that episodic framing reduced the strength of moral attitudes toward the unvaccinated, with participants who experienced episodic framing reporting lower scores ( $B = -0.231$ ,  $p = .005$ ) compared to the control group. However, the participants we subjected to thematic framing did not exhibit significant differences compared to the control group. The results of the Wald test also suggest that there are no differences in effect size between the frames ( $F = 2.56$ ,  $p = .110$ ), at least below the 15% significance level. The marginal means of the model are shown in Figure 2 showing that respondents’ attitudes were on average highly moralized in each group. The marginal mean in the episodic group was 4.11 ( $SE = 0.06$ ), in the thematic 4.26 ( $SE = 0.06$ ) and in the control 4.34 ( $SE = 0.06$ ).

**Table 2.** Predicting the strength of moral attitudes and emotions towards unvaccinated according to the framing treatment. Unstandardized regression coefficients.

|                           | Moral attitudes                              | Disgust                                      | Anger  | Gratitude                                 | Sympathy                                  |
|---------------------------|--|--|--|---|---|
| Framing treatment:        |  |  |  |   |   |
| Control (reference group) |  |  |  |   |   |
| Episodic                  | -0.243**<br>(-0.420 –<br>-0.066)             | -0.461**<br>(-0.761 –<br>-0.161)             | -0.430**<br>(-0.723 –<br>-0.137)             | 0.092<br>(-0.006 –<br>0.191)              | 0.256**<br>(0.071 –<br>0.442)             |
| Thematic                  | -0.089<br>(-0.269 –<br>0.091)                | -0.121<br>(-0.427 –<br>0.186)                | -0.076<br>(-0.374 –<br>0.222)                | 0.037<br>(-0.063 –<br>0.137)              | 0.188<br>(-0.000 –<br>0.377)              |
| Vaccine attitudes         | -0.572***<br>(-0.698 –<br>-0.445)<br>(0.064) | -0.485***<br>(-0.700 –<br>-0.271)<br>(0.109) | -0.464***<br>(-0.674 –<br>-0.255)<br>(0.107) | 0.205***<br>(0.135 –<br>0.275)<br>(0.036) | 0.489***<br>(0.356 –<br>0.621)<br>(0.067) |
| Constant                  | 5.191***<br>(4.966 –<br>5.416)               | 3.751***<br>(3.368 –<br>4.133)               | 3.390***<br>(3.017 –<br>3.763)               | 0.773***<br>(0.648 –<br>0.898)            | 0.689***<br>(0.453 –<br>0.925)            |
| VIF (mean)                | 1.19   | 1.19   | 1.19   | 1.19                                      | 1.19                                      |
| Observations              | 454  | 452  | 454  | 454                                       | 454                                       |
| R-squared                 | 0.157  | 0.058  | 0.055  | 0.072                                     | 0.116                                     |

95% Confidence intervals in parentheses

\*\*\* $p < .001$ , \*\* $p < .01$ . Note: Only observations without missing data were used in the models.



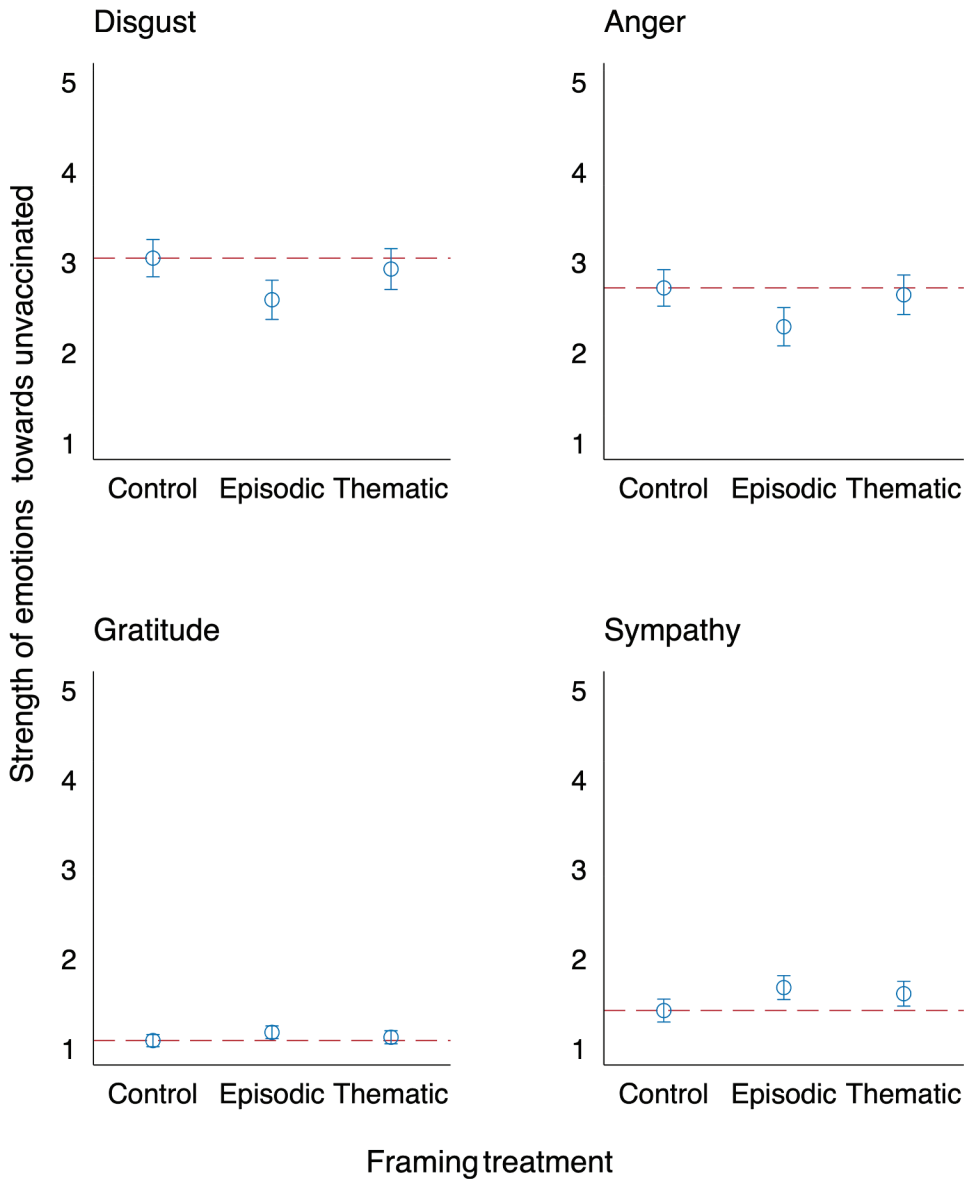
**Figure 2.** Impact of framing on moral attitudes towards the unvaccinated: predicted marginal means with 95% confidence intervals. The dashed line represents control group mean.

With the second analysis, we aimed to assess episodic or thematic framing's effect on emotions regarding the unvaccinated. The models shown in Table 2 shows that episodic framing decreased disgust ( $B = -.461$ ,  $p < .001$ ) and anger ( $B = -.430$ ,  $p = .04$ ) and increased sympathy ( $B = .257$ ,  $p = .007$ ) towards unvaccinated. Although, it did not quite reach statistical significance, episodic framing also increased gratitude towards unvaccinated ( $B = .092$ ,  $p = .065$ ). Notably, thematic framing only slightly increased sympathy ( $B = .188$ ,  $p = .050$ ). When we compared framing's effects on different emotions, the results showed that episodic framing had a stronger effect on disgust ( $F = 4.55$ ,  $p = .033$ ) and anger ( $F = 5.19$ ,  $p = .023$ ), but we found no significant differences for gratitude ( $F = 1.13$ ,  $p = .288$ ) or sympathy ( $F = .48$ ,  $p = .486$ ).

Based on the regression models, we further present the results with predicted marginals means for the different experimental groups in Figure 3. The figure first shows the differences between the groups, and in particular how episodic framing reduces disgust and anger towards the unvaccinated compared to the control group and thematic framing. The figure also shows that respondents did not generally have very negative emotions towards the unvaccinated, but neither did they have very positive emotions.

Finally, we continued the previous analysis by also considering how emotions are related to moral attitudes and how they mediate the effect of frame. The results of the mediation analysis are reported in Table 3 and Figure 4. In the analysis, we focused specifically on episodic framing's effect, found to be significant in the previous section. We also tested for possible indirect effects between the thematic framing and the control group but found no significant paths in the analyses.

The results in Figure 4 and Table 3 shows that emotions significantly mediated episodic framing's impact on moral attitudes ( $B = -.141$ ,  $p = .012$ ), accounting for 58.0% of the total mediation effect. After considering the effect of emotions, we could not find a significant direct effect of episodic framing on moral attitudes. Indirect effects show that disgust ( $B = -.059$ ;  $p = .023$ ) and sympathy ( $B = -.043$ ,  $p = .023$ ) mediated the effect of the episodic frame in a statistically significant way. In addition, we found that anger ( $B = -.042$ ,  $p = .056$ ) had borderline



**Figure 3.** Impact of framing on emotions towards the unvaccinated: predicted marginal means with 95% confidence intervals. The dashed line represents control group means.

significant mediating effect between the episodic framing and moral attitudes. In contrast, we found no mediating effect of gratitude ( $B = .003$ ,  $p = .681$ ). The final models, which included emotions and control variables in addition to framing, explained 31% of the total variance in moral attitudes.

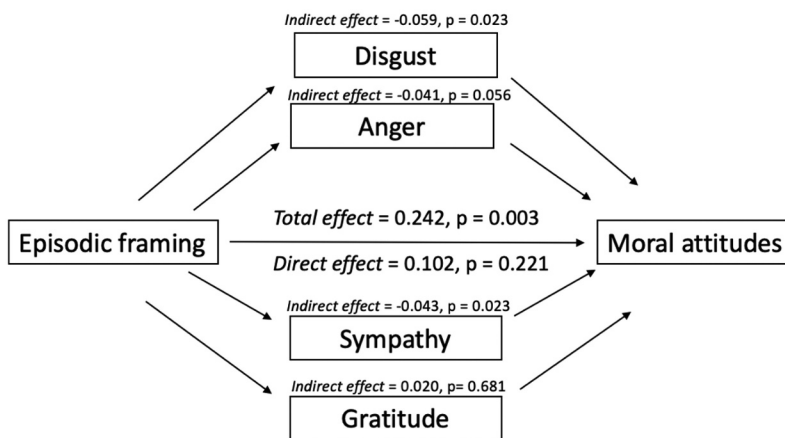
## 5. Discussion

This study examined how news framing influences moral attitudes toward the unvaccinated during the COVID-19 pandemic. Participants of the study were randomly assigned to a control group or one of two experimental groups. All groups received a brief summary of COVID-19 vaccination coverage

**Table 3.** Summary of the mediation analysis: the impact of episodic framing on moral attitudes through emotions.

| <i>Episodic frame</i>                      | <i>B</i> | <i>SE</i> | <i>P</i> | <i>95CIs</i> |       |
|--|----------|-----------|----------|--------------|-------|
| Total effect                               | -.243    | .082      | .003     | -.404        | -.082 |
| Direct effect                              | -.102    | .084      | .221     | -.266        | .030  |
| Direct effect of disgust                   | .177     | .054      | .001     | .071         | .283  |
| Indirect effect of frame through disgust   | -.059    | .026      | .023     | -.111        | -.007 |
| Direct effect of anger                     | .135     | .054      | .016     | .249         | .236  |
| Indirect effect of frame through anger     | -.042    | .022      | .056     | -.086        | .002  |
| Direct effect of gratitude                 | .015     | .038      | .700     | -.060        | .089  |
| Indirect effect of frame through gratitude | .003     | .007      | .681     | -.011        | .017  |
| Direct effect of sympathy                  | -.149    | .039      | <.001    | -.226        | -.072 |
| Indirect effect of frame through sympathy  | -.043    | .019      | .023     | -.081        | -.005 |
| Total indirect effect of emotions          | -.141    | .056      | .012     | -.251        | -.031 |
| Total mediation percentage of emotions     | 58.0%    |           |          |              |       |
| R2 (full model)                            | .31      |           |          |              |       |
| Observations                               | 452      |           |          |              |       |

Estimates are linear regression coefficients with standard errors in parentheses. The control frame is an omitted reference category. The models control for general attitudes towards vaccination.



**Figure 4.** Path model diagram for the parallel mediation analyses. The figure shows unstandardized regression coefficients and *p* values.

and its impact on healthcare in Finland. The experimental groups also read a news story on why individuals with chronic conditions might avoid vaccination, either with episodic or thematic frame. Our findings reveal that episodic frame significantly reduced the strength of moral attitudes, while thematic frame had no such effect. Moreover, episodic frame elicited stronger emotional responses, and the effect of episodic framing was indirect through emotions. We discuss the results in detail below.

### 5.1. Framing and moral attitudes

We found out that episodic framing significantly reduced the strength of moral attitudes, while thematic framing had no significant effect (H1a). These results are in line with earlier studies in news framing literature, which have proposed that episodic frames that are more personal can generate shift in individuals' opinions on variety of policy issues (Aarøe, 2011). Additionally, our results add to the existing research that has indicated that episodic frames are efficient in communicating moral attitudes, even though we do not find a significant difference between the thematic and

episodic frames (H1b) as earlier studies (Ciuk & Rottman, 2021). The thematic framing presents issues in a broader, contextual manner, and tends to encourage analytical thinking and systematic processing (Gross, 2008). Given that moral attitudes are deeply intertwined with emotional responses, the nonsignificant impact of thematic framing is understandable.

Also, the results relate to the recent findings that episodic framing can mitigate strongly polarized attitudes towards outgroups (Boyer et al., 2024). This result is particularly important as the earlier research has shown that people tend to punish outgroups more harshly than ingroups (Loustau et al., 2024), and that during the COVID-19 the general public opinion was in favor of discriminatory conduct towards the unvaccinated persons (Bor, Jørgensen, & Petersen, 2023). Notably, episodic framing reduced the strength of moral attitudes despite the fact that the respondents were likely to have already exposed to the public discussion about the vaccination. This pre-treatment effect may often diminish the effect of framing on attitudes, as people have already formed strong, non-negotiable opinions about the matter at hand (e.g., Druckman & Leeper, 2012). However, it may be that frames that evoke strong emotions can change attitudes even in cases where respondents have already formed an opinion about the issue prior to the experiment.

## **5.2. Framing and the role of emotional responses**

Compared to control group, episodic framing had a strong effect on emotional responses, especially for negative emotions such as fear and disgust, which it significantly reduced. Episodic framing also increased sympathy, whereas thematic framing was found to significantly affect only sympathy and no other emotions (H2a). Notably, the effect of episodic framing was significantly stronger for negative emotions, but no significant differences between the episodic and thematic frames were observed for positive emotions (H2b).

These results align with previous research demonstrating the complex emotional impact of episodic framing. Specifically, our findings confirm existing studies showing that episodic framing can amplify negative emotions such as fear and disgust (Ciuk & Rottman, 2021), but also generate sympathetic responses toward the individuals portrayed in the frames (Gross, 2008; Lecheler et al., 2015). Our research further shows that episodic framing is capable of eliciting nuanced emotional responses to political and moral issues (Aarøe, 2011; Gross, 2008). This outcome was anticipated, given the established understanding that highly moralized topics—such as COVID-19 vaccination—are inherently emotional, and episodic framing that incorporates person-specific narratives typically evokes stronger emotional engagement. Our analysis reveals the important role of narrative framing in shaping emotional and moral perceptions.

Finally, our findings provide robust evidence that emotions significantly mediate the impact of episodic framing on moral attitudes (H3). Specifically, disgust, sympathy, and anger were key mediators and demonstrated significant or borderline-significant indirect effects, while gratitude did not. These findings are also consistent with the existing literature, which highlight the role of emotions in shaping perception of moral issues (Ciuk & Rottman, 2021; Clifford, 2019; Skitka et al., 2021). While anger is often seen as a fundamental emotional response to perceived injustice and is closely linked to moral judgment and feelings of resentment (Haidt, 2003), our analysis found it to be a relatively minor factor when compared to other emotions. One possible explanation for this borderline-effect of anger is the high correlation between anger and disgust observed in our data, which may have introduced multicollinearity. Multicollinearity can diminish the statistical power of mediation analyses by making it challenging to disentangle the unique effects of closely related variables, potentially masking the mediating role of anger.

## **5.3. Limitations**

Our study has several limitations. First, the random design of the experiment reduces the risk of significant differences between groups in moral attitudes and emotions before the experiment (Alferes,

2012), especially considering the effect of vaccination attitudes and uptake, which we measured before the experiment. However, we measured moral attitudes and emotions after the experiment, potentially increasing the risk of unobserved heterogeneity related to other factors. One way to reduce the risk of this bias is to measure the dependent variable both before and after the treatment (see Clifford et al., 2021).

Research has also shown that the question of the duration of framing effects remains largely unanswered, raising questions about the relevance of experimental study findings to real-world situations. On the other hand, studies that only track the effects of framing exposure at a single point in time or for a limited amount of time provide valuable insights into the effects of framing in the media environment (Lecheler & de Vreese, 2016). Also, even though the effects of a single exposure may be minimal, repeated exposure to similar media stimuli may accumulate and influence people's moral reasoning over time. Further studies with longitudinal designs are needed to better understand the temporal effects of frame exposure, and repeated-measures designs can provide more robust estimates of experimental effects (Clifford et al., 2021).

Naturally, our design does not account for several additional dimensions of framing that could influence the observed effects. For instance, beyond the type of framing employed in the experiment, the specific content of the stimulus likely impacts the results. However, it remains unclear how the characteristics of the individual featured in episodic framing influence its effectiveness (Scheufele, 2004). Future research could explore how attributes such as gender, name, and place of residence of the person presented in episodic framing shape respondents' perceptions and reactions.

Also, further research covering other countries with different political and media environments is needed. Previous research has highlighted how Finland ranks among the most democratic countries in lists where public media are characterized by pluralism, independence, and strong state-guaranteed tax-based funding (Neff & Pickard, 2024).

Public outlets have long been central to the Finnish media ecosystem and are consistently ranked as one of the most trusted sources of information (see Sirkkunen et al., 2021). The strong political neutrality also extends to privately funded national newspapers and tabloids (Välvirronen, 2022). While traditional media remains a cornerstone for older audiences, younger generations increasingly consume news through digital platforms, which has fragmented news consumption and reduced engagement with traditional media. As media landscapes have significant variation across countries, caution with interpreting our results are needed.

## 6. Conclusion

Overall, our findings highlight the fact that in addition to the role of public actors such as health institutions, politicians, and researchers, the media also play a key role in providing information about health risks (Lupton, 1993). The news media not only report on issues, but through their frame-building and selective function, also shape how events are interpreted (e.g., Entman, 1993). In doing so, the media contribute to the formation of new health-related norms and significantly influence citizens' moral attitudes (Malik et al., 2021). These results are not limited to health crises but are also applicable to broader contexts of moral polarization, where framing can influence public attitudes and societal divisions.

Specifically, our findings suggest that news framing may reduce the strength of moralized attitudes. Although moralization can have positive effects, such as promoting cooperation and health-protective behaviors (Ellemers & van den Bos, 2012; van Zomeren et al., 2011), it also has negative consequences, such as intensifying social conflict, exacerbating polarization, and promoting dehumanization of individuals perceived as behaving immorally (Skitka & Morgan, 2014; van Zomeren et al., 2012). From a practical perspective, these results suggest that careful consideration of framing strategies in media and public communication is essential to mitigate the negative effects of moralization, such as polarization and social conflict.

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## ORCID

Eetu Marttila  <http://orcid.org/0000-0001-9119-7790>

Aki Koivula  <http://orcid.org/0000-0002-8453-0863>

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