

Pandemic threat and authoritarian attitudes in Europe: An empirical analysis of the exposure to COVID-19.

Maximilian Filsinger, Institute of Political Science, University of Bern, Bern, Switzerland

Markus Freitag, Institute of Political Science, University of Bern, Bern, Switzerland

Abstract

While analysis of the impact of threatening events has moved from bit player to center stage in political science in recent decades, the phenomenon of pandemic threat is widely neglected in terms of a systematic research agenda. Tying together insights from the behavioral immune system hypothesis and standard political science models of emotional processing, we evaluate whether exposure to the COVID-19 pandemic threat is related to authoritarian attitudes and which emotions do the work. Using 12 samples with over 12,000 respondents from six European countries at two time points (2020 and 2021), we argue that pandemic threats can generate disgust, anger and fear. Our analyses indicate that exposure to the COVID-19 pandemic threat particularly activates fear, which in turn is linked to authoritarian attitudes.

Keywords

Authoritarian attitudes, behavioral immune system, affective intelligence theory, pandemic threat, comparative politics

Corresponding author

Maximilian Filsinger, Institute of Political Science, University of Bern, Fabrikstrasse 8, 3012 Bern, Switzerland.

Email: maximilian.filsinger@unibe.ch

Introduction

The spread of the coronavirus disease-2019 (COVID-19) has produced a crisis unprecedented in modern history (Weible et al., 2020). The Johns-Hopkins-University has counted over five million deaths by January 2022 (Johns Hopkins University, 2022). To that end, the current pandemic poses a serious threat to citizens around the world. Conventional wisdom associates external threats with an increase in authoritarian attitudes, i.e. ‘basic social values or motivational goals that represent different, though related, strategies for attaining collective security at the expense of individual autonomy’ (Duckitt and Bizumic, 2013: 842). Yet, in this respect several questions remain unanswered (Duckitt, 2013). First, with regard to the mechanism that connects threat and authoritarian attitudes, studies have provided inconclusive results with some scholars reporting fear as the driving force (Albertson and Gadarian, 2015; Huddy et al., 2005; Oesterreich, 2005) while others argue that anger or disgust is the main determinant (Marcus et al., 2019; Murray and Schaller, 2016; Vasilopoulos et al., 2018; Vasilopoulos et al., 2019). Second, it remains unclear whether authoritarian attitudes develop in the wake of every threat, or whether there are differences regarding threat situations. Finally, it remains open whether authoritarianism can be treated empirically as a unidimensional concept.

This is the starting point of our investigation.¹ We use the current COVID-19 pandemic to investigate whether pandemic threat is related to authoritarian attitudes among citizens in six European countries. Combining insights from evolutionary psychology and standard political science models of emotional processing, we argue that emotions such as disgust, fear and anger triggered by the perception of this public health threat shape how citizens form their political attitudes. Key to this understanding is that the ‘psychological footprint [of the pandemic] will likely be larger than the medical footprint’ (Taylor, 2019: 23).

We use two original surveys conducted during the second and third COVID-19 waves (November 2020 to January 2021 and April to May 2021) with over 12,000 respondents from France, Germany, Italy, Spain, Switzerland and the United Kingdom (UK). While disgust and anger appear unrelated according to our empirical analyses, we find evidence that the appraisal of the pandemic threat is critical in predicting the fear that it will stimulate and, therefore, the impact that exposure to it will have on authoritarian attitudes. This relationship is particularly evident in Germany, Switzerland and, to a lesser extent, in the UK and Italy but not in France and Spain. It seems that pandemic-induced fear does not translate into authoritarian attitudes in countries with less protection of individual liberties (France and Spain), while in countries with more emphasis on the protection of individual liberties, fearful citizens submit themselves to the protective authority of the state by adopting authoritarian attitudes. Lastly, looking at the subdimensions of authoritarian attitudes, fear mainly affects authoritarian submission, which is often declared as the core of authoritarianism (Passini, 2015).

Overall, our study contributes to the literature in several aspects. First, although the empirical investigation of the impact of threatening events – such as civil war, terrorism, economic recession, and natural disasters – on social and political attitudes has moved from bit player to center stage in political science, the phenomenon of pandemic threat is widely neglected in terms of a systematic research agenda. Second, while the world has been repeatedly hit by pandemics such as Spanish flu, SARS and swine flu, the emergence of COVID-19 now allows to analyze the impact of exposure to a pandemic threat on political preferences in a real-world situation. Third, although political psychologists have focused on neural process theories (Marcus et al., 2000), evolutionary biologists and psychologists have referred to the behavioral immune system to evaluate the impact of threats on social and political attitudes (Murray et al., 2013; Murray and Schaller, 2016; Thornhill et al., 2009). However, these strands of literature have seldom been related to each other. Fourth, in contrast to existing studies that mostly

account for the impact of disgust as one single pathogen avoidance-oriented emotion on political attitudes, we study emotional states more broadly. In this regard, our results show that fear rather than anger and disgust links pandemic threat to authoritarian attitudes. Fifth, unlike most studies that rely on single country studies to study emotional responses to threatening stimuli, we provide a comparative perspective examining the effects of Coronavirus in six European countries which have all been severely affected by the pandemic. Consistent with cautious comments about drawing conclusions based on current COVID-19 research, as well as lessons from the ‘replicability crisis’ in social science, identifying robust, replicable, and generalizable evidence seems critical (Zettler et al., 2022). Because globalization boosts the threat of pandemic emergence and accelerates global disease transmission, this issue demands findings on the politico-psychological consequences of pandemics.

COVID-19 pandemic threat and the inclination towards authoritarianism

In line with the conception of Rosenthal et al. (1989: 10), we define the COVID-19 pandemic as ‘a serious threat to the basic structures or the fundamental values and norms of a system, which under time pressure and highly uncertain circumstances necessitates making vital decisions.’ COVID-19 is threatening because it seems uncontrollable and evokes citizens’ fears of a novel and deadly illness that could spread rapidly among people (Kachanoff et al., 2021). In addition, the pandemic undermines deeply rooted convictions of security, health and welfare (Kachanoff et al., 2021). Such public health crises lead to a variety of uncertainties, for instance, uncertainty about an infection, the success of protective measures, and the duration of the pandemic (Taylor, 2019: 43). Finally, the COVID-19 pandemic triggers a sense of urgency, as time constraints are a defining element marked by the relatively short time in which the virus has spread and induced governmental responses.

Inspecting the current pandemic reveals that the nature of the disease with its rapid human-to-human transmission and potential for fatality is ‘a powerful force in shaping perceptions and behaviours’ of citizens (Albertson and Gadarian, 2015: 20). In this regard, research has evaluated political trust in the wake of the so-called ‘rally round the flag’ effect (Bol et al., 2021; Devine et al., 2021; Erhardt et al., 2021), anti-systemic attitudes and political violence (Bartusevičius et al., 2021), the demand for authoritative policy measures (Amat et al., 2020), attitudes toward democracy (Lupu and Zechmeister, 2021), and political behavior (Iacoella et al., 2021). Although the literature on the COVID-19 pandemic in terms of political orientations and behavior is expanding, the pandemic’s effects on *authoritarian attitudes* remain largely unexplored. This is surprising, since numerous studies have shown there is a relationship between threat and authoritarian orientations for diverse samples and methodologies and in a wide range of contexts (Duckitt, 2013).

To fill this gap, we aim to uncover whether exposure to pandemic threat increases the preference for authoritarian attitudes. Authoritarianism has long been a prominent concept in the social sciences, often viewed as a stable individual difference dimension – the authoritarian personality (Adorno et al., 1950). Yet, in recent years, scholars have swayed from the view that authoritarian attitudes are an expression of personality and now consider that such scales are ‘exclusively attitudinal or ideological in content’ (Duckitt, 2013: 1). In this regard, authoritarian attitudes can be defined as ‘social attitudinal or ideological expressions of basic social values or motivational goals that represent different, though related, strategies for attaining collective security at the expense of individual autonomy’ (Duckitt and Bizumic, 2013: 842). As such, three authoritarian components are identified: (a) attitudes favoring obedience to societal or group authorities and institutions (authoritarian submission); (b) attitudes favoring harsh, coercive social control against the violation of social rules and laws (authoritarian aggression); and (c) attitudes favoring conformity to established traditional, old fashioned social norms,

values, and morality (conventionalism) (Altemeyer, 1981; Duckitt and Bizumic, 2013). This dimension is ultimately directed towards the goal of maintaining traditional lifestyles, norms, and morality (Altemeyer, 1981; Duckitt et al., 2010). Altogether, authoritarian attitudes express a desire for collective security at the expense of individual liberty. In times of threat, authoritarianism offers specific strategies to regain security and is thus likely to be activated by pandemic threat perceptions. For example, research has shown that in countries characterized by a historically higher prevalence of parasitic diseases, people are less individualistic, more likely to conform to majority opinion, respond more negatively toward people who fail to conform, adopt more conservative attitudes, and more strongly endorse ‘binding’ moral values that emphasize group loyalty, obedience, and respect for authority (Murray et al., 2013: 2). Pathogen threat might strengthen the desire for group cohesion, collective security and controlling at the expense of individual freedom, as essential characteristics of authoritarianism (Duckitt and Bizumic, 2013).

Suggestions for the mechanisms behind this are described by two independently developed approaches. First, deriving from the field of evolutionary biology, the behavioral immune system hypothesis has advanced the idea that aside from the physiological immune system, humans developed a behavioral immune system (BIS), which can be described as ‘a motivational system [...] inhibiting contact with disease-causing parasites’ (Murray and Schaller, 2016: 76).² The BIS relies on a complex set of cognitive, affective, and behavioral mechanisms that ultimately help to prevent the spread of infectious diseases. When the BIS perceives an infection risk, it triggers adaptive psychological responses – including the arousal of particular kinds of aversive emotional states – that expedite behavioral avoidance or the demand for control of the infectious disease (Schaller and Park, 2011: 99; Thornhill and Fincher, 2014: 14). Proponents of the behavioral immune system hypothesis argue that perceptions of infectious threats activate specific emotions, particularly disgust, fear, and anger

(Ackerman et al., 2018). These emotional states enable engagement in functionally adaptive behaviors, e.g. policy preferences of infectious disease control and avoidance (Ackerman et al., 2021).

Political psychology accounts support this view when it comes to emotional processing during threatening situations. Drawing on the insights of neuroscience, affective intelligence theory (AIT) posits that three brain systems operate constantly and routinely to sort information we are confronted with, thus leading to feelings of enthusiasm, fear and aversion (anger and disgust). In particular, the latter two emotional states emerge as a response to threat (Marcus et al., 2019). Both aversion (anger and disgust) and fear are neural correlates to different regions of the brain and are activated as responses to distinct kinds of threats (Vasilopoulos et al., 2019; Vasilopoulou and Wagner, 2017; Wagner, 2014). While disgust and anger signal that a threat is harmful to familiar norms and thought practices, anxiety (fear) signifies the extent to which the threat is novel or uncertain. AIT holds that all relevant appraisals are executed simultaneously and largely independently.³ Whichever is the more robust, at any given moment, will determine the course taken (Brader et al., 2010; Marcus et al., 2000).

As for the three emotional states of anger, disgust, and fear, we assume that the novelty of the COVID-19 pandemic evokes primarily the latter, since what is unknown can also be dangerous, disrupt security, and cause uncertainty (Taylor, 2019; Troisi, 2020). Fear ‘occurs when individuals appraise a situation as being unpleasant, highly threatening and uncertain’ (Albertson and Gadarian, 2015: 8). This emotion can drive the adoption of authoritarian attitudes related to a pandemic threat like COVID-19 in several ways: First, fear stimulates people to reduce the risk of becoming infected by favoring risk-averse behavior (Erhardt et al., 2021). In this vein, fearful people approve actions aimed to prevent and to mitigate the danger of infection and create a safer environment. To achieve these objectives, fearful people might change their habits and disregard extant practices (which will likely be ill-suited to novel

circumstances) in the face of uncertainty (Albertson and Gadarian, 2015; Brader and Marcus, 2013; Marcus et al., 2019). They might believe that the successful containment of the pandemic requires following rules, striving for conformist behavior, and punishing deviant actions – all markers of authoritarian governance (Murray et al., 2013). Thus, fear might induce citizens to express authoritarian attitudes that are different from the liberal democratic preferences of normal times but might be better suited to deal with the current threat. Such positions imply the severe punishment for disobedience, a willingness to submit to authority, but also adherence to conformism (Duckitt, 2013; Duckitt and Bizumic, 2013; Murray et al., 2013; Thornhill et al., 2009). In this vein, authoritarianism is regarded as a valid disease-controlling strategy (Murray et al., 2013). Second, another angle on the possible relationship between fear and authoritarianism and one that can be developed in an evolutionary context: Since the survival of the individual happened mostly under a hierarchical conception of social order in human-ancestral populations, an innate fear of (pandemic) threat sets the stage for authoritarian attitudes (Eigenberger, 1998). In sum, we propose that fear triggered by pandemic threat increases the preference for authoritarian attitudes. Thus, our first hypothesis is formulated as follows:

H1: Fear activated by pandemic threat is positively related to authoritarian attitudes.

Moreover, according to the insights of the AIT a threat can not only be perceived as novel and activate fear, but can also be appraised as noxious, triggering anger. Fear motivates people to be careful and avoid harm, anger inspires people to attack and remove the source of action (Huddy et al., 2005; Smith et al., 2008). Or as Marcus et al. (2019: 120) explain: anger, as an emotional state, leads to ‘rallying the troops and launching as ferocious a response as necessary to eliminate the threat’. Anger arises in particular when individuals face challenges to central norms that they consider fundamental to the social or political order. Thus, anger can develop

when the pandemic thwarts goals set by the individual or when the measures taken to combat the pandemic do not meet the expectations of the individual (Marcus et al., 2019). In the context of the current pandemic, there are numerous examples of such challenges, ranging from restrictions on individual liberties to accentuated executive power through emergency laws.

The belief that others cause harm or regulate the sources of a harmful event or threat is a principal component of anger (Steenbergen and Ellis, 2016). This means that anger rather than fear may be the consequence of situations where individuals are frustrated about an actor who should be concerned more about the welfare of the individual (Vasilopoulou and Wagner, 2017; Wagner, 2014). Put differently: ‘Anger serves to launch defenses against challenges to extant core norms by those who threaten’ (Marcus et al., 2019: 119). The protection of these important norms may lead people to disregard the specific benefits or costs of such actions (Marcus et al., 2019). Lerner et al. (2003), for example, show that experimentally primed anger activated more punitive preferences, while fear enhanced preferences for conciliatory policies. Moreover, Marcus et al. (2019) find empirical evidence that anger promotes the support of authoritarian policy preferences. In sum, we propose that anger triggered by pandemic threat fosters authoritarian attitudes. Thus, our second hypothesis is formulated as follows:

H2: Anger stimulated by pandemic threat is positively related to authoritarian attitudes.

Finally, the BIS and psychological research generally understand disgust as an affective response associated with a threat of infection and refer to it as one single pathogen avoidance-oriented emotion (Schaller and Park, 2011: 100). Despite a close intertwining with anger, disgust responses also arise from a distinct and very ancient neural and physiological process that evolved to avoid and dispel contamination (Rozin and Fallon, 1987). As the consciously accessible output of the activated BIS (Aarøe et al., 2017), disgust is said to be an affective-protective reaction designed to ward off contamination within the body and society, and it can

emerge even in the absence of a real or objective threat of contamination (Kam and Estes, 2016). Disgust motivates individuals to stay away from harmful or impure stimuli such as COVID-19 (Brader and Marcus, 2013). Against this background, the tendency towards authoritarianism could be seen as a politico-social effect of disgust-induced discontent in order to avoid infection with COVID-19. Empirical studies show that people adopt more conformist attitudes in conditions where they feel more vulnerable to infection (Murray et al., 2013; Troisi, 2020). Schaller et al. (2015) have explained such a tendency toward conformism by suggesting that in pre-industrial human societies, an individual's ability to learn local norms (particularly rituals related to food preparation and hygiene) and their tendency to show greater aversion to nonconformists likely functioned as an important means of limiting infection risk (Schaller et al., 2015). Social conformity, obedience, intolerance of dissent, and ethnocentrism are characteristic of authoritarian governance. Altogether, we suggest that disgust triggered by pandemic threat promotes authoritarian attitudes. Thus, our third hypothesis is formulated as follows:

H3: Disgust triggered by pandemic threat is positively related to authoritarian attitudes.

Research design

In the following section, the theoretical expectations will be put to an empirical test. To understand the impact of the COVID-19 pandemic, we base our analyses on a detailed quantitative study of pandemic threat in six countries severely hit from the outset by the pandemic. In particular, we rely on two web-based surveys, conducted by the German-based survey company SurveyEngine in France, Germany, Italy, Spain, Switzerland, and the UK, with quota-sampling (i.e. representative with regard to sex, age and education). There were around 1000 respondents per country (12,000 respondents in total) and they received a small monetary incentive to complete the survey. The first survey started in November 2020 and finished in

January 2021. At that time the second wave of the pandemic was in full swing, with the number of infections reaching extreme heights in the countries under study. The second survey was conducted from April 2021 to May 2021. During this period, the countries under study experienced the third wave of the pandemic. As such, the six countries provide a good sample to study the relationship between pandemic threat and authoritarian attitudes as all six countries were severely hit by the COVID-19 pandemic during the second and third wave (Freitag and Hofstetter, 2021). Nevertheless, the countries included in this study offer useful heterogeneity with regard to political, historical, economic and cultural aspects making it more likely that the findings might travel beyond the immediate context studied here. A more detailed description of the survey and descriptive statistics for each country are presented in the Online appendix.

Our main dependent variable is authoritarian attitudes. Authoritarianism has long been a prominent concept in the social sciences, often viewed as a stable individual difference dimension, the authoritarian personality (Adorno et al., 1950). Yet, in recent years, scholars swayed from the perception that authoritarian attitudes are an expression of personality, agreeing that such scales are ‘exclusively attitudinal or ideological in content’ (Duckitt, 2013: 1). In this regard, authoritarian attitudes can be defined as ‘social attitudinal or ideological expressions of basic social values or motivational goals that represent different, though related, strategies for attaining collective security at the expense of individual autonomy’ (Duckitt and Bizumic, 2013: 842). This implies support for traditional moral and ethical claims and a desire for cultural conformity and structure (Duckitt and Bizumic, 2013). Revising the conceptualization of Adorno et al. (1950), Altemeyer (1981) proposed three sub-dimensions of authoritarianism: authoritarian aggression, authoritarian submission and conventionalism. Although authoritarianism is multidimensional, it has mostly been used as a unidimensional construct (Nießen et al., 2019). However, recent studies have shown that such a strong focus on authoritarianism as a superordinate construct cannot account for peculiarities in the

subdimensions of authoritarian attitudes (Clarke et al., 2021; Duckitt et al., 2010; Duckitt and Bizumic, 2013). Thus, we capture authoritarian attitudes through different, though interrelated statements that tap into these three dimensions (Beierlein et al., 2014).

To measure our dependent variable, we use the KSA-3 authoritarian attitudes short scale which records a superordinate dimension as well as the three sub-dimensions: authoritarian aggression, authoritarian subservience and conventionalism, with three items per sub-dimension, resulting in a total of nine items (Beierlein et al., 2014). Both surveys include the same scale to make the results comparable. The scale enables a valid and reliable measurement of authoritarianism in both surveys (Beierlein et al., 2014 see the Online appendix for the exact wording of the items). For the first survey (November 2020-January 2021), the nine items show a Cronbach's alpha of .83 (France: .81, Germany: .86, Italy: .81, Spain: .82, Switzerland: .83, UK: .88).⁴ In the second survey (April-May 2021) the nine items show a Cronbach's alpha of .85 (France: .82, Germany: .86, Italy: .83, Spain: .84, Switzerland: .85, UK: .90).⁵ We follow Beierlein et al. (2014) and combine the items into a summated scale, take the mean and rescale it from 0 to 1 for ease of interpretation.

To measure emotional reactions to the pandemic threat we follow previous research that has measured emotional reactions to threatening events (Marcus et al., 2019). In both surveys, we asked respondents the following question: 'Thinking back to the last weeks and months: How often have you felt the following emotions in relation to a possible infection with the Coronavirus?' Answers ranged from (1) 'Never' to (5) 'Very often'. Thus, our empirical measures for emotions allow us to test the contention that pandemic-elicited negative emotions are related to authoritarian attitudes because these measures are explicitly focused on the COVID-19 pandemic and capture emotional reactions to pandemic threat.

Following previous research, we treat 'anxious' and 'worried' as indicators of fear (Marcus et al., 2019). The two items show a Spearman-Brown reliability coefficient of .75

(France: .52, Germany: .81, Italy: .79, Spain: .67, Switzerland: .75, UK: .87) in the first survey. In the second survey, the Spearman-Brown reliability coefficient is .76 (France: .55, Germany: .83, Italy: .80, Spain: .69, Switzerland: .77, UK: .87). For anger, we use ‘angry’ and ‘hostile’ as indicators in both surveys. In the first survey, the two items show a Spearman-Brown reliability coefficient of .73 (France: .74, Germany: .68, Italy: .75, Spain: .77, Switzerland: .70, UK: .73) and in the second survey of .74 (France: .74, Germany: .69, Italy: .77, Spain: .75, Switzerland: .70, UK: .78). For disgust, we use the item ‘disgusted’ in both surveys. All three emotions are negatively correlated emotional states which are generated by different neural processes in the brain (Survey 1: $r = .50$ (fear-anger) $r = .43$ (fear-disgust) $r = .65$ (anger-disgust); Survey 2: $r = .52$ (fear-anger) $r = .44$ (fear-disgust) $r = .63$ (anger-disgust)). All emotional measures are recoded to range from 0 to 1.

Further, we introduce a range of potential control variables that may influence the relationships we study. We use the same control variables in both surveys to enable a comparison. We include the socio-demographic variables age, sex, education, personal income situation and self-rated health. Research has shown that men have a higher preference for authoritarian attitudes than women, as do people with lower levels of education and income (Duckitt and Bizumic, 2013). We also include one attitudinal measure – left-right self-placement – as research shows that people who situate themselves more on the political right are more likely to have authoritarian preferences (Duckitt and Bizumic, 2013). Thus, not including the ideological position might distort our results.

Methodologically, we rely on ordinary least squares (OLS) regression models with robust standard errors to test the relationship between pandemic threat-induced emotions and authoritarian attitudes. We estimate these models separately for each country in our sample.

Empirical results

We start with the investigation of our hypotheses that anger, disgust and fear elicited by exposure to pandemic threat are positively related to authoritarian attitudes.⁶ Since AIT posits that emotional states are experienced simultaneously, we test the emotions jointly in each regression model as they are correlated rather than orthogonal to each other. Figure 1 shows the relevant coefficients for anger, disgust and fear based on both surveys in all six countries (full models are shown in the Online appendix). With respect to fear, the analyses of the first survey reveal that this emotional state appears to be the prevalent emotion for authoritarian attitudes in Germany ($p=0.00$), Switzerland ($p=0.03$) and the UK ($p=0.00$). In these three countries, fear is significantly and positively related to authoritarian attitudes, indicating that during the second wave of the COVID-19 pandemic, individuals who express higher levels of fear are more inclined to express authoritarian attitudes than those who are less fearful. In France and Italy, the coefficient of fear is positive but does not reach conventional levels of statistical significance ($p=0.31$; $p=0.45$), while in Spain the coefficient is close to zero and not significant ($p=0.92$).

The analyses of the second survey mainly support these findings. Again, fear is positively and significantly related to authoritarian attitudes in Germany ($p=0.00$), Italy ($p=0.01$) and Switzerland ($p=0.00$). Moreover, the coefficients of fear are positive in France and the UK but do not reach conventional levels of statistical significance ($p = 0.15$, $p = 0.16$). The coefficient of fear is insignificant in Spain ($p=0.85$). Overall, our analyses of both surveys reveal that in four of the six countries fearful people express authoritarian attitudes that might offer solutions better suited to deal with the current threat. These imply a severe punishment for disobedience and a willingness to submit to authority, both of which offer collective security at the expense of individual autonomy (Duckitt and Bizumic, 2013; Murray et al., 2013; Thornhill et al., 2009). However, we do not find a significant relationship between fear and authoritarian attitudes in France and Spain in either survey.⁷

Moreover, the results of the first survey indicate that anger is not significantly related to authoritarian attitudes in any of the six countries (see Figure 1 (a)). Thus, there are no indications that pandemic-induced anger is associated with authoritarian attitudes. Although anger is usually associated with raising defenses against threats, the COVID-19 pandemic does not elicit such a response in any of the six countries under study between November 2020 and January 2021. All the more, in the second survey, we consistently find no significant relationship between anger and authoritarian attitudes. To put it bluntly: anger elicited by COVID-19 does not result in an authoritarian response in the six countries under study from November 2020 to January 2021 or in April and May 2021.

Lastly, for disgust as the important emotion advanced by the BIS hypothesis, our analyses also offer mixed results. In the first survey we find that disgust is positively related to authoritarian attitudes in France ($p=0.06$) and Germany ($p=0.08$) but not in the other four countries. However, according to the estimations of the second survey, disgust is not significantly associated with authoritarian attitudes in any of the six countries analyzed.

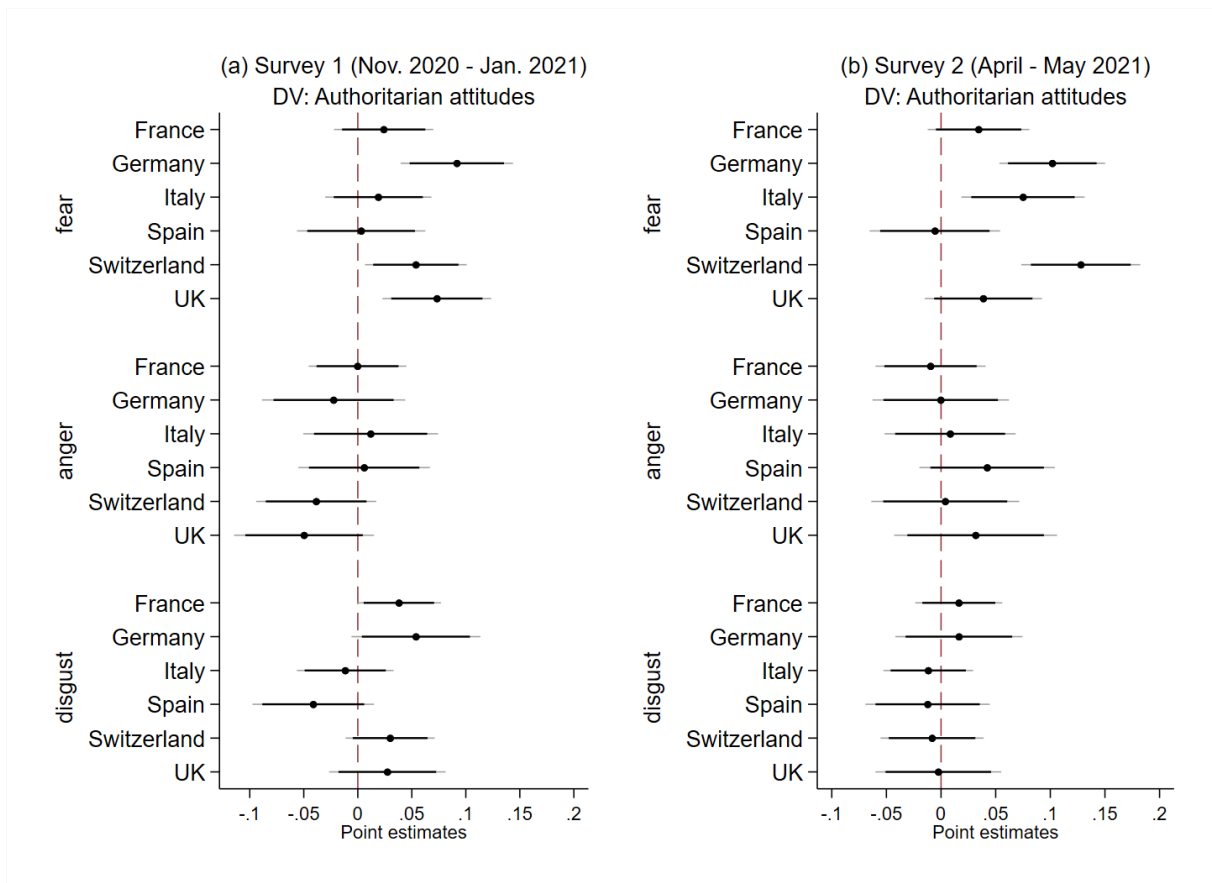


Figure 1. Coefficient plot for the relationship between fear, anger and disgust and authoritarian attitudes based on OLS regression models for (a) Survey 1 (November 2020 – January 2021) and (b) Survey 2 (April – May 2021).

Notes: Estimates are based on the models reported in the Online appendix. These models include all control variables (age, sex, education, income situation, self-rated health and left-right self-placement) and robust standard errors. Displayed are 95% (light gray bars) and 90% (black bars) confidence intervals.

A brief look at the control variables reveals that there are only marginal differences between the countries and the surveys (see the Online appendix). We find that age is positively related to authoritarian attitudes. Moreover, the empirical analyses reveal that in all countries tertiary educated respondents are less likely to express authoritarian attitudes than those with only secondary education or less. Furthermore, the analyses reveal that the left-right self-placement is positively related to authoritarian attitudes. This indicates that people who situate themselves on the right of the political spectrum have higher levels of authoritarian attitudes. These findings are all in line with previous research (Duckitt and Bizumic, 2013). All other

control variables are insignificant or only occasionally reach conventional levels of statistical significance.

We now turn to the relationships between fear, anger, and disgust and the three authoritarian subdimensions. This is an important part of the investigation as it might uncover potentially different relationships between emotional reactions and the different subdimensions (Clarke et al., 2021; Kachanoff et al., 2021). Figure 2 shows the relevant coefficients of the three emotional states sorted by the subdimensions of authoritarian submission, authoritarian conventionalism and authoritarian aggression.

Starting with the first survey and the relationship between fear and *authoritarian submission*, the results show that fear is positively related to submission in Germany ($p=0.00$), Switzerland ($p=0.00$) and the UK ($p=0.00$). In France, the coefficient almost reaches a conventional significance level ($p=0.13$). Thus, in Germany, Switzerland, and the UK, citizens who react with fear to the current pandemic are more likely to willingly submit to authority (Figure 2 (a)). In Italy ($p=0.77$) and Spain ($p=0.57$), the coefficients for the relationship between fear and authoritarian submission are close to zero and do not reach conventional levels of statistical significance. With respect to the second survey, fear is again positively related to authoritarian submission in Germany ($p=0.00$) and Switzerland ($p=0.00$) but also in Italy ($p=0.02$), the UK ($p=0.00$) and almost in France ($p=0.12$), thereby underscoring the findings from the first survey (Figure 2 (d)).

Turning to the relationship between anger and authoritarian submission, i.e. the willingness to submit to an authority and their decisions, it has to be noted that anger is not positively related to this subdimension. On the contrary, in France ($p=0.04$), Germany ($p=0.09$) and the UK ($p=0.03$), anger elicited by the pandemic is negatively and significantly related to authoritarian submission in survey 1 (Figure 2 (a)). In this regard, people who feel angry as a result of the pandemic are less likely to submit to an authority and their decisions in France,

Germany, and the UK. A potential explanation could be that anger is often associated with those who protest against governmental measures to curb infections and those who have less trust in governments (Erhardt et al., 2021). Thus, if respondents are angry, they are less likely to willingly submit to authority but rather trust their own decisions. One potential explanation for these cases are the particularly strong demonstrations against the governmental measures in France and Germany and the special role of individual responsibility in the UK. However, employing data from the second survey, we find no significant relationship between anger and authoritarian submission in any of the countries (Figure 2 (d)).

For the emotional state of disgust, it has to be noted that we do not find any systematic evidence. In the first survey, disgust is positively related to authoritarian submission in Germany ($p=0.04$) but negatively related in Spain ($p=0.05$). In all other countries, our estimations reveal no significant relationships. In the second survey, we do not detect a significant relationship between disgust and authoritarian submission in any of the six countries.

Turning to *authoritarian conventionalism*, our analyses indicate a positive and significant relationship between this subdimension and fear in Germany ($p=0.01$), Italy ($p=0.05$) and almost in Switzerland ($p=0.10$). Here, citizens who react to the pandemic with fear reveal higher levels of conventionalism. We find the same results in the second survey where fear is positively and significantly related to authoritarian conventionalism in Germany ($p=0.03$), Italy ($p=0.01$) and Switzerland ($p=0.00$) (Figure 2 (e)).

In addition, anger is not significantly related to authoritarian conventionalism in any country except the UK ($p=0.08$) in the first survey (Figure 2 (e)). Yet, contrary to our hypothesis, this relationship is negative implying that citizens who experience pandemic-elicited anger are less likely to adhere to conventional norms and habits. The estimations of the second survey show no significant relationships between anger and authoritarian conventionalism (Figure 2 (e)).

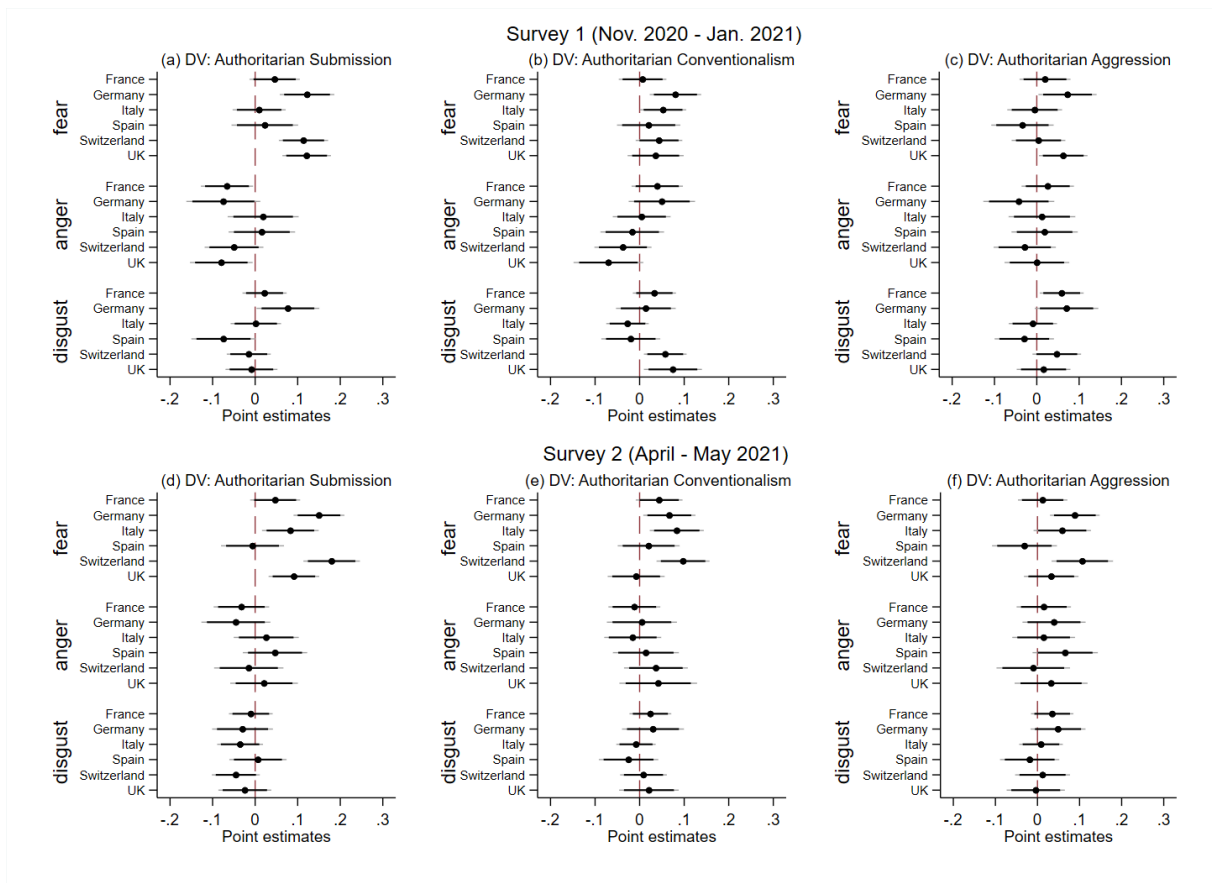


Figure 2. Coefficient plot for the relationship between fear, anger and disgust and authoritarian subdimensions based on OLS regression models for Survey 1 (November 2020 – January 2021) and Survey 2 (April – May 2021).

Notes: Estimates in (a), (b) and (c) use survey 1 (Nov 2020 – Jan 2021) and estimates in (d), (e), (f) use survey 2 (April – May 2021). The base models are reported in the Online appendix and include all control variables (age, sex, education, income situation, self-rated health and left-right self-placement) and robust standard errors. Displayed are 95% (light gray bars) and 90% (black bars) confidence intervals.

For disgust, we can report that this emotional response is positively related to authoritarian conventionalism in Switzerland ($p=0.02$) and the UK ($p=0.03$) but not in any other country in the first survey. In the second survey, there is no significant relationship between disgust and authoritarian conventionalism in any country.

The last subdimension we study is *authoritarian aggression* for which we find the least consistent results. For fear, we report a positive relationship with aggression, i.e. attitudes favoring harsh, coercive social control in Germany ($p=0.04$) and the UK ($p=0.03$) in the first survey (Figure 2(c)). In the second survey, fear is positively related to authoritarian aggression in Germany ($p=0.00$), Italy ($p=0.09$) and Switzerland ($p=0.00$) (Figure 2 (f)). Moreover, in the

first survey, anger is not significantly related to authoritarian aggression in any of the six countries (Figure 2 (c)). This result also holds for the second survey (Figure 2(f)). In the first survey, disgust is positively related to authoritarian aggression in France ($p=0.03$) and Germany ($p=0.07$) but these results do not hold for the second survey.

To sum up, our analyses cannot confirm that neither anger nor disgust activated by pandemic threat are positively related to authoritarian attitudes (*H2* and *H3*). We only find scattered evidence of relationships between these emotional states and authoritarian attitudes. However, our analyses provide empirical support for *H1*, according to which fear is associated with authoritarian attitudes in European countries. This relationship does not hold equally in all countries studied but is especially true for Germany and Switzerland (and to some degree Italy and the UK). How can these differences between countries be explained?

Discussion

Our findings show that fear, albeit the most consistent emotion, does not translate into authoritarian attitudes in all six countries under study. Our findings suggest that contextual factors play a role in shaping the link between emotions and authoritarian attitudes. As we have based our analyses on a small-N comparison, we are unable to perform comprehensive statistical procedures on such multi-level analyses but have to rely on a qualitative explanation of our results. We provide a politico-institutional explanation that focuses on democratic quality in terms of institutional guarantees of democratic freedoms. To that end, our proposed explanation outlines under which circumstances we think that pandemic elicited fear might translate into an authoritarian response.

We argue that fear is a reaction to the perception that a situation poses a threat to one's well-being and that authoritarian policies promise protection, and this mechanism manifests itself in Germany and Switzerland, and to a lesser extent in the UK and Italy. However, there

is no significant relationship between fear and authoritarian attitudes in France and Spain in either survey.

One potential explanation for the non-significant findings in France and Spain might be found in the quality of democratic principles, in particular the protection of individual liberties. Although both countries are advanced democracies, with respect to the protection of individual liberties such as freedom of movement or the right of assembly, Spain and France rank lower than Germany, Italy, Switzerland and the UK (Engler et al., 2021). In this regard, the inability of governments to protect individual liberties may increase the risk of taking authoritarian positions considerably more than in high-quality democracies.

Conversely, with regard to Germany and Switzerland, we could argue that fear elicits an authoritarian response only in a particularly stable democratic environment, where people can assume that taking authoritarian positions will not weaken individual liberties in the long run. On the bedrock of consolidated and stable democratic principles, in these two countries a short-term authoritarian preference for harsh measures and submission to authority might be seen as a way to guarantee the country's stability and order in the current pandemic without the risk of a shift towards an authoritarian regime. Furthermore, one could argue that during the pandemic, citizens in countries that hold individual liberties in very high regard express a desire for authority. This desire might be based on the impression of wrongly understood freedom, for example when it comes to the decision to accept public health measures or vaccinations.

In Italy and the UK, we also see a trend suggesting a link between fear and the adoption of authoritarian positions. However, this relationship does not appear as established as in Germany and Switzerland. Although the UK places great importance on respecting individual liberties, similar to Switzerland and Germany, the unsteady governance of Boris Johnson's political leadership is disturbing in a Westminster democracy with few constitutional constraints. In Italy, on the other hand, there are institutional constraints on government action,

but the country's political instability might make citizens more careful in expressing authoritarian attitudes.

Conclusion

In this study, we argue that the appraisal of pandemic threat predicts emotional states that are related to authoritarian attitudes among citizens in six Western European countries. That is, we maintain that threat engenders a need for group cohesion and the subordination of individual autonomy to the group and its authority (Duckitt et al., 2010). Building on recent research, we focus on fear, anger and disgust as important emotional responses to pandemic threat (Marcus et al., 2019; Schaller and Park, 2011).

Using data from two original surveys during the second (November 2020 to January 2021) and third (April 2021 to May 2021) COVID-19 waves in France, Germany, Italy, Spain, Switzerland, and the UK, we present the following findings based on comprehensive empirical analyses: First, we show evidence that pathogen threat elicits fear as an emotional response which is positively related to authoritarian attitudes that function as a disease-controlling strategy (Murray et al., 2013). Conversely, although other studies on threatening circumstances indicate anger is the dominant emotion for authoritarianism, our analyses show that anger is unrelated to authoritarian attitudes. We also do not find that disgust affects authoritarian attitudes.

Yet, it should be noted that the mechanism described manifests itself particularly in Germany and Switzerland and to a lesser extent in Italy and the UK. It seems that pandemic-induced fear does not translate into authoritarian attitudes in countries with less protection of individual liberties such as France and Spain. In other words: If uncertainty about the stability of individual liberties exists, authoritarian positions are not seen as a way to combat the pandemic because the instability of these democratic principles leads to a fear of permanently

abandoning these virtues. Conversely, in countries that emphasize protection of individual liberties, fearful citizens have fewer problems giving up individual freedoms and instead favor group cohesion and the subordination of individual autonomy to the group and its authority to overcome the threat (in particular, Germany and Switzerland). The protection of individual liberties prevents a weakening of these core virtues in the long run which makes an expression of authoritarian positions to combat the public health crisis less risky. Moreover, if we look at the three subdimensions of authoritarianism (submission, conventionalism and aggression), we find the most significant relationships between fear and authoritarianism in the submission dimension in the comparison of the six countries. In this vein, authoritarian submission is seen as the dimension that most accurately captures authoritarian people, at least as far as the classical and more recent literature on the subject is concerned (Passini, 2015).

Information on the effects of COVID-19 on political orientation is necessary and instructive and our research has several important implications. First, our analyses show the advantages of comparative research beyond pure single case studies. Our study has demonstrated that fear elicited by the COVID-19 pandemic is positively related to authoritarian attitudes in Germany, Switzerland, the UK and Italy, but that this relationship is not present in other countries. The vast majority of studies to date have only ever investigated the influence of threat-induced emotions on the basis of individual case studies (Huddy et al., 2005; Marcus et al., 2019; Vasilopoulos et al., 2019; Wagner, 2014). If we had followed this way, our investigation of the influence of pandemic threat would have had different implications depending on the chosen country. Second, our study underscores the importance of investigating the emotional responses to this novel external threat. Our results demonstrate that pandemic threat-induced fear is more important compared to anger and disgust when it comes to its relationship with authoritarian attitudes. Thus, studies investigating the influence of ecological stimuli should account for the different emotional responses aroused and how these

affect political decision-making and attitudes. Different threat situations often require unique responses; it is imperative to study emotions more broadly.

However, we must underscore that future studies should empirically scrutinize the causal mechanism between pandemic threat and political preferences in order to provide a more confident base to indeed speak of a causal relationship. Although we rely on original survey data collected during the second and third waves of the pandemic, we do not use panel data. Consequently, we cannot make any claims about the development of our relationships over time within individuals. Although the relationships seem to be consistent on an aggregate level, we cannot make any claims about the longevity of the effects or how changes within individuals develop over time. Moreover, we cannot control for baseline levels of authoritarian attitudes before the COVID-19 pandemic. Thus, we refrain from making any causal claims. Future studies could remedy this problem by triggering perceived pathogen threat experimentally to understand whether there is a causal relationship and subsequently test the mechanism in a controlled setting (Aarøe et al., 2017; Kam and Estes, 2016).

Moreover, as the pandemic threat does not affect the entire population in the same way, it is reasonable to assume that the effects of the threat are not uniform. It would therefore be advisable to model group-specific threat effects. Finally, as globalization boosts the threat of pandemic emergence and accelerates global disease transmission, our results might indicate serious challenges for liberal democracies (Taylor, 2019). However, it remains an open question as to whether the threat-induced support for authoritarian attitudes will remain in the medium to long term. While our findings do not solve the question of how enduring the effect of pandemic threat is, they might give an indication that as long as the threat of the pandemic is present and fosters fear among the populace of some countries, authoritarian attitudes are still fostered. In this vein, future studies should expand the number of countries under study to potentially uncover institutional mechanisms that explain the emergence of authoritarian

attitudes as a response to pandemic threat. These are limitations of our study that we would like to address in future research.

Acknowledgements

We would like to thank Alina Zumbrunn, Julian Erhardt, Nathalie Hofstetter, and Steffen Wamsler for helpful comments and suggestions. Furthermore, we would like to thank the four anonymous reviewers and the editor of European Union Politics for their critical and constructive comments on earlier versions of this manuscript. Furthermore, we would like to thank Mila Bühler for excellent research assistance and Maja Harris for language editing. All mistakes remain our own.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship and/or publication of this article: This work was supported by the Swiss National Science Foundation (SNSF) (grant no. 100017_204507) and by the Berne University Research Foundation.

ORCID iDs

Maximilian Filsinger <https://orcid.org/0000-0002-6583-8301>

Markus Freitag <https://orcid.org/0000-0003-2428-0652>

Supplemental material

Supplemental material for this article is available online.

Notes:

- 1 This article was written as part of the research project "The Politics of Public Health Threat" that is financially supported by the Swiss National Science Foundation (SNSF) and the Berne University Research Foundation. In this context, reference should also be made to the contributions by Freitag and Hofstetter (2022) and Wamsler et al. (2022), who are elaborating theoretically and empirically similar designs in a coherent research program.
- 2 Although, we assume that exposure to the COVID-19 pandemic threat elicits emotions, we are well aware that the BIS has deep evolutionary roots. Even though we should be careful about considering any pandemic as a direct trigger for the BIS (see Ackerman et al., 2021), recent research suggests that the COVID-19 pandemic had noticeable effects on BIS-related factors (Schaller et al., 2021; Szymkow et al., 2021).
- 3 Some treat anger and aversion as synonymous terms, although strictly speaking aversion includes anger and disgust.
- 4 Furthermore, we use CFA to explore the structure of our measurement of authoritarian attitudes. The results suggest that the respective items measure the three subdimensions of authoritarianism (model fit in survey 1: $\chi^2 = 526.928$, $df = 23$; CFI = .968; RMSEA = .06; see Table S6)

- 5 Again, we use CFA to explore the structure of our measurement of authoritarian attitudes. The results suggest that the respective items measure the three subdimensions of authoritarianism (model fit in Survey 2: $\chi^2 = 494.479$, $df = 23$; CFI = .972; RMSEA = .058; see the Online appendix (Table S6)).
- 6 To clarify the implications of the relationship between pandemic threat, authoritarian attitudes, and the demand for security, we validate whether authoritarian attitudes are related to security preferences in times of threat (see the Online appendix). In both surveys, authoritarian attitudes (and most subdimensions) are positively linked to the preference of closing borders as a countermeasure to the pandemic in all six countries.
- 7 These conclusions are supported by mediation analyses using a measure for pandemic exposure in the respondents' immediate environment as the independent variable, our emotional reactions as mediators and authoritarian attitudes as dependent variables (results available upon request).

References

- Aarøe L, Petersen MB and Arceneaux K (2017) The Behavioral Immune System Shapes Political Intuitions: Why and How Individual Differences in Disgust Sensitivity Underlie Opposition to Immigration. *American Political Science Review* 111(2): 277–294.
- Ackerman JM, Hill SE and Murray DR (2018) The behavioral immune system: Current concerns and future directions. *Social and Personality Psychology Compass* 12(2): e12371.
- Ackerman JM, Tybur JM and Blackwell AD (2021) What Role Does Pathogen-Avoidance Psychology Play in Pandemics? *Trends in cognitive sciences* 25(3): 177–186.
- Adorno T, Frenkel-Brunswik E, Levinson D, et al. (1950) *The Authoritarian Personality*. New York: Harpers.
- Albertson B and Gadarian SK (2015) *Anxious politics: Democratic citizenship in a threatening world*. Cambridge: Cambridge Univ. Press.
- Altemeyer B (1981) *Right-wing authoritarianism*. Winnipeg, Manitoba, Canada: University of Manitoba Press.
- Amat F, Arenas A, Falcó-Gimeno A, et al. (2020) *Pandemics meet democracy. Experimental evidence from the COVID-19 crisis in Spain*.
- Bartusevičius H, Bor A, Jørgensen F, et al. (2021) The Psychological Burden of the COVID-19 Pandemic Is Associated With Antisystemic Attitudes and Political Violence. *Psychological Science* Online first: 1–13.
- Beierlein C, Asbrock F, Kauff M, et al. (2014) *Die Kurzskala Autoritarismus (KSA-3): Ein ökonomisches Messinstrument zur Erfassung dreier Subdimensionen autoritärer Einstellungen.: Zusammenstellung sozialwissenschaftlicher Items und Skalen (ZIS)*.
- Bol D, Giani M, Blais A, et al. (2021) The effect of COVID-19 lockdowns on political support: Some good news for democracy? *European Journal of Political Research* 60(2): 497–505.
- Brader T, Groenendyk EW and Valentino NA (2010) *Fight or Flight? When Political Threats Arouse Public Anger and Fear*.
- Brader T and Marcus GE (2013) Emotion and political psychology. In: Huddy L, Sears DO and Levy JS (eds) *The Oxford Handbook of Political Psychology*: Oxford University Press, pp. 165–204.
- Clarke EJ, Klas A and Dyos E (2021) The role of ideological attitudes in responses to COVID-19 threat and government restrictions in Australia. *Personality and Individual Differences* 175: 110734.

- Devine D, Gaskell J, Jennings W, et al. (2021) Trust and the Coronavirus Pandemic: What are the Consequences of and for Trust? An Early Review of the Literature. *Political Studies Review* 19(2): 274–285.
- Duckitt J (2013) Introduction to the special section on authoritarianism in societal context: the role of threat. *International journal of psychology Journal internationale de psychologie* 48(1): 1–5.
- Duckitt J and Bizumic B (2013) Multidimensionality of Right-Wing Authoritarian Attitudes: Authoritarianism-Conservatism-Traditionalism. *Political Psychology* 34(6): 841–862.
- Duckitt J, Bizumic B, Krauss SW, et al. (2010) A Tripartite Approach to Right-Wing Authoritarianism: The Authoritarianism-Conservatism-Traditionalism. *Political Psychology* 31(5): 685–715.
- Eigenberger ME (1998) Fear as a correlate of authoritarianism. *Psychological Reports* 83(3): 1395–1409.
- Engler S, Brunner P, Loviat R, et al. (2021) Democracy in times of the pandemic: explaining the variation of COVID-19 policies across European democracies. *West European Politics*: 1–22.
- Erhardt J, Freitag M, Filsinger M, et al. (2021) The Emotional Foundations of Political Support: How Fear and Anger Affect Trust in the Government in Times of the Covid-19 Pandemic. *Swiss Political Science Review* 27(2): 339–352.
- Freitag M and Hofstetter N (2021) Pandemic personality: Emotional reactions, political and social preferences across personality traits in times of Corona. *Current psychology (New Brunswick, N.J.)*: 1–15.
- Freitag M and Hofstetter N (2022) Pandemic Threat and Intergroup Relations: How negative emotions associated with the threat of Covid-19 shape attitudes towards immigrants. *Journal of Ethnic and Migration Studies*. [accepted for publication]
- Huddy L, Feldman S, Taber Charles, et al. (2005) Threat, Anxiety, and Support of Antiterrorism Policies. *American Journal of Political Science* 49(3): 593–608.
- Iacoella F, Justino P and Martorano B (2021) *Do pandemics lead to rebellion? Policy responses to COVID-19, inequality, and protests in the USA*. UNU-WIDER.
- Johns Hopkins University (2022) Coronavirus Resource Center. Available at: <https://coronavirus.jhu.edu/map.html> (accessed 19 January 2022).
- Kachanoff FJ, Bigman YE, Kapsaskis K, et al. (2021) Measuring Realistic and Symbolic Threats of COVID-19 and Their Unique Impacts on Well-Being and Adherence to Public Health Behaviors. *Social Psychological and Personality Science* 12(5): 603–616.
- Kam CD and Estes BA (2016) Disgust Sensitivity and Public Demand for Protection. *The Journal of Politics* 78(2): 481–496.
- Lerner JS, Gonzalez RM, Small DA, et al. (2003) Effects of Fear and Anger on Perceived Risks of Terrorism: A National Field Experiment. *Psychological Science* 14(2): 145–150.
- Lupu N and Zechmeister EJ (2021) The early COVID-19 pandemic and democratic attitudes. *PloS one* 16(6).
- Marcus GE, Neumann WR and MacKuen MB (2000) *Affective intelligence and political judgment*. Chicago, London: University of Chicago Press.
- Marcus GE, Valentino NA, Vasilopoulos P, et al. (2019) Applying the Theory of Affective Intelligence to Support for Authoritarian Policies and Parties. *Political Psychology* 40(S1): 109–139.
- Murray DR and Schaller M (2016) The Behavioral Immune System: Implications for Social Cognition, Social Interaction, and Social Influence. In: Zanna MP and Olson JM (eds) *Advances in Experimental Social Psychology*: s.l.: Elsevier Science, pp. 75–129.
- Murray DR, Schaller M and Suedfeld P (2013) Pathogens and politics: further evidence that parasite prevalence predicts authoritarianism. *PloS one* 8(5): 1–8.
- Nießen D, Schmidt I, Beierlein C, et al. (2019) *Authoritarianism Short Scale (KSA-3)*.

- Oesterreich D (2005) Flight into Security: A New Approach and Measure of the Authoritarian Personality. *Political Psychology* 26(2): 275–297.
- Passini S (2015) Social Relations, the Financial Crisis and Human Development. In: Psaltis C, Gillespie A and Perret-Clermont A-N (eds) *Social Relations in Human and Societal Development*: Palgrave Macmillan.
- Rosenthal U, Charles MT and 't Hart P (eds) (1989) *Coping With Crises: The Management of Disasters, Riots, and Terrorism*. Springfield: Charles C Thomas Pub Limited.
- Rozin P and Fallon AE (1987) A perspective on disgust. *Psychological Review* 94(1): 23–41.
- Schaller M, Murray DR and Bangerter A (2015) Implications of the behavioural immune system for social behaviour and human health in the modern world. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences* 370(1669).
- Schaller M, Murray DR and Hofer MK (2021) The behavioural immune system and pandemic psychology: the evolved psychology of disease-avoidance and its implications for attitudes, behaviour, and public health during epidemic outbreaks. *European Review of Social Psychology*: 1–37.
- Schaller M and Park JH (2011) The Behavioral Immune System (and Why It Matters). *Current Directions in Psychological Science* 20(2): 99–103.
- Smith HJ, Cronin T and Kessler T (2008) Anger, Fear, or Sadness: Faculty Members' Emotional Reactions to Collective Pay Disadvantage. *Political Psychology* 29(2): 221–246.
- Steenbergen MR and Ellis C (2016) Fear and Loathing in American Elections: Context, Traits, and Negative Candidate Affect. In: Redlawsk DP (ed) *Feeling politics: Emotion in political information processing*. New York: Palgrave Macmillan, pp. 109–133.
- Szymkow A, Frankowska N and Gałasińska K (2021) Social distancing from foreign individuals as a disease-avoidance mechanism: Testing the assumptions of the behavioral immune system theory during the COVID-19 pandemic. *Social Psychological Bulletin* 16(3).
- Taylor S (2019) *The psychology of pandemics: Preparing for the next global outbreak of infectious disease*. Cambridge Scholars Publ.
- Thornhill R and Fincher CL (2014) *The parasite-stress theory of values and sociality: Infectious disease, history and human values worldwide*. Cham: Springer.
- Thornhill R, Fincher CL and Aran D (2009) Parasites, democratization, and the liberalization of values across contemporary countries. *Biological Reviews* 84(1): 113–131.
- Troisi A (2020) Fear of COVID-19: insights from evolutionary behavioral science. *Clinical Neuropsychiatry* 17(2): 72–75.
- Vasilopoulos P, Marcus GE and Foucault M (2018) Emotional Responses to the Charlie Hebdo Attacks: Addressing the Authoritarianism Puzzle. *Political Psychology* 39(3): 557–575.
- Vasilopoulos P, Marcus GE, Valentino NA, et al. (2019) Fear, Anger, and Voting for the Far Right: Evidence From the November 13, 2015 Paris Terror Attacks. *Political Psychology* 40(4): 679–704.
- Vasilopoulou S and Wagner M (2017) Fear, anger and enthusiasm about the European Union: Effects of emotional reactions on public preferences towards European integration. *European Union Politics* 18(3): 382–405.
- Wagner M (2014) Fear and Anger in Great Britain: Blame Assignment and Emotional Reactions to the Financial Crisis. *Political Behavior* 36: 683–703.
- Wamsler S, Freitag M, Erhardt J, et al. (2022): The Pandemic and the Question of National Belonging: Covid-19 Threat and Conceptions of Nationhood, in *European Journal of Political Research* [accepted for publication].
- Weible CM, Nohrstedt D, Cairney P, et al. (2020) COVID-19 and the policy sciences: initial reactions and perspectives. *Policy Sciences* 19(4): 1–18.

Zettler I, Schild C, Lilleholt L, et al. (2022) The Role of Personality in COVID-19-Related Perceptions, Evaluations, and Behaviors: Findings Across Five Samples, Nine Traits, and 17 Criteria. *Social Psychological and Personality Science* 13(1): 299-310.