Crisis Leadership Approval:

The Opposing Effects of Perceived Threat and Anxiety

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Abstract

In times of crisis, citizens tend to increase their approval of the government and its leader which might shift the balance of power. This 'rally effect' is a persistent empirical regularity, however, the literature does not identify its underlying causal mechanisms. We argue that crises induce threat and anxiety, and theorize that perceived threat increases approval of the incumbent leader, whereas anxiety decreases it. By analyzing German panel data from the COVID-19 pandemic, we causally identify both mechanisms and provide systematic evidence supporting this theory. Moreover, we increase the scope of our theory and show that both mechanisms are also at work when citizens approve cabinet members who manage key portfolios. Finally, we also leverage a comparative survey design across eleven countries to show that our evidence generalizes beyond a single country. Our findings have highly important implications for our understanding of the rally effect and crises politics in democracies.

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In times of crisis, the public gathers behind the current political leadership. This 'rally effect' which entered the political science vocabulary in the early 1970s (Mueller, 1970) is a persistent empirical regularity that is well-documented in numerous studies. Although originally developed with respect to the US presidency, research demonstrates that the effect generalizes beyond the United States (e.g., Dinesen and Jæger, 2013). Moreover, it does not only manifest in the context of intergroup conflicts such as wars or terrorist attacks (e.g., Edwards III and Swenson, 1997) but also in the aftermath of natural disasters (e.g., Boittin, Mo and Utych, 2020) or international public health crises such as the COVID-19 pandemic (e.g., Yam et al., 2020). Despite its persistence, generality, and law-like character, the mechanisms explaining why this effect occurs in times of crisis still remain largely unknown (see also Hegewald and Schraff, 2020; Hintson and Vaishnav, 2021).

It is crucial to generate insights into the underlying causal mechanisms, as the rally effect can have dramatic repercussions on policy outcomes in liberal democracies. In cases where a crisis occurs during an election campaign, the rally effect can strongly influence election results (Leininger and Schaub, 2020) and with it the central mechanism of granting democratic authority to rule. Almost more importantly, the observation of rally effects is often accompanied by increasing support for policies restricting civil and political liberties like pandemic lockdowns (in the context of the COVID-19 pandemic, see Alsan et al., 2020) or the US Patriot Act (in the context of the 9/11 terrorist attacks, see Huddy, Khatib and Capelos, 2002; Huddy and Feldman, 2011). As citizens are more willing to sacrifice freedom for security in the context of rally effects, it can become easier for governments to implement policies limiting fundamental rights (Page and Shapiro, 1983). This is all the more true because the opposition is typically reluctant to criticize the political leadership in times of crisis (Hetherington and Nelson, 2003). Moreover, after the crisis has been overcome and the rally effect has worn off, there is a risk that rights might not be regranted in full – especially in illiberal democracies.

We address the lack of understanding by being the first to argue that the rally effect is composed

of two distinct and counteracting psychological mechanisms: a *perceived threat mechanism* as well as an *anxiety mechanism.* Perceived threat and anxiety are different concepts. Perceived threat is the perceived risk posed by a crisis, while anxiety is a negative emotional response to a crisis (Huddy and Feldman, 2011). We argue that considering the interplay between both effects is imperative to understanding the rally effect as they have very different substantive implications. Perceived threat should boost support for political leaders, in part because it triggers system-justifying reactions. On the contrary, anxiety should undermine support for the political leader by producing an assimilation effect by which the negative affective state of anxiety negatively colors the evaluation of the leader.

It is already known that both perceived threat and anxiety have distinct effects on the support of counter-terrorism policies in the aftermath of terrorist attacks. Huddy et al. (2005) argue that individuals who perceive high levels of threat should be more supportive of hawkish military action, since perceived threat leads to demand for retaliation against the aggressor. On the contrary, they claim that individuals who exhibit high levels of anxiety should be less inclined to support aggressive (and potentially risky) military action, as anxiety leads to greater risk aversion (see also Huddy and Feldman, 2011, for a discussion on the effect of perceived threat and anxiety in the context of terrorist attacks). Huddy et al. (2005) provide evidence for these arguments employing a survey fielded in the US after the 9/11 terrorist attacks.

We connect the work of Huddy et al. (2005) to the literature on the rally effect by arguing that perceived threat and anxiety play an essential role in the aftermath of *all sorts of crisis situations* and, most importantly, they should directly affect *support for political leaders*, not only the support for specific policies. While the perceived threat mechanism has recently become well known in the literature on the rally effect (Feinstein, 2018; Kritzinger et al., 2021), the hypothesised anxiety mechanism is so far not established. It is well known that anxiety leads to risk aversion and, thus, support for cautious government action in times of crisis (e.g. Huddy et al., 2005; Lambert, Schott and Scherer, 2011; Erhardt et al., 2021), but the effect on anxiety on political leadership support remains unclear. In fact, we are the first to argue that anxiety directly shapes the rally effect, namely via an assimilation effect. This assimilation effect should reduce support for the political

leader - regardless of whether the government's response to the crisis is cautious or risky.

We provide robust evidence for the hypothesized anxiety and perceived threat mechanisms in multiple ways. First, we rely on panel data based on more than 32,000 interviews from the early COVID-19 pandemic in Germany to better trace the causal mechanisms. The findings show that both mechanisms operate as theorized. Second, we present evidence from more than 10,000 cross-sectional survey respondents across eleven democracies that corroborates the more nuanced results of the panel analysis across a set of very different countries. Third, we demonstrate that the mechanisms are not only at work when citizens evaluate their heads of government, yet, also when they rate ministers who manage key crisis portfolios.

Our findings have important theoretical implications as we challenge the view that crises automatically lead to an increase in approval of the political leader. This way, we inform the debate on the individual-level characteristics that lead citizens to change their evaluation of political leaders in times of crisis. While existing research shows that the rally effect is shaped by the emotion of anger (Small, Lerner and Fischhoff, 2006), pre-crisis support for the leader (Edwards III and Swenson, 1997; Malhotra and Kuo, 2008), political information (Sirin, 2011), or exposure to the crisis (Hintson and Vaishnav, 2021), we suggest a novel duality of psychological mechanisms, and provide robust empirical evidence that they are in fact at play. Consequently, our findings promote understanding of how the rally effect comes about.

Theory: Underlying Mechanisms

In times of crisis we can observe that citizens tend to increase their approval of the incumbent government and its leader. This rally effect is composed of two distinct mechanisms because such crises induce two responses among citizens – threat and anxiety. Moreover, we expect that the *perceived threat mechanism* and the *anxiety mechanism* are counteracting with regard to leadership approval. While threatened citizens should tend to approve, anxious citizens should tend to disapprove of their political leaders.

Perceived Threat Mechanism

Perceived threat is the perceived risk posed by a crisis, and we argue that it is one driver of the rally effect (Huddy and Feldman, 2011). A number of theoretical arguments expect an increase in perceived threat to boost support for political leaders in times of crises. The first originates from what is known as the *opinion leadership school* of research on the rally effect (Baekgaard et al., 2020, p. 3). The argument builds on the notion that, when evaluating political leaders, an increase in perceived threat enhances the salience of considerations related to the crisis while it reduces the salience of other relevant issues. As opinion leaders from opposition parties typically refrain from criticizing the leader's crisis management in the wake of a threat, individuals are mostly exposed to public comments supportive of the leader with respect to the salient considerations (Brody and Shapiro, 1989; Hetherington and Nelson, 2003, p. 37-39). Hence, the evaluation of political leaders should improve as perceived threat increases. Somewhat consistent with this argument, Schraff (2020) found in the context of the COVID-19 pandemic that considerations like economic evaluations become less important determinants of political trust as COVID-19 infection numbers increase.

System justification theory provides us with another argument (Jost and Banaji, 1994). This theory states that people show a tendency to defend and justify the political, economic or social system (even if it is contrary to self-interest). Times of crisis should amplify these tendencies since exposure to "threat can increase system-justifying responses in a variety of ways" (Jost, 2019, p. 267) in order to reduce feelings of uncertainty. Empirical evidence shows support for the notion that perceived dependence on a system is positively related to perceived legitimacy of the system's authorities. In fact, experimental evidence indicates that feelings of political powerlessness result in greater legitimization of governmental authorities (van der Toorn et al., 2015, Study 5, p. 104-106).

Moreover, Gelfand et al. (2011) formulated a *cultural evolutionary theory* according to which nations that are exposed to threats need strong social coordination in order to survive. This would lead to strong social norms and a low tolerance of deviant behavior, and could perhaps also lead to greater support for political leaders. Gelfand et al. (2011) show that nations which historically experienced great environmental (e.g. natural disasters) and health-related threats (e.g. prevalence

of pathogens) have stronger social norms than those nations that encountered these threats to a lesser extent.

There is also empirical evidence supportive of these arguments claiming that perceived threat drives the rally effect. Analyzing the public reaction to COVID-19 pandemic in Austria using a panel data design, Kritzinger et al. (2021) show that perceived threat to public health increased trust in the Austrian government.

Based on this review of the literature, we expect an increase in perceived threat during times of crisis to boost support for the political leader. Note that all of the arguments above expect that an increase in perceived threat boosts support for political leaders – independent of enacted policies and the leader's crisis management. This is broadly consistent with the findings of Schraff (2020, p. 9) suggesting that the increase in political trust during the COVID-19 pandemic "is driven by the pandemic intensity of the crisis and not [by] the specific government measures" like lockdowns. However, it is conceivable that the leader's performance and emergency responses affect the perceptions of threat. For instance, the imposition of a pandemic lockdown likely reduces the perceived threat originating from the spread of a virus. This way, government measures could indirectly influence support for the leader.

Emotions Matter: *Anxiety Mechanism*

In addition to the perceived threat mechanism that is likely to increase the approval of political leaders, we propose that the rally effect is driven by another mechanisms – the *anxiety mechanism* – that disadvantages political leaders. In this context, anxiety is a negative emotional response to a crisis (Huddy and Feldman, 2011). We will argue that if times of crisis induce anxiety among citizens, then they will be less likely to support their political leaders.

Times of crisis typically induce anxious arousal. In the context of terrorist attacks, the physical proximity to the 9/11 attacks fueled anxieties (Huddy et al., 2005). We also know that the COVID-19 pandemic induced higher levels of anxiety, based on cumulating evidence obtained in countries such as the US (Tabri, Hollingshead and Wohl, 2020), Canada (Robillard et al., 2020), Austria (Pieh, Budimir and Probst, 2020), China (Wang et al., 2020), Italy (Mazza et al., 2020) or Spain

(Ozamiz-Etxebarria et al., 2020). Research suggests that not only health-related considerations but also economic concerns fueled anxieties during the COVID-19 pandemic (Fetzer et al., 2020).

What are the consequences of increasing levels of anxiety during times of crisis on support for political leaders? A number of psychological theories claim the existence of an *assimilation effect* according to which an adverse affective state, such as anxiety, negatively influences the evaluation of (political) objects, such as political leaders. The *affective contagion* hypothesis originating from a motivated political reasoning argues that the process of making a political evaluation is shaped by the feelings that were evoked at the beginning of this process (Erisen, Lodge and Taber, 2014). These feelings bias the kind of considerations that enter the evaluation process: positive feelings tend to induce positively charged considerations while negative feelings arouse negatively charged considerations. Similarly, according to the *affect infusion* hypothesis, negative affect can serve as a heuristic cue when making a (political) evaluation of an object (Forgas, 1995). This way, the evaluation is negatively colored—even if the origin of the affect is unrelated to the object. Compliant with the *affect-as-information* hypothesis, assimilation effects can occur if individuals are not aware of the source of their affective state (Schwarz and Clore, 1983). In these cases, feelings may be misattributed to an unrelated object inducing a more negative evaluation of that particular object. In similar fashion, the *affect transfer* hypothesis (Ladd and Lenz, 2008, 2011) expects emotional reactions to political candidates to directly shape the evaluations of those candidates: "[I]f someone makes you feel anxious, you like him or her less; if someone makes you feel enthusiastic, you like him or her more" (Ladd and Lenz, 2008, p. 276).

Based on this line of literature, we hypothesize that the specific phenomenon under consideration, the rally effect, is governed by such an assimilation effect: anxieties induced by situations of crisis should negatively influence support for political leaders. Referring to the *affective contagion* hypothesis above, anxious arousal should emphasise negative thoughts concerning the leader, such as problems related to the management of the crisis. Also the *affect infusion*, *affect-as-information* and *affect transfer* hypothesis suggest anxiety to negatively affect the evaluation of the leader, especially because individuals might not be able to precisely localize the origin of their anxious arousal in turbulent times of crisis.

Note that the survey fielded by Huddy et al. (2005) in the US in the aftermath of the 9/11 terrorist attacks found anxiety to be negatively related to support for president George W. Bush, which is in line with our expectations. However, Huddy et al. (2005) attributed this finding to the reluctance of anxious individuals to support the potentially risky military response to the 9/11 attacks promoted by George W. Bush. The same is true for the study of Erhardt et al. (2021), which attributes an observed effect of anxiety on trust in the Swiss government to the risk aversion of anxious people. We, in turn, expect that the effect of anxiety is more general and should be found also when there is no *risky* government response to a crisis. In fact, the empirical analysis employs a case in which government response was not risky, but greatly cautious (the COVID-19 pandemic).

To sum up, our expectation regarding the effects of the *anxiety mechanisms* to bring about the rally effect is, thus, opposite to the expectation regarding the *perceived threat mechanisms* we discussed previously.

In the next section we first leverage an individual-level panel design that allows us to causally identify and distinguish the observed effects of both mechanisms with respective to leaders including key ministers. Furthermore, we also leverage a cross-sectional survey to show that the empirical implications of our two mechanisms seem to hold beyond a single case.

Research Design

We test the hypotheses that perceived threat and anxiety have opposed effects on leadership approval at times of crises with data collected during the COVID-19 pandemic, an international public health crisis. As Figure 1 indicates, citizens approval of leaders' parties increased substantially when the pandemic first hit their respective countries.[1] In fact, there is cumulating evidence indicating that the COVID-19 pandemic induced the rally effect. At the outset of the pandemic, COVID-19 infection numbers were positively associated with approval for the political leader (Yam et al., 2020), trust in the government (Esaiasson et al., 2021), trust in the national

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[1]For European countries, we rely on polling data provided by POLITICO. Further, we include data by YouGov (Australia), Léger (Canada), Kantar and Migdam (Israel), Reid Research and Roy Morgan Research (New Zealand) as well as Ipsos (United States).

parliament (Schraff, 2020; Hegewald and Schraff, 2020), and incumbent's vote shares in elections (Leininger and Schaub, 2020). Other studies revealed that the imposition of pandemic lockdowns boosted trust in the political leader (Baekgaard et al., 2020; Bol et al., 2020), the intention to vote for the political leader's party (Bol et al., 2020), and attachment to government parties (De Vries et al., 2020). Therefore, we are confident that the COVID-19 pandemic serves as a valid case to study the composition of rally effects.
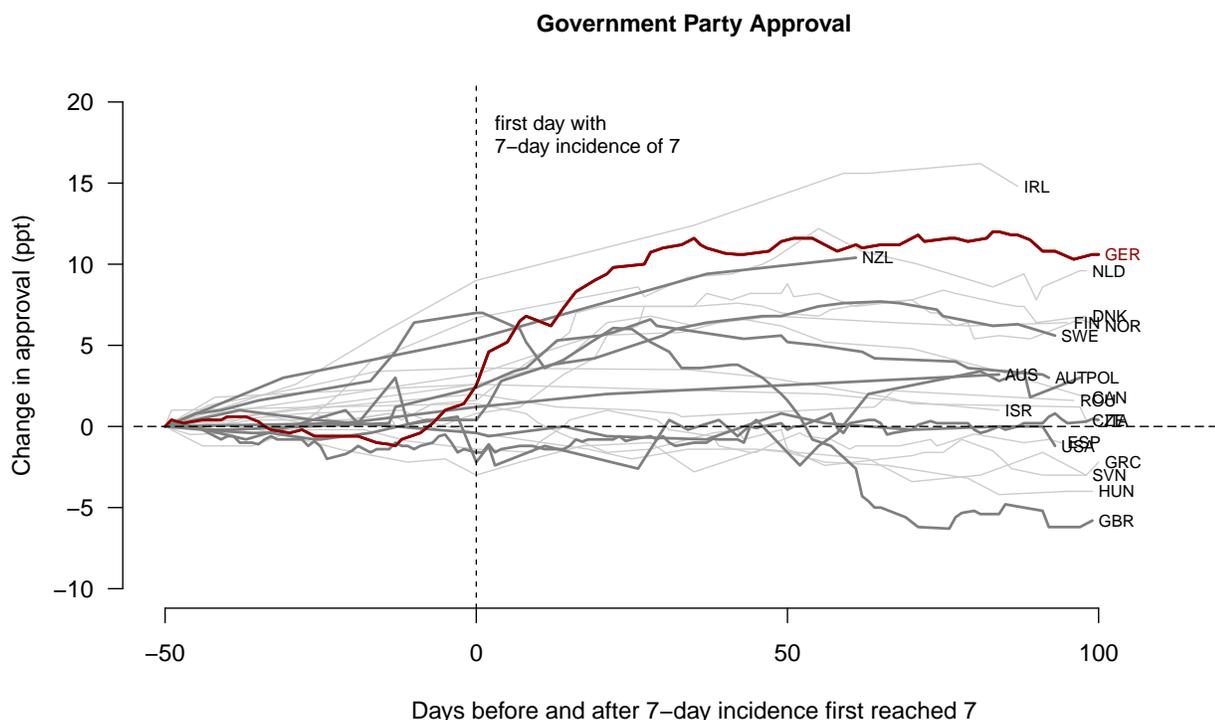
Government Party Approval

Figure 1: Change in government party approval around the week that first 7 of 100,000 inhabitants tested positive for COVID-19. Countries included in our subsequent analyses are bold.

To isolate the diverging effects of perceived threat and anxiety on leadership approval, we require detailed individual-level data. Such data was collected by the Mannheim Corona Study (MCS) during the first wave of the pandemic in Germany (Blom et al., 2020). Based on the probability-based sample of the German Internet Panel (GIP) (Blom, Gathmann and Krieger, 2015), the MCS used a daily rotating individual-level panel design of the general adult population in Germany. Effectively, 4,400 German residents were invited to participate in the MCS once a week for a duration of sixteen weeks. Although the study was conducted online, it is based on the

GIP sample which was recruited offline irrespective of prior internet usage.[2] Covering the time span from March 20 to July 10 2020, the MCS was in field throughout most of Germany's first wave of COVID-19 infections, and a substantial period after the wave had ebbed away. At the survey's start, German schools had been shuttered for a week but more severe lockdown measures were yet to follow. The MCS questionnaire changed each week, however, the survey encompasses several panel items that were asked at different times (Blom et al., 2020).

Our dependent variable is based on a survey item which asked respondents to what extent they approve of Chancellor Angela Merkel. Respondents replied on an eleven-point scale. The survey item was included in eleven of the sixteen MCS weeks.

An item that asks respondents to assess the degree to which they perceive the COVID-19 pandemic as a personal threat was included in all MCS weeks. We rescale responses from an 11-point scale to the unit interval, and use them to test the perceived threat mechanism. To empirically test the anxiety mechanism, we need to quantify how anxious respondents are. To this end, we construct a simple additive index based on two survey items: the first item asks whether respondents feel worried and the second whether they feel nervous. Respondents indicate their feelings using a 4-point scale for each item. After summing up and rescaling, the resulting anxiety index ranges from 0 (no anxiety) to 1 (severe anxiety). It is available for all sixteen MCS weeks.

We exploit the MCS panel design and additional MCS items to control for possible confounders. First, we estimate respondent fixed effects that control for all time-invariant differences between respondents. To control for time-variant factors such as the state of the pandemic, we include the contemporary COVID-19 incidence rate,[3] and per capita household income in the previous month. Finally, we add a dummy variable that indicates whether the respondent agrees with the federal government's policy to (not) close national borders on the day of the interview.[4] Overall, we obtain a sample of 32,187 interviews by 3680 respondents. Each interview includes all the information we require, and each respondent participated in the MCS at least twice as required for the estimation of individual fixed effects. To address potential issues of serial correlation and

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[2]For more information on the MCS, including the study design and daily response rates, see Blom et al. (2020).

[3]These are all confirmed infections per 100,000 inhabitants in Germany in the past seven days (Robert Koch Institut, 2020).

[4]A description of the survey items can be found in the supporting information SI.2.

heteroscedastic errors, we compute clustered panel standard errors. We present summary statistics in the supporting information SI.1.

As an empirical test of the proposed individual-level mechanisms, we regress the satisfaction with Chancellor Angela Merkel on perceived threat and the anxiety index. We apply weights as provided by the MCS team which make the MCS data correspond to German census data with respect to several socio-economic dimensions (Blom et al., 2020). We expect perceived threat to increase approval of Chancellor Merkel, and anxiety to depress it. Table 1 reports the results of our fixed effects panel regression.

Results: Threat and Anxiety Affect Leadership Approval

Table 1: The Effect of Perceived Threat and Anxiety on Merkel Approval

	(1)	(2)
Perceived Threat	0.484***	0.500***
	(0.116)	(0.120)
Anxiety	−0.435***	−0.430***
	(0.140)	(0.140)
COVID-19 Incidence		−0.001
		(0.001)
HH Income Previous Month		0.087
		(0.075)
Policy Congruence: Border Closures		0.092**
		(0.037)
Individual Fixed effects	Yes	Yes
Number of Respondents	3680	3680
Observations	32,187	32,187
Note:	*p<0.1; **p<0.05; ***p<0.01	

The findings lend strong support to both theorized mechanisms. Respondents rally around Chancellor Merkel as the head of the German federal government when feeling exposed to an external threat. The more pronounced threat perceptions are, the stronger the rally effect becomes which is in line with our *perceived threat* mechanism. For instance, when perceived threat increases from 0 to 1, Germans' approval of Angela Merkel increases on average by about .5 units on an

eleven-point scale.[5]

When respondents feel anxious about the pandemic, however, we observe the opposite effect on Merkel approval. In accordance with our *anxiety* mechanism, the data show that anxiety undermines the support for the head of government. As anxiety increases from 0 to 1, a respondent's approval of Chancellor Merkel decreases by about .4 units. Negative emotions, such as anxiety, negatively affect respondents' assessment of Chancellor Merkel.

Turning to the control variables, we observe that neither an increasing COVID-19 incidence nor more household income has an effect on leadership approval once perceived threat and anxiety are accounted for. By contrast, approval of the government's containment strategy increases support for Angela Merkel. Most importantly, the effects of perceived threat and anxiety remain substantially unaffected by the inclusion of the control variables. All else equal, the empirical evidence provided here suggests that the rally effect is related to an increase in individuals' threat perceptions. At the same time, the positive effect of perceived threat on the approval ratings of political leaders vanishes and, in fact, gets reversed once perceived threat is overshadowed by anxiety. In this situation, negative feelings dominate the assessment of political leaders during an emergency situation such as the global COVID-19 pandemic.

Reverse Causality: Does Merkel Propagate Threat and Anxiety?

In the following, we demonstrate that our results do not mistake causes (perceived threat and anxiety) for effects of Merkel approval. Suppose that someone argues that instead of perceived threat causing an increase in satisfaction with Angela Merkel, the Chancellor herself may increase individuals' threat perceptions. More specifically, individuals who are satisfied with Merkel's performance in office might trust her public statements about the severity of the virus more than individuals with a critical stance towards her. As a consequence, Merkel supporters may feel more threatened because of the Chancellor's alarming rhetoric. Similarly, longstanding Merkel

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[5]At first, this may seem relatively weak for a rally effect. We argue, however, that this figure is rather a lower limit of the rally effect. Recall that the data used to obtain this result were collected when the pandemic had already hit. In fact, about 97 percent of respondents indicate that they perceive some personal threat due to the pandemic in the survey's fist week. Thus, our fixed-effects results rely on within respondent variation at a time of generally high threat perceptions. It is beyond this paper to estimate any additional effect skyrocketing threat perceptions at the very beginning of the pandemic may have had on leadership approval.

opponents may be worried about her managing the crisis, and hence opposing Merkel may lead to anxiety during the pandemic (*endogenous affect*, see Ladd and Lenz, 2008, 2011). Yet, in the following, we demonstrate that these reverse causal mechanisms receive no empirical support.

If individuals who were satisfied with Angela Merkel prior to the outbreak of the pandemic believed her more, and hence felt more threatened by the virus during the pandemic, we should be able to observe this pattern when exploiting (pre-pandemic) panel data. Similarly, if the thought of Angela Merkel managing Germany's crisis response really caused anxiety in citizens, we should be able to observe that people who were unsatisfied with Merkel's work prior to the pandemic are more anxious during the pandemic.

We test for these patterns by estimating a set of hierarchical regressions on two different dependent variables: respondents' perceived threat and their anxiety. We acknowledge the fact that respondents provide multiple threat and anxiety ratings over time, and add random intercepts at both the respondent and the MCS week level. As key independent variable we use a (pre-pandemic) evaluation of Angela Merkel from July 2018. Since many MCS respondents were recruited to the GIP only later that year, roughly 50 % of respondents drop out from this analysis. We, thus, also present evidence based on respondents' evaluations of the federal government in November 2019. While replacing evaluations of Angela Merkel by government evaluations does not immediately measure our theoretical point of interest, yet, it allows us to use a more contemporary measurement and draw on the full sample of MCS respondents. Both measurements were collected on an eleven-point scale which we recode to the unit interval. To corroborate the claim that Angela Merkel increased threat perceptions during the pandemic, either of these measurements (or both) should be positively correlated with perceived COVID-19 threat. To support the hypothesis that Angela Merkel triggers anxiety in citizens, they should be negatively correlated with anxiety.

To control for the most basic reasons why someone might feel threatened by or anxious because of COVID-19, we include a set of dummy variables each of which indicates that a respondent has a characteristic which is directly linked to a more severe course of COVID-19. These include an indicator variable for each men, respondents with at least one of a list of specific medical preconditions,[6] and respondents who are more than 60 years of age (Yang et al., 2020).

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[6]These are obesity, diabetes, high blood pressure, issues with the heart, breathing, the lungs, or the liver as well

As models 1 and 2 in Table 2 show, the effects of neither pre-pandemic Merkel approval, nor pre-pandemic satisfaction with the federal government are significantly associated with the threat levels respondent report. Models 3 and 4 indicate that these factors are also not significantly associated with anxiety. Unsurprisingly, we find consistent effects that a medical precondition and gender are related to higher threat and anxiety levels. Further, high age increases perceived threat, yet, results for anxiety levels are mixed. Overall, this analysis strongly suggests that Merkel supporters did neither heighten their perceived threat levels more than the average population, nor were they more anxious during the early pandemic. These findings clearly refute the alternative mechanisms and substantially increase our confidence that anxiety and perceived threat drive support for Angela Merkel, and not the other way around.

Table 2: Does Merkel cause Threat or Anxiety?

	Perceived Threat		Anxiety	
	(1)	(2)	(3)	(4)
Merkel Approval (July 2019)	−0.008		−0.021	
	(0.025)		(0.020)	
Government Approval (November 2020)		0.016		−0.005
		(0.021)		(0.017)
Medical Precondition	0.105***	0.129***	0.039***	0.058***
	(0.014)	(0.009)	(0.011)	(0.007)
60+ Years	0.066***	0.060***	0.023**	0.009
	(0.014)	(0.009)	(0.011)	(0.007)
Male	−0.047***	−0.035***	−0.057***	−0.056***
	(0.014)	(0.008)	(0.011)	(0.007)
Intercept	0.338***	0.307***	0.269***	0.259***
	(0.025)	(0.022)	(0.017)	(0.014)
Respondent Random Effect: Std. Dev.	0.224	0.223	0.177	0.177
MCS Week Random Effect: Std. Dev.	0.076	0.074	0.042	0.04
Number of Respondents	1134	2977	1134	2979
Observations	16,301	43,252	16,531	43,892
Log Likelihood	4,142.889	10,815.900	8,360.099	20,908.930

Note: *p<0.1; **p<0.05; ***p<0.01

as cancer or a weak immune system.

Increasing the Scope: Approval of Key Ministers

Prior research suggests that the rally effect is not limited to the head of government but that it also affects government ministers (Gaines, 2002). In the following, we demonstrate that minister approval during times of crisis dependents on the perceived threat mechanism and the anxiety mechanism. We focus on the German Minister of Health, Jens Spahn, and the Minister for Economic Affairs, Peter Altmaier. Both of them are members of Angela Merkel's Christian Democrats (CDU).[7] We replicate the above analyses on Angela Merkel's approval, yet, replace her approval ratings with respondents' evaluation of the corresponding ministers. The results appear in Table 3.

Table 3: The Effect of Perceived Threat and Anxiety on Minister Approval

	Economics Affairs	Health
	(1)	(2)
Perceived Threat	0.480***	0.625***
	(0.102)	(0.106)
Anxiety	−0.289**	−0.400***
	(0.145)	(0.137)
COVID-19 Incidence	0.012***	0.011***
	(0.001)	(0.001)
HH Income Previous Month	0.046	0.029
	(0.076)	(0.077)
Policy Congruence: Border Closures	0.060*	0.084**
	(0.033)	(0.035)
Individual Fixed effects	Yes	Yes
Number of Respondents	3419	3617
Observations	28,603	31,182

Note: *p<0.1; **p<0.05; ***p<0.01

As expected, while the effects of some control variables differ slightly, we find similar effects for our main explanatory variables on satisfaction with Minister of Health Spahn and Minister for Economic Affairs Altmaier. Even the magnitude of the effects are comparable in size to the ones reported with respect to Angela Merkel's approval ratings. While an increase in threat perceptions

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[7]Unfortunately, the MCS did not survey respondents about additional politicians. Hence, we cannot extend the analysis to other government parties or ministers whose portfolios are less directly affected by the pandemic.

boosts approval, anxiety decreases it. As a result, these analysis confirm that the anxiety mechanism and the perceived threat mechanism are not restricted to the head of government. Instead, we provide evidence that key ministers, that are also immediately involved with crisis responses, are also subject to them.

Increasing the Scope Even Further: International Evidence

Above results convincingly establish that perceived threat and anxiety exert distinct effects on leadership approval in Germany at times of crisis. Yet, we do not know if these results generalize to other societies. In this section, we demonstrate that they hold up beyond the German context.

Unfortunately, moving beyond German borders comes at the cost of less immediate tests of the anxiety mechanism and the perceived threat mechanism. This is because were are not aware of comparative surveys that include all the items we require to perfectly replicate the German research design. Despite some caveats that remain, we seek to replicate our German analysis as closely as possible.

The data we exploit stem from the fourth wave of the Citizens' Attitudes Under Covid-19 project (CAUCP), a survey of a thousand respondents in each of eleven countries across the world (Brouard et al., 2021).[8] The data cover countries that differ in several aspects including their political institutions, government compositions, leadership tenure in office, political cultures, pandemic intensities, and policies to contain the pandemic. A successful replication of the German results would, thus, boost our confidence that perceived threat and anxiety have distinct effects on leadership approval in many contexts including crises severity, government responses, and pre-pandemic leadership approval.

The CAUCP data include direct measurements of two key variables that our theory concerns: leadership approval and respondents' anxiety. Because there is no immediate information on respondents' perceived threat due to the pandemic, we rely on respondents' assessments how likely

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[8]These countries (and their leaders) are Australia (Prime Minister), Austria (Prime Minister), Brazil (President), France (President), Germany (Prime Minister), Italy (Prime Minister), New Zealand (Prime Minister), Poland (Prime Minister), Sweden (Prime Minister), the United Kingdom (Prime Minister), and the United States of America (President).

they would become seriously ill if infected with the Corona virus.[9] Threats to one's personal health are certainly one, albeit not the only, main driver of perceived pandemic threats. We are, hence, convinced that perceived health threat is a reasonable proxy for general perceived pandemic threat. In the supporting information SI.3, we use the German MCS data and show that that our central findings replicate when substituting pandemic threat for perceived likelihood to require hospital treatment when infected.

As before, we control for the rate of reported COVID-19 infections per 100,000 inhabitants in the last seven days (European Centre for Disease Prevention and Control, 2020),[10] respondents' per capita household income (in 1000 units of the local currency), and whether the government meets their opposition to or demand for a total border closure, respectively (Hale et al., 2021). Unlike before, we do not analyze panel data. Hence, we cannot include individual fixed effects, and instead need to control for time-invariant differences between respondents. To do so, we add an indicator variable for each women, respondents who graduated from tertiary education (at least ISCED5),[11] respondents who feel at least a little closer to the PM party than to any other party, and those who have a medical precondition that is likely to cause a severe course of COVID-19 (Yang et al., 2020). We also add respondents' age in years. Finally, we include country-level fixed effects which control for differences between countries (e.g., differences in mean income levels and mean leadership approval). Instead of choosing a country as reference category, we omit the intercept from the analysis and estimate all fixed effects. Eventually, we obtain a dataset of 10,620 respondents from eleven countries.[12].

The results appear in Table 4. As before, we expect that perceived threat exerts a positive effects on leadership approval, while anxiety yields a negative effect. As Table 4 indicates, these findings hold up. Further, the coefficients on the control variables are either insignificant or similar to previous results. The newly added controls on respondent demographics are in line with standard expectations. For instance, partisans of the main government party approve significantly

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[9]We rescale the anxiety and perceived threat scores from an eleven point scale to the unit interval.

[10]While we know that all respondents answered our survey in the first half of December 2020 (Brouard et al., 2021), we do not know exactly when American and French respondents completed the survey. We assign the same COVID-19 incidence to all of these respondents. Since we use country-level fixed effects (see below) they do not contribute to the estimation of the corresponding coefficient.

[11]ISCED classifications are taken from the OECD Maps of Educational Systems.

[12]Summary statistics can be found in the supporting information SI.4

more of the leader than others. Overall, the results suggest that the perceived threat and anxiety mechanism play a crucial role in leadership approval at the time of crises across many political and economic contexts.

Conclusion and Discussion

We present theoretical reasoning and robust empirical evidence that perceived threat and anxiety have distinct effects on leadership approval at times of crises. Using German individual-level panel data from the early COVID-19 pandemic, we causally identify that perceived threat increases citizens' support of their leader, and anxiety decreases it. We also provide evidence from eleven democracies that these findings generalize beyond the German context. Moreover, we show that perceived threat and anxiety also have the expected effect on the approval of ministers who manage key crisis portfolios. Our findings yield highly important implications for our understanding of how the so-called rally effect evolves, and how it shapes the politics of crises in democracies.

Our finding that perceived threat and anxiety have distinct and opposed effects on leadership support has striking implications for democratic crises politics. It suggests that politicians and political parties face strategic incentives to exploit crises to their advantage. Based on our two counteracting mechanisms we would expect that politicians affiliated with the government or the opposition strategically frame crises as threatening or frightening to advance their political goals and to exploit how times of crises play out in public opinion. Previous research suggests that government and opposition develop different crisis exploitation strategies, and that contextual features condition whether a government is likely to gain additional support from crisis exploitation or not (Boin, 't Hart and McConnell, 2009). Future research should, thus, scrutinize how government and opposition crisis rhetoric aim at threat perceptions and anxiety, under what circumstances their crisis rhetoric affects individual levels of perceived threat and anxiety, and when and why corresponding effects are strong and durable enough to influence election results, government stability, and crises policy-making.

Our study also makes significant contributions to our understanding of the rally effect's scope. We delivered evidence indicating that the effects of perceived threat and anxiety are not limited to

Table 4: Cross-country Evidence that Leadership Approval can be systematically predicted by Perceived Threat and Anxiety.

Perceived Threat	0.867***
	(0.117)
Anxiety	−0.238**
	(0.111)
COVID-19 Incidence	−0.013*
	(0.007)
HH Income	−0.001
	(0.001)
Policy Congruence: Border Closures	−0.042
	(0.087)
Age	0.002
	(0.002)
Female	0.192***
	(0.059)
Highly Educated	0.166**
	(0.071)
Medical Precondition	0.133
	(0.160)
Leader Party ID	1.089***
	(0.136)
Australia	5.068***
	(0.190)
Austria	7.387***
	(1.794)
Brazil	5.286***
	(0.985)
France	4.383***
	(0.851)
Germany	7.063***
	(1.092)
Italy	7.561***
	(1.731)
New Zealand	5.470***
	(0.244)
Poland	4.733***
	(1.507)
Sweden	8.543***
	(2.530)
United Kingdom	5.450***
	(1.098)
United States of America	10.249***
	(3.091)
Observations	10,620
Adjusted R^2	0.728

Note: 19 *p<0.1; **p<0.05; ***p<0.01

the political leader, but also pertain to other members of the government. In fact, also in the aftermath of the 9/11 terrorist attacks, not only President George W. Bush received a boost in support but also Secretary of Defense Donald Rumsfeld and Secretary of State Colin Powell (Gaines, 2002). Unfortunately, our study has to stop short of studying the rally effect's partisan scope. For multiparty systems with coalition governments, it would be interesting to study whether the perceived threat effect also translates to ministers of the junior coalition partners. There is some evidence from the Netherlands indicating that this is not the case (Beijen, Otjes and Kanne, 2021). It is conceivable that the perceived threat mechanism first and foremost boosts support for the head of government as the most prominent figure of the nation's political leadership. Then, there might be spillover of this effect to ministers of the same party of the government's head but not or to a lesser extent to ministers of other parties. Similarly, with regard to vote choice, the perceived threat mechanism can be expected to increase electoral support for the party of the head of government while junior coalition parties, which have a less apparent association with the political leadership and also less media attention than the senior party (Klüver and Spoon, 2020), might profit to a lesser degree.

Our results also yield implications for crises' ability to harm democratic principles. The findings that anxiety and perceived threat have opposing effects on leadership approval add a new layer to other crisis related research. Prior scholarship reports a tendency for more anxious citizens to value stability and maintain their prior behavior, whereas citizens who feel more threatened demand action and are willing to change. For instance, anxiety is related to opposing a foreign intervention after 9/11 (Huddy et al., 2005), a smaller probability to use a mobile phone application that traces contacts during the COVID pandemic (Witteveen, de Pedraza et al., 2021), and a preference for less disrupting electoral candidates (Bisbee and Honig, 2021). Citizens who felt more threatened, by contrast, were more likely to support a foreign intervention following 9/11 (Huddy et al., 2005), more likely to allow their smartphone to trace their contacts (Wnuk, Oleksy and Maison, 2020), and more likely to vote for robust responses to terror (Getmansky and Zeitzoff, 2014). Adding leadership support to the list of perceived threat's consequences, thus, raises concerns with respect to democratic theory: The fact that the rather change-driven share of the population is also likely to

lend additional support to the government may open a window of opportunity for the government to alter systems of checks and balances. When crisis support for the government wanes, these changes are often locked in so that they will not be fully reversed. The Patriot Act passed by the US Congress in the aftermath of 9/11 serves as a prime example.

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SI Supporting Information

Contents

SI.1 Summary Statistics German Panel Data

Table SI1: Summary Statistics: German Panel Data

Statistic	N	Mean	St. Dev.	Min	Max
Merkel Approval	32,187	6.285	2.897	0	10
Perceived Threat	32,187	0.398	0.288	0.000	1.000
Anxiety	32,187	0.267	0.220	0.000	1.000
COVID-19 Incidence	32,187	19.240	14.375	2.952	44.544
HH Income Previous Month	32,187	1.654	0.921	0.050	7.500
Policy Congruence: Border Closures	32,187	0.737	0.440	0	1

SI.2 Question Text Wording

Merkel Approval; MCS: SCPX001

- *English translation:* How dissatisfied or satisfied are you with the work of Chancellor Angela Merkel?

  - completely dissatisfied (1) - fully satisfied (11)

  - don't know

- *Original (German):* Wie unzufrieden oder zufrieden sind Sie mit der Arbeit von Bundeskanzlerin Angela Merkel?

- völlig unzufrieden (1) - völlig zufrieden (11)

- weiß nicht

Perceived Threat; MCS: SCBX003

- *English translation:* To what extent do you see the coronavirus pandemic as a threat to yourself?

  - no threat to me at all (0) - extreme threat to me (10)

  - don't know

- *Original (German):* Inwiefern empfinden Sie die Corona-Virus-Pandemie als Bedrohung für sich selbst?

  - überhaupt keine Bedrohung für mich (0) - extreme Bedrohung für mich (10)

  - weiß nicht

Anxiety (Worry and Nervousness)

- *English translation:* Below are a number of statements people use to describe themselves. Please indicate how much each statement indicates how you feel at this moment. There are no right or wrong answers. Please do not think twice and remember to choose the answer that best describes your current emotional state.

  - I am concerned that something could go wrong **(MCS: SCBX009)**.

  - I am nervous **(MCS: SCBX011)**.

    * not at all (1)

    * a little (2)

    * quite (3)

    * very (4)

- *Original (German):* Im Folgenden finden Sie eine Reihe von Aussagen, mit denen Menschen sich selbst beschreiben. Bitte geben Sie an, wie sehr die jeweilige Aussage angibt, wie Sie sich jetzt in diesem Momentfühlen. Es gibt keine richtigen oder falschen Antworten. Überlegen Sie bitte nicht lange und denken Sie daran, diejenige Antwort auszuwählen, die Ihren augenblicklichen Gefühlszustand am besten beschreibt.

    - Ich bin besorgt, dass etwas schiefgehen könnte **(MCS: SCBX009)**.

    - Ich bin nervös **(MCS: SCBX011)**.

        * überhaupt nicht (1)

        * ein wenig (2)

        * ziemlich (3)

        * sehr (4)

HH Income Previous Month

- *English translation:* How much money did your household have in February [March / April / May / June] 2020? **(MCS: SCDX005/ SCDX007/ SCDX008/ SCDX009)**

    - less than 150 euros (1)

    - 150 to under 400 euros (2)

    - 400 to under 1000 euros (3)

    - 1000 to under 1500 euros (4)

    - 1500 to under 2000 euros (5)

    - 2000 to under 2500 euros (6)

    - 2500 to under 3000 euros (7)

    - 3000 to under 3500 euros (8)

    - 3500 to under 4000 euros (9)

    - 4000 to under 4500 euros (10)

- 4500 to under 5000 euros (11)

- 5000 to under 5500 euros (12)

- 5500 to under 6000 euros (13)

- 6000 to under 7500 euros (14)

- 7500 euros and more (15)

- don't know

- not specified

- *Original (German):* Wie viel Geld stand Ihrem Haushalt im Februar [März/ April/ Mai/ Juni] 2020 in etwa zur Verfügung? **(MCS: SCDX005/ SCDX007/ SCDX008/ SCDX009)**

  - unter 150 Euro (1)

  - 150 bis unter 400 Euro (2)

  - 400 bis unter 1000 Euro (3)

  - 1000 bis unter 1500 Euro (4)

  - 1500 bis unter 2000 Euro (5)

  - 2000 bis unter 2500 Euro (6)

  - 2500 bis unter 3000 Euro (7)

  - 3000 bis unter 3500 Euro (8)

  - 3500 bis unter 4000 Euro (9)

  - 4000 bis unter 4500 Euro (10)

  - 4500 bis unter 5000 Euro (11)

  - 5000 bis unter 5500 Euro (12)

  - 5500 bis unter 6000 Euro (13)

  - 6000 bis unter 7500 Euro (14)

  - 7500 Euro und mehr (15)

– weiß nicht

– keine Angabe

Policy Congruence: Border Closures

- *English translation:* In Germany, various measures are and have been discussed and taken to contain the corona pandemic. We would now like to know from you what you think of the measures that have already been decided and what you think of of possible future measures. Which of the following measures do you consider appropriate in the current situation?

  – Closure of national borders to travelers (**MCS: SCPX006_b**)

- *Original (German):* In Deutschland werden und wurden zur Eindämmung der Corona-Pandemie verschiedene Maßnahmen diskutiert und ergriffen. Wir möchten nun von Ihnen wissen, was Sie von bereits beschlossenen Maßnahmen als auch von möglichen zukünftigen Maßnahmen halten. Welche der folgenden Maßnahmen halten Sie in der heutigen Situation für angemessen?

  – Schließung der Landesgrenzen für Reisende (**MCS: SCPX006_b**)

Health Secretary Approval; MCS: SCPX002

- *English translation:* How dissatisfied or satisfied are you with the work of Federal Health Secretary Jens Spahn?

  – completely dissatisfied (1) - fully satisfied (11)

  – don't know

- *Original (German):* Wie unzufrieden oder zufrieden sind Sie mit der Arbeit von Bundesgesundheitsminister Jens Spahn?

  – völlig unzufrieden (1) - völlig zufrieden (11)

  – weiß nicht

Business Secretary Approval; MCS: SCPX003

- *English translation:* How dissatisfied or satisfied are you with the work of Federal Business Secretary Peter Altmaier?

    – completely dissatisfied (1) - fully satisfied (11)

    – don't know

- *Original (German):* Wie unzufrieden oder zufrieden sind Sie mit der Arbeit von Bundeswirtschaftsminister Peter Altmaier?

    – völlig unzufrieden (1) - völlig zufrieden (11)

    – weiß nicht

SI.3   Expected Hospitalization instead of Perceived Threat

In this section, we replicate our main analysis on support for Angela Merkel (Table 1). Yet, we replace the direct measure of perceived pandemic threat by respondents' assessments how likely they would have to be admitted to hospital if infected with COVID-19. Since we use a similar proxy in the comparative analysis (likelihood to become seriously ill if infected), replicating our findings with the German MCS data would boost our confidence in expected serious illness as a proxy for perceived pandemic threat.

The analysis here is identical to the analysis shown in Table 1 — except for the perceived threat variable. It is replaced by respondents' assessments how likely they would have to be admitted to hospital if infected with COVID-19. Respondents answered on a seven-point scale (higher values imply a higher probability to be admitted) which we rescale to the unit interval.

We continue to expect that anxiety has a negative effect on Merkel approval, while expected hospitalization should have a positive effect. The results in Table SI2 support these expectations. Further, they are substantially similar to the results in Table 1. We are, thus, confident that expected hospitalization and expected severe course of disease are meaningful proxies for perceived pandemic threat.

Table SI2: The Effect of Expected Hospitalization and Anxiety on Merkel Approval

Expected Hospitalization	0.403**
	(0.160)
Anxiety	−0.260*
	(0.149)
COVID-19 Incidence	0.0002
	(0.001)
HH Income Previous Month	0.080
	(0.081)
Policy Congruence: Border Closures	0.051
	(0.038)
Individual Fixed effects	Yes
Number of Respondents	3371
Observations	26,233
Note:	*p<0.1; **p<0.05; ***p<0.01

SI.4 Summary Statistics International Data

Table SI3: Summary Statistics: International Data

Statistic	N	Mean	St. Dev.	Min	Max
Leader Approval	10,620	4.760	3.156	0	10
Perceived Threat	10,620	0.528	0.279	0.000	1.000
Anxiety	10,620	0.479	0.297	0.000	1.000
Age	10,620	48.988	16.071	18	118
Female	10,620	0.502	0.500	0	1
Highly Educated	10,620	0.310	0.463	0	1
HH Income	10,620	34.919	88.659	0.062	900.001
Leader Party ID	10,620	0.050	0.219	0	1
Medical Precondition	10,620	0.875	0.331	0	1
Policy Congruence: Border Closures	10,620	0.283	0.451	0	1
COVID-19 Incidence	10,620	205.008	127.087	0.270	445.731