

OPEN ACCESS

EDITED BY

Nicolas Tsapatsoulis,
Cyprus University of Technology, Cyprus

REVIEWED BY

Davide Morisi,
Collegio Carlo Alberto, Italy
Markus Wagner,
University of Vienna, Austria

*CORRESPONDENCE

Roberto Stefan Foa
✉ rf274@cam.ac.uk
Christian Welzel
✉ christian.welzel@uni.leuphana.de

RECEIVED 06 December 2022

ACCEPTED 04 April 2023

PUBLISHED 19 May 2023

CITATION

Foa RS and Welzel C (2023) Existential
insecurity and deference to authority: the
pandemic as a natural experiment.
Front. Polit. Sci. 5:1117550.
doi: 10.3389/fpos.2023.1117550

COPYRIGHT

© 2023 Foa and Welzel. This is an open-access
article distributed under the terms of the
[Creative Commons Attribution License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/).
The use, distribution or reproduction in other
forums is permitted, provided the original
author(s) and the copyright owner(s) are
credited and that the original publication in this
journal is cited, in accordance with accepted
academic practice. No use, distribution or
reproduction is permitted which does not
comply with these terms.

Existential insecurity and deference to authority: the pandemic as a natural experiment

Roberto Stefan Foa^{1*} and Christian Welzel^{2*}

¹Department of Politics and International Studies, University of Cambridge, Cambridge, United Kingdom,
²Center for the Study of Democracy, Leuphana University Lüneburg, Lüneburg, Germany

Introduction: The global coronavirus pandemic offers a quasi-experimental setting for understanding the impact of sudden exposure to heightened existential risk upon both individual and societal values.

Methods: We examined the effect of the pandemic on political attitudes by comparing data from eight countries surveyed before and after the worldwide spread of COVID-19 in March 2020 with continuous weekly polling tracker data from the United Kingdom from 2019 to 2021. Multilevel models were used to explore the drivers of change, and the results indicated that reported emotions of fear and stress were positively associated with institutional approval during periods of greater pathogen risk.

Results: Our findings revealed that support for political and technocratic authority, as well as satisfaction with political institutions, rose significantly above long-term historical baselines during the pandemic.

Discussion: The results support the hypothesis that exposure to existential risk results in greater support for authority and that individual feelings of insecurity may be linked to less critical citizen orientations.

KEYWORDS

pandemic, existential security, populism, authoritarianism, pathogen risk, COVID-19

1. Introduction

A large body of research by social scientists suggests that “existential security,” the feeling that survival can be taken for granted, is conducive to the values of tolerance, freedom, openness to social change, and pro-democratic political attitudes (Inglehart, 1977, 1997; Inglehart and Welzel, 2005; and Welzel, 2013). Conversely, when faced with heightened existential insecurity, individuals become more likely to revert to deferential norms, authority orientation, and collectivism (Feldman and Stenner, 1997). For example, Inglehart et al. (2006) found that survey respondents in post-war Iraq expressed the highest levels of outgroup rejection among the 85 societies for which data had previously been collected, with comparable results later found in post-war Rwanda, Libya, and Lebanon (Inglehart, 2018). A similar observation in the field of political behavior is the famous “rally-round-the-flag” effect, whereby support for political leaders spikes during periods of international conflict or disaster response (Mueller, 1970, 1973). Such studies have also been replicated using natural experiments at the subnational level: Lazarev et al. (2014), for example, found that villages in Russia randomly exposed to wildfires subsequently exhibited higher support for the government, irrespective of the government disaster response. Mahdavian et al. (2020) also reported similar results for German households exposed to the 2013 floods.

Although war and natural disasters present immediate existential threats, the greatest sources of mortality risk for most individuals, most of the time, are disease and ill health (World Health Organization, 2022). Accordingly, scholars place special emphasis on the link between disease risk and societal attitudes and beliefs. The “parasite stress theory of values,”

in particular, argues that cultures evolving in regions with a higher prevalence of infectious diseases are more likely to adopt norms against outgroups and outgroup interaction to minimize exposure to potentially harmful pathogens (Fincher and Thornhill, 2012; Thornhill and Fincher, 2014). Additional evidence shows that parents are more likely to raise their children with collectivist values in societies with a high degree of pathogenic stress (Cashdan and Steele, 2013) and that high levels of such stress are linked to conformity (Murray et al., 2011) and to cultural practices associated with ingroup favoritism (Murray et al., 2011; Fincher and Thornhill, 2012; van Leeuwen and Täuber, 2012) – precisely the values common to all collectivist cultures (Inglehart et al., 2014).

Research on the effects of macro-societal risks, such as war and natural disasters, has benefited from a wide range of natural experiments that affect different communities randomly (Baez and Santos, 2007; Lazarev et al., 2014; You et al., 2020) and from time-series data that allows for the observation of the pre- and post-impact of such events as they occur (Calvo et al., 2015). However, only a few studies have examined the value-shift effects of sudden shocks in the disease environment. Indeed, until recently, research on the causal relationship between disease risk and attitudes toward authority has mainly been based on experimental studies. In these studies, researchers manipulated participants' *perceived* exposure to pathogens and then discovered that they are more likely to display behaviors associated with ethnocentrism (Navarrete and Fessler, 2006), xenophobia (Faulkner et al., 2004), and avoidance of others (Mortensen et al., 2010). Additionally, priming individuals with a disease contagion threat has been found to make them less agreeable, less open to new experiences, and more introverted (Ibid).

However, while lab experiments are commendable for their causal (pre/post-treatment) design, they lack ecological validity. It is uncertain whether human behavior observed in artificial scenarios can be generalized to how people behave in real-life situations. Thus, it is necessary to gather data of representative quality from quasi-natural experiments to study the latter. Since these types of data are notoriously sparse, this study therefore aimed to fill a significant research gap by providing original empirical observations.

Specifically, our study empirically validated the disease stress theory of values by exploring a distinctive set of global cross-country survey data that were collected before and during the 2020–21 coronavirus pandemic. These data established a connection between heightened existential risk at both the societal and individual levels and temporary shifts in attitudes toward authority. These shifts were expressed in terms of preferences for autocratic or technocratic governments in the future, as well as in the satisfaction levels with existing institutions. During the pandemic, we found that authority-oriented beliefs increased, and *within* the pandemic, periods of elevated disease risk during viral waves were accompanied by a surge in reported fear and stress, as well as an increase in support for existing political institutions. As a global contagion that affected almost every country in the world in a sudden and prolonged manner, the global coronavirus pandemic presents an unparalleled opportunity to investigate how mortality risk can affect societal attitudes and beliefs at a cross-country level (Thomson, 2020; Foa et al., 2022a).

2. Overview

In this article, we present novel data that helped us examine the effects of the pandemic on attitudes toward institutions and authority, both at the cross-country level before and after the pandemic onset and within a single country, on a weekly basis during consecutive viral waves. We achieved this by examining the pandemic's association with two types of authority preferences—support for autocratic and technocratic governance—and its association with citizens' feelings toward existing authorities and institutions. Accordingly, the remainder of this article is structured as follows. In the following Section III, we provide a literature review of existing research on the pandemic's effects on societal beliefs and values and contextualize this study within the contemporary debate. Section IV then examines harmonized data from eight countries before and after the pandemic outbreak, revealing the prevalence of authority-oriented beliefs during this period. Section V builds on these insights further in a single-country context, using unique weekly survey tracking data to examine how short-term fluctuations in institutional attitudes correspond to each wave of coronavirus infections. By exploring this association further using multilevel models, we found that reported emotions of fear and stress are positively associated with civic contentment during viral waves, indicating that existential insecurity may be a major factor in determining how individual citizens relate to governing institutions. Finally, Section 7 provides concluding remarks.

3. Literature review

Since the onset of the coronavirus pandemic, numerous studies have sought to investigate its potential impacts on societal beliefs, norms, and values. Previous studies were primarily focused on the effect of the pandemic (and its associated lockdowns) on subjective wellbeing and mental health (Foa et al., 2018, 2022b). These studies aimed to examine how societal differences in collectivism, trust, and social compliance might contribute to the success or failure of the efforts to curb the spread of the virus (Devine et al., 2021; Chen et al., 2022). In this way, previous research on the pandemic focused on understanding differences in societal resilience to COVID-19, both in terms of susceptibility to the exposure and spread of the virus, as well as its second-order effects on mental and physical health (Gao et al., 2020; Wachtler et al., 2020).

After this initial wave of research, a subsequent round of studies shifted focus toward examining whether the pandemic *itself* might have altered societal norms and values, including levels of personal and civic attitudes toward authority. For example, the surveys conducted in the first year of the pandemic revealed an increase in reported trust in the government (Delhey et al., 2021; Edelman Trust Institute, 2021; Goldfinch et al., 2021), which is consistent with the literature on the “rally-round-the-flag” effect. This literature suggests that crises induce gains in government and leadership approval (Johansson et al., 2021; Kritzinger et al., 2021; Schraff, 2021). Further studies also showed increased general social trust, including altruism, generosity, and trust in strangers (Branas-Garza et al., 2020; Esaiasson et al., 2020; Grimalda et al., 2021).

In addition, psychological research suggested broader changes in personality structure since the pandemic's onset, including a greater focus on "conservation" values such as "order and stability" and a reduction in more liberal values such as openness to change or self-transcendence (Winkler, 2021; Daniel et al., 2022). Further, studies have linked these deferential norms to a significant increase in trust in experts and scientists (Amat et al., 2020; Algan et al., 2021; Lavezzolo et al., 2021), as well as a greater willingness to follow scientific recommendations on a personal level (Mede and Schäfer, 2022). Finally, after a decade in which "populist" parties and politicians have attempted to erode trust in expertise and science, political science research suggests that the pandemic has led to a decline in support for populism (Daniele et al., 2020; Boxell et al., 2021). This was particularly evident when populist opposition to scientific consensus resulted in poor decision-making in office. This observation helps explain the electoral defeat of politicians such as Donald Trump, Jair Bolsonaro, and Andrej Babiš, all of whom initially sought to downplay the threat of COVID-19 against the weight of scientific evidence (Bufacchi, 2020; Bayerlein et al., 2021; Foa et al., 2022a).

Taken together, these findings suggest a series of changes that can be described as increased deference to governmental and, in particular, expert authority. This includes changes in subjective affects, such as approval, behavioral norms of compliance, or epistemic outcomes such as beliefs. However, although a research agenda on the pandemic's attitudinal and sociological effects is currently ongoing, many studies are subject to limitations. The first limitation is the challenge of differentiating between the pandemic's initial and potentially short-term impact on the public's mood and values from longer-lasting shifts in public attitudes. Prior studies on the "rally-round-the-flag" effect have indicated that crisis events produce only temporary changes in public attitudes (lasting around 3–6 months), after which opinions revert to historical baselines (Oneal and Bryan, 1995). As most existing studies only compared one or more pre-pandemic surveys with a single survey conducted in its first year, this distinction has been difficult to establish. In contrast, the present study includes cross-country data that cover both the decades prior to the pandemic, allowing us to establish reliable attitudinal baselines, and then the pandemic's first and second years. Moreover, single-country tracking data from the United Kingdom offers weekly observations over a prolonged period of time.

Second, although comparing pre- and post-pandemic surveys can provide useful descriptive information regarding changes that have occurred since the onset of the COVID-19 pandemic, they offer limited insights into the mechanisms underlying shifts in authority orientation. In contrast, our study incorporates individual-level tracking data from the United Kingdom that includes variables for respondent mood states. This unique data design allows us to accurately infer how personal emotions of existential insecurity, such as fear and stress, are related to an individual respondent's propensity to hold viewpoints that are more deferential to political authority in their country. Finally, while the majority of previous studies consist of either single-country studies presenting relatively detailed survey evidence on changes in technocratic beliefs (e.g., Lavezzolo et al., 2021; Mede and Schäfer, 2022) or cross-country studies examining conventional

metrics such as trust or satisfaction with government (Edelman Trust Institute, 2021), our research presents cross-country results of survey items that are specific to the study and understanding of authoritarianism, such as a respondent's expressed preference for expert or autocratic rule. This approach allows us to bridge the gap between the study of institutional deference and authoritarianism and to make important distinctions between these different forms of authority preference.

4. Changes in authority attitudes during COVID-19: cross-country findings

In this section, we examine the novel data collected during the global coronavirus pandemic across eight countries regarding citizen attitudes toward authority and, specifically, civic preferences regarding either autocratic ("strongman") or technocratic ("expert") rule. We achieved this by harmonizing data from long-standing survey sources on democratic attitudes and beliefs, notably the World Values Survey and the European Values Study (WVS/EVS), with the results of a battery of surveys on authoritarian beliefs and attitudes that have been refielded annually by the polling company YouGov in eight western democracies from November 2019 to November 2021.

Since 1995, the World Values Survey has included a set of survey items that measure individuals' orientation to political authority, in which respondents were asked to indicate whether they believe each of a series of options would be a suitable "way of governing this country." The survey items start with the following two items: "having a strong leader who does not have to bother with parliament and elections" and "having experts, not the government, make decisions according to what they think is best for the country" (Inglehart et al., 2020). In addition, from 2017 to 2019, the "strong leader" item was refielded in the United States by the VOTER Study Group and then again in the summer of 2020 by the Nationscape project. Fieldwork was conducted by YouGov and Lucid, respectively (Democracy Fund Voter Study Group., 2021; Tausanovitch and Vavreck, 2021). These additional data, collected from 2019 to 2021 across a wider sample of countries, provide a large number of survey observations collected both in the years before and during the global COVID-19 pandemic.

Changes in both items are shown in Figure 1. Gray trend lines represent the respondents' approval of having "experts rule" in place of the elected government, while black trend lines show respondents' approval for having a "strong leader" being able to rule without the restraint of elections or the legislature. While the average trend on both variables was relatively stable before the pandemic, a marked increase can be observed in 2020. Taking the population-weighted average across all eight countries, support for a strong leader increased from 26.1% in the year prior to the pandemic to 32.7% in its first year (February 2020 to February 2021) and nearly the same percentage again (32.8%) the year after that. Support for having "experts" make decisions increased from 52.0% in the year before the pandemic to 59.5% in the first year and 58.4% in the second year. These figures suggest a pre/post +6.6 percentage

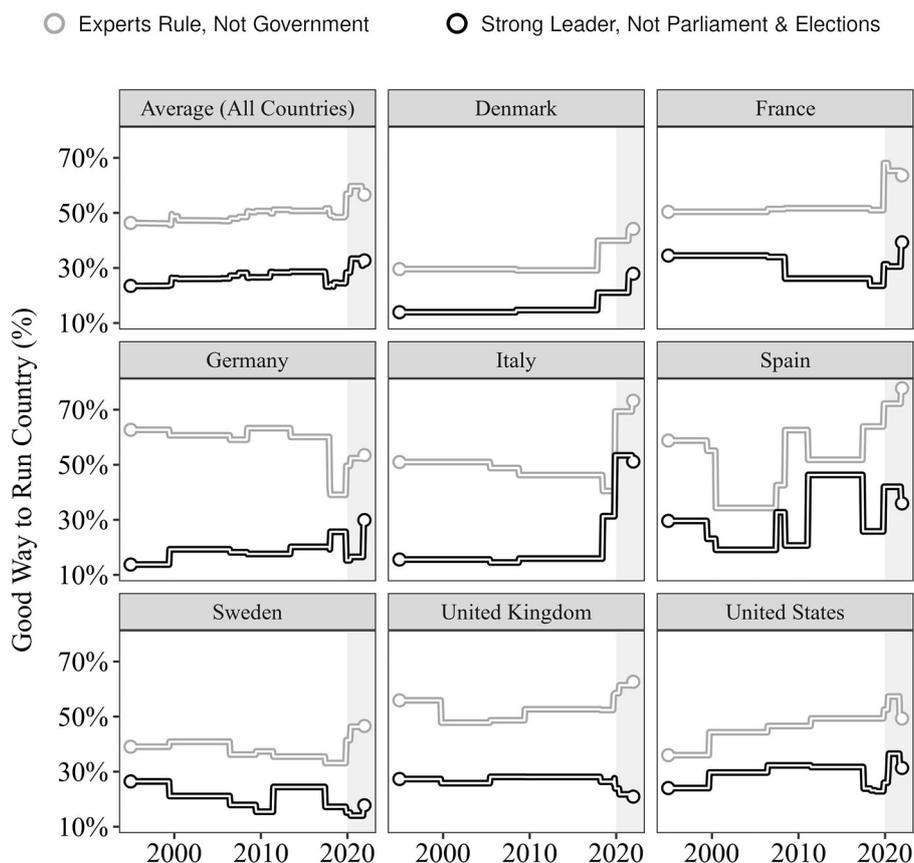


FIGURE 1 Long-Term Trends in Authority Preference and the Pandemic Shift. Source data are from the World Values Survey/European Values Study (1995–2021) and YouGov (2019–21), including fieldwork conducted on behalf of the VOTER Study project (2017–2019) and the Nationscape surveys (2020). The average for all countries is a population-weighted mean over time across the eight cases shown here.

point shift on the strong leader item and a +7.5 percentage point shift on the rule by “experts item” associated with the onset of the pandemic.

While academics disagree over the importance of any change on such items during the decades prior to that point, this earlier fluctuation appears minor compared to the substantial shift that occurred in 2020. This is consistent with the theory that existential security is a critical precondition for the growth and development of pro-democratic attitudes and value orientations and that temporary events that interrupt such security can lead to short-term reversals, even in the context of a broader historical trend toward post-material needs and concerns (Inglehart, 1977; Inglehart et al., 2006; Welzel and Inglehart, 2009; Welzel, 2013).

4.1. Time-series models

While descriptive trends offer an initial basis for inference, we were able to estimate the pandemic effect on authoritarian attitudes using time-series models, in which controls are included for potential confounding factors such as economic circumstances (GDP per capita and economic growth), country-fixed effects to account for country-specific “political cultures,” periods of populist administration in government, and a measure of political instability

(the number of executive office holders during the previous 5 years). The country-year data were aggregated into five-year panels for the pre-pandemic period from 1995 to 2020, with a final panel observation covering data that were collected during the pandemic between 2020 and 2022.

Table 1 presents the results of models estimated using robust standard errors and country-fixed effects. The models utilized both population-weighted and unweighted observations (equal-weight), with dependent variables recoded to 0–1 in relation to whether respondents broadly agree (consider a ‘very good’ or ‘fairly good’ way to run the country) or disagree (consider ‘fairly bad’ or ‘very bad’) with each item. The results were then aggregated to the country-year level (percentage agree).

The results suggest the following conclusions. First, the most evident statistical association is between the onset of the COVID-19 pandemic and deference to technocratic authority, with a *ceteris paribus* estimated increase of 8.6 to 10.5% in the percentage of respondents approving of having ‘experts rule’ from surveys conducted during the pandemic in 2020 and 2021, depending on the range of controls and whether population weights are applied. With respect to a surveyed preference for having a “strong leader,” the pandemic was associated with a much smaller increase from 5.5 to 7.4% above the baseline value, again depending on

TABLE 1 Time-series regressions on authority attitudes.

Dependent variable :	(1) Experts	(2) Experts	(3) Experts	(4) Strong leader	(5) Strong leader	(6) Strong leader
Pandemic (0/1)	0.086** (0.02)	0.108*** −0.03	0.085** (0.03)	0.070† (0.04)	0.053 (0.04)	0.061† (0.03)
Lag Dependent Variable	0.432 (0.30)	0.262 (0.33)	−	0.539† (0.28)	0.611** (0.20)	−
Populist government	0.036 (0.02)	0.052 (0.04)	0.053† (0.03)	0.003 (0.03)	0.019 (0.04)	0.004 (0.03)
GDP per capita, PPP (thousands)	−0.006† (0.00)	−0.004 (0.00)	−0.004 (0.00)	−0.008† (0.00)	−0.006 (0.00)	−0.006 (0.00)
GDP growth rate (%)	−0.011 (0.01)	−0.007 (0.01)	−	−0.005 (0.01)	−0.009 (0.01)	−
Political instability	0.006 (0.02)	−0.003 (0.02)	0.002 (0.02)	0.018 (0.02)	0.009 (0.03)	0.027 (0.03)
Constant	0.512** (0.14)	0.463** (0.16)	0.498*** (0.17)	0.455* (0.19)	0.396* (0.19)	0.448* (0.21)
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Weighted regression	Yes	No	Yes	Yes	No	Yes
Observations	40	40	40	40	40	40
Adj. R-squared	0.583	0.733	0.532	0.429	0.423	0.388

Robust standard errors in parentheses. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.1$.

the model specification, and with an overall weaker significance. Other variables that can predict authoritarian preferences within this country sample include GDP per capita, which is negatively, albeit weakly significantly, associated with the prevalence of such attitudes. In the absence of the lagged dependent variable, populist administration in government is associated with higher levels of support than technocratic (expert) administration, though not with a preference for having a strong leader.

The results also suggest the importance of distinguishing between technocratic and autocratic preferences (that is, favoring experts vis-à-vis favoring a “strong leader”) rather than treating them as a single dimension of authoritarianism (Caramani, 2017; Bertou and Caramani, 2022). First, preferences for expert rule are consistently higher than those for autocratic governance, suggesting a clear semantic difference in how respondents understand these concepts. This is further supported by the observation that, in several societies, specifically, Germany, the United Kingdom, and Sweden, a divergence occurred at the outset of the pandemic, characterized by greater demand for expert governance and yet lower acceptance of being governed by an autocrat.

Second, preferences for expert rule appear to be more sensitive to short-term variation in response to the pandemic compared to autocratic beliefs. This conclusion is also supported by the fact that the lagged dependent variable consistently shows a more significant effect on autocratic preferences than expert preferences. In other words, autocratic leanings are (a) more residual and (b) more glacial than technocratic ones. These findings also support the conclusion that governments have a considerable margin of leverage to increase institutional trust if they demonstrably rely on scientific expertise in their policies during times of crisis.

Finally, it is important to note that these estimated effects inform us only of the immediate impact of the pandemic on public opinion and values rather than its long-term legacy. In addition, country-level averages may obscure the heterogeneous effects of the pandemic within society among diverse demographic groups. For example, even if the majority of individuals responded to the pandemic by rallying behind public authority, a minority may have been motivated to mobilize against public health measures, such as mobility restrictions or vaccine mandates, and hence against government authority more broadly. Thus, despite a general shift toward more technocratic attitudes, there may also be group-specific opposing countertrends that are linked to salient partisan

and social cleavages. This is especially evident in societies such as Brazil or the United States where the response to the pandemic became a divisive partisan issue (Aassve et al., 2022). As the initial shock of the crisis faded, such views may have increased in salience, as evidenced by the moderate decline in support for having “experts” make decisions in 2021 compared to the previous year, possibly due to “pandemic fatigue.”

5. Mortality risk and institutional deference: weekly variation during COVID-19 waves in the United Kingdom

Having examined cross-country changes in authority orientation following the onset of the global coronavirus pandemic, in this section, we offer a more detailed analysis in a single-country context using weekly tracking survey data collected in the United Kingdom by YouGov from November 2019 to January 2021. Each week, a nationally representative sample of the population was polled regarding their evaluation of the country’s political institutions, with surveys spaced across several days. The dataset includes demographic controls and a mood tracker question battery where respondents were asked to report on their emotional states over the past week, including those related to existential fear and anxiety.

As a measure of citizen attitudes toward authority, we used a question that asks respondents about their degree of satisfaction with the political system, namely, whether they consider themselves “on the whole” to be “very satisfied, fairly satisfied, not very satisfied, or not satisfied at all” with the “functioning of democracy” in the country. For ease of interpretation, this information was recoded into a binary variable (satisfied/not satisfied). Rather than measuring citizen demand for (autocratic or technocratic) authority, this item instead reflected citizen sentiment toward *existing* political institutions. Such assessments arise from a complex combination of objective output performance and changes in subjective standards. Because of this latter component, scholars have used this item widely to detect a “decline in deference” in recent decades and the spread of more critical civic and elite-challenging value orientations (Norris, 1999; Inglehart and Welzel, 2005; Dalton and Welzel, 2014; Howe, 2017). In some countries, the decline in deference toward political institutions may be due to an actual deterioration in democratic quality and hence objective performance. However, this trend was also observed in countries, such as Canada, New Zealand, and Australia, where the rise in political discontent does not appear linked to any deterioration in the objective institutional performance of political institutions (Nevitte, 1996; Kanji and Nevitte, 2002; McAllister et al., 2019).

To track how changing public responses relate to rising and falling disease mortality risk cycles, we merged the survey tracking data with corresponding daily data on pandemic severity in the United Kingdom from the Johns Hopkins global COVID-19 database (Dong et al., 2020). This dataset included measures such as the number of daily coronavirus fatalities, diagnoses, hospital admissions, and diagnosis-positive test rates. Among these, we used daily fatalities as our preferred measure of mortality risk. Raw

diagnosis counts were heavily biased by changes in the availability and practice of mass testing, while hospital intensive care unit data were reported only from the middle of the first COVID-19 wave onwards (Pearce et al., 2020).¹

Accordingly, Figure 2 shows the descriptive relationship over time between disease risk (daily COVID-19 fatalities), institutional legitimacy (via reported levels of satisfaction with the functioning of British democracy), and subjective wellbeing (a proxy life satisfaction measure that is based upon reported mood states; see Foa et al., 2022b).

The public opinion in the first year of the coronavirus pandemic showed a notable correlation with the major waves of coronavirus infection. During the first wave of the COVID-19 outbreak in the United Kingdom from March to May of 2020, satisfaction with political institutions rose dramatically, while personal wellbeing declined, disrupting the otherwise positive link between self-satisfaction and system satisfaction. As viral transmissions declined during the summer, both measures saw a steady reversion to their baselines. However, as local clusters of the virus re-appeared in October 2020, political legitimacy increased and life satisfaction decreased, followed by a much larger shift on both indicators during the “winter wave” of the virus in January and February 2021.

5.1. Multilevel models

While descriptive statistics are useful for making initial inferences to better individuate the specific association between viral waves, personality traits, and political beliefs, we then used multilevel models to explore how feelings of existential insecurity interact to produce support for authority during periods of heightened mortality risk. Multilevel models are especially appropriate to this research question, as they are commonly used for longitudinal analyses in which highly period-specific events or processes may dramatically alter the relationships between individual attributes and outcomes of interest (Singer et al., 2003; Skrondal and Rabe-Hesketh, 2004; Steele, 2008; Wright and London, 2009). With respect to causal inference, this approach has a key merit: it means that we can isolate the exact periods and crisis events that trigger a transformation in the relation between two variables of interest – in this case, how personal feelings of insecurity produce a greater rallying effect when they occur in the context of a societal-wide existential threat that is shared by others.

¹ In a country such as the United Kingdom, fatality counts, by contrast, were relatively unbiased by changes in testing regimes because (i) the overwhelming majority of COVID-19 fatalities occurred subsequent to emergency hospital admission and (ii) a practice was implemented early in the pandemic to ensure that all bodies be tested post-mortem for any presence of the virus (Pearce et al., 2020). Daily fatality counts also have the benefit of being the most valid empirical measure of our underlying target concept, namely, the extent of elevated mortality risk that was faced by respondents each day of the survey as a result of the spread of COVID-19.

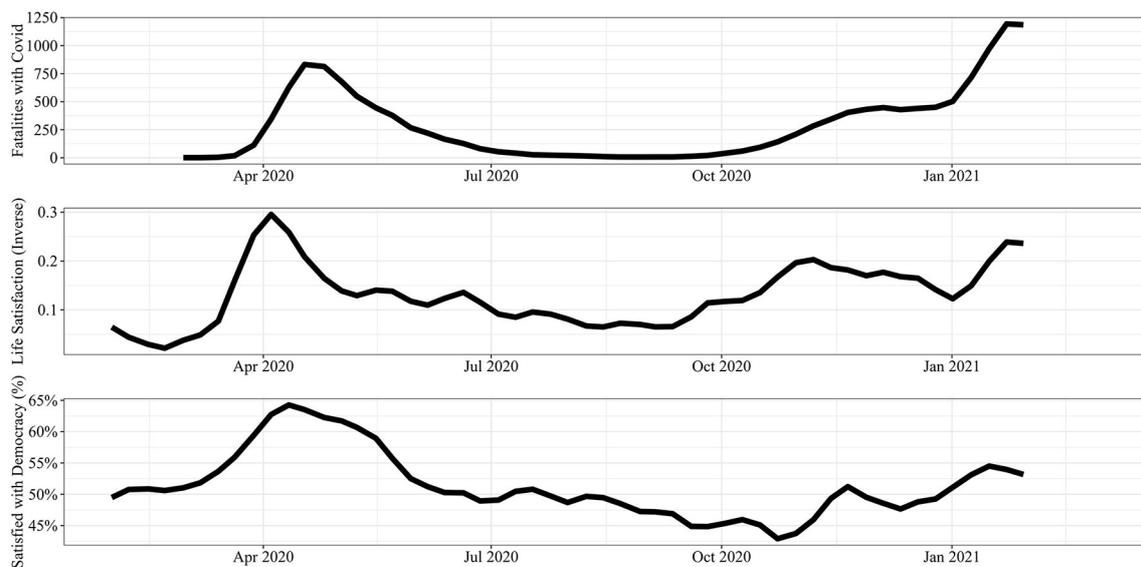


FIGURE 2

Pandemic Intensity, Institutional Satisfaction, and Life Dissatisfaction. Weekly trends across three variables in the United Kingdom: the number of fatalities among individuals diagnosed with COVID-19 (top); levels of life dissatisfaction (inverse life satisfaction; middle); and levels of surveyed satisfaction with the functioning of democracy in the United Kingdom (bottom), 2020–21. As disease prevalence increases, institutional confidence among citizens also increases, even as subjective wellbeing declines. For ease of interpretation, slopes are plotted using an 8-week smoothing function.

We, therefore, estimated multilevel models with random slopes by survey week, according to the standard specification:

$$SWD_i = X_i\beta + S_i s_i + W_j w_j + \varepsilon_i$$

$$SWD_{ij} = (\beta_{0j} + X_{0j}) + \beta_1 A_{ij} + \varepsilon_{ij},$$

where SWD_{ij} represents the score of subject i on the satisfaction with democracy measure in period j , X_{0j} denotes the random effects design matrix consisting of ones in the first column (corresponding to the estimation of random slope intercepts), second-level variables in the other columns, β_{0j} denotes the set of random slope coefficients for each time period j , and A_{ij} represents a matrix of first-level independent variables including a constant term, for which time-invariant coefficients are provided by the vector β_1 .

For the sake of parsimony and ease of estimation, we included socio-demographic variables as lower-order terms and random slopes. We focused on three variables of personal effect to examine their changing relationship with authority deference over time. These variables are as follows: (i) reported feelings of fear (whether a respondent has felt “scared” or “stressed” in the past week); (ii) behavioral patterns that are indicative of social anxiety (whether a respondent reports that they are checking social media “every day”); and (iii) finally, reported feelings of happiness (whether a respondent reports feeling “happy” or “content” in the past week). The implicit assumption behind this model design is that emotions should be considered as “proximate” determinants of a respondent’s changing personal beliefs and values, whereas socio-demographic attributes function as deep determinants that may have long-term structural associations with authority beliefs. In the short run, socio-demographic attributes are assumed to affect

current attitudes through their connection to emotional shifts, but lasting socio-demographic characteristics should not be estimated simultaneously as random slopes. A variable for the frequency of checking information online is predicated on the hypothesis that such activity, colloquially referred to as “doom-scrolling” (the act of spending excessive amounts of screen time on the absorption of negative news), was both especially prevalent during the pandemic and indicative of experiencing heightened anxiety concerning the possible threat of infections (Buchanan et al., 2021; Ytre-Arne and Moe, 2021; Mannell and Meese, 2022; Price et al., 2022).

The lower-order (fixed effect) coefficients are reported in Appendix Table 1. Consistent with earlier research into the causes of individual-level satisfaction and trust in institutions, these reveal partisan effects on the evaluation of democratic performance (Blais and Gélinau, 2007; Ridge, 2020) and comparable relationships between political satisfaction and demographic variables such as socioeconomic status or age (Schäfer, 2013). Meanwhile, random slopes showing the changing coefficients by week for the effect of different emotional and behavioral patterns upon institutional support are displayed in Figure 3. The top chart in this figure shows changing mortality intensity over time, and the subsequent charts’ random effects slopes by week for each of the higher-order variables included in the model show the covariance of coefficients with waves of heightened or reduced mortality risk that can be easily visualized and inferred.

These findings suggest the following inferences. First, in periods when disease vulnerability was elevated due to the COVID-19 wave (April–May 2020 and October 2020–February 2021), feelings of fear became more positively associated with the tendency to express greater confidence in the country’s political institutions.

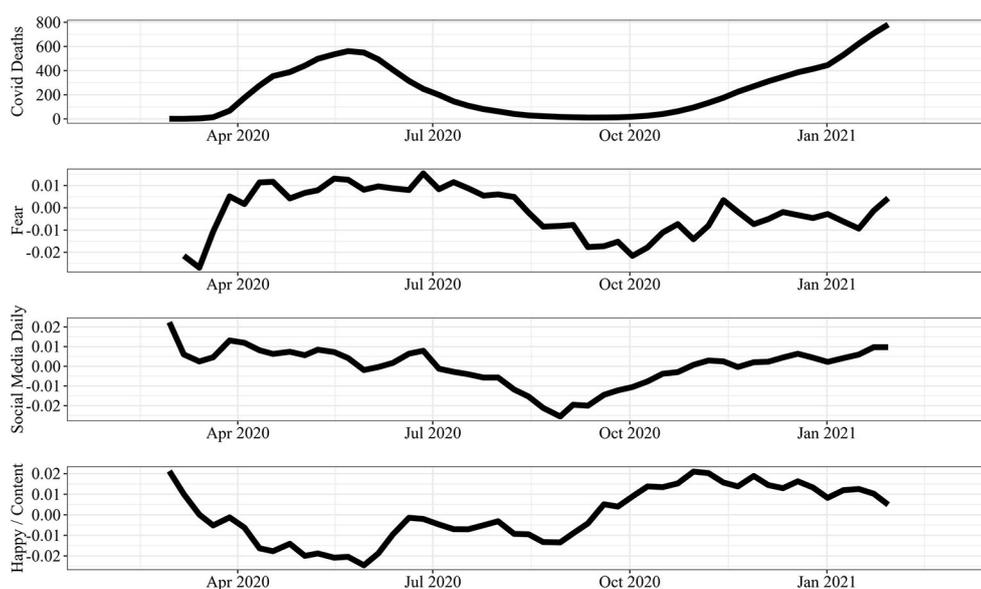


FIGURE 3

Effect of Emotions on Satisfaction: Multilevel Model Random Slopes by Week. Random slopes show the changing association between each variable and satisfaction with the functioning of democracy over time. For ease of visual interpretation, slopes are plotted using an 8-week rolling average smoothing function.

In contrast, when existential risk is lower due to the absence of an infection wave (both prior to the pandemic in February–March 2020 and during August–September of that year), the slope coefficient returns to zero or negative, thus uncoupling current moods from institutional support.

Second, our chosen behavioral measure of coronavirus anxiety – whether a respondent engages in an unusually high frequency of checking social media during the months of the pandemic – also exhibits a similar pattern. This coefficient becomes positive only in periods when the virus is sufficiently spread throughout the general population. During the period in which the diagnosed presence of COVID-19 in society had returned to at or near-zero levels, this coefficient turned negative, which is consistent with the interpretation that such behavior is indicative of existential anxiety during moments of heightened risk (Boursier et al., 2020).

Finally, feelings of happiness are inversely associated with institutional satisfaction in times of acute existential and psychological stress. For this reason, subjective wellbeing may be interpreted as a form of “inoculation” against the fear reflex toward greater deference (Inglehart, 2009). Although happiness and confidence in authority generally correlate positively, happier individuals were *less* likely to express such opinions during the first coronavirus wave, when existential risk was greatest. This finding supports the idea that the relationship between psychological wellbeing, personal autonomy, and defiance is complex and endogenous. It suggests that individual happiness is not solely dependent on personal freedom [as argued by Inglehart et al. (2006)] but that societies which promote individual flourishing also create the conditions for a healthy, contentious, and democratic civic space (Welzel and Dalton, 2016, 2017).

6. Discussion

The initial analysis of changes during the COVID-19 pandemic reveals two significant findings. First, consistent with the “rally-round-the-flag” theory, domestic political legitimacy rose dramatically following the global spread of the novel coronavirus in March and April of 2020. Indeed, within 6 months, the United Kingdom’s satisfaction with the functioning of democracy rose from being close to its lowest level ever recorded in November 2019 to a level that was well above the country’s average level over several decades by April 2020. The impression of decisiveness created by enforcing swift and far-reaching measures may have reinforced the insecurity reflex to rally behind public authority. The focus of “rally-round-the-flag” theories is often on collective pride or shared identity, however, whereas our analysis suggests that fear is a key factor in driving the increase in domestic political legitimacy during the COVID-19 pandemic.

Furthermore, in contrast to the implication that any shift in crisis-induced political legitimacy should prove temporary, we found that the second wave of COVID-19 in the United Kingdom was associated with an equally large positive shift in the covariance of fear emotions with political and institutional support. Despite the perceived “lockdown fatigue” among citizens who were no longer accepting social distancing restrictions and measures, the same association between anxiety emotions and political legitimacy remained strong. We observed a broader cross-country shift in preferences toward scientific and bureaucratic elites (that is, governance by experts), and we found that concerned citizens in Western societies underwent an “authority shift” during the pandemic. This shift was specific and did not gravitate toward traditional or charismatic sources of legitimacy. Instead, citizens tended toward what Max Weber famously termed “legal-rational”

authority, which refers to technocratic and meritocratic institutions of governance.

Third, consistent with the theory that existential insecurity prompts greater authority orientation, we found a dramatic inversion of the normal (positive) association between life satisfaction and the political system. Ordinarily, these two variables are positively associated. As one might expect, individuals who are more positive when evaluating their country's politics and institutions are also more satisfied with their lives. Thus, at the individual level, satisfaction with the political system and satisfaction with life are strongly positively correlated across four decades of data collected by the World Values Survey ($R = 0.20$ across 192,308 joint observations). Moreover, they are also positively correlated ($R = 0.33$) at the country level, suggesting a broader systemic link between institutions that facilitate greater personal well-being and greater satisfaction with the efficacy and functioning of public institutions.

However, this association inverted during the 2020–21 COVID-19 pandemic. Elevated *individual* stress and dissatisfaction became associated with higher levels of political support. These changes, in turn, were associated with the prevalence of coronavirus cases in the general population. A possible psychological explanation for this pattern is as follows. When a crisis that one cannot individually resolve arises, the perceived locus of control shifts from the self to collective institutions and authorities. Consequently, individual life satisfaction decreases while systemic support increases in the hope of collective solutions to the crisis at hand.

This suggests that both ends of the emotional spectrum affect satisfaction with political institutions during crises. At one extreme, in the face of a major societal challenge, fear and anxiety can trigger individuals to seek reassurance through deference to authority. This reaction may be especially prominent when confronting suddenly occurring crises of a sweeping nature, such as natural disasters or pandemics, which require rapid and centralized coordination of resources and behavior to react effectively (Serikbayeva et al., 2021). At the other end of the emotional spectrum, feelings of happiness and contentment during crisis periods are less associated with political deference than would normally be the case, perhaps due to feelings of greater confidence and control in one's personal domain. This may also help explain a long-standing cross-country paradox with respect to levels of satisfaction with the political system: countries whose political institutions have the highest levels of popular approval include *both* some of the world's existentially *least* secure low-income societies, such as Rwanda or Cambodia, and some of the existentially *most* secure *high*-income democracies, such as Sweden or Norway, whose welfare systems minimize individual fatality risks as much as possible with institutions.

Such observations, however, are logical from a locus of control perspective. The response of individuals to external challenges, such as disease, poverty, or violence, is determined by the options available through their society's formal and informal institutions. In individualist cultures, these options may include self-treatment, self-insurance, or self-defense, whereas in collectivist societies, this may involve communal structures such as the family, the local community, or the state. The reflex to rally behind authority occurs when the individualist pathway proves inadequate, especially in cases where a collective action problem arises that cannot be resolved through individual agency alone. In such

circumstances, individuals facing dire existential conditions will experience weaker feelings of life control. Thus, they are more prone to transferring their hopes toward authority systems and representatives, generating collectivist authority beliefs.

7. Conclusion

In his political science classic, *The Silent Revolution: Changing Values and Styles Among Western Publics* (1977), Ronald Inglehart offered two hypotheses to explain value-change in global societies: a socialization hypothesis and a scarcity hypothesis. According to the scarcity hypothesis, people tend to value what is rare to them at any given time, which historically has been physical and material security. Therefore, societies can only progress slowly toward post-materialist values as new generations take economic and social development for granted. However, if this comfort is undermined, there is a risk of reverting to security-oriented beliefs (Inglehart et al., 2006; Inglehart, 2018).

In 2020 and 2021, the global coronavirus pandemic provided a unique opportunity to test this hypothesis in a quasi-experiment. In the space of a few months, people across the globe were faced with the prospect of infection by a new and deadly pathogen with a mortality rate which was estimated initially at 4% (Baud et al., 2020). Moreover, the pandemic hit hardest in precisely those parts of the world where existential security should be greatest – high-income societies such as Italy, the United Kingdom, or the United States, all of which experienced excess mortality rates significantly above the global average (Ritchie et al., 2020). In addition to this, infection and mortality rates were elevated among people with low incomes and a number of socially privileged demographics, including men, the upper-middle aged, and the socially mobile (Rahman et al., 2020; Qin et al., 2022).

The results of this experiment confirm Inglehart's thesis. In Western European societies hit by the pandemic, we observed a significant increase in authority demand. Our analysis of daily data from the United Kingdom confirms that individuals' feelings during each viral wave were associated with increased confidence in governing political institutions. Regarding the socialization hypothesis, we generally assume that the dynamics of human values, especially the authoritarian-vs-liberal dimension, involve glacial and cyclical elements of change (Welzel, 2013: 199, Figure 10.3). People raised under more secure conditions tend to support liberal values at a higher baseline throughout their lives; societal values only change gradually due to generational replacement. The persistence of such baselines does not mean, however, that people's support for authoritarian or liberal values is entirely fixed over time. Instead, recurrent events that diminish or enhance feelings of existential security (most notably linked to the economic cycle) cause momentary adjustments that lower or heighten their support for authoritarian/liberal values. The general principle of these momentary adjustments is the same existential (in)security logic that also governs baseline differences in values: shifts toward authoritarianism under increased feelings of insecurity and opposite shifts toward liberalism under reduced insecurity. This dynamic is ongoing, following the cyclicity of recurrent events, and operates within the margin of normalcy.

However, external shocks such as wars, disasters, and epidemics are so significant in their impact that they fall beyond the boundaries of normalcy. Consequently, rapid liberal-to-authoritarian shifts in values triggered by sudden increases in existential insecurity should also be exceptional in scope in the wake of disruptive external shocks. A largely unanswered question in this context is how lasting a sudden liberal-to-authoritarian shift in values can be when the amplitude of this shift exceeds what is typical during normal downcycles in felt existential security.

As a result, our findings present important updates to the literature on fundamental attitudes and authority orientation. In particular, while studies on “political culture” have viewed fundamental attitudes on the nature or choice of political authority as being fairly glacial over time, our study refielded long-standing survey items on authoritarian attitudes repeatedly during a period of sudden and large-scale risk events. We found that these events dramatically altered societal attitudes during a defined period of crisis. However, it remains to be seen whether these changes will translate into durable cohort effects or reflect a short-term effect that may already have faded. Filling this gap should be a priority on the future research agenda.

Data availability statement

The data analyzed in this study is subject to the following licenses/restrictions: Aggregate data collected by the World Values Survey/European Values Study, the YouGov/VOTER Study, and Nationscape are in the public domain, and can be found on the respective project websites included in the references. Raw individual-level datasets from the YouGov Great Britain tracking poll were provided by the YouGov-Cambridge Centre for Public Opinion Research.

Author contributions

Conceptualization, writing–review and editing, literature review, and writing–original draft: RF and CW. Visualization, empirical models, and data curation: RF. All authors contributed to the article and approved the submitted version.

References

- Aassve, A., Capezzone, T., Cavalli, N., and Conzo, P. (2022). Trust at the times of coronavirus: Longitudinal evidence from the United States. *SocArXiv [Preprint]*. doi: 10.31235/osf.io/vwzk7
- Algan, Y., Cohen, D., Davoine, E., Foucault, M., and Stantcheva, S. (2021). Trust in scientists in times of pandemic: panel evidence from 12 countries. *Proc. Nat. Acad. Sci.* 118, e2108576118. doi: 10.1073/pnas.2108576118
- Amat, F., Arenas, A., Falcó-Gimeno, A., and Muñoz, J. (2020). Pandemics meet democracy. Experimental evidence from the COVID-19 crisis in Spain. *SocArXiv [Preprint]*. doi: 10.31235/osf.io/dkusw
- Baez, J. E., and Santos, I. V. (2007). *Children's Vulnerability to Weather Shocks: A Natural Disaster as a Natural Experiment*. New York, NY: Social Science Research Network.
- Baud, D., Qi, X., Nielsen-Saines, K., Musso, D., Pomar, L., Favre, G., et al. (2020). Real estimates of mortality following COVID-19 infection. *Lancet Inf. Diseases* 20, 773. doi: 10.1016/S1473-3099(20)30195-X
- Bayerlein, M., Boese, V. A., Gates, S., Kamin, K., and Murshed, S. M. (2021). Populism and Covid-19: how populist governments (mis) handle the pandemic. *J. Polit. Inst. Polit. Econ.* 2, 389–428. doi: 10.1561/113.00000043
- Bertsou, E., and Caramani, D. (2022). People haven't had enough of experts: Technocratic attitudes among citizens in nine European democracies. *Am. J. Polit. Sci.* 66, 5–23. doi: 10.1111/ajps.12554
- Blais, A., and Gélinau, F. (2007). Winning, losing and satisfaction with democracy. *Polit. Stu.* 55, 425–441. doi: 10.1111/j.1467-9248.2007.00659.x

Funding

We acknowledge support by the German Research Foundation (DFG) and the Open Access Publication Fund of Leuphana University Lüneburg.

Acknowledgments

The authors would like to thank Joel Rogers de Waal for his commitment to the project, and Stephan Shakespeare for providing support to the YouGov-Cambridge Centre for Public Opinion Research. The views expressed in this article are solely those of the authors and do not necessarily reflect the opinions of YouGov Plc. We would also like to thank the reviewers for their comments and suggestions, and assistance in improving the manuscript. We also acknowledge support by the German Research Foundation (DFG) and the Open Access Publication Fund of Leuphana University Lüneburg in making the publication of this work possible.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpos.2023.1117550/full#supplementary-material>

- Boursier, V., Gioia, F., Musetti, A., and Schimmenti, A. (2020). Facing loneliness and anxiety during the COVID-19 isolation: the role of excessive social media use in a sample of Italian adults. *Front. Psychiatr.* 11, 586222. doi: 10.3389/fpsy.2020.586222
- Boxell, L., Conway, J., Druckman, J. N., and Gentzkow, M. (2021). Affective polarization did not increase during the coronavirus pandemic (No. w28036). *Q. J. Polit. Sci.* doi: 10.2139/ssrn.3785328
- Branas-Garza, P., Jorrat, D., Alfonso-Costillo, A., Espin, A. M., García, T., and Kovářík, J. (2020). Exposure to the Covid-19 pandemic and generosity. *PsyArXiv [Preprint]*. Available online at: <https://psyarxiv.com/6ktuz>
- Buchanan, K., Aknin, L. B., Lotun, S., and Sandstrom, G. M. (2021). Brief exposure to social media during the COVID-19 pandemic: doom-scrolling has negative emotional consequences, but kindness-scrolling does not. *PLoS ONE* 16, e0257728. doi: 10.1371/journal.pone.0257728
- Bufoacchi, V. (2020). *Is Coronavirus Bad for Populism?* New York, NY: 21st Century Global Dynamics Initiative.
- Calvo, R., Arcaya, M., Baum, C. F., Lowe, S. R., and Waters, M. C. (2015). Happily ever after? Pre-and-post disaster determinants of happiness among survivors of Hurricane Katrina. *J. Happiness Stu.* 16, 427–442. doi: 10.1007/s10902-014-9516-5
- Caramani, D. (2017). Will vs. reason: the populist and technocratic forms of political representation and their critique to party government. *Am. Polit. Sci. Review* 111, 54–67. doi: 10.1017/S000305516000538
- Cashdan, E., and Steele, M. (2013). Pathogen prevalence, group bias, and collectivism in the standard cross-cultural sample. *Human Nature* 24, 59–75. doi: 10.1007/s12110-012-9159-3
- Chen, S. X., Ng, J. C., Hui, B. P., Au, A. K., Lam, B. C., Wu, C. (2022). Global consciousness predicts behavioral responses to the COVID-19 pandemic: empirical evidence from 35 cultures. *Soc. Psychol. Pers. Sci.* 27, 19485506221124392. doi: 10.1177/19485506221124392
- Dalton, R. J., and Welzel, C. (2014). *The Civic Culture Transformed: From Allegiant to Assertive Citizens*. Cambridge, England: Cambridge University Press.
- Daniel, E., Bardi, A., Fischer, R., Benish-Weisman, M., and Lee, J. A. (2022). Changes in personal values in pandemic times. *Social Psychological and Personality Science* 13, 572–582. doi: 10.1177/19485506211024026
- Daniele, G., Martinangeli, A. F., Passarelli, F., Sas, W., and Windsteiger, L. (2020). Wind of change? Experimental survey evidence on the Covid-19 shock and socio-political attitudes in Europe. *Covid Econ.* 44, 72–153. doi: 10.2139/ssrn.3671674
- Delhey, J., Steckermeier, L. C., Boehnke, K., Deutsch, F., Eichhorn, J., Kühnen, U., et al. (2021). *A Virus of Distrust?: Existential Insecurity and Trust During the Coronavirus Pandemic*. Magdeburg: Otto-von-Guericke-University Magdeburg.
- Democracy Fund Voter Study Group. (2021). *Views of the Electorate Research Survey*. Washington, DC: Voter Study Group.
- Devine, D., Gaskell, J., Jennings, W., and Stoker, G. (2021). Trust and the coronavirus pandemic: What are the consequences of and for trust? An early review of the literature. *Polit. Stu. Rev.* 19, 274–285. doi: 10.1177/1478929920948684
- Dong, E., Du, H., and Gardner, L. (2020). An interactive web-based dashboard to track COVID-19 in real time. *Lancet Infect Dis.* 20, 533–4. doi: 10.1016/S1473-3099(20)30354-6
- Edelman Trust Institute (2021). *Edelman Trust Barometer 2021 Global Report*. Available online at: <https://www.edelman.com/sites/g/files/aatuss191/files/2021-03/2021%20Edelman%20Trust%20Barometer.pdf>
- Esaiasson, P., Sohlberg, J., and Gherstti, M., and Johansson, B. (2020). How the coronavirus crisis affects citizen trust in institutions and in unknown others: evidence from 'the Swedish experiment'. *Eur. J. Polit. Res.* 60, 1–13. doi: 10.31235/osf.io/6yw9r
- Faulkner, J., Schaller, M., Park, J. H., and Duncan, L. A. (2004). Evolved disease-avoidance mechanisms and contemporary xenophobic attitudes. *Group Proc. Intergroup Relat.* 7, 333–353. doi: 10.1177/1368430204046142
- Feldman, S., and Stenner, K. (1997). Perceived threat and authoritarianism. *Polit. Psychol.* 18, 741–770. doi: 10.1111/0162-895X.00077
- Fincher, C. L., and Thornhill, R. (2012). Parasite-stress promotes ingroup assortative sociality: the cases of strong family ties and heightened religiosity. *Behav. Brain Sci.* 35, 61–79. doi: 10.1017/S0140525X11000021
- Foa, R. S., Fabian, M., and Gilbert, S. (2022b). Subjective well-being during the 2020–21 global coronavirus pandemic: evidence from high frequency time series data. *PLoS ONE* 17, e0263570. doi: 10.1371/journal.pone.0263570
- Foa, R. S., Inglehart, R., and Ponarin, E., and Karabchuk, T. (2018). Set-point theory and societal collapse: the case of Russia. *J. Happiness Studies* 19, 1639–1656. doi: 10.1007/s10902-017-9888-4
- Foa, R. S., Romero-Vidal, X., Klassen, A. J., Fuenzalida Concha, J., Quednau, M., Fenner, L. S., et al. (2022a). *The Great Reset: Public Opinion, Populism, and the Pandemic*. Cambridge, England: Bennett Institute for Public Policy.
- Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., et al. (2020). Mental health problems and social media exposure during COVID-19 outbreak. *PLoS ONE* 15, 924. doi: 10.1371/journal.pone.0231924
- Goldfinch, S., Taplin, R., and Gauld, R. (2021). Trust in government increased during the Covid-19 pandemic in Australia and New Zealand. *Austr. J. Public Admin.* 80, 3–11. doi: 10.1111/1467-8500.12459
- Grimalda, G., Buchan, N. R., Ozturk, O. D., Pinate, A. C., Urso, G., Brewer, M. B., et al. (2021). Exposure to COVID-19 is associated with increased altruism, particularly at the local level. *Sci. Rep.* 11, 18950. doi: 10.1038/s41598-021-97234-2
- Howe, P. (2017). Eroding norms and democratic deconsolidation. *J. Democracy* 28, 15–29. doi: 10.1353/jod.2017.0061
- Inglehart, R. (2009). *Democracy and Happiness: What Causes What?*. In *Happiness, Economics and Politics*. London: Edward Elgar Publishing.
- Inglehart, R., Haerpfer, C., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano, J., et al. (2020). *World Values Survey: All Rounds – Country-Pooled Datafile*. Madrid; Vienna: JD Systems Institute & WWSA Secretariat. Available online at: <http://www.worldvaluessurvey.org/WVSDocumentationWVL.jsp>
- Inglehart, R. F. (1997). *Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Societies*. Princeton, NJ: Princeton University Press.
- Inglehart, R. F. (2018). Modernization, existential security, and cultural change. *Handb. Adv. Culture Psychol.* 7, 1. doi: 10.1093/oso/9780190879228.003.0001
- Inglehart, R. F., Borinskaya, S., Cotter, A., Harro, J., Inglehart, R. C., Ponarin, E., et al. (2014). Genetic factors, cultural predispositions, happiness and gender equality. *J. Res. Gender Studies* 4, 32.
- Inglehart, R. F., Moaddel, M., and Tessler, M. (2006). Xenophobia and ingroup solidarity in Iraq: a natural experiment on the impact of insecurity. *Pers. Polit.* 4, 495–505. doi: 10.1017/S1537592706060324
- Inglehart, R. F., and Welzel, C. (2005). *Modernization, Cultural Change, and Democracy: The Human Development Sequence*. Cambridge, England: Cambridge University Press.
- Inglehart, R. F. (1977). *The Silent Revolution: Changing Values and Political Styles Among Western Publics*. Princeton, NJ: Princeton University Press.
- Johansson, B., Hopmann, D. N., and Shehata, A. (2021). When the rally-around-the-flag effect disappears, or: when the COVID-19 pandemic becomes "normalized". *J. Elect. Public Opin. Parties.* 31, 321–334. doi: 10.1080/17457289.2021.1924742
- Kanji, M., and Nevitte, N. (2002). Authority orientations and political support: A cross-national analysis of satisfaction with governments and democracy. *Comp. Sociol.* 1, 387–412.
- Kritzing, S., Foucault, M., Lachat, R., Partheymüller, J., Plescia, C., Brouard, S., et al. (2021). 'Rally round the flag': the COVID-19 crisis and trust in the national government. *West European Politics* 44, 1205–1231. doi: 10.1080/01402382.2021.1925017
- Lavezzolo, S., and Ramiro, L., and Fernández-Vazquez, P. A. B. L. O. (2021). Technocratic attitudes in COVID-19 times: change and preference over types of experts. *Eur. J. Polit. Res.* 61, 1123–1142. doi: 10.1111/1475-6765.12491
- Lazarev, E., Sobolev, A., Soboleva, I. V., and Sokolov, B. (2014). Trial by fire: a natural disaster's impact on support for the authorities in rural Russia. *World Politics* 66, 641–668. doi: 10.1017/S0043887114000215
- Mahdavian, F., Wiens, M., Platt, S., and Schultmann, F. (2020). Risk behaviour and people's attitude towards public authorities—A survey of 2007 UK and 2013 German floods. *Int. J. Disaster Risk Reduc.* 49, 101685. doi: 10.1016/j.ijdrr.2020.101685
- Mannell, K., and Meese, J. (2022). From doom-scrolling to news avoidance: limiting news as a wellbeing strategy during COVID lockdown. *J. Studies* 23, 302–319. doi: 10.1080/1461670X.2021.2021105
- McAllister, I., Sheppard, J., Bean, C., Gibson, R., Makkai, T., Cameron, S. (2019). *Australian Election Study 2019*. Canberra, ACT: Australian Data Archive, The Australian National University.
- Mede, N. G., and Schäfer, M. S. (2022). Science-related populism declining during the COVID-19 pandemic: a panel survey of the Swiss population before and after the Coronavirus outbreak. *Public Understanding Sci.* 31, 211–222. doi: 10.1177/09636625211056871
- Mortensen, C. R., Becker, D. V., Ackerman, J. M., Neuberger, S. L., and Kenrick, D. T. (2010). Infection breeds reticence: the effects of disease salience on self-perceptions of personality and behavioral avoidance tendencies. *Psychol. Sci.* 21, 440–447. doi: 10.1177/0956797610361706
- Mueller, J. E. (1970). Presidential popularity from Truman to Johnson. *Am. Polit. Sci. Rev.* 64, 18–34. doi: 10.2307/1955610
- Mueller, J. E. (1973). *War, Presidents, and Public Opinion*. New York, NY: Wiley.
- Murray, D. R., Trudeau, R., and Schaller, M. (2011). On the origins of cultural differences in conformity: four tests of the pathogen prevalence hypothesis. *Person. Soc. Psychol. Bulletin* 37, 318–329. doi: 10.1177/0146167210394451
- Navarrete, C. D., and Fessler, D. M. (2006). Disease avoidance and ethnocentrism: The effects of disease vulnerability and disgust sensitivity on intergroup attitudes. *Evol. Hum. Behav.* 27, 270–282. doi: 10.1016/j.evolhumbehav.2005.12.001

- Neavitt, N. (1996). *The Decline of Deference: Canadian Value Change in Cross National Perspective*. Toronto, Canada: University of Toronto Press.
- Norris, P. (1999). *Critical Citizens: Global Support for Democratic Government*. Oxford: Oxford University Press.
- Oneal, J. R., and Bryan, A. L. (1995). The rally'round the flag effect in US foreign policy crises, 1950–1985. *Political Behav.* 17, 379–401. doi: 10.1007/BF01498516
- Pearce, N., Vandenbroucke, J. P., VanderWeele, T. J., and Greenland, S. (2020). Accurate statistics on COVID-19 are essential for policy guidance and decisions. *Am. J. Public Health* 110, 949–951. doi: 10.2105/AJPH.2020.305708
- Price, M., Legrand, A. C., Brier, Z. M. F., van Stolk-Cooke, K., Peck, K., Dodds, P. S., et al. (2022). Doomscrolling during COVID-19: The negative association between daily social and traditional media consumption and mental health symptoms during the COVID-19 pandemic. *Psychol. Trauma: Theor. Res. Pract. Policy*. 14, 1338–1346. doi: 10.1037/tra0001202
- Qin, M., Evandrou, M., Falkingham, J., and Vlachantoni, A. (2022). Did the socioeconomic gradient in depression in later-life deteriorate or weaken during the COVID-19 pandemic? New evidence from England using path analysis. *Int. J. Environ. Res. Public Health* 19, 6700. doi: 10.3390/ijerph19116700
- Rahman, M. M., Thill, J. C., and Paul, K. C. (2020). COVID-19 pandemic severity, lockdown regimes, and people's mobility: Early evidence from 88 countries. *Sustainability* 12, 9101. doi: 10.3390/su12219101
- Ridge, H. M. (2020). Enemy mine: negative partisanship and satisfaction with democracy. *Political Behav.* 1–25. doi: 10.1007/s11109-020-09658-7
- Ritchie, H., Mathieu, E., Rod s-Guirao, L., Appel, C., Giattino, C., Ortiz-Ospina, E., et al. (2020). *Coronavirus Pandemic (COVID-19). Our World in Data*.
- Sch fer, A. (2013). *Affluence, inequality and Satisfaction With Democracy*. London: Routledge.
- Schraff, D. (2021). Political trust during the Covid-19 pandemic: Rally around the flag or lockdown effects?. *Eur. J. Polit. Res.* 60, 1007–1017. doi: 10.1111/1475-6765.12425
- Serikbayeva, B., Abdulla, K., and Oskenbayev, Y. (2021). State capacity in responding to COVID-19. *Int. J. Public Admin.* 44, 920–930. doi: 10.1080/01900692.2020.1850778
- Singer, J. D., Willett, J. B., and Willett, J. B. (2003). *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*. Oxford, England: Oxford University Press.
- Skrondal, A., and Rabe-Hesketh, S. (2004). *Generalized Latent Variable Modeling: Multilevel, Longitudinal, and Structural Equation Models*. London: Chapman and Hall/CRC.
- Steele, F. (2008). Multilevel models for longitudinal data. *J. Royal Stat. Soc. Series A* 171, 5–19. doi: 10.1111/j.1467-985X.2007.00509.x
- Tausanovitch, C., and Vavreck, L. (2021). *Democracy Fund + UCLA Nationscape Project*. Available online at: <https://www.voterstudygroup.org/data/nationscape> (accessed January 20, 2023).
- Thomson, B. (2020). The COVID-19 pandemic: a global natural experiment. *Circulation* 142, 14–16. doi: 10.1161/CIRCULATIONAHA.120.047538
- Thornhill, R., and Fincher, C. L. (2014). The parasite-stress theory of sociality, the behavioral immune system, and human social and cognitive uniqueness. *Evol. Behav. Sci.* 8, 257. doi: 10.1037/ebs0000020
- van Leeuwen, E., and T uber, S. (2012). Outgroup helping as a tool to communicate ingroup warmth. *Person. Soc. Psychol. Bulletin* 38, 772–783. doi: 10.1177/0146167211436253
- Wachtler, B., Michalski, N., Nowossadeck, E., Diercke, M., Wahrendorf, M., Santos-H vener, C., et al. (2020). Socioeconomic inequalities and COVID-19 - A review of the current international literature. *J. Health Monit.* 5(Suppl 7), 3–17. doi: 10.25646/7059
- Welzel, C. (2013). *Freedom Rising*. Cambridge, England: Cambridge University Press.
- Welzel, C., and Dalton, R. J. (2016). *The secret of better government? Citizens Who Complain*. England: Democratic Audit UK.
- Welzel, C., and Dalton, R. J. (2017). Cultural change in Asia and beyond: from allegiant to assertive citizens. *Asian J. Comp. Politics* 2, 112–132. doi: 10.1177/2057891116675978
- Welzel, C., and Inglehart, R. F. (2009). Political culture, value change, and mass beliefs. *Democratization* 127–144. doi: 10.1093/hepl/9780199233021.003.0009
- Winkler, M. (2021). *Do Disasters Affect the Tightness of Social Norms?* Available online at: https://static1.squarespace.com/static/6012d580037eab74e6a1e7dd/t/6038022b45dcad582f8473be/1614283345510/Winkler_jmp.pdf (accessed January 20, 2023).
- World Health Organization. (2022). *World Health Statistics 2022: Monitoring Health for the SDGs, Sustainable Development Goals*. Geneva, Switzerland: World Health Organization.
- Wright, D. B., and London, K. (2009). Multilevel modelling: beyond the basic applications. *Br. J. Mathe. Stat. Psychol.* 62, 439–456. doi: 10.1348/000711008X327632
- You, Y., Huang, Y., and Zhuang, Y. (2020). Natural disaster and political trust: a natural experiment study of the impact of the Wenchuan earthquake. *Chinese J. Sociol.* 6, 140–165. doi: 10.1177/2057150X19891880
- Ytre-Arne, B., and Moe, H. (2021). Doomscrolling, monitoring and avoiding: news use in COVID-19 pandemic lockdown. *Journalism Stu.* 22, 1739–1755. doi: 10.1080/1461670X.2021.1952475