

# Moralizing the COVID-19 Pandemic: Self-Interest Predicts Moral Condemnation of Other's Compliance, Distancing, and Vaccination

Alexander Bor   
Aarhus University

Frederik Jørgensen   
Aarhus University

Marie Fly Lindholt  
Aarhus University

Michael Bang Petersen   
Aarhus University

---

*The emergence of the novel coronavirus has put societies under tremendous pressure to instigate massive and rapid behavior change. Throughout history, an effective strategy to facilitate novel behaviors has been to morally condemn those who do not behave in an appropriate way. Accordingly, here, we investigate if complying with the advice of health authorities—for example, to physically distance or vaccinate—has emerged as a moralized issue during the COVID-19 pandemic. In Study 1, we rely on data ( $N = 94K$ ) from quota-sampled rolling cross-sectional online surveys from eight countries (Denmark, Sweden, Germany, France, Italy, Hungary, the United Kingdom, and the United States). We find that large majorities find it justified to condemn those who do not keep a distance to others in public and around half of respondents blame ordinary citizens for the severity of the pandemic. Furthermore, we identify the most important predictors of condemnation to be behavior change and personal concern, while institutional trust and social distrust also play large but less consistent roles. Study 2 offers a registered replication of our findings on a representative sample of Britons ( $N = 1.5K$ ). It shows that both moralization and condemnation of both vaccination and general compliance are best predicted by self-interested considerations.*

---

**KEY WORDS:** COVID-19, moralization, compliance, vaccination, physical distancing, moral psychology

---

During the COVID-19 pandemic, health authorities have sought to educate citizens on proper behavior: A responsible citizen avoids crowded areas, keeps a safe distance to all others, wears a face mask in public, and avoids touching others (Chu et al., 2020). These behaviors have not come easy to many people. To begin with, all habits are difficult to change (Marcus et al., 2000), but the habits

around social interactions concern the core of human nature. Humans are social animals, and mingling with others is a fundamental instinct (Dunbar, 1998). While analyses demonstrated dramatic changes in behavior across the world during the first wave of the COVID-19 pandemic in March 2020 (e.g., Jørgensen, Bor, & Petersen, 2021), public opinion data also shows that compliance decreased by midsummer 2020 in several countries.<sup>1</sup> A number of international research projects and survey agencies monitored compliance, for example, Imperial College London's [Covid-19 Behavior Tracker](#), the [HOPE project](#) in Denmark, or YouGov's [Covid-19 Public Monitor](#) (last accessed November 1, 2021). Consistent with this, the World Health Organization warned that compliance throughout the pandemic had been dwindling, and several countries showed signs of “pandemic fatigue” (WHO, 2020).

Yet given the economic and welfare costs of government-mandated lockdowns (Clemmensen et al., 2020; Fernandes, 2020), voluntary behavior change remains an important remedy against the COVID-19 pandemic until vaccines become *globally* available (Chu et al., 2020). Thus, the authorities in most countries seek to sustain behavioral change through a combination of restrictions, informational campaigns, and nudges. Importantly, however, such top-down strategies alone may have limited effects. For one, in democracies, it is not possible nor normatively desirable, to strictly enforce restrictions that affect the private lives of citizens. The literature both on compliance in general and compliance during the COVID-19 pandemic highlights that it is driven to a large extent by citizen-level perceptions (Tyler, 2006), for example, about the legitimacy of restrictions (Chan et al., 2020) and the perceived threat from COVID-19 (Harper et al., 2020). From this perspective, public compliance is as much shaped by ordinary citizens' views and behaviors as by top-down efforts from the authorities.

In this article, we focus on a bottom-up process that has a proven track record in instigating rapid behavioral and attitudinal change but has received limited attention in research on the COVID-19 pandemic: moralization. To moralize is to promote rules and norms, which purport that certain behaviors are moral imperatives, and hence violating them is immoral and worthy of condemnation (DeScioli & Kurzban, 2013; Rozin, 1999, p. 218). Moralization has been crucial, for example, in the fight against secondhand smoking (Rozin & Singh, 1999). Health authorities have leveled information campaigns against smoking for decades, but behavioral change only emerged—and did so quickly—when exposing others to secondhand smoking was labeled immoral. Anecdotal evidence suggests that compliance with health advice regarding COVID-19 quickly became a moral issue when the pandemic hit the world in the spring of 2020. Countless news reports described often violent confrontations between ordinary citizens with regards to physical distancing or mask wearing.<sup>2</sup> See, for example, these reports from [Michigan, New York](#), and [Budapest, Hungary](#) (last accessed on November 3, 2021). These reports appear to be especially abundant in the United States, where disease avoidance became heavily polarized along partisan lines (Gollwitzer et al., 2020).

In this article, we ask, first, whether compliance with health advice to mitigate the COVID-19 pandemic has emerged as a moral issue across countries during the COVID-19 pandemic. Second, we investigate *who* is most likely to moralize compliance. Study 1 offers the most comprehensive comparative data on moral condemnation related to physical distancing to date, relying on large, quota-sampled online surveys from eight Western democracies: Denmark, Sweden, Germany, France, Italy, Hungary, the United Kingdom, and the United States (total  $N = 93,722$ ). Study 2 builds on a representative online sample from the United Kingdom ( $N = 1532$ ) and offers a preregistered replication of our main findings. It relies on scales of both moral condemnation and moralization and includes both the issue of vaccination and compliant behavior in general.

Our data show convincing evidence for high levels of moralization across countries. At the same time, the results that we present also inform theoretical debates over the nature of moralization by showing that moralization is essentially egotrophic in nature. The more likely someone is to benefit from public compliance with official health advice, the more likely they are to support moralization.

### Why Would People Moralize Compliance With Health Advice?

Moralization can be defined as “the process through which preferences are converted into values” (Rozin, 1999, p. 218). Unlike conventional preferences, moralized convictions are behavior-guiding principles that feel universally and objectively true, independently of whether the authorities mandate them or not (Skitka, 2010). Moralized actions are considered virtuous in and of themselves, often heavily discounting specific consequences (Ryan, 2019). Consequently, people are unwilling to compromise on moral issues (Delton et al., 2020; Ryan, 2017).

The exact function of morality is a hotly debated topic (e.g., Shackelford & Hansen, 2015), but most accounts agree that morality is rooted in the complexities of humans’ social life. Gintis et al. (2008) see morality as the cornerstone of human altruism; Curry (2016) proposes that morality has evolved as a mechanism to solve a wide variety of coordination and cooperation dilemmas; and DeScioli and Kurzban (2013) posit that morality is a tool for choosing sides in conflicts. However, all these accounts agree that one key function of morality is social: to incentivize particular behaviors in others through *moral condemnation* (DeScioli & Kurzban, 2009).

Condemnation is a key element of moralized conviction and, in part, distinguishes those convictions from conventional preferences: People experience outrage when their moralized principles are breached, and they feel personally motivated to inflict costs on the perpetrator (Fiske & Tetlock, 1997). Moralization thus fuels what is often termed third-party punishment, that is, punishment from individuals not directly engaged in a given interaction (DeScioli & Kurzban, 2009). Imagine that Alex hits Bertie. If Bertie retaliates, it is an instance of second-party punishment. If, however, Casey intervenes and punishes Alex, it is an instance of third-party punishment. If there is no prior relationship between Bertie and Casey, this intervention is likely motivated by a moral outrage caused by Alex’s norm-breaking behavior. As Ryan (2017, 2019) demonstrates, many political attitudes are conventional in the sense that citizens simply leave it to the government to address the problem. When political attitudes become moralized, however, people are prone to become personally involved in the matter.

Third-party punishment often takes a social form rather than a physical or monetary form. The mere act of condemnation is a form of punishment-by-stigmatization that signals to the target and other audience members that the punisher lowered their valuation of the target and is therefore less likely to act prosocially towards them in the future (Sznycer et al., 2016). Moreover, condemnation also signals that the punisher is likely to act in similar ways towards any other actor who violates the moralized principle. Thus, moralization incentivizes the observation of specific behaviors and can therefore lead individuals who are otherwise neutral about the behavior to still follow it for the fear of condemnation. Accordingly, moralization is a tool in the negotiation of norms within groups, and the goal of moralizing a particular conviction is to establish it as a norm within the group (DeScioli & Kurzban, 2013).

In March 2020, the COVID-19 pandemic and associated distancing advice and policies arguably facilitated one of the largest synchronous changes in behavior in human history. Following this, in 2021, the COVID-19 pandemic facilitated the biggest vaccination effort in human history. The communication surrounding distancing, vaccinations, and other health advice has been shown to tap into a range of value-based considerations from trust (Jørgensen, Bor, & Petersen, 2021; Lindholt et al., 2021) and empathy (Pfattheicher et al., 2020, 2021) over national identity (Van Bavel et al., 2022) to concerns over one’s personal health (Lindholt et al., 2021). There is ample reason to expect that, at least for some, compliance with advice from the health authorities become a moral issue during the COVID-19 pandemic. Indeed, previous research found evidence for moralization in Britain, the United States, and New Zealand (Graso et al., 2021; Van Assche et al., 2020). However, these studies relied on small convenience samples and have not sought to quantify the level of moralization. Below, we investigate if substantial parts of society moralized

the COVID-19 pandemic using large samples of respondents resembling the population of eight countries.

### Who Moralizes Compliance With Health Advice?

To the extent we find evidence for the existence of moralization and condemnation during the COVID-19 pandemic, the next question is this: Who are the condemners? Or, more precisely, what are the psychological motivations that lead some individuals to moralize compliance during the COVID-19 pandemic?

Within moral psychology, there are two competing perspectives. One perspective focuses on the role of egotrophic or self-interested motives (DeScioli et al., 2014; Kurzban, 2011; Kurzban et al., 2010; Petersen, 2013). People “could benefit from manipulating the propensity of others to engage in third-party punishment, if this punishment can be directed toward people who challenge the interest of the individual” (Petersen, 2013, p. 79). In other words, a clever way to further one’s interest is to claim that acts that harm the *self* are immoral and should therefore be socially condemned. For example, Kurzban et al. (2010) show that moral views on recreational drug use did not reflect principled considerations but rather strategic interests related to access to sexual partners. Similarly, DeScioli et al. (2014) showed that moral views about resource divisions did not reflect principled considerations, but rather self-interested stakes in different division rules.

Meanwhile, the other perspective focuses on sociotropic or altruistic factors (Gintis et al., 2008; Richerson & Boyd, 2008). According to this view, people punish norm violators altruistically as a means to support and sustain their group. While third-party punishment is costly for individuals, the norms motivating such behavior have spread because they yield sufficient benefits at the group level. In short, condemnation is a way to ensure the cohesion and cooperativeness of one’s group by claiming that acts that harm the *group* are immoral and should therefore be socially condemned.

To sum up, the two perspectives about moral condemnation disagree whether the fundamental driver of moralization is concerns for yourself or for others. At the same time, both perspectives argue that moral condemnation is motivated by a desire to see others comply with particular norms and, hence, share a number of predictions. In essence, the more one believes that a norm is important, and the more one worries that others will not comply with it, the more likely one is to moralize.

On the basis of the predictions *shared* by the different theoretical approaches to moralization during the COVID-19 pandemic, we can specify three key factors that could predict variation in the condemnation of those who do not comply with health advice: (1) people’s own behavior; (2) people’s perception of the sources of the advice; and (3) people’s perception that others cannot be trusted to follow the health advice.

Specifically, to explain variation in moralization during the COVID-19 pandemic, first, we ask if people who themselves follow official recommendations are more likely to incentivize others to do the same. Changing one’s own behavior to fight the coronavirus is a credible signal that someone considers the official health advice relevant and important. Besides, people who have already paid the price of cooperation are particularly interested in ensuring that others follow suit too (Tooby & Cosmides, 2010).

Second, given that health recommendations are being promoted by the government and health authorities, it is plausible that having more confidence in the authorities increases the perceived severity of the crisis and the urgency to promote the official guidelines. Indeed, trust in the authorities have been found to be the primary determinant of, for example, taking up the vaccine during the COVID-19 crisis (Lindholt et al., 2021). Thus, we also investigate if individuals who trust more in state institutions are also more motivated to push others to follow the guidelines.

Third, we should expect people who view others as unlikely to comply with the government's recommendations to be more motivated to take it on themselves to enforce compliance and condemn others. A key psychological construct to tap into such perceptions is interpersonal trust. Individual differences in interpersonal trust generally reflect differences in perceptions about whether others are willing to contribute to public goods, which benefit all, irrespective of whether they contributed to it or not. In the context of the pandemic, hindering the transmission of the virus is a public good; wearing a mask, avoiding physical contact, or getting vaccinated yield important benefits to those most vulnerable to the disease (Johnson et al., 2020). Thus, while *institutional* trust may increase moralization, the next research question asks if people low in *interpersonal* trust are more motivated to moralize protective behavior in the context of the COVID-19 pandemic and condemn others for not observing the underlying recommendation.

Turning to predictions where the egotropic and the sociotropic accounts diverge, the key question is whether condemners are mostly concerned about the impact of noncompliance on themselves or whether they are mostly concerned about the impact of noncompliance on others. The immediate self-interested concern in the context of COVID-19 is whether oneself or close family members get sick. But there may also be additional personal concerns about, for example, personal employment if the noncompliance of others leads to further restrictions and lockdowns. Independently of the specific nature of the personal concerns, we examine (as our fourth research question) if people who are more concerned about the impact of COVID-19 on *themselves* are more likely to engage in moral condemnation. As a modern version of the Nietzschean view of morality (Nietzsche, 1994), this perspective entails that while morality is often praised for its virtuousness, it is essentially self-interest in disguise.

In contrast, the sociotropic perspective motivates our fifth and last research question: Do people morally condemn noncompliance to help *others*? In the context of the COVID-19 pandemic, there are multiple relevant sociotropic concerns. Most importantly, individuals can be concerned about the health impact of noncompliance and how this generates an overheated hospital system, or they can be concerned about the national economic consequences of renewed lockdowns if individuals do not comply. In addition, concerns can relate to society's ability to help disadvantaged groups or the impact of continued lockdowns on social unrest.

## STUDY 1—CROSS-CULTURAL INVESTIGATION

### Case Selection

Our objective is to better understand who moralized—and to what extent—the COVID-19 pandemic in Western democracies. We focus on *democracies* because rights and freedoms guaranteed by a democratic regime offer more room for bottom-up pressures like moralization to shape human behavior. We limit our attention to *Western* democracies out of convenience and fully acknowledge the need to study these topics in other regions too. Admittedly, Western democracies still encompass a diverse region with many unique countries. Yet, as our theory of moralization is rooted in deep-seated psychological processes, we expect to find some common trends across Western democracies. In other words, we are more interested in finding the similarities across a diverse set of countries than in explaining what causes certain differences.

Our strategy was to rely on a most different systems design logic and sample a diverse set of Western democracies. We posit that insofar as we are able to identify common trends across our selected cases, we may cautiously assume that our findings would generalize to other Western democracies. Given how volatile life became during the pandemic, we considered it important to get a longitudinal component of the survey, despite it increasing costs considerably. We therefore launched a rolling cross-sectional panel survey with an omnibus of various measures in eight

countries (Denmark, Sweden, Germany, France, Italy, Hungary, the United Kingdom, and the United States) in the first weeks of the pandemic (April 9, 2020). Our study period runs until November 7, 2020.

We consider it to be one of the key advantages of our data that we capture the state of eight societies very early during the pandemic. At the same time, it means that we had to launch our data collection during a period of uncertainty concerning epidemic trajectories or government responses. We sought to diversify our cases in terms of standard macrolevel indicators (Section S2.1 in the online supporting information offers an overview). Among other things, our countries vary on wealth (GDP PPP ranging from \$34K in Hungary to \$65K in the United States), their level of democracy (Freedom House Democracy Scores ranging from 70 in Hungary to 100 in Sweden), ethnic polarization (fractionalization index ranging from 0.06 in Sweden to 0.49 in the United States), and size of the welfare state (social expenditure in percentage of the GDP ranging from 19 in the United States to 31 in France).

In retrospect, we can confidently state that our eight countries also encompass substantial variation in terms of the toll of the pandemic and government responses. On April 9, 2020, the pandemic was already slowing down in Italy, while being at or near its first peak in France, United Kingdom, and Sweden with a 7-day rolling average of COVID-19 related deaths between 9 to 14 per million citizens. Meanwhile, in Denmark, Germany, and Hungary, the first wave took a markedly smaller toll with COVID-19 deaths below three per million. These early months have been characterized by rather stringent government responses in almost all countries. According to the 0–100 scale developed by the Oxford Covid-19 Government Response Tracker, the stringency ranged from 65 in Sweden, which avoided total lockdowns at high costs, to 92 in Italy, where large parts of the country had been under hard lockdown for several weeks.

The summer months brought a relative appeasing in both deaths and stringency in most countries, although to a very different extent. Sweden sought to change policies as little as possible and hovered at a level between 55 and 65 in the Government Response Tracker. Italy, the United Kingdom, and the United States, which were slow to respond in the Spring, paid a heavy price and were unable to open up too much in the summer—their stringency levels stayed above 60. Meanwhile, France, Germany, Hungary, and Denmark had witnessed major reopening with stringency dropping below 50, and in the latter two cases close to 40. It is notable that by August the death counts had dropped close to 0 in all countries but the United States.

Finally, the fall brought the start of the second wave of infections. By the last date of our study period, November 7, 2020, the death levels were well on their way to match or to overshadow the first wave in several countries, but particularly Hungary (nine deaths per million), France (eight deaths per million) and Italy (six deaths per million). Meanwhile, Denmark, Germany, and Sweden managed still to keep the virus at bay, and the United Kingdom and the United States were in between these two groups. The stringency of government responses was below the spring levels in every single country although at very different levels ranging from 40 in Denmark to 79 in France.

## Data

In each round of the data collection, the survey company Epinion sampled approximately 500 adult respondents from the population of eligible voters in each country, setting quotas on age, gender, and geography to mimic the marginal distributions in the population. Smaller deviations from these quotas are corrected with poststratification weights (see the Statistical Analysis Section). The respondents were recruited from large web panels maintained by Norstat (in Denmark) and CINT (in the other seven countries) and thus exclude all citizens without Internet access. Still, we consider that online surveys constitute the best and safest method to

study samples resembling the populations during a pandemic. Participants were reimbursed via lotteries for gift certificates. After answering a survey, respondents were “quarantined” for eight days and became eligible to be invited again afterwards. We exploit this feature of our data in the within-respondent analyses below. The survey was conducted in line with the national ethical guidelines for conducting survey-based research involving human subjects. Informed consent was obtained from each participant at the beginning of the survey.

[Section S2.2](#) in the online supporting information offers a detailed overview of sample sizes and dates for each of the 34 waves we include here. Respondents answered questions in a roughly 20 min omnibus survey including a broad range of topics all related to the COVID-19 crisis from physical contact to policy evaluations.

Our sample is slightly imbalanced across countries as Denmark was oversampled, especially in the first months of data collection, for reasons unrelated to this article. We also collected data more frequently in the first part of the study period: In April, we fielded a wave twice a week, but from May we shifted to weekly waves (see details in [Section S2.2](#) in the online supporting information). We rely on multilevel modeling to reduce the effect of this imbalance. In total, the overall sample includes 34 data-rounds and 93,722 observations. [Section S2.3](#) offers sample descriptives.

## Methods

### *Outcome Variables*

Study 1 analyzes moralization via condemnation, which has been highlighted as a key and unique feature of moralized attitudes (DeScioli & Kurzban, 2009). In Study 2 below, we provide a replication with more direct measures. Specifically, Study 1 relies on two variables tapping into levels of moral condemnation: condemning norm breakers and blaming ordinary people for their behavior. How can we know if physical distancing has become a moral issue? We could ask whether people have condemned anyone for breaking the social norm. Yet personal experience with condemnation is likely a rare, costly, and sensitive behavior. Instead, we use an indirect measure, asking to what extent the respondent feels it is “justified to condemn those who do not keep a distance to others in public.” This is a much more common, less costly, and less sensitive issue, which could therefore be more accurately assessed in an online survey. We measure this outcome on a standard 5-point Likert scale, which we transform into a 0–1 continuous variable for our analyses.

Yet, the condemnation variable remains mute on how frequently respondents experience that others do not keep their distance in public. Consequently, we employ a secondary outcome variable that taps into the extent to which respondents believed that the COVID-19 crisis had become this severe “because lay individuals did not take the virus seriously enough.” Blaming the people is measured on a simple binary yes-no scale. The two outcome variables are weakly correlated (*Pearson’s*  $r = 0.20$ ). We report detailed question wordings in [Section S1](#) in the online supporting information.

### *Predictors of Moral Condemnation*

We rely on four sets of correlates in our statistical models, measuring (1) degree of behavioral change as a response to the pandemic, (2) interpersonal and institutional trust, (3) levels of concern, and finally, (4) standard demographic covariates.

First, to measure broadly the psychological motivation to enforce norms around physical distancing, we focus on whether respondents changed their own behavior. Moralization is an effective

tool against free riding, and those who pay the price of cooperation should be more motivated to ensure that others do, too. Accordingly, we asked the following: “To what degree do you feel that the current situation with the corona virus has made you change your behavior to avoid spreading infection?” and measured answers on a 4-point scale from “not at all” to “to a high degree.” We expect more behavior change to lead to more moralization.

Second, trust often plays a central role in matters of social cooperation. As explained, moralization about physical distancing during a pandemic is one of the few issues where social and institutional trust are expected to have opposite effects. Social trust renders moralization superfluous; if most people can be trusted, there is no need to waste effort on moral condemnation. We measure social trust with a standard question: “Do you think that most people by and large are to be trusted or that you cannot be too careful when it comes to other people?” on an 11-point scale. Conversely, institutional trust could be considered an indicator of political legitimacy. People with high institutional trust are likely to believe that the new social norms propagated by the state and government are good and right. This may add an additional level of motivation to moralize beyond mere concern or behavior change. Respondents indicate their level of confidence in the government on a standard 11-point scale.

Third, theories of moralization agree that people who are concerned about the consequences of the pandemic are more likely to moralize but disagree on whether it is primarily personal or social concern that drives these effects. We rely on a battery of five items measuring concern on a 4-point scale from “not at all” to “to a high degree.” An exploratory factor analysis indicates that the items load on two factors. The first taps into more personal concerns about (1) the self and the family and (2) hospitals’ ability to help the sick. The other taps into more social concerns about (3) society’s ability to help the disadvantaged, (4) social unrest and crime, and (5) the country’s economy.<sup>3</sup> Item 1 (self and family) and item 3 (help the disadvantaged) load on both factors, but for the sake of conceptual clarity and simplicity, we lump these items with the theoretically relevant group. Indices based on factor loadings correlate very strongly with our simple averages 0.91 and 0.97 for personal and social concern, respectively. In [Section S3.2.2](#) in the online supporting information, we also replicate our analyses with a more theoretically motivated split of items, which lumps all concern items, except “self and family” under social concerns. We expect higher concern to lead to higher moralization.

Fourth, we rely on demographic variables in our models. We include a dummy variable for those who identify as female. We include a continuous variable for age. We add a dummy for having completed tertiary education (level 5 or higher according to the UNESCO’s International Standard Classification of Education). Finally, respondents are asked to answer which party or candidate they voted for at the last first-order national election. This variable is recoded into a variable that indicates whether the respondent voted for a left-wing party, a right-wing party, or neither. All continuous variables are standardized with a mean of 0 and a unit of two standard deviations. This makes the coefficients of continuous variables and binary indicators comparable (Gelman, 2008).

### *Statistical Analysis*

A methodological challenge posed by our data is the clustering due to multiple countries and waves. We address this challenge by relying on multilevel regression modeling. Our baseline models rely only on the demographic covariates but include varying intercepts for countries and survey waves. Next, we add the other predictors, first, one-by-one and then all in a single model. All coefficients remain substantively similar in the pooled model; therefore, we rely on this for further analyses. Yet these models assume that the correlation of the psychological predictors is the same



across all countries. We relax this assumption by adding varying slopes for the five psychological correlates. At each step of increasing model complexity, we verify that the model fit is improved by standard information criteria (AIC and BIC). Full model details are reported in [Section S3.1](#) of the online supporting information.

All of our models include poststratification weights, which ensures that our samples are informative of the population. Weights have been calculated by the data provider and include data on party choice, region, education, age and gender interactions, house type, and household size. Because the continuous variables are rescaled with a mean of zero and a unit of two standard deviations, coefficient estimates could be interpreted as the difference between a respondent one standard deviation below average and a respondent one standard deviation above average on a predictor. Given our large sample sizes, traditional significance estimates are uninformative (most estimates are significant). Therefore, our results section focuses on substantive effect sizes.

As robustness checks, we rerun our main models without poststratification weights. Moreover, by adding varying slopes for survey rounds, we investigated whether the strength of the associations between our outcomes and the psychological predictors changes in time. We found no meaningful time trends in the strength of these associations. See [Section S3.2](#) in the online supporting information for details.

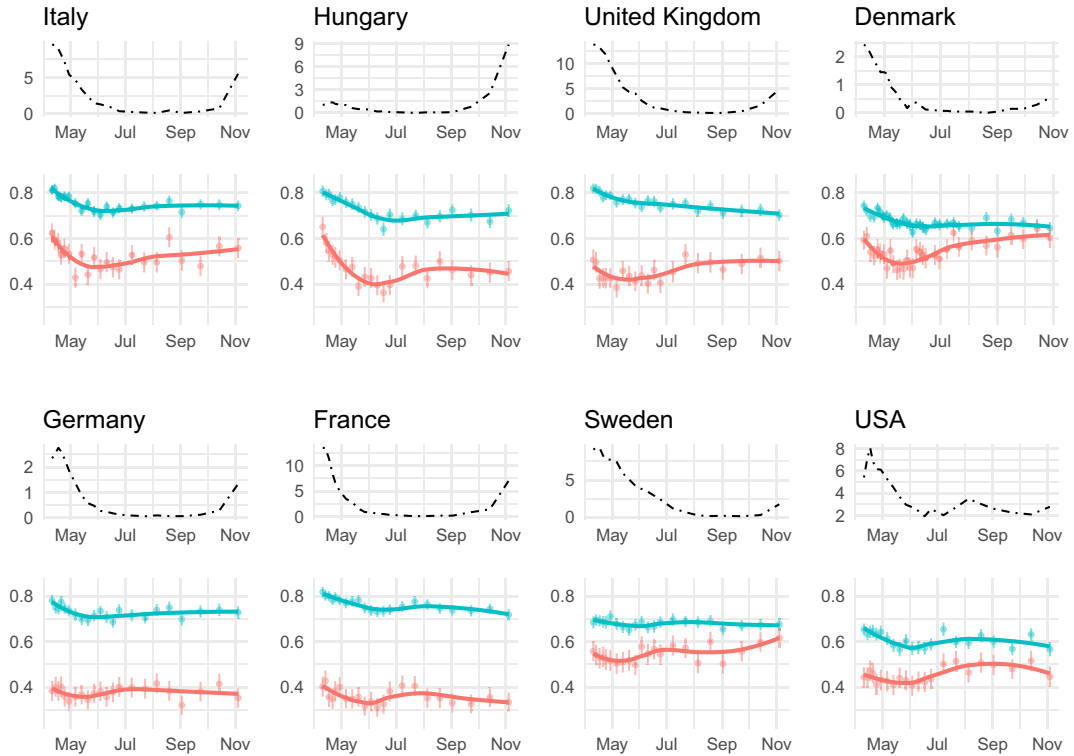
## Results

### *Descriptive Analyses*

[Figure 1](#) displays the two outcome variables for each country across the study period. The countries are ordered by the overall level of moralization we observe. A number of important descriptive patterns emerge. First, as the blue points indicate, a large majority of our respondents readily condemn norm breaking related to physical distancing. The average value is around 0.7 across the entire period in all countries, except the United States, where it is around 0.6. It is notable how little initial levels of condemnation are dependent on the severity of the pandemic, Italians and Hungarians, or the British and Germans condemned those who did not physically distance to similar extent, yet they experienced vastly different infection levels.

Second, the red points on [Figure 1](#) show that consistently fewer respondents blame laypeople than condemn norm breakers. Still, for most of the study period, the sample means range between 0.35 and 0.6. It is notable that blaming the people varies much more across countries than moralization, suggesting that respondents everywhere moralize physical distancing but disagree about how large the problem of noncompliance is. Again, levels of blame are remarkably independent of objective indicators of behavior and severity. Italians blamed people initially to the same extent as Danes (or Hungarians, or Swedes) despite very different actual infection levels and very different levels of baseline conformity and rule following. Germany and France have consistently exhibited the lowest level of blame.

Third, both condemnation and blame show some temporal dynamics. Both measures were at their peak in the spring, witnessing the highest death rates in most countries and characterized by a global sense of urgency and fear, often paired with stringent government restrictions. Moralization has decreased substantially over the summer in Italy, Hungary, Denmark, and Germany. This trend is always more profound in blaming the people than in condemning norm breakers. Interestingly, there is little to no decrease in moralization in the countries hit the hardest by the pandemic: Sweden, France, the United Kingdom, and the United States. Although the absolute levels of moralization are not the highest in these countries, the lack of a decline may mean that these countries stayed on edge. Meanwhile, despite a surge in infections in Hungary, Italy, and Germany, our data show no evidence that moralization also rebounded to or beyond spring 2020 levels.

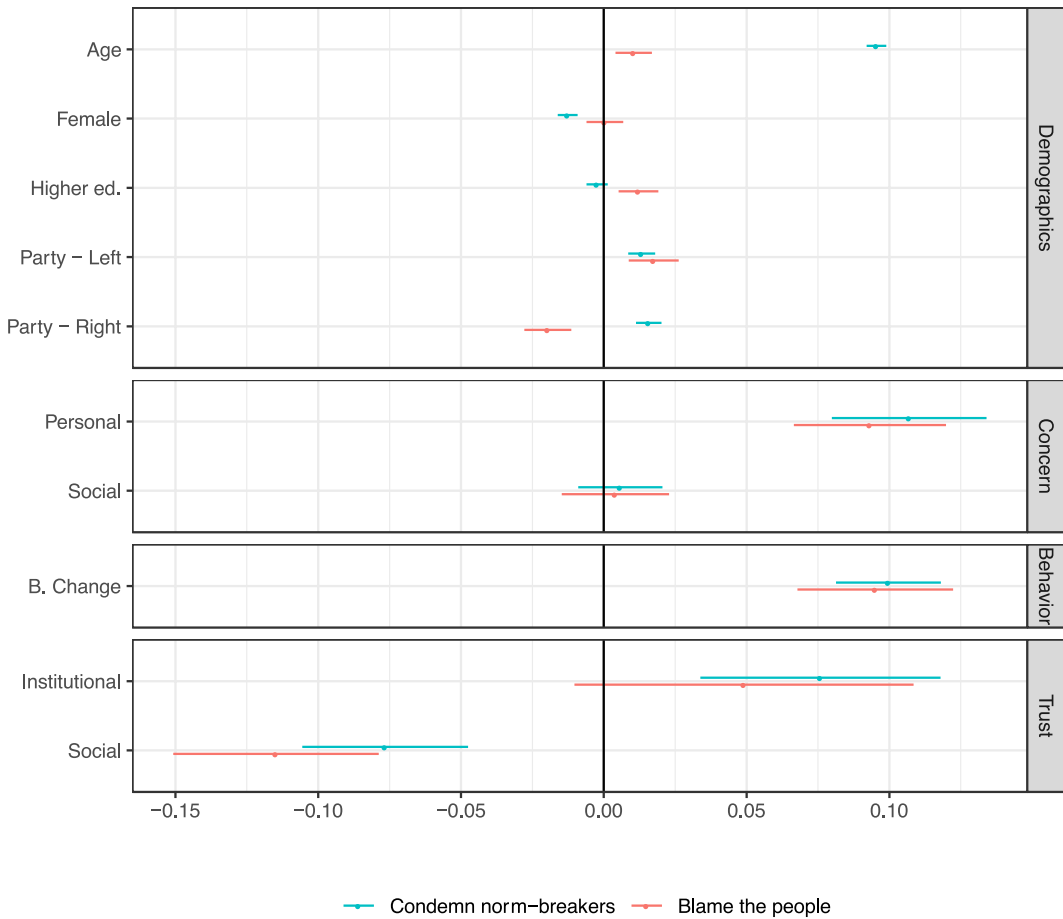


**Figure 1.** Time trends in levels of moralization—condemning norm breakers in blue, blaming the people in red—and COVID-19-related deaths across the eight countries. Red and blue points denote weighted sample means. Error bars denote 95% confidence intervals. Smooth lines display loess curves. Dashed black lines denote COVID-19-related deaths per one million citizens.

### *Individual-Level Correlates of Moralization*

Next, we turn our attention to the individual-level correlates of moralization. Who is more likely to condemn norm breakers and blame the people for the pandemic? **Figure 2** reports the fixed effects from the multilevel regression model, partially pooling data across all eight countries in our sample. These estimates can be interpreted as the average correlations across the eight countries. First, it is apparent that there are relatively little asymmetries by demographic correlates, with the exception of age and moralization. Elderly respondents condemn about 10 percentage points more than young respondents (33% of a standard deviation in condemnation). Interestingly, however, there is no age asymmetry when it comes to blaming the people, perhaps because the elderly follow physical-distancing guidelines strictly (Jørgensen, Bor, & Petersen, 2021) and see the same behavior among their peers. Although the coefficient estimates for sex, education, and partisanship often reach statistical significance because of our large sample size, these associations remain substantively small at around 2 percentage points or less (i.e., less than 7% of a standard deviation in the outcomes).

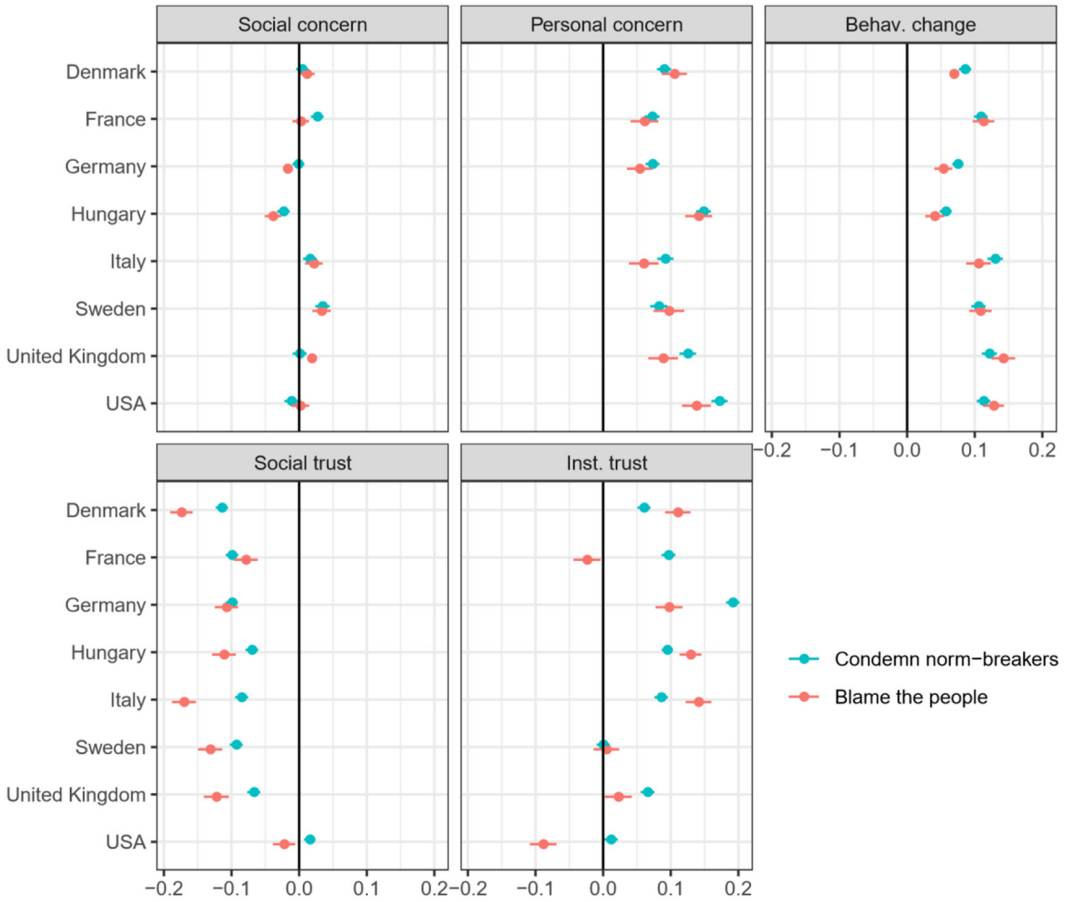
When it comes to concern, we find that personal concern is a consistently strong correlate of moralization, whereas social concern (once personal concern is controlled for) is not. Respondents with higher levels of concern are on average 11 percentage points more likely to approve condemnation (37% of a standard deviation) and 9 percentage points more likely to blame the people (19% of a standard deviation).



**Figure 2.** Individual-level correlates of moralization and blaming the people. Fixed-effect coefficient estimates from linear multilevel regression models corresponding to a two standard-deviation change in the independent variables. The outcomes are coded 0–1. Error bars are 95% confidence intervals.

Looking at self-reported behavior change to mitigate the effects of the pandemic, we find a remarkably similar picture. People who report higher behavior change are 10 percentage points more likely to condemn and blame laypeople compared to people reporting lower behavior change (35% and 19% of a standard deviation, respectively). Importantly, we find these strong associations despite both concern and behavior-change variables being skewed, with most respondents reporting some or high levels of concern or behavior change.

Finally, consistent with the theories, we find that both institutional and social trust are meaningfully correlated with our outcomes, albeit in opposite directions. Respondents who trust institutions more are about 8 percentage points more likely to condemn others (26% of a standard deviation) and 5 percentage points more likely to blame the people (10% of a standard deviation). That said, it is worth noting that these estimates have much higher uncertainty than other variables in our model due to larger cross-country variance (see below). Accordingly, the estimate for blaming the people does not reach statistical significance. Meanwhile, trusting other people is negatively correlated with moralization. Respondents with higher social trust morally condemn 8 percentage points less and blame other people 11 percentage points less (27% and 23% of a standard deviation, respectively).



**Figure 3.** Cross-country differences in the psychological correlates of moralization. Varying slope estimates from linear multilevel regression models corresponding to a two standard-deviation change in the independent variables. The outcomes are coded 0–1. Error bars are 95% confidence intervals.

*Similarities and Differences Across Countries*

To investigate cross-country heterogeneity, we display the correlations by country (i.e., the varying slopes) in Figure 3. The first and main lesson is the remarkable similarity across countries. Particularly for personal concern, social concern, and behavior change, the coefficient estimates are substantively similar in all eight countries. We have high confidence that these relationships generalize well to other Western democracies.

At the same time, Figure 3 also explains the higher uncertainty in the associations for social and institutional trust reported above: These relationships show more cross-country variation. In the United States, people higher versus lower on social trust are equally likely to moralize, whereas in the other seven countries, these relationships are large and negative. One potential explanation for this is that the extreme levels of partisan polarization over physical distancing (Gollwitzer et al., 2020) reduces the role of trust in all other Americans in general and increases the role of trust in more specific groups that one is likely to interact with.

Finally, institutional trust shows the most intercountry variability among our predictors. While it is a consistent and strong correlate in Denmark, Germany, Hungary, and Italy, it is

associated with condemnation but not blaming the people in France and the United Kingdom; it is not associated with either outcome in Sweden; and it is not associated with condemnation but negatively associated with blaming the people in the United States. It is notable that the latter three countries (Sweden, United Kingdom, and the United States) also stand out for nonstandard government response. In the case of Sweden, this was a reluctance to use hard lockdown as a mitigation strategy and the government's emphasis on empowering people to behave responsibly (as opposed to a more antagonistic relationship, where the government needs to restrain its citizens). Meanwhile, the U.K. and the U.S. institutions were somewhat reluctant to acknowledge the real severity of the COVID-19 crisis. President Trump has admitted to intentionally downplaying the virus; while in the United Kingdom, the government first sought to reach herd immunity and reversed course (at a heavy price) later on.

### *Within-Respondent Analyses*

Our analyses so far have limited internal validity. We find that people who are (1) more personally concerned, (2) changed their behavior more, (3) trust institutions more, and (4) trust other people less are also more likely to moralize. Yet, we do not know to what extent these psychological factors cause moralization. As the next test of our predictions, we repeat our analyses among the 15,088 respondents who completed the survey at multiple times (total  $N = 39,907$ ). Two-way fixed-effects regression models purge variation across respondents and survey waves thereby zooming in on within-respondent changes in attitudes over and above national trends. As a consequence, these models control for all omitted variables that do not change for respondents between the waves or do not change for waves between respondents (Mummolo & Peterson, 2018).

As usual with these models, limiting our attention to unique within-respondent variation of the predictors diminishes the strength of the associations, yet they retain statistical significance.

The average within-respondent change in our independent variables correspond to 2–7 percentage points of a standard-deviation change in the residualized (i.e., demeaned) condemnation variable. That said, for those who change their psychological motivations the most in our sample, this predicted change is 16–51 percentage points of a standard deviation in the outcome. These associations are similar for blaming the people, amounting to 5–7 percentage points of a standard deviation in the residualized outcome for an average within-individual change in the predictors and 31–55 percentage points of a standard-deviation change for maximum observed within-individual change in the predictors. The only exception is institutional trust, which is not associated with blaming the people in our panel samples controlling for respondent and wave fixed effects.

To further probe the internal validity of these estimates, we conduct two standard robustness tests in Section S3.2 in the online supporting information. First, we lead the independent variables to test if we can detect signs of reverse causality or simultaneity that could bias our estimates. These models show that the within-respondent change in the outcomes between interviews  $j$  and  $j + 1$  is correlated with changes in the predictors in the same period, but not with the change in the predictors in the following period (between interviews  $j + 1$  and  $j + 2$ ). Besides, the coefficient estimates of the predictors are virtually unchanged whether we also include the lead predictors or not. The only exception to this rule is the relationship between social concerns and blaming the people, where a significant lead indicates that an increase in blame feeds back into higher social concerns. Then again, this finding reinforces one of the main conclusions from our analyses: Personal concerns play a larger role in moralizing than social concerns. Overall, these models do not indicate that reverse causality or simultaneity is a major issue.

Second, we also rerun our within-respondent analyses with individual-specific linear time trends. These models relax the common trends assumption and use within-unit variation above

and beyond this individual linear time trend. Again, the model estimates are more noisy but substantively unaffected by these additions. The main takeaway from these fixed-effects models is that the associations reported in our multilevel models are unlikely to be simple statistical artifacts.

## STUDY 2—PREREGISTERED CONCEPTUAL REPLICATION

Study 1 demonstrated that large parts of Western democratic societies moralized physical distancing during the first few months of the COVID-19 pandemic. Consistent with most theories of moralization, Study 1 found that moral condemnation was predicted by factors associated with the perceived general importance of motivating others to comply: especially that respondents themselves had changed behavior to avoid spreading the infection and that distrusting other people were strong predictors of condemning norm breakers and blaming the people for the pandemic. We found somewhat smaller and less consistent effects for trusting political institutions, that is, the source of the health advice. Speaking to key theoretical debates within the literature on moralization, we furthermore found that what mattered was the personal rather than social importance of compliance. In support of theories of egotropic moralization and in opposition to theories of sociotropic moralization, we found that those who condemned others were those who personally felt vulnerable to COVID-19.

At the same time, Study 1 suffers from a number of limitations. First, the outcome measures do not concern all relevant aspects of the pandemic. While we theorize that condemning norm breakers and blaming laypeople are fundamental aspects of moralization, they do not offer direct evidence of the link between moralization and condemnation in the sense that the measures did not directly capture whether people thought compliance with health advice was an absolute moral rule. Furthermore, Study 1 focused mainly on physical distancing. While this has been the cornerstone of preventive measures at the first stages of the pandemic, it is but one of the nonpharmaceutical interventions against COVID-19. Other important measures include wearing masks, isolating when showing signs of illness, and vaccination. Accordingly, Study 2 shifts attention to these latter behaviors and includes questions about moralization specifically.

A second set of limitations in Study 1 concern methodological issues. The measures employed in Study 1 were necessarily constrained by the realities of a large omnibus survey designed at the beginning of the pandemic: They were short measures designed to paint a broad picture about the eight societies during the COVID-19 crisis. Study 2 seeks to reduce measurement error and the loose links to prior research by adapting validated, multi-item measures from the literature on moralization, as well as developing finely tuned, multi-item measures to better distinguish between personal and social concerns. Finally, Study 1 is a non-preregistered, exploratory investigation, and as such it may suffer from an inflated rate of false positive errors. We therefore preregistered all hypotheses, measures, and analyses of Study 2 at <https://aspredicted.org/sa5p2.pdf>.

### Hypotheses

We preregistered four hypotheses, corresponding to the five relevant predictors identified in Study 1: (1) personal concern, (2) social concern, (3) behavior change, (4) institutional trust, and (5) social trust. Recall that while we found positive relationships between moralization and personal concern, behavior change and institutional trust, for social trust the effect was negative, and for social concern it was close to zero. We investigate the relationship between these five predictors and four outcome variables concerning moralizing and condemning vaccine hesitancy and general noncompliance with guidelines against COVID-19. Hypothesis 1 focuses on the theoretical debate between egotropic and sociotropic theories of moralization, while Hypotheses 2–4

focus on the general set of factors that predict the motivation to exert moral pressure on others according to both theories.

*H1*: Personal concern is more positively correlated than social concern (1) with moralization of vaccination against COVID-19; (2) with moralization of compliance with guidelines against COVID-19, (3) with condemning (non)vaccination against COVID-19, and (4) with condemning (non)compliance with guidelines against COVID-19. *H2*: Retrospective behavior change is positively correlated (1) with moralization of vaccination against COVID-19; (2) with moralization of compliance with guidelines against COVID-19, (3) with condemning (non)vaccination against COVID-19, and (4) with condemning (non)compliance with guidelines against COVID-19. *H3*: Institutional trust is positively correlated (1) with moralization of vaccination against COVID-19; (2) with moralization of compliance with guidelines against COVID-19, (3) with condemning (non)vaccination against COVID-19, and (4) with condemning (non)compliance with guidelines against COVID-19. *H4*: Social trust is negatively correlated (1) with moralization of vaccination against COVID-19; (2) with moralization of compliance with guidelines against COVID-19, (3) with condemning (non)vaccination against COVID-19, and (4) with condemning (non)compliance with guidelines against COVID-19.

## Data

To investigate the hypotheses, we fielded an online survey in the United Kingdom between July 7 and July 13, 2021. We relied on the United Kingdom because COVID-19's delta variant hit the country hard, causing a major third wave in infections, if not deaths. This context had yet again made the epidemic a salient topic in the United Kingdom potentially creating a fertile ground for moralization.

We relied on YouGov's online panel, employing quotas to ensure that the sample resembles the population on gender, age, education, and geographic region (see details in [Table S4.1](#) in the online supporting information). In all, 1,532 individuals completed the survey.<sup>4</sup> In the preregistration, we planned to exclude "do not know" answers. Yet upon collecting the data, we found missing data only on two categorical demographic variables: education and vote choice. Instead of excluding 276 respondents for this reason, in the main analyses reported here, we directly model "do not knows" as a response option on these questions. [Section S4.5](#) in the online supporting information demonstrates that our results are unchanged by this decision. Following the preregistration, we employ poststratification weights (calculated by YouGov) in all analyses. This poststratification reweights the data to correct the slight imbalances that remain after quota sampling by matching our data to population margins on gender, age, education, and geographic region.

## Methods

### *Outcome Variables*

Our hypotheses concern four outcomes: moralization and condemnation of vaccination and compliance. We generate indices for each outcome by averaging across all items relevant for that particular variable. Respondents answered the outcome questions on scales ranging from 1 (*strongly agree*) to 7 (*strongly disagree*). Each index is rescaled to 0–1 range with higher values indicating more moralization or condemnation. We report alpha statistics to demonstrate that our indices have high reliability (except for social concern, where reliability is medium).

The first outcome variable, moralization of vaccination, is an eight-item battery adapted from Ringel & Ditto's (2019) moralization of obesity scale by replacing obesity-related terms with vaccination-related behaviors (e.g., "refusing to take up a coronavirus vaccine is disrespectful"). Together, the items form a reliable scale ( $\alpha = 0.92$ ). The second outcome, moralization of compliance, is another eight-item battery adapted from Salomon et al.'s (2017) moralization of climate change scale (e.g., "complying with the official guidelines regarding COVID-19 decreases suffering in others") that together form a reliable scale ( $\alpha = 0.91$ ). For the two measures of condemnation, we design an original four-item battery. It includes first, Study 1's item on condemnation, second, an item on feelings of anger, which have been linked to moral judgment (Russell & Giner-Sorolla, 2011), and finally, an item on direct and another on indirect punishment, both identified as strategically employed responses to norm violations (Molho et al., 2020). The two batteries are identical except for evoking nonvaccination or failure to comply with guidelines. Both batteries form reliable scales (for both  $\alpha = 0.90$ ).

### Predictors

Corresponding to the hypotheses, we measure five main correlates: personal concerns, social concerns, retrospective behavior change, institutional trust, and social trust. We rescale each measure to range between 0 and 1 with higher values indicating more concern, more behavioral change, and higher trust, respectively.

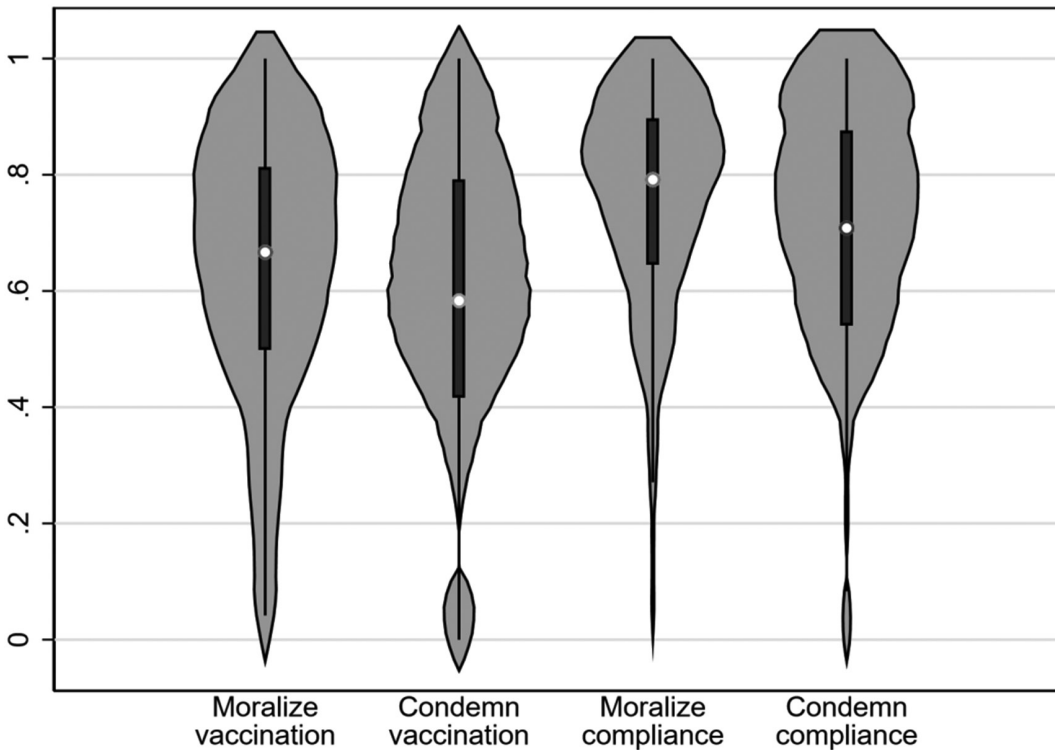
For Hypothesis 1, the main correlates are personal and social concern. Personal concerns are measured with a six-item battery, for example, "thinking about the coronavirus (COVID-19) makes me feel personally threatened" ( $\alpha = 0.92$ ). Social concerns are measured with a five-item battery, for example, "I was worried about the state of the British economy throughout the corona crisis" ( $\alpha = 0.56$ ). For each statement, respondents stated their agreement on scales ranging from 1 (*strongly agree*) to 7 (*strongly disagree*). For Hypothesis 2, the main correlate is retrospective behavior change that was measured using a single question from Study 1: To what degree did you change your behavior to avoid spreading infection throughout the coronavirus (COVID-19) pandemic? The question had four answer categories (*to a high degree, to a certain degree, to a lesser degree, not at all*). For Hypothesis 3, institutional trust was measured using a standard question: Give your assessment on a scale from 0 to 10, where 0 indicates that you have no confidence in the government at all and 10 indicates that you have full confidence in the government. For Hypothesis 4, social trust was measured using a standard question: Do you think that most people by and large are to be trusted or that you cannot be too careful when it comes to other people? Respondents answered on a scale from 0 (*you cannot be too careful*) to 10 (*most people are to be trusted*).

In addition to the main correlates, the models also contain the following demographic covariates: sex, age, education, and vote choice in the 2019 general election.

### Statistical Analysis

Following our preregistration, we tested our hypotheses using OLS models regressing each of the four outcome variables on the five correlates and demographic of covariates. In addition, the models include poststratification weights as discussed above. We compute the unstandardized regression coefficients. Given the 0–1 scaling of all continuous variables, this means that the estimates can be interpreted as percentage-point change in the respective outcome associated with a min-max difference in the respective correlate. We employ two-sided significance tests with robust standard errors. In the preregistration, we specified that we would run robustness tests, where instead of adding all four independent variables to a single model, we include them one-by-one, while adjusting for





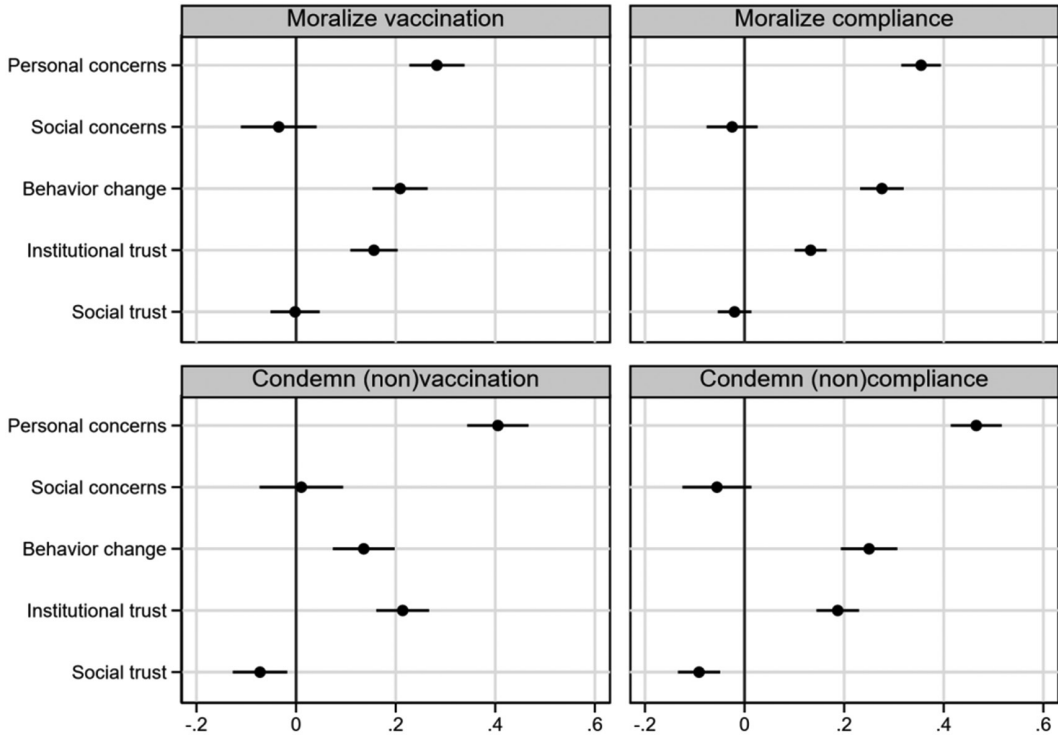
**Figure 4.** Distribution of moralizing and condemning vaccination and general compliance, Study 2. The dots denote the median; the thick lines denote the interquartile range.

demographic covariates (see [Figure S4.3](#) in the online supporting information). Moreover, we also rerun the results while excluding the poststratification weights (see [Figure S4.4](#)). These robustness checks replicate all of our findings reported below.

## Results

First, we report descriptive, post hoc analyses on the overall levels of moralization in the sample. [Figure 4](#) displays the distributions of our four outcome variables, moralizing and condemning vaccination and general compliance with health advice. Four notable descriptive results emerge. Most importantly, first, general levels of moralization and condemnation have been high in the United Kingdom in the summer of 2021. (Moralizing vaccination  $M(SD) = .63(.25)$ , Condemning vaccination  $M(SD) = .57(.28)$ , Moralizing compliance  $M(SD) = .74(.21)$ , Condemning compliance  $M(SD) = .68(.26)$ ). Second, respondents appear to moralize more readily than to condemn, which makes perfect sense given the inherent costliness of moralistic punishment. Third, people moralize and condemn general compliance with health advice more than vaccination. Fourth, underpinning that condemnation is an inherent feature of moralization; we find very high levels of correlation between the moralization and condemnation both for vaccines ( $r = .85$ ) and for general compliance ( $r = .76$ ). Unsurprisingly, those who moralize one issue are also likely to moralize the other ( $r = .65$ ), and the same is true for condemning ( $r = .76$ ).

[Figure 5](#) shows the results from the estimations as specified above (see [Section S4.2](#) in the online supporting information for the full models). The findings strongly support Hypothesis 1: Personal concern is more strongly positively correlated than social concern with each of the



**Figure 5.** Correlates of moralization and condemnation, Study 2. Black filled circles are unstandardized regression coefficients. Error bars denote 95% confidence intervals.

outcomes. Thus, a difference between the highest and lowest personal concern is associated with a 29 percentage-point increase in moralization of vaccination, a 35 percentage-point increase in moralization of compliance, a 41 percentage-point increase in condemnation of (non)vaccination, and a 47 percentage-point increase in condemnation of non(compliance). To the contrary, social concern do not statistically significantly correlate with any of the outcomes. F-tests that compare the estimated personal and social concern coefficients corroborate that personal concern is more strongly positively correlated with each of the outcomes than social concern is. Note that the robustness analyses where we include the main correlates one-by-one show that social concern correlates positively with each of the outcomes (see [Figure S4.3](#) in the online supporting information). However, the personal-concern correlations are similarly stronger, and the F-tests consistently support that personal concern is more strongly positively correlated with each of the outcomes than social concern.

Hypotheses 2 and 3 are similarly supported by the results: Retrospective behavior change and institutional trust, respectively, positively correlate with each of the outcomes. In particular, the difference between lowest and highest levels in retrospective behavior change is associated with a 21 percentage-point increase in moralization of compliance, a 28 percentage-point increase in moralization of compliance, a 14 percentage-point increase in condemnation of (non)vaccination, and a 25 percentage-point increase in condemnation of non(compliance). The same change in institutional trust is associated with a 16 percentage-point increase in moralization of compliance, a 13 percentage-point increase in moralization of compliance, a 21 percentage-point increase in condemnation of (non)vaccination, and a 19 percentage-point increase in condemnation of non(compliance).

Finally, Hypothesis 4—that social trust is negatively correlated with each of the outcomes—is only partially supported by the results. On the one hand, replicating the results from Study 1, social trust is negatively associated with both condemnation outcomes. Comparing those with highest versus lowest levels of social trust, we find a difference of 7 and 9 percentage points in condemnation of (non)vaccination and (non)compliance, respectively. On the other hand, the results also show that the estimated associations are statistically indistinguishable from zero when it comes to social trust and the two moralization outcomes.

## CONCLUSIONS AND DISCUSSION

In this article, we documented widespread moralization related to compliance with health advice during the COVID-19 pandemic motivating citizens to condemn and shame each other. This is consistent with media reports of several—sometimes even fatal—incidents between people condemning noncompliance with the health advice during the pandemic and people condemning the advice itself. In Study 1, we investigated this issue comparatively, relying on quantitative survey data across eight Western democratic countries during the COVID-19 pandemic. We found that in all countries, most respondents think it is justified to condemn those who break the new norms of physical distancing. Meanwhile, about half of respondents believe that laypeople are to blame for the pandemic. In Study 2, we focused on the United Kingdom and found extensive moralization of both general compliance with the health authorities' advice and vaccination as well as condemnation of those who were not complying or getting vaccinated. The diversity of the sample of countries implies that moral condemnation likely has been a feature of other developed democracies too during the COVID-19 pandemic.

These findings provide an empirical demonstration of a key point within theories of moralization: Rapid normative change within valued domains of life will often be accompanied and reinforced by moralized views (Rozin & Singh, 1999). The COVID-19 pandemic is in this regard a perfect example. When the pandemic hit the world in early 2020, it facilitated one of the largest behavior changes in history, as people around the globe synchronously engaged in distancing (Jørgensen, Bor, & Petersen, 2021). This was facilitated by communication that activated a range of value-infused considerations including trust, empathy, national identity, and personal fear (Jørgensen, Bor, Lindholt, & Petersen, 2021; Pfattheicher et al., 2020; Van Bavel et al., 2022). As shown here, the result was widespread moralization of compliance with the advice from the health authorities.

The results also provide an empirical demonstration of another key point within the literature on moralization: Third-party punishment—that is, condemnation of others—is integral to moralization processes. In Study 2, moralization and condemnation as measured independently and parallel results were obtained. These findings are in line with the view that morality is a social phenomenon rather than merely a matter of one's own conscience (Kurzban, 2011) in the sense that moral views shapes behaviors towards and judgments of others.

While most theories of moralization converge on the importance of values and condemnation for moralization, the present results also shed light on key theoretical debates within the moralization literature: Is the underlying driver of condemnation self-interest or societal interest? While moralized language is highly universalistic (Skitka, 2010) and we often associate morality with altruism (Gintis et al., 2008), our results firmly support the theory that moralistic condemnation is about incentivizing others to engage in behavior that aligns with the interests of the self rather than with the interests of society. In Studies 1 and 2, we find that personal concern regarding the pandemic is a strong predictor of condemnation and moralization regarding general compliance, distancing, and vaccinations. Social concerns are consistently insignificantly related to these views once personal concerns are taken into account. Analyses using two-way

fixed-effects models on panel data support the argument that the associations reflect a causal effect from personal concern to moralization. Given this role of personal concern, it may seem surprising that moral discourse, at face value, is so oriented towards universalism and “the greater good.” Psychological research suggest that this reflects that moralization is a mobilization or recruitment device whereby individuals seek to show how their own interests aligns with the interests of potential recruits (Tooby & Cosmides, 2010). It is exactly because of the universalism that moral discourse is able to fulfill this function, although the underlying motivation may be self-interested.

While these findings demonstrate the power of moralization theory to illuminate patterns during a massive, behavior-changing crisis like the COVID-19 pandemic, our analyses are also subject to a number of limitations. First, while our two-way fixed-effects models increase our confidence in a causal relationship between personal concern, behavioral change, and moralization, we cannot rule out that time-variant confounders bias the estimated relationship. Thus, future research may seek to employ experimental methods to increase the internal validity of the present findings. Second, our analysis zeroes in on individual-level psychological processes but remains mute on macrolevel trends. What makes Italians and Hungarian moralize more (on average) than Americans? Why do Swedes blame laypeople more than the French do? Future research should explore how elite dynamics and cultural differences (among other things) shaped these processes. Third, it is beyond the scope of our analysis to test whether moralization works, that is, whether it indeed yields more compliance with the advice of the health authorities in others. The literature on moralization offers solid evidence that moralization is an important tool for compliance (Gintis et al., 2005), but especially in polarized societies, condemning some for not following the new norms may backfire (Prosser et al., 2020). Backfiring may not just take the form of intensified conflict, but the stigmatization associated with moralization may also negatively influence the motivation to be tested and facilitate the tracing of close contacts. Stigmatization has thus been raised as a key obstacle to test-and-trace strategies in relation to other epidemics, such as sexually transmitted diseases (Villa et al., 2020).

These limitations notwithstanding, the findings may have important practical implications regarding the management of crises that requires massive behavioral change. The pandemic is an obvious example, but there are other similar crises, such as the climate crisis, on the horizon. In the face of such crises, democratic societies may face limitations regarding the degree to which the necessary behavior changes can be facilitated through formal restrictions and regulations. However, the present article documents that moralization can easily and strongly be activated among those who are concerned and who themselves engage in behavior change. This moralization among behavioral “first movers” can subsequently act as a “bottom-up” force that incentivizes others, creating a tipping-point dynamic whereby the novel behaviors spread throughout the population (DeScioli & Kurzban, 2013), beyond what can be reached through formal regulation. At the same time, it is wise to remember that moralization is a potent tool and carries the risk of backfiring. As any potent tool, moralization should thus be utilized with care.

## ACKNOWLEDGMENTS

This research has been supported by the Carlsberg Foundation’s grant CF20-0044 awarded to Michael Bang Petersen. Part of MBP’s time for carrying out this work was funded by the Danish National Science Foundation (no DNR114). Correspondence concerning this article should be addressed to Alexander Bor, Department of Political Science, Aarhus University, Aarhus, Denmark. E-mail: [alexander.bor@ps.au.dk](mailto:alexander.bor@ps.au.dk)

## REFERENCES

- Chan, H. F., Brumpton, M., Macintyre, A., Arapoc, J., Savage, D. A., Skali, A., Stadelmann, D., & Torgler, B. (2020). How confidence in health care systems affects mobility and compliance during the COVID-19 pandemic. *PLoS One*, *15*(10), e0240644.
- Chu, D. K., Akl, E. A., Duda, S., Solo, K., Yaacoub, S., Schünemann, H. J., & COVID-19 Systematic Urgent Review Group Effort (SURGE) study authors. (2020). Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: A systematic review and meta-analysis. *The Lancet*, *395*(10242), 1973–1987.
- Clemmensen, C., Petersen, M. B., & Sørensen, T. I. (2020). Will the COVID-19 pandemic worsen the obesity epidemic? *Nature Reviews Endocrinology*, *16*(9), 469–470.
- Curry, O. S. (2016). Morality as cooperation: A problem-centred approach. In T. K. Shackelford & R. D. Hansen (Eds.), *The evolution of morality* (pp. 27–51). Springer.
- Delton, A. W., DeScioli, P., & Ryan, T. J. (2020). Moral obstinacy in political negotiations. *Political Psychology*, *41*(1), 3–20.
- DeScioli, P., & Kurzban, R. (2009). Mysteries of morality. *Cognition*, *112*(2), 281–299.
- DeScioli, P., & Kurzban, R. (2013). A solution to the mysteries of morality. *Psychological Bulletin*, *139*(2), 477–496.
- DeScioli, P., Massenkoff, M., Shaw, A., Petersen, M. B., & Kurzban, R. (2014). Equity or equality? Moral judgments follow the money. *Proceedings of the Royal Society B: Biological Sciences*, *281*(1797), 20142112.
- Dunbar, R. I. (1998). The social brain hypothesis. *Evolutionary Anthropology: Issues, News, and Reviews: Issues, News, and Reviews*, *6*(5), 178–190.
- Fernandes, N. (2020). *Economic effects of coronavirus outbreak (COVID-19) on the world economy*. IESE Business School Working Paper No. WP-1240-E, Available at SSRN 3557504.
- Fiske, A. P., & Tetlock, P. E. (1997). Taboo trade-offs: Reactions to transactions that transgress the spheres of justice. *Political Psychology*, *18*(2), 255–297.
- Gelman, A. (2008). Scaling regression inputs by dividing by two standard deviations. *Statistics in Medicine*, *27*(15), 2865–2873.
- Gintis, H., Bowles, S., Boyd, R. T., & Fehr, E. (2005). *Moral sentiments and material interests: The foundations of cooperation in economic life* (Vol. 6). MIT Press.
- Gintis, H., Henrich, J., Bowles, S., Boyd, R., & Fehr, E. (2008). Strong reciprocity and the roots of human morality. *Social Justice Research*, *21*(2), 241–253.
- Gollwitzer, A., Martel, C., Brady, W. J., Pärnamets, P., Freedman, I. G., Knowles, E. D., & Van Bavel, J. J. (2020). Partisan differences in physical distancing are linked to health outcomes during the COVID-19 pandemic. *Nature Human Behaviour*, *4*(11), 1186–1197.
- Graso, M., Chen, F. X., & Reynolds, T. (2021). Moralization of COVID-19 health response: Asymmetry in tolerance for human costs. *Journal of Experimental Social Psychology*, *93*, 104084.
- Harper, C. A., Satchell, L. P., Fido, D., & Latzman, R. D. (2020). Functional fear predicts public health compliance in the COVID-19 pandemic. *International Journal of Mental Health and Addiction*, *19*, 1875–1888. <https://doi.org/10.1007/s11469-020-00281-5>
- Johnson, T., Dawes, C., Fowler, J., & Smirnov, O. (2020). Slowing COVID-19 transmission as a social dilemma: Lessons for government officials from interdisciplinary research on cooperation. *Journal of Behavioral Public Administration*, *3*(1), 1–13.
- Jørgensen, F., Bor, A., Lindholt, M. F., & Petersen, M. B. (2021). Public support for government responses against COVID-19: Assessing levels and predictors in eight western democracies during 2020. *West European Politics*, *44*(5–6), 1129–1158. <https://doi.org/10.1080/01402382.2021.1925821>
- Jørgensen, F., Bor, A., & Petersen, M. B. (2021). Compliance without fear: Individual-level protective behaviour during the first wave of the COVID-19 pandemic. *British Journal of Health Psychology*, *26*(2), 679–696.
- Kurzban, R. (2011). *Why everyone (else) is a hypocrite*. Princeton University Press.
- Kurzban, R., Dukes, A., & Weeden, J. (2010). Sex, drugs and moral goals: Reproductive strategies and views about recreational drugs. *Proceedings of the Royal Society B: Biological Sciences*, *277*(1699), 3501–3508.
- Lindholt, M. F., Jørgensen, F., Bor, A., & Petersen, M. B. (2021). Public acceptance of COVID-19 vaccines: Cross-national evidence on levels and individual-level predictors using observational data. *BMJ Open*, *11*(6), e048172.
- Marcus, G. E., Neuman, W. R., & MacKuen, M. (2000). *Affective intelligence and political judgment*. University of Chicago Press.
- Molho, C., Tybur, J. M., Van Lange, P. A., & Balliet, D. (2020). Direct and indirect punishment of norm violations in daily life. *Nature Communications*, *11*(1), 1–9.

- Mummolo, J., & Peterson, E. (2018). Improving the interpretation of fixed effects regression results. *Political Science Research and Methods*, 6(4), 829–835.
- Nietzsche, F. (1994). *Nietzsche: "On the genealogy of morality" and other writings*. Cambridge University Press.
- Petersen, M. B. (2013). Moralization as protection against exploitation: Do individuals without allies moralize more? *Evolution and Human Behavior*, 34(2), 78–85.
- Pfafftheicher, S., Nockur, L., Böhm, R., Sassenrath, C., & Petersen, M. B. (2020). The emotional path to action: Empathy promotes physical distancing and wearing of face masks during the COVID-19 pandemic. *Psychological Science*, 31(11), 1363–1373.
- Pfafftheicher, S., Petersen, M. B., & Böhm, R. (2021). Information about herd immunity through vaccination and empathy promote COVID-19 vaccination intentions. *Health Psychology*, 41(2), 85–93.
- Prosser, A. M., Judge, M., Bolderdijk, J. W., Blackwood, L., & Kurz, T. (2020). "Distancers" and "non-distancers"? The potential social psychological impact of moralizing COVID-19 mitigating practices on sustained behaviour change. *British Journal of Social Psychology*, 59(3), 653–662.
- Richerson, P. J., & Boyd, R. (2008). *Not by genes alone: How culture transformed human evolution*. University of Chicago Press.
- Ringel, M. M., & Ditto, P. H. (2019). The moralization of obesity. *Social Science & Medicine*, 237, 112399.
- Rozin, P. (1999). The process of moralization. *Psychological Science*, 10(3), 218–221.
- Rozin, P., & Singh, L. (1999). The moralization of cigarette smoking in the United States. *Journal of Consumer Psychology*, 8(3), 321–337.
- Russell, P. S., & Giner-Sorolla, R. (2011). Moral anger is more flexible than moral disgust. *Social Psychological and Personality Science*, 2(4), 360–364.
- Ryan, T. J. (2017). No compromise: Political consequences of moralized attitudes. *American Journal of Political Science*, 61(2), 409–423.
- Ryan, T. J. (2019). Actions versus consequences in political arguments: Insights from moral psychology. *The Journal of Politics*, 81(2), 426–440.
- Salomon, E., Preston, J. L., & Tannenbaum, M. B. (2017). Climate change helplessness and the (de)moralization of individual energy behavior. *Journal of Experimental Psychology: Applied*, 23(1), 15–28.
- Shackelford, T. K., & Hansen, R. D. (2015). *The evolution of morality*. Springer.
- Skitka, L. J. (2010). The psychology of moral conviction. *Social and Personality Psychology Compass*, 4(4), 267–281.
- Sznycer, D., Tooby, J., Cosmides, L., Porat, R., Shalvi, S., & Halperin, E. (2016). Shame closely tracks the threat of devaluation by others, even across cultures. *Proceedings of the National Academy of Sciences*, 113(10), 2625–2630.
- Tooby, J., & Cosmides, L. (2010). Groups in mind: The coalitional roots of war and morality. In H. Høgh-Olesen (Ed.), *Human morality and sociality: Evolutionary and comparative perspectives* (pp. 91–234). Bloomsbury Academic.
- Tyler, T. R. (2006). *Why people obey the law*. Princeton University Press.
- Van Assche, J., Politi, E., Van Dessel, P., & Phalet, K. (2020). To punish or to assist? Divergent reactions to ingroup and outgroup members disobeying social distancing. *British Journal of Social Psychology*, 59(3), 594–606.
- Van Bavel, J. J., Cichocka, A., Capraro, V., Sjästad, H., Nezelek, J. B., Pavlović, T., Alfano, M., Gelfand, M. J., Azevedo, F., Birtel, M. D., Cislak, A., Lockwood, P. L., Ross, R. M., Abts, K., Agadullina, E., Aruta, J. J. B., Besharati, S. N., Bor, A., Choma, B. L., ... Boggio, P. S. (2022). National identity predicts public health support during a global pandemic. *Nature Communications*, 13(1), 517.
- Villa, S., Jaramillo, E., Mangioni, D., Bandera, A., Gori, A., & Raviglione, M. C. (2020). Stigma at the time of the COVID-19 pandemic. *Clinical Microbiology and Infection*, 26(11), 1450–1452.
- WHO. (2020). *Pandemic fatigue: Reinvigorating the public to prevent COVID-19: Policy considerations for member states in the who European region* (Tech. Rep.). World Health Organization. Regional Office for Europe.

## Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web site:

**Appendix S1.** Study 1 Question Wordings

**Appendix S2.** Study 1 Descriptive Statistics

**Table S2.1.** Country Level Macro Statistics Reflecting Considerable Variability in Our Case Selection

**Table S2.2.** Sample Sizes and Dates by Survey Waves and Country

**Table S2.3.** Sample Characteristics by Country Group

**Appendix S3.** Study 1 Supplementary Results

**Table S3.1.** Individual Level Correlates of Condemning Norm-breakers

**Table S3.2.** Individual Level Correlates of Blaming Regular People

**Table S3.3.** Two-way Fixed Effects Models on Condemning Norm-breakers

**Table S3.4.** Two-way Fixed Effects Models on Blaming Laypeople

**Table S3.5.** Scaled Two-way Fixed Effects Effect Size Estimates

**Table S3.6.** Rerunning Main Multilevel Regression Models without Weights

**Table S3.7.** Re-running Main Models with Alternative Split of Concern Items

**Figure S3.1.** We find no meaningful time trends in the relationship btw the outcomes and the psychological predictors.

**Table S3.8.** Robustness Test for Parallel Trends Assumption in 2FE Models

**Appendix S4.** Study 2 Supplementary Results

**Table S4.1.** Sample Demographics with and without Weighting

**Table S4.2.** Full Model Details

**Figure S4.3.** Study 2 results replicate when we factor in each of the main correlates subsequently.

**Figure S4.4.** Study 2 results replicate when we exclude the poststratification weights.

**Table S4.5.** Excluding Participants with Missing Data on Vote and Education