Anxious and Angry: Emotional and Political Motives for Approving of and Complying with Hygiene Measures related to the COVID-19 Pandemic

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Abstract

The current COVID-19 pandemic elicits a vast amount of collective anxiety, which may also have broader societal and political implications. In the current study, we investigate the individual and social impact of this anxiety. We conducted an online survey in four different countries (Germany, the Netherlands, Spain and the UK; N=2031), examining whether anxiety about the Coronavirus leads to more approval of and compliance with hygiene measures deployed in those countries, and what role political beliefs play at this. We found significant differences between the four countries, with Spain marking highest anxiety as well as approval of and compliance with hygiene measures. Furthermore, three linear regressions showed that one's anxiety is not only predicted by proximity to sources of infection (age, country, oneself or friends being infected), but also by political views (populist attitudes, anger at the government). Importantly, people who are anxious are also angry, at transgressors of hygiene rules or at their government. Thus, anger does not reduce one's fear, but fear leads to more anger, especially in countries with the highest infection rates. Anxiety also leads to more approval of and compliance with hygiene measures, but again anger and political beliefs play a role in this relation. Whereas behavioral compliance is more predicted by fear and anger at others who transgress the rules, approval of the measures is better predicted by anxiety about the impact of Coronavirus and anger at the government.

Keywords: anger, anxiety, conspiracy mentality, COVID-19, populism

Fear of COVID-19 and Populism

Previous studies on infection outbreaks, as well as recent studies on the current COVID-19 pandemic have shown that viruses like Coronavirus not only pose medical health problems, but also elicit a vast amount of anxiety and mental stress (Liu et al., 2020; Robillard et al., 2020). We argue that this collective anxiety of being infected with the Coronavirus may easily generalize to other, societal or political domains (see Manstead & Fischer, 2001; Bruder, Fischer & Manstead, 2014). Fear and anxiety are characterized by a high amount of uncertainty (Roseman, 1984; Smith & Ellsworth, 1985) about whether and how one will be affected by threat, i.e., a virus, and by nature individuals aim to reduce this state of discomfort as much as possible (van Harreveld, Rutjens, Rotteveel, Nordgren, & van der Pligt, 2009). One way to reduce this unpleasant emotional state is by blaming the government for not taking the appropriate public health measures.

In the current study, we investigate whether fear of COVID-19 infection will lead to more approval of and compliance with hygiene measures, but also whether populist attitudes, anger at the government and conspiracy mentality affect this approval of and compliance. In addition, we include samples from four different European countries with different political and public health contexts.

Fear of COVID-19 Infection

The current global crisis about being infected with the COVID-19 disease elicits a lot of anxiety and mental stress. Anxiety is often referred to as a more generalized negative state of mind of foreboding or apprehensive anticipation of future danger and is considered less specific than fear. Fear always has an identifiable object, as one is afraid of something (e.g., Öhman & Rück, 2007). Thus, in the case of COVID-19, it may be more accurate to speak of fear rather than anxiety, but at the same time this fear may give rise to a more general anxious

foreboding, as it remains unknown when and how exactly the Coronavirus attacks the human

body. We therefore will use the terms 'anxiety' and 'fear' interchangeably in this paper.

Various studies, for example in China (Chen, et al., 2020; Liu et al., 2020; Tian et al.,

2020; Wang et al., 2020; Zhu et al., 2020) but also in other countries (Mazza et al., 2020;

Ozamiz-Etxebarria, Dosil-Santamaria, Picaza-Gorrochategui, & Idoiaga-Mondragon, 2020;

Pieh, Budimir, & Probst, 2020; Robillard et al., 2020) have shown that people are

experiencing anxiety in reaction to this pandemic. More specifically, people with the highest

probability of being infected show most distress, such as the elderly, or people living close to

pandemic flashpoints, e.g., the population of China's central provinces where the COVID-19

pandemic started, reported more distress than people in other parts of China. Further,

respondents who had any friends infected with the Coronavirus are more likely to be severely

anxious, as measured with a Generalized Anxiety Disorder Scale (GAD-7; Cao et al., 2020).

Previous research has also shown that in case information about the causes of an event is

ambiguous, stress may further increase as people tend to interpret ambiguous information

(i.e., uncertainty) as more negative (Blanchette & Richards, 2010). These patterns of factors

influencing individual differences in fear of the Coronavirus should also be reflected in our

current sample of four European countries, namely Germany, the Netherlands, Spain and the

UK. Because the Coronavirus has caused casualties and deaths to different degrees across

those countries, we may expect that fear of the Coronavirus will vary per country, as well as

with age and closeness to sources of infection, such as whether one has friends who are or

have been infected with the Coronavirus.

Fear is a natural response to the threat of a highly contagious and potentially deadly

virus. Fear implies the appraisal of a negative event as threatening for one's safety or health,

or more general well-being. Depending on the type of threat and one's own perceived ability

to effectively cope with the threat, fear may elicit a tendency to avoid, run away from, attack,

or control the threat (Frijda, Kuipers, & ter Schure, 1989; Smith & Ellsworth, 1985). People will try to avoid places where they suspect the Coronavirus to be present, but given the invisibility of the virus, they will still experience uncertainty, in contrast to running away from a visible threat. At the time of collecting our data, it was still unknown how exactly the Coronavirus spreads and how *multiple infection* can take place. Thus, knowing little about the threat implies that people will be anxious as long as there is no treatment. Downregulating one's fear is an obvious consequence.

There are two common ways to downregulate one's fear. The first is *situation selection*, namely avoiding situations that are expected to increase one's fear (Gross, Richards, & John, 2006; Gross, 2002). In the case of reducing the anxiety related to COVID-19, this can be effectuated by taking precautionary measures and complying with hygiene rules set by the government. Such preventive behavior should reduce the feelings of threat and provide certainty that one is doing the best they can. We therefore expect that anxiety is a positive predictor of the approval of and compliance with measures to protect oneself of being infected with the Coronavirus. This would also imply that anxious people are more condemning of others who transgress these rules and thereby put oneself and fellows in danger.

Anxiety, Anger and Populism

A second way to downregulate one's fear and the accompanying uncertainty is *cognitive reappraisal*, i.e. trying to perceive the situation in a less threatening way. For example, one could view the bright side of the COVID-19 implications, or reappraise them in terms of a divine purpose, implying that humankind has to accept the current situation. Rather than framing the crisis in an optimistic way, however, people may also try to reappraise the feeling of having no control by blaming others for the experienced negative situation. Blaming others is one way to take back control over the fear of the unknown, namely not

knowing how the Coronavirus spreads and its impact on one's life. This way of emotion regulation is actually replacing one negative emotion, fear, with another, namely anger (Frijda et al., 1989; Mesquita & Frijda, 2011; Roseman, 1984). Blaming others is characteristic of anger (e.g., Fischer & Roseman, 2007; Harmon-Jones, 2003), but has also been associated with populist thinking, in which blaming the government and the elites for the negative state of affairs of a society is an important element as well (Abadi, D., Huguet Cabot, P.L., Duyvendak, J.W. & Fischer, A., 2020; Rico, Guinjoan, & Anduiza, 2017; Salmela & von Scheve, 2017).

Blaming others as a way of reducing uncertainty can be found in conspiracy beliefs as well (van Prooijen & Acker, 2015), where people feel the urge to explain impactful events with simplistic, one-sided, and proportionally large causes, such as secret organizations or extraterrestrials (Leman & Cinnirella, 2007; van Prooijen & Douglas, 2017). Recent theories have argued that existential threats that occur because of distressing large societal events, such as fear of the Coronavirus, may give rise to conspiracy beliefs (Van Prooijen, 2020). According to van Prooijen's *existential threat model*, conspiracy theories are mainly endorsed when there are salient outgroups. We therefore suggest that individuals who already frame negative events in terms of 'Us versus Them', would be more prone to conspiracy mentality (see also Abadi et al., 2020). In other words, anxious individuals may be more likely to adhere to conspiracy mentality and populist arguments, thus turning their fear of complex threats into simplistic and one-sided blames attributed to 'the elites' or 'the government'. In turn, conspiracy mentality may also contribute to one's fear of the Coronavirus.

Threats like the COVID-19 pandemic have similar characteristics to the 9/11 terrorist attacks. According to *terror management theory* (Greenberg, Solomon, & Pyszczynski, 1997), death-related anxiety reminds us of our own *mortality salience* and the transience of our cultural heritage (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). Global

threats, such as terrorist attacks, but also pandemics make our mortality salient. In order to defend ourselves against this death-related fear, we fall back on worldviews defending our behavior, because such beliefs provide symbolic immortality, and transcend the biological reality. Various studies have shown that people, when reminded of their own death, intensify their ideology (Huddy, Feldman, Taber & Lahav, 2005; Huddy & Feldman, 2011), implying that conservatives become more conservative and liberals more liberal. In other words, people fall back on the cultural, religious and political beliefs that are part of their worldview. This also explains why they become more hostile and aggressive towards people with other worldviews and support aggressive interventions against outgroups. For example, after 9/11 terrorist attacks, Muslim immigrants were more often portrayed as a threat to society in the media, or government descriptions of asylum-seekers tended to use terms such as 'threatening', 'illegitimate', or 'illegal' (Esses, Medianu, & Lawson, 2013).

In sum, there is strong evidence that *mortality salience* leads to societal polarization, as indicated by strengthening of *ingroup favoritism* and *outgroup hostility* (Greenberg et al., 1990; Rosenblatt et al., 1989; Schimel et al., 1999). Applying these insights to fear of the Coronavirus, and assuming that the pandemic is considered a threat to most people, we may assume that Coronavirus causes *mortality salience*, and may lead to tendencies to blame outgroups. In fact, pandemics in the past have often led to outgroup violence. For example, the plague led to murders of Catalans in Sicily, and pogroms against Jews across Europe (see Cohn, 2017). We have also seen examples during the current COVID-19 pandemic of hostility against Chinese people, or more generally Asians, who are accused of having started the spreading of the Coronavirus. This *outgroup hostility* is not necessarily an ingredient of populism, but it is often part of the 'Us versus Them' rhetoric – particularly in opposition to the government, who are not 'Us'. Fear of the Coronavirus may thus strengthen populist

attitudes, which in turn will result in less approval of rules set by the government – the very government that is perceived as not properly handling the pandemic.

Current Study

In the current study we examined the social and political implications of fear of the Coronavirus in four different countries: Germany, the Netherlands, Spain and the UK. These four countries have distinct public health laws, socio-economic and political contexts and they implemented different measures during the COVID-19 pandemic. On April 13, 2020, Spain counted more than 17.000 deaths, while the Netherlands and Germany reported less than 3,000 deaths. This same week there was a large increase of Coronavirus deaths in the UK, counting more than 11,000 deaths. When our survey was conducted, Spanish citizens had already been under full lockdown since four weeks (starting in March 14, 2020). On March 16 the prime minister of the Netherlands addressed the nation to inform them about *social distancing* measures that were less strict than in other European countries ('intelligent lockdown'). On the same day, the state of Bavaria in Germany declared the state of emergency, and other German states followed soon after. The measures taken in Germany varied per state and it is therefore difficult to draw general conclusions on the strictness of policy measures for the whole country. In the UK the measures became legally enforceable on the March 26, and therefore our British sample had already experienced the lockdown for over 2 weeks.

We tested the following hypotheses. First, *Anxiety about Coronavirus* is mostly predicted by factors that reflect the proximity to sources of infection (age, country, oneself or friends being infected with the Coronavirus), but also by regulatory processes in the form of belief systems reducing anxiety (*Religiousness*, *Spirituality*, *Populist Attitudes*, *Anger at Government)* or increasing anxiety (*Conspiracy Mentality*). Second, *Approval of Hygiene Measures* is predicted by *Anxiety about Coronavirus*, but also by *Populist Attitudes*, *Anger at*

Government and *Conspiracy Mentality*, which may *negatively* affect the *Approval of Hygiene Measures*. Third, this may not be the case for *Compliance with Hygiene Measures*, because one's agreement with government measures may be more strongly related to people's views about the government, whereas following actual measures may be more strongly related to one's anxiety about being infected. Thus, we hypothesize that *Compliance with Hygiene Measures* is predicted by *Anxiety about Coronavirus*, as well as by anger at others who transgress the hygiene rules (*Anger at Transgressors*), but not by *Populist Attitudes*, *Anger at Government* or *Conspiracy Mentality*. Finally, we expect and explore the differences between the four countries, based on the Coronavirus transmission, hygiene measures, as well as trust in the government, yet without clear hypotheses.

Method

We tested our hypotheses in a large-scale cross-national study across four European countries. In view of the COVID-19 pandemic, we included a variety of European countries of different public health laws, socio-economic factors and political cultures to display their differences in emotional reactions. Our country samples included Germany, The Netherlands, Spain, and the United Kingdom. Our desired representative sample size amounted to approximately 500 respondents per country, while quotas based on current UN-census data (*United Nations Data Retrieval System*) were set up for age, gender and geographical region. In the *Informed Consent* respondents were instructed about the purpose of our study, their voluntary participation and guaranteed privacy based on GDPR regulations. We obtained ethical approval from the Faculty Ethics Review Board of the University of Amsterdam (Number 2020-SP-12035).

Survey

The survey began with general information about our study and a request for informed consent (see Appendix). All respondents were required to give informed consent,

before proceeding to the actual questions. The survey included both existing and newly developed scales[1]. Cronbach's Alpha (α) is the most common measure of internal consistency ("reliability") of survey items and it is used here to determine how reliable our multiple Likert-scale questions are.[2]

Measures

Anxiety about Coronavirus. We developed this scale to measure anxiety related to the Coronavirus infection, which included three items, such as "I am concerned about the effects of the Coronavirus" and "I am worried that my family may be affected by the Coronavirus". The three items (using a 10-point Likert-scale from *not at all* to *extremely*) formed a reliable scale (Cronbach's α = 0.81).

Conspiracy Mentality. This scale included five items from the existing scale *Conspiracy Mentality Questionnaire* (CMQ; Bruder, Haffke, Neave, Nouripanah & Imhoff, 2013), such as " I think there are secret organizations that greatly influence political decisions". Considering the long history of pandemics inciting anti-Semitism and its recent revival (see Brackmann, 2020; Gerstenfeld, 2020; Kofta, Soral & Bilewicz, 2020), we decided to include the item "Jews or Zionists have engineered the Coronavirus as a biological weapon, in order to dominate the world". The six items (using a 7-point Likert-scale from *strongly disagree* to *strongly agree*) formed a reliable scale (Cronbach's α = .80).

Populist Attitudes. This scale was based on existing items measuring *Populist Attitudes* (Akkerman, Mudde, and Zaslove, 2014; Schulz, Müller, Schemer, Wirz, Wettstein, Wirth, 2018), which was recently revised by Castanho Silva, Jungkunz, Helbling and Littvay

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[1] In some cases, we used shortened versions of the original scale, in order to prevent our Qualtrics survey from becoming too long.

[2] Other variables were measured but are not be reported in the present study. A complete list of measured variables and scales used in our Qualtrics survey (e.g. symbolic and realistic threats, news consumption (headline selection), threat estimation (material and safety, Coronavirus, prosocial behavior, moral reasoning) can be found in the Appendix.

(2019). This scale consisted of three sub-scales, i.e. *People-Centrism (e.g., "Politicians should always listen closely to the problems of the people", Anti-Elitism (e.g., "The government is pretty much run by a few big interests looking out for themselves"), and Manichaean Outlook* (e.g., "You can tell if a person is good or bad if you know their political views"). We also created a subscale *Nativism* by adding three items, such as "The political elites have failed to protect our cultural identity". The ten (using a 7-point Likert-scale from *strongly disagree* to *strongly agree*) formed a reliable scale (Cronbach's α = .71).

Anger at Government. This scale was developed to measure how respondents evaluate the recent actions of their government concerning the COVID-19 pandemic. It included four items (using a 7-point Likert-scale from *strongly disagree* to *strongly agree*), for example "I think that our government can be blamed for not reacting fast enough to the outbreak of the Coronavirus", which formed a reliable scale (Cronbach's α = .81).

Anger at Transgressors. We developed this scale to measure how angry respondents are when other people transgress the hygiene rules set by the government during the COVID-19 pandemic. It included seven items (using a 7-point Likert-scale from *strongly disagree* to *strongly agree*), such as "I think that the main problem is that some people do not follow the rules", or "I would confront people who transgress the rules" which formed a reliable scale (Cronbach's α = .70).

Approval of Hygiene Measures. This scale was created to evaluate the level of approval with various hygiene measures imposed during the pandemic. The scale included nine items (using a 7-point Likert-scale from *strongly disagree* to *strongly agree*), such as " Hand washing for 20 seconds more than 5 times a day" and " Wearing a face mask when leaving your house", and they formed a very reliable scale (Cronbach's α = .88).

Compliance with Hygiene Measures. This scale included the same nine items as *Approval of Hygiene Measures*, while respondents were asked to what extent (using a 7-point

Likert-scale from *never* to *always*) they comply with these hygiene measures themselves. The items formed a reliable scale (Cronbach's α = .78).

Infection of Self or Friends. We asked whether respondents themselves were infected with the Coronavirus (1=I do not know, 2=No, 3=Yes, but not confirmed yet, 4=Yes, confirmed) and whether this was the case for their friends or people in their immediate social environment (same categories).

Demographic Variables and SES. We used self-reported data on age, employment status, gender (1=unemployed, 2=student, 3=retired, 4=(self)employed); marital status (1=single, 2=in a relationship, 3=married, 4=divorced, 5=widowed), religiousness (1=not at all, 10=extremely), spirituality (1=not at all, 10=extremely), and (perceived) subjective socio-economic status (*MacArthur Scale of Subjective Social Status*; Adler, Epel, Castellazzo, & Ickovics, 2000; 1=low, 10=high). All survey items can be found in the Appendix.

Procedure

The survey was first developed in English and then translated into 3 other languages by native speakers of our consortium partners, before being back-translated to English. In addition, each survey version was individualized based on country specifications, such as country name and culture-specific terms. All translated surveys were uploaded on *Qualtrics* online survey platform (Version: April 2020) and the survey data were collected after being synchronized with a global research platform (*Cint*), which provided us a heterogeneous pool of survey respondents across all four countries involved in this study.

A *pre-test* with 50 respondents per country was run to evaluate the survey time taken (on average between 15 and 20 min). It also aimed to assess the clarity of survey items and its suitability to respondents across various countries. Our pre-test results were satisfactory and no further survey revisions were required. In total, our survey resulted in 2062 respondents,

while 31 respondents with missing values were excluded, resulting in 2031 complete

respondents across four European countries.

Results

Respondents

Our final sample consisted of 2031 participants. Only participants who passed the

attention check were included in this sample. The characteristics of our sample across four

countries included quotas based on current UN-census data set up for age, gender and

geographical region (see Table 1).

Table 1

Demographic Variables across four countries (N=2031)

Variables	Categories	Germany	Spain	Netherlands	UK
Age (%)	18 - 24	8.97	9.88	9.74	12.01
	25 - 34	22.14	22.98	22.66	23.82
	35 - 44	23.09	34.48	25.85	23.82
	45 – 54	26.34	19.56	21.47	21.46
	55 - 64	17.75	12.1	18.29	17.32
	65 - 74	1.72	1.01	1.79	1.58
	75 - 84	0	0	0.199	0
Gender (%)	Male	50.76	50.2	52.49	47.44
	Female	49.05	49.8	47.52	52.56
	Other	0.191	0	0	0
Employment (%)	Unemployed	11.26	14.11	20.08	15.75
	Student	6.3	6.05	5.96	2.95
	Retired	8.02	2.22	2.78	3.15
	(Self-)Employed	74.43	77.62	71.17	78.15
Education (%)	No degree	2.1	0.61	1.79	5.12
	High school	11.64	15.52	14.51	22.05
	Some university, no degree	8.59	5.65	36.18	14.76
	Technical degree	46.18	23.79	22.47	18.11
	Bachelor's degree	13.36	38.11	8.95	26.97
	Master's degree	16.79	11.9	12.33	8.47
	Doctoral degree	1.34	4.44	3.78	4.53
Religion (%)	Protestant	23.86	1.82	12.33	19.09
	Roman-Catholic	25.76	46.17	20.48	19.49
	Muslim	5.73	0.81	5.77	4.73

Jewish	0.76	0.61	1.59	1.38
Russian-Orthodox	0.95	0.4	0.4	0.4
Greek-Orthodox	0.76	0	0.4	0.79
Hindu	0.76	0	0.4	0.98
Buddhist	0.57	0.61	0.99	0.79
Agnostic	1.91	6.25	0.99	1.77
Atheist	6.68	14.52	3.58	5.91
Spiritual	1.91	4.64	4.97	3.35
Non-Religious	30.34	24.19	48.11	41.34

Preliminary Analyses: Cross-country Differences

We first checked all reliabilities of our main scales per country, in order to detect issues with specific items. All scales had Cronbach's Alphas (α) similar to the overall reliability and always higher than .60, with one exception. *Compliance with Hygiene Measures* had a good reliability across countries, however not per country. In fact, the only Cronbach's Alpha (α) that was reliable was in Spain (.80) and for the three other countries compliance did not form a reliable scale (Cronbach's alphas between .47 and .59). This can be explained as Spain differed from other countries in so far as COVID-19 pandemic measures were made obligatory. For example, in the UK wearing a face mask in public was not required, and in the Netherlands, it was not even recommended, whereas it was compulsory in most public spaces in Germany and Spain. Also, visiting people with a weakened immune system or chronic health condition, or attending social gatherings of more than two people was prohibited in Spain, while not in the three other countries. Despite these differences, we have summed up the frequency with which people complied to various hygiene measures, as *Compliance with Hygiene Measures*. Table 2 shows the country differences affecting our key scales. As expected, all measured variables significantly differed per country.

Table 2

Means (M) and Standard Deviations (SD), F-test (F) and Effect Size (η_p^2) of Scales per

Country

Scales	Germany	Spain	Netherlands	UK	F (3, 2027)	
	M *(SD)*	*M* *(SD)*	*M* *(SD)*	*M* *(SD)*	*F*	η_p^2
Anxiety about Coronavirus	6.26[c] (2.16)	7.69[a] (1.53)	6.39[c] (1.81)	7.12[b] (1.92)	64.14***	.087
Populist Attitudes	4.72[a] (.91)	4.88[b] (.78)	4.40[c] (.82)	4.81[a] (.81)	32.79***	.046
Conspiracy Mentality	4.13[a] (1.20)	4.76[b] (.93)	4.11[a] (1.07)	4.39[c] (1.07)	39.77***	.056
Anger at Government	3.85[a] (1.34)	4.62[b] (1.45)	3.81[a] (1.39)	4.37[c] (1.38)	41.71***	.058
Approval of Hygiene Measures	5.66[b] (1.09)	6.17[a] (.91)	5.49[b] (.95)	5.84[b] (.98)	42.61***	.059
Compliance with Hygiene Measures	4.42[b] (.87)	6.19[a] (.86)	4.06[c] (.72)	4.04[c] (.84)	771.82***	.533
Anger at Transgressors	4.11[a] (1.06)	4.35[b] (1.02)	4.12[a] (.89)	4.44[b] (1.05)	13.292***	.019

***$p<.001$; different superscripts refer to significant differences at $p<.01$

Our results reveal that *Anxiety about Coronavirus* was significantly higher in Spain than in the three other countries, and that the UK was the second highest. Both Spain and the UK were the countries with the highest death tolls. Spain also had highest scores on *Approval of-* and especially *Compliance with Hygiene Measures*, the latter showing a particularly large effect size. The other cross-country differences were smaller, which showed that Spain scored highest on *Populist Attitudes*, followed by Germany and the UK. Both Spain and the UK had higher scores than the Netherlands and Germany on *Conspiracy Mentality* and *Anger at Government*. Because the differences between the four countries are significant, we include country as a factor in all the further analyses.

Second, we first inspected the correlations between the variables relevant for our second and third hypothesis. As shown in Table 3, the relations are moderately strong. Strongest correlations were found between *Populist Attitudes*, *Conspiracy Mentality* and *Anger at Government*.

Table 3

Pearson Correlations between Scales

Scales	M (SD)	Anxiety about Coronavirus	Approval of Hygiene Measures	Compliance with Hygiene Measures	Conspiracy Mentality	Populist Attitudes	Anger at Government
Anxiety about Coronavirus	6.86 (1.96)						
Approval of Hygiene Measures	5.79 (1.02)	.390**					
Compliance with Hygiene Measures	4.67 (1/21)	.305**	.327**				
Conspiracy Mentality	4.34 (1.10)	.190**	.103**	.258**			
Populist Attitudes	4.70 (1.43)	.240**	.306**	.202**	.615**		
Anger at Government	4.16 (1.43)	.249**	.138**	.243**	.497**	.436**	
Anger at Transgressors	4.25 (1.02)	.329**	.386**	.201**	.214**	.328**	.201**

**$p<.001$

Determinants of Coronavirus Anxiety

Our first hypothesis is that anxiety about COVID-19 is mostly predicted by factors that reflect the proximity to sources of infection (age, country, oneself or friends being infected), but also by belief systems reducing anxiety (*Religiousness*, *Spirituality*, *Anger at Government* or *Populist Attitudes*). In addition, we test the role of different types of belief systems. *Populist Attitudes*, *Anger at Government, and Religiousness Spirituality* may play a

buffering role, because they could downregulate one's anxiety, whereas *Conspiracy Mentality* may play a reinforcing role.

We tested this hypothesis by conducting a hierarchical linear regression to examine whether proximity to source of infection (age, country, oneself or friends being infected), and different types of belief systems (*Religiousness*, *Spirituality*, *Populist Attitudes*, *Anger at Government* and *Conspiracy Mentality*) would predict anxiety related to COVID-19 (*Anxiety about Coronavirus*). We controlled for demographic variables, namely marital status, gender, employment status, education, and (perceived) subjective socio-economic status (*MacArthur Scale of Subjective Social Status*; Adler et al., 2000). We first dummy coded our categorical variables: experience with own/friends' infections (0=no, 1=yes), marital status (0=no relation, 1=in relation), employment (0=unemployed, 1=employed) and country. We used Spain as the reference category because Spain had the highest number of COVID related deaths and the strictest hygiene measures at the moment we collected the data. We entered the variables in three blocks: 1. Demographic (control) variables, 2. Exposure to Coronavirus, 3. Religious and political belief systems.

Table 4

Hierarchical Regression Analysis in 4 Steps for Anxiety about Coronavirus (Standardized Regression Coefficients)

Variables	β	t	sr^2	R	R^2	ΔR^2
Model 1		35.795***		.164	.027	.027
Gender	.106	4.769***	.105			
Employment	-.020	-.860	-.019			
Marital Status	.111	4.872***	.107			
Subjective Social Status	.029	1.260	.028			
Model 2		30.732***		.350	.123	.096
Gender	.105	5.039***	.105			
Employment	-.025	-.141	-.003			
Marital Status	.101	3.241***	.068			
Subjective Social Status	.016	3.174*	.066			

Age	.014	1.785	.037			
Infection (Self)	.012	1.442	.030			
Infection (Friends)	.132	4.160***	.087			
Germany	.-.294	-11.227***	-.234			
UK	-.105	-4.192***	-.087			
The Netherlands	-.284	-11.026***	-.230			
Model 3		13.563***		.440	.193	.070
Gender	.105	5.585***	.112			
Employment	-.025	-0.70	-.001			
Marital Status	.101	3.143**	.063			
Subjective Social Status	-.012	2.060*	.041			
Age	.029	1.690	.034			
Infection (Self)	-.010	.146	.003			
Infection (Friends)	.126	3.660***	.073			
Germany	.-.294	-10.243***	-.205			
UK	-.105	-4.038***	-.081			
The Netherlands	-.284	-8.860***	-.177			
Religiousness	.173	6.464***	.129			
Spirituality	.026	-1.150	-.023			
Populist Attitudes	.165	6.523***	.131			
Conspiracy Mentality	-.039	-2.244*	-.045			
Anger at Government	.131	4.484***	.090			

Note. N=2031. * *p*=.05, **p<.01, ***p<.001

Table 4 shows the results of the hierarchical regression analysis. The first model is significant (F (4, 2026) = 14.078, p<.0001), but only gender and marital status contributed to the regression model, implying that women and people in a relationship reported to be more anxious (see also Robillard et al., 2020). The second model, adding exposure factors, explains another 12% of additional variance, F (10, 2020) = 28.275, p<.0001), indicating that country and infection of friends further add to the explained variance. Country variables all show that compared to Spain, which served as the reference group, participants from the three other countries reported significantly lower amounts of *Anxiety about Coronavirus*. These results confirm the general hypothesis that more exposure to COVID-19 (country, infected friends) are positive predictors of anxiety. The third model, including religious and political beliefs,

further significantly improved the explained variance, F (15, 2015) = 32.185, p<.0001. In contrast with our hypothesis, *Religiousness*, *Populist Attitudes*, and *Anger at Government* did not act as buffer against one's *Anxiety about Coronavirus*, but rather the opposite. People who are religious, who have a populist mindset and who are angry at their government are more rather than less anxious. Conspiracy believers on the other hand, do report less *Anxiety about Coronavirus*. In order to inspect whether the positive role of *Religiousness* could be related to different types of religions, we also checked how religious people who adhered to various religions reported themselves to be (see Table 5). Clearly, Greek- and Russian Orthodox and Muslims rated themselves highest on *Religiousness*, whereas non-religious, atheist and agnostics scored lowest. We will come back to this finding in the discussion.

Table 5

Means and SD on 'Religiousness', Split for People with Various Religions

Religion	*M*	*SD*	*N*
Greek-Orthodox	7.70	2.627	10
Muslim	6.98	2.080	87
Russian-Orthodox	6.18	2.786	11
Jewish	5.82	2.481	22
Roman Catholic	5.35	2.419	566
Protestant	5.20	2.554	293
Hindu	5.00	2.530	11
Buddhist	5.07	2.890	15
Spiritual	4.83	3.073	75
Agnostic	2.60	2.078	55
Non-Religious	2.31	2.026	731
Atheist	1.83	1.840	155
Total	3.96	2.805	2031

Determinants of Hygiene Approval

In order to test the second hypothesis, we conducted another hierarchical linear regression with *Approval of Hygiene Measures* as dependent variable. We hypothesized that *Approval of Hygiene Measures* would be predicted by *Anxiety about Coronavirus* and *Infection (Friends)*, entered in the first step, but also by *Populist Attitudes*, *Anger at*

Government, *Conspiracy Mentality*, and *Anger at Transgressors*, which were entered in the

second step. Country was entered in the third step (see Table 6).

Table 6

Hierarchical Regression Analysis for Approval of Hygiene Measures in 3 Steps (Standardized

Regression Coefficients)

	β	t	sr^2	R	R^2	ΔR^2
Model 1		57.989***		.328	.107	.107
Anxiety about Coronavirus	.319	19.912***	.387			
Infection (Friends)	-.005	-2.64	-.005			
Model 2		23.876***		.396	57	.050
Anxiety about Coronavirus	.281	13.579***	.259			
Infection (Friends)	-.010	-.496	-.009			
Populist Attitudes	.262	10.277***	.196			
Anger at Government	-.018	-.794	-.015			
Anger at Transgressors	.246	11.702***	.223			
Conspiracy Mentality	-.155	-6.065*	-.115			
Model 3		25.047***		.764	84	.427
Anxiety about Coronavirus	.247	11.770***	.221			
Infection (Friends)	-.021	-1.098*	-.021			
Populist Attitudes	.263	10.344***	.194			
Anger at Government	-.031	-1.376	-.026			
Anger at Transgressors	.255	12.266***	.230			
Conspiracy Mentality	-.179	-7.043*	-.132			
Germany	-.149	-5.987***	-.112			
UK	-.141	-5.942***	-.111			
NL	-.181	-7.446***	-.140			

*Note. N=2031. * p=.05, ***p<.001*

The hierarchical regression in Table 6 shows that the first model is significant (F (2,

2028) = 181.775, *p<.0001*), but only *Anxiety about Coronavirus*, and not *Infection (Friends)*

contributed to the regression model. The second model, adding political beliefs, explains 11%

of additional variance, F (4, 2024) = 78.58, *p<.0001*), implying that *Populist Attitudes, Anger*

at Transgressors and *Conspiracy Mentality*, but not *Anger at Government* are significant

predictors. Stronger *Populist Attitudes* and more *Anger at Transgressors* predict more

Approval of Hygiene Measures. Conspiracy Mentality is a negative predictor, so stronger beliefs in *Conspiracy Mentality* predict less *Approval of Hygiene Measures*. The third model, adding the country variables also significantly improved the model, F (9, 2021) = 91.068, p<.0001), revealing that compared to Spain, the other three countries reported less *Approval of Hygiene Measures*.

In order to test our third hypothesis, stating that political beliefs are less relevant for *Compliance with*- than for *Approval of Hygiene Measures*, we conducted a similar regression analysis, but with *Compliance with Hygiene Measures* as the dependent variable. Table 7 shows that the first model is significant (F (2, 2028) = 122.078, p<.0001), indicating that *Anxiety about Coronavirus* and infection of friends, significantly explain the variance in *Compliance with Hygiene Measures*. The second model, adding political beliefs, explains another 5% of additional variance, F (4, 2024) = 29.807, p<.0001), showing that *Anxiety about Coronavirus* and friends' infections remain significant, but *Anger at Government*, *Anger at Transgressors* and *Conspiracy Mentality* also add to the explained variance. *Populist Attitudes* was not a significant predictor, however. The third model, including the different countries, further significantly improves the explained variance, (F (9, 2021) = 315.010, p<.0001), showing that *Anxiety about Coronavirus* and friends' infection remain positive predictors, and that *Anger at Government* and *Anger at Transgressors*, as well as *Conspiracy Mentality* also remained significant predictors. In the third step, the country variables also significantly improved the model, F (12, 201) = 14.078, p<.0001), demonstrating that compared to Spain, which served as the reference group, the other three countries reported significantly less *Compliance with Hygiene Measures*.

Table 7

Hierarchical Regression Analysis for Compliance with Hygiene Measures in 3 Steps (Standardized Regression Coefficients)

	β	t	sr^2	R	R	ΔR^2
Model 1		36.341***		*.328*	.107	.107
Anxiety about Coronavirus	.288	13.585***	.285			
Infection (Friends)	.121	5.727***	.120			
Model 2		14.822***		.396	.157	.050
Anxiety about Coronavirus	.218	9.801***	.200			
Infection (Friends)	.102	4.912***	.100			
Populist Attitudes	-.012	-.446	-.009			
Anger at Government	.092	3.769***	.077			
Anger at Transgressors	.071	3.160**	.064			
Conspiracy Mentality	.155	5.674***	.116			
Model 3		36.522***		.764	.584	.427
Anxiety about Coronavirus	.096	5.965***	.086			
Infection (Friends)	.043	2.865**	.041			
Populist Attitudes	.002	.090	.001			
Anger at Government	.058	3.380**	.048			
Anger at Transgressors	.123	7.717***	.111			
Conspiracy Mentality	.050	2.555*	.037			
Germany	-.504	-29.633***	-.425			
UK	-.747	-41.274***	-.592			
NL	-.697	-37.524***	-.538			

*Note. N=2031. * p=.05, ***p<.001*

Discussion

We reported the results of an online survey examining the relations between individuals'
anxiety about being infected with the Coronavirus, their approval of and willingness to
comply with hygiene measures taken by their governments, and their political motives as
reflected in anger at their governments and populist mindsets.

Our first hypothesis was that anxiety about the Coronavirus is mostly predicted by
factors that reflect the proximity to sources of infection (age, country, oneself or friends being
infected), but also by regulatory processes in the form of belief systems reducing anxiety
(religiousness, spirituality, populist attitudes, anger at the government) or increasing anxiety,
such as conspiracy mentality. We found that exposure to the Coronavirus indeed predicts how
anxious one feels about being infected. Individuals who reported infections in their

immediate social environment, and those who live in countries with high infection rates (Spain, UK) are the most anxious. Unexpectedly, age was not a significant predictor. Further, women and people in intimate relationships are more anxious than men and people who are single. Women generally tend to report stronger emotions (Fischer, 2000; Fischer, Rodriguez, van Vianen & Manstead 2004), which has been found in other studies on mental stress about infection as well (e.g., Liu et al., 2020). The finding that people in intimate relationships show more anxiety can be explained by the fact that people generally seem more concerned about the health of their friends and family than about their own health, which is reflected in the finding that anxiety about others' infections is a stronger predictor for anxiety about the Coronavirus than anxiety about being infected oneself. Alternatively, people may prefer a *situation selection* strategy (Gross et al., 2006) by socially isolating themselves in times of a pandemic, which could mean that people who are not in a relationship, are more successful in downregulating their stress.

Most importantly, however, we found support for the idea that political and religious beliefs affect one's anxiety as well: people with populist attitudes, who are both religious and angry at the government are more anxious about the Coronavirus, whereas the opposite was found for individuals who adhere to conspiracy theories. Thus, the direction of the effect was different than hypothesized: anger as well as religious beliefs do not downregulate anxiety, but actually increase it. This means that anger does not contribute to controlling and inhibiting one's fear, but that it is experienced in addition to one's fear, and actually makes one more fearful. The idea that people can experience *mixed emotions*, especially in reaction to big or ambiguous events, has been found in previous research (e.g., Larsen & McGraw, 2014; Ross, 2013; Solomon, 2013; Van Rythoven, 2015). Most research on mixed emotions shows that people can feel sad and happy at the same time and in reaction to the same event; the experience of different negative emotions is even more likely. As argued by some

scholars (Ross, 2013), emotions are likely experienced in continuous interaction with others, which may lead to an amalgam of emotions. The present research cannot answer more specific questions about which of these feelings antecedes the other, or whether they occur simultaneously, not least because they have different objects. We measured anxiety about the Coronavirus and anger at the government, which can obviously occur simultaneously depending on what one thinks about. Thus, anxiety about the Coronavirus could also elicit anger at the government and vice versa.

The small negative effect of conspiracy mentality on anxiety was also expected, because we expected conspiracy thinkers to be more anxious. Our finding could be explained by the fact that people who believe in hidden motives of politicians and secret organizations are already anxious about what is happening in the world and the anxiety about being infected with the Coronavirus may be considered a minor threat compared to all other threats that they believe they are facing. This speculative explanation needs further testing, however. The negative contribution of religiousness to one's anxiety about the Coronavirus also requires an explanation. We assumed that religious people would more easily accept the threat, and therefore become less anxious, but our findings show the opposite. A closer look at who reports to be most religious shows that orthodox people and Muslims report to be most religious, and thus our findings suggest that they find least relief in their religion when it comes to anxiety about their health. Alternatively, they could also be the most anxious people, who seek relief.

Our second hypothesis was that approval of hygiene measures enforced by the government is not only predicted by anxiety about the Coronavirus, but also by populist attitudes, anger at the government and negatively by conspiracy mentality, which may increase disapproval. As expected, we found that populist attitudes, but not anger at the government, predict approval of hygiene measures, whereas conspiracy mentality leads to

disapproval. Unexpectedly, anger at the government did not play a role in predicting approval of hygiene measures. It could be that individuals' anxiety made them less angry at the government, because they did agree with governmental hygiene measures. This idea is supported by the fact that anger at people who transgress the hygiene rules also predicts the approval of hygiene measures.

Finally, our third hypothesis tested the same prediction, but for compliance with hygiene measures as a dependent measure, thus for actual behavior, rather than mere approval. This hypothesis was supported, revealing that fear of and exposure to the Coronavirus, blaming others for endangering oneself and anger at the government for not taking the appropriate public health measures are the most important predictors for actually behaving according to governmental hygiene measures. This strategy can be considered a form of *situation selection* (Gross et al., 2006): mainly avoiding those situations that enhance the likelihood of being infected with the Coronavirus. The expected differences in predictors for approving of and behaving according to the governmental hygiene measures is interesting. One's agreement with measures seems more strongly related to one's views about the government, whereas following actual measures may be more strongly related to one's anxiety about being infected.

Finally, we also found differences across countries in the expected direction. First of all, all our key measures show differences between the four countries, which can be summarized as Spain being consistently different from Germany, the Netherlands and the UK. Spanish participants showed higher levels of anxiety, anger and conspiracy mentality, but they also approved of and complied with the rules. As Spain had the highest death rates, and largest number of infections, this situation at least partly explains why people approve of and comply with measures that would slow down the Coronavirus transmission. On the basis of the present research design and measures, we cannot fully address which other country

variables, such as the political situation or cultural orientation, play a role here. For example, different cultural orientation of countries (i.e., sense of collectivism versus individualism) has shown different responses by people during the COVID-19 pandemic. According to recent research (Biddlestone, Green & Douglas, 2020), people adopting a collectivist mindset comply more with social distancing and hygiene measures to help reduce the spread of COVID-19.

Limitations

One limitation is that we deployed an online survey. Although we made sure to have a representative sample in terms of age, gender, geographical region, education and employment, measuring people's beliefs, feelings and behaviors in an online setting is often prone to social desirability effects. Yet, we are not aware of better methods to collect information on such topics, especially not during COVID-19 pandemic times when people are requested to stay mostly at home. A second limitation concerns the translation of our survey items into four different languages. Words have a culture-specific meaning sometimes, and thus are understood slightly differently across four countries. Our back-translation procedure did not reveal major issues, however. In addition, we consistently used multiple items to measure a construct, hence we think that this issue was reduced as much as possible. We also checked reliabilities of our scales separately for each country and they were all satisfactory, except for compliance with hygiene measures, the lack of which we explained in the results section.

Conclusion

Our study in four European countries shows that not only anxiety about one's own health, but also anger and political beliefs play a role as to whether one approves of and adheres to policy measures to contain the Coronavirus. Whereas behavioral compliance is more predicted by fear and anger at people transgressing the hygiene rules, approval of

hygiene measures is more predicted by anxiety about the impact of Coronavirus. Further, one's anxiety is also not only predicted by actual threats, namely, proximity to sources of infection (age, country, oneself or friends being infected), but also by political views (populist attitudes, anger at the government). Importantly, people who are anxious are also angry, at transgressors of hygiene rules or at their government. Thus, rather than replacing their fear with anger, fear leads to more anger, this is especially the case in countries with highest infection rates.

References

Abadi, D., Huguet Cabot, P.L., Duyvendak, J.W., Fischer, A. (2020). *Socio-economic or emotional predictors of populist attitudes across Europe*. Unpublished manuscript under review, University of Amsterdam.

Biddlestone, M., Green, R., & Douglas, K. (2020). Cultural orientation, powerlessness, belief in conspiracy theories, and intentions to reduce the spread of COVID-19. *British Journal of Social Psychology*. https://doi.org/10.1111/bjso.12397

Blanchette, I., & Richards, A. (2010). The influence of affect on higher level cognition: A review of research on interpretation, judgement, decision making and reasoning. *Cognition and Emotion,* 24(4), 561-595. https://doi.org/10.1080/02699930903132496

Brackmann, H. (2020). *Deadly New Virus Intersects with History's Oldest Hate: Report & Analysis.* Simon Wiesenthal Center (April 2020). http://www.wiesenthal.com/assets/pdf/deadly-new-virus-intersects.pdf

Bruder, M., Haffke, P., Neave, N., Nouripanah, N., & Imhoff, R. (2013). Measuring individual differences in generic beliefs in conspiracy theories across cultures: Conspiracy Mentality Questionnaire. *Frontiers in psychology*, *4*, 225. https://doi.org/10.3389/fpsyg.2013.00225

Bruder, M., Fischer, A., & Manstead, A. S. (2014). Social appraisal as a cause of collective emotions. In Ch. von Scheve & M. Salmela (Eds.), *Collective emotion*s (pp. 141-155). Oxford University Press.

Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*. https://doi.org/10.1016/j.psychres.2020.112934

Chen, Q., Liang, M., Li, Y., Guo, J., Fei, D., Wang, L., Wang, J., He, L., Sheng, C., Cai, Y., Li, X, Wang, J., Zhang, Z.(2020). Mental health care for medical staff in China during

the COVID-19 outbreak. *The Lancet Psychiatry*, 7(4), e15-e16.

https://doi.org/10.1016/s2215-0366(20)30078-x

Cohn Jr, S. (2017). Plague violence and abandonment from the Black Death to the early

modern period. In *Annales de démographie historique* (No. 2, pp. 39-61). Belin.

Esses, V. M., Medianu, S., & Lawson, A. S. (2013). Uncertainty, Threat, and the Role of the

Media in Promoting the Dehumanization of Immigrants and Refugees. *Journal of

Social Issues, 69*(3)*, 518-536. https://doi.org/10.1111/josi.12027

Fischer, A.H. (Ed.) (2000). *Gender and Emotion: Social Psychological Perspectives*.

Cambridge University Press. https://doi.org/10.1017/CBO9780511628191

Fischer, A. H., Rodriguez, P. M., van Vianen, E.A.M., & Manstead, A. S. R. (2004). Gender

and culture differences in emotion. *Emotion*, *4*(1), 87-94.

https://doi.org/10.1037/1528-3542.4.1.87

Fischer, A. H., & Roseman, I. J. (2007). Beat Them or Ban Them: The Characteristics and

Social Functions of Anger and Contempt. *Journal of Personality and Social

Psychology*, *93*(1), 103. https://doi.org/10.1037/0022-3514.93.1.103

Frijda, N. H., Kuipers, P., & ter Schure, E. (1989). Relations among emotion, appraisal, and

emotional action readiness. *Journal of Personality and Social Psychology, 57*(2), 212.

https://doi.org/10.1037/0022-3514.57.2.212

Gerstenfeld, M. (2020). *Anti-Jewish Coronavirus Conspiracy Theories in Historical Context*.

BESA Center Perspectives Paper No. 1,513 (March 31, 2020).

https://besacenter.org/perspectives-papers/coronavirus-conspiracy-theories-jews/

Greenberg, J., Pyszczynski, T., Solomon, S., Rosenblatt, A., Veeder, M., Kirkland, S., &

Lyon, D. (1990). Evidence for Terror Management Theory II: The Effects of

Mortality Salience on Reactions to Those Who Threaten or Bolster the Cultural

Worldview. *Journal of Personality and Social Psychology, 58*(2), 308.

https://doi.org/10.1037/0022-3514.58.2.308

Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror Management Theory of Self-

Esteem and Cultural Worldviews: Empirical Assessments and Conceptual

Refinements. *Advances in Experimental Social Psychology* (Vol. 29, pp. 61-139)*.*

Academic Press. https://doi.org/10.1016/S0065-2601(08)60016-7

Gross, J. J. (2002). Emotion regulation: affective, cognitive, and social consequences.

Psychophysiology, *39*(3), 281–291. https://doi.org/10.1017/S0048577201393198

Gross, J. J., Richards, J. M., & John, O. P. (2006). Emotion regulation in everyday life. In In

D. K. Snyder, J. Simpson, & J. N. Hughes (Eds.), *Emotion Regulation in Families:*

Pathways to Dysfunction and Health (pp. 13–35)*.* American Psychological

Association*. https://doi.org/10.1037/11468-001*

Harmon-Jones, E. (2003). Anger and the behavioral approach system. *Personality and*

Individual Differences, 35(5), 995-1005. https://doi.org/10.1016/S0191-

8869(02)00313-6

Huddy, L., Feldman, S., Taber, C., & Lahav, G. (2005). Threat, anxiety, and support of

antiterrorism policies. *American Journal of Political Science*, *49*(3), 593-608.

https://doi.org/10.1111/j.1540-5907.2005.00144.x

Huddy, L., & Feldman, S. (2011). Americans Respond Politically to 9/11: Understanding the

Impact of the Terrorist Attacks and Their Aftermath. *American Psychologist, 66*(6),

455. https://doi.org/10.1037/a0024894

Kofta, M., Soral, W., & Bilewicz, M. (2020). What breeds conspiracy antisemitism? The role

of political uncontrollability and uncertainty in the belief in Jewish

conspiracy. *Journal of Personality and Social Psychology. 118*, 900-918.

https://doi.org/10.1037/pspa0000183

Leman, P. & Cinnirella, M. (2007). A major event has a major cause: Evidence for the role

of heuristics in reasoning about conspiracy theories. *Social Psychological Review, 9*(2), 18-28.

Liu, N., Zhang, F., Wei, C., Jia, Y., Shang, Z., Sun, L., Liu, W. Wu, L., Sun, Z., Zhou, Y., Wang, Y, Liu, W. (2020). Prevalence and predictors of PTSS during COVID-19 outbreak in China hardest-hit areas: Gender differences matter. *Psychiatry Research,* 112921. https://doi.org/10.1016/j.psychres.2020.112921

Manstead, A. S., & Fischer, A. H. (2001). Social appraisal. In K. Scherer, T. Johnstone, & A. Schorr (Eds), *Appraisal processes in emotion: Theory, methods, research* (pp. 221-232). Oxford University Press.

Mazza, C., Ricci, E., Biondi, S., Colasanti, M., Ferracuti, S., Napoli, C., & Roma, P. (2020). A nationwide survey of psychological distress among italian people during the covid-19 pandemic: Immediate psychological responses and associated factors. *International Journal of Environmental Research and Public Health, 17*(9), 3165. https://doi.org/10.3390/ijerph17093165

Mesquita, B., & Frijda, N. H. (2011). An emotion perspective on emotion regulation. *Cognition & Emotion*, *25*, 782–784. https://doi.org/10.1080/02699931.2011.586824

Öhman, A., & Rück, C. (2007). Four Principles of Fear and Their Implications for Phobias. In J. Rottenberg & S. L. Johnson (Eds.), *Emotion and psychopathology: Bridging affective and clinical science* (p. 167–189). American Psychological Association. https://doi.org/10.1037/11562-008

Ozamiz-Etxebarria, N., Dosil-Santamaria, M., Picaza-Gorrochategui, M., & Idoiaga-Mondragon, N. (2020). Stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak in a population sample in the northern Spain. *Cadernos de Saude Publica, 36*. https://doi.org/10.1590/0102-311X00054020

Pieh, C., Budimir, S., & Probst, T. (2020). Mental Health during COVID-19 Lockdown: A

Comparison of Austria and the UK. *SSRN Electronic Journal*.

https://doi.org/10.2139/ssrn.3592372

Pyszczynski, T., Solomon, S., & Greenberg, J. (2003). In the wake of 9/11: Rising above the

terror. In T. Pyszczynski, S. Solomon, & J. Greenberg, *In the wake of 9/11: The*

psychology of terror (pp. 189–198). American Psychological Association.

https://doi.org/10.1037/10478-009

Rico, G., Guinjoan, M., & Anduiza, E. (2017). The Emotional Underpinnings of Populism:

How Anger and Fear Affect Populist Attitudes. *Swiss Political Science Review, 23*(4*),*

444-461. https://doi.org/10.1111/spsr.12261

Robillard, R., Saad, M., Edwards, J. D., Solomonova, E., Pennestri, M.-H., Daros, A.,

Veissiere, S.P.L., Quilty, L., Dion, K., Nixon, A., Phillips, J. L., Bhatla, R., Spilg, E.,

Godbout, R., Yazji, B., Rushton, C.H., Gifford, W., Gautam, M., Boafo, A.,

Kendzerska, T. (2020). Social, Financial and Psychological Stress during an Emerging

Pandemic: Observations from a Population Web-Based Survey in the acute phase of

the COVID-19 pandemic. *MedRxiv*. https://doi.org/10.1101/2020.06.29.20142638

Roseman, I. J. (1984). Cognitive determinants of emotion: A structural theory. *Review of*

Personality & Social Psychology, *5*, 11–36.

Rosenblatt, A., Greenberg, J., Solomon, S., Pyszczynski, T., & Lyon, D. (1989). Evidence for

Terror Management Theory: I. The Effects of Mortality Salience on Reactions to

Those Who Violate or Uphold Cultural Values. *Journal of Personality and Social*

Psychology, 57 (4), 68. https://doi.org/10.1037/0022-3514.57.4.681

Ross, A. G. (2013). *Mixed Emotions: Beyond Fear and Hatred in International Conflict*.

University of Chicago Press.

https://doi.org/10.7208/chicago/9780226077567.001.0001

Salmela, M., & von Scheve, C. (2017). Emotional roots of right-wing political populism.

Social Science Information, 56(4), 567-595.

https://doi.org/10.1177/0539018417734419

Schimel, J., Simon, L., Greenberg, J., Solomon, S., Pyszczynski, T., Waxmonsky, J., &

Arndt, J. (1999). Stereotypes and terror management: Evidence that mortality salience

enhances stereotypic thinking and preferences. *Journal of Personality and Social*

Psychology, 77(5), 905. https://doi.org/10.1037/0022-3514.77.5.905

Solomon, T. (2013). Attachment, tautology, and ontological security. *Critical Studies on*

Security, 1(1), 130-132.

Smith, C. A., & Ellsworth, P. C. (1985). Patterns of cognitive appraisal in emotion. *Journal*

of Personality & Social Psychology, 48(4), 813-838. https://doi.org/10.1037/0022-

3514.48.4.813

Tian, S., Hu, N., Lou, J., Chen, K., Kang, X., Xiang, Z., Chen, H., Wang, D., Liu, N., Liu, D.,

Chen, G., Zhang, Y., Li, D., Li, J., Lian, H., Niu, S., Zhang, L., Zhang, J. (2020).

Characteristics of COVID-19 infection in Beijing. *Journal of Infection*.

https://doi.org/10.1016/j.jinf.2020.02.018

van Harreveld, F., Rutjens, B. T., Rotteveel, M., Nordgren, L. F., & van der Pligt, J. (2009).

Ambivalence and decisional conflict as a cause of psychological discomfort: Feeling

tense before jumping off the fence. *Journal of Experimental Social Psychology, 45*(1),

167-173. https://doi.org/10.1016/j.jesp.2008.08.015

Van Prooijen, J. W. (2020). An Existential Threat Model of Conspiracy Theories. *European*

Psychologist. https://doi.org/10.1027/1016-9040/a000381

van Prooijen, J. W., & Acker, M. (2015). The Influence of Control on Belief in Conspiracy

Theories: Conceptual and Applied Extensions. *Applied Cognitive Psychology, 29*(5),

753-761. https://doi.org/10.1002/acp.3161

van Prooijen, J.-W. & Douglas, K. M. (2017). Conspiracy theories as part of history: The role of societal crisis situations. *Memory studies, 10*(3), 323-333. https://doi.org/10.1177/1750698017701615

Van Rythoven, E. (2015). Learning to feel, learning to fear? Emotions, imaginaries, and limits in the politics of securitization. *Security Dialogue*, *46*(5), 458-475.

Valentino, N. A., Hutchings, V. L., Banks, A. J., & Davis, A. K. (2008). Is a worried citizen a good citizen? Emotions, political information seeking, and learning via the internet. *Political Psychology, 29*(2), 247-273. https://doi.org/10.1111/j.1467-9221.2008.00625.x

Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health, 17*(5), 1729.https://doi.org/10.3390/ijerph17051729

Zhu, Z., Xu, S., Wang, H., Liu, Z., Wu, J., Li, G., Miao, J, Zhang, C., Yang, Y., Sun, W., Zhu, S., Fan, Y., Hu, J., Liu, J., Wang, W. (2020). COVID-19 in Wuhan: Immediate Psychological Impact on 5062 Health Workers. *MedRxiv*. https://doi.org/10.1101/2020.02.20.20025338

Appendix

Means (M) and Standard Deviations (SD), F-test (F) and Effect Size (η_p^2) of Scales per Country

Post-hoc analyses of differences in *Anxiety about Coronavirus*, differentiated for country, marital status, gender, employment status, and infection of self or friends: Univariate analyses of variance with post hoc tests for each of the key variables show that people from Germany (*M*=6.26, *SD*=2.16) and the Netherlands (M=6.40, SD=1.81) report to feel less anxious than people from the UK (*M*=7.12, *SD*=1.92), who in turn report to be less anxious than people from Spain (*M*=7.69, *SD*=1.53), F (4, 2026) = 64.15, *p*<.0001, η_p^2=.087. Singles (*M*=6.42, *SD*=2.043) report to be less anxious than people who are in a relationship (*M*=6.88, *SD*=1.88), married (*M*=7.11, *SD*=1.90), or divorced (*M*=7.07, *SD*=1.87), but not different from widowed people (*M*=6.13, *SD*=2.12), F (4, 2026) = 12,45, *p*<.0001, η_p^2=.024). People without a partner thus seem less anxious than people with (ex)partners. Further, women (*M*=7.07, *SD*=1.87) report to be more anxious than men (*M*=6.65, *SD*=2.02), F (2, 2028) = 11.97, *p*<.0001, η_p^2=.012. People who are (self) employed (M=6.93, SD=1.96), report similar levels of anxiety as people who are unemployed (*M*=6.77, *SD*=2.01), or students (M=6.59, SD=2.00), but more anxiety than retired people (M=6.31, SD=2.09) or F (3, 2027) = 3.69, *p*=.011, η_p^2=.005). Finally, people whose friends have been infected (either confirmed (*M*=7.37, *SD*= 1.76) or not confirmed (*M*=7.15, *SD*=1.76) were more anxious than people whose friends were not infected (not confirmed, *M*=6.82, *SD*=1.98, or confirmed, *M*=6.67, *SD*=2.01), F (3, 2027) = 14.57, *p*<.0001, η_p^2=.021).