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## Becoming authoritarian for the greater good? Authoritarian attitudes in context of the societal crises of COVID-19 and climate change

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## Online Supplement

### Content

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<b>A   Additional Information on the Variables</b> .....	2
TABLE S1: Wordings and Scales of All Main Variables from the Path Model.....	2
TABLE S2: Descriptive Statistics of Variables.....	3
TABLE S3: Correlation Matrix (Spearman’s Rho) for Variables in Germany.....	4
Table S4: Correlation Matrix (Spearman’s Rho) for Variables in Spain .....	5
<b>B   Additional Tables</b> .....	5
TABLE S5: Group differences across experimental treatment conditions .....	5
TABLE S6: Weighted linear regression analysis predicting authoritarian responses .....	6
TABLE S7: Full regression table for subdimensions of Authoritarianism .....	7

## A | Additional Information on the Variables

TABLE S1: Wordings and Scales of All Main Variables from the Path Model

Variable	Items	Original Scale
<i>Authoritarian Manifestation</i>	<b>Authoritarian Submission</b> We should be grateful for leaders who tell us exactly what we can do and how [in our times/in times of the Coronavirus/ in times of global warming]. [In our times/in times of the Coronavirus/in times of climate change], restraint and obedience are important.	1 (totally disagree) – 7 (totally agree)
	<b>Authoritarian Aggression</b> [Those who do not follow social rules/Those who do not follow the rules for fighting the Coronavirus/Polluters] should be severely punished. [Troublemakers and dissenters/Those spreading conspiracy theories and Coronavirus deniers/Those spreading conspiracy theories and climate change deniers] should be made aware that they are unwanted in society.	
<i>Authoritarian Disposition</i>	<b>Authoritarian Submission</b> People should leave important decisions in society to their leaders. We should be grateful for leaders telling us exactly what to do We need strong leaders so that we can live safely in society.	1 (totally disagree) – 7 (totally agree)
	<b>Authoritarian Aggression</b> We should take strong action against misfits and slackers in society. Troublemakers should be made to feel that they are not welcome in society. Rules in society should be enforced without pity.	
	<b>Conventionalism</b> Traditions should definitely be carried on and kept alive. Well-established behavior should not be questioned. It's always best to do things in the usual way.	
<i>Trust in Science</i>	How much do you personally trust each of these institutions or actors? The universities The scientists	1 (no trust at all) – 7 (complete trust)
<i>Trust in National Institutions</i>	How much do you personally trust each of these institutions or actors? The government The courts The news media / press The national parliament	1 (no trust at all) – 7 (complete trust)
<i>perceived COVID-19 health risk</i>	How afraid are you that you or your loved ones get sick and suffer severely from the Coronavirus?	1 (not afraid at all) – 7 (very afraid)

TABLE S2: Descriptive Statistics of Variables

Continuous Variables	Germany			Spain		
	Mean ( <i>SD</i> )	Min	Max	Mean ( <i>SD</i> )	Min	Max
Authoritarian Manifestation	4.73 (1.48)	1	7	4.80 (1.36)	1	7
Submission	4.41 (1.63)	1	7	4.31 (1.60)	1	7
Aggression	5.05 (1.68)	1	7	5.29 (1.55)	1	7
Authoritarian Disposition	4.34 (1.19)	1	7	4.25 (1.14)	1	7
Submission	4.17 (1.47)	1	7	4.84 (1.42)	1	7
Aggression	4.49 (1.53)	1	7	4.56 (1.48)	1	7
Conventionalism	4.37 (1.37)	1	7	4.37 (1.37)	1	7
Trust in Science	4.90 (1.37)	1	7	5.13 (1.29)	1	7
Trust in National Institutions	4.11 (1.46)	1	7	3.01 (1.31)	1	7
Perceived COVID-19 Health Risk	4.76 (1.81)	1	7	6.24 (1.30)	1	7
Age in years	48.70 (16.61)	18	84	48.57 (16.18)	18	93
Categorical Variables	<i>N</i>	%		<i>N</i>	%	
Treatment						
Control Group	472	31.89		490	32.43	
COVID-19 Frame	519	35.07		507	33.55	
Climate Change Frame	489	33.04		514	34.02	
Gender						
Male	797	5.73		775	49.65	
Female	772	49.14		783	5.16	
Other	2	.13		3	.19	
Education						
Low	563	38.04		409	27.07	
Medium	402	27.16		397	26.27	
High	515	34.80		705	46.66	

TABLE S3: Correlation Matrix (Spearman's Rho) for Variables in Germany

	Authoritarian Manifestation	Auth. Manifestation: Submission	Auth. Manifestation: Aggression	Authoritarian Disposition	Auth. Disposition: Submission	Auth. Disposition: Aggression	Auth. Disposition: Conventionalism	Trust in Science	Trust in National Institutions	Perceived COVID-19 Health Risk	Age
Authoritarian Manifestation	1										
Submission	.890	1									
Aggression	.871	.572	1								
Authoritarian Disposition	.581	.536	.494	1							
Submission	.574	.613	.399	.813	1						
Aggression	.539	.424	.537	.846	.547	1					
Conventionalism	.297	.268	.259	.775	.449	.512	1				
Trust in Science	.340	.349	.264	.163	.272	.100	.014	1			
Trust in National Institutions	.419	.454	.293	.240	.373	.145	.055	.678	1		
Perceived COVID-19 Health Risk	.375	.331	.346	.274	.291	.261	.111	.229	.237	1	
Age	.118	.037	.169	.226	.079	.246	.247	-.038	-.013	.035	1

Note: N = 1480

Table S4: Correlation Matrix (Spearman's Rho) for Variables in Spain

	Authoritarian Manifestation	Auth. Manifestation: Submission	Auth. Manifestation: Aggression	Authoritarian Disposition	Auth. Disposition: Submission	Auth. Disposition: Aggression	Auth. Disposition: Conventionalism	Trust in Science	Trust in National Institutions	Perceived COVID-19 Health Risk	Age
Authoritarian Manifestation	1										
Submission	.868	1									
Aggression	.835	.478	1								
Authoritarian Disposition	.438	.389	.366	1							
Submission	.426	.447	.288	.794	1						
Aggression	.391	.280	.404	.800	.467	1					
Conventionalism	.246	.225	.195	.778	.454	.452	1				
Trust in Science	.305	.285	.237	.194	.212	.113	.124	1			
Trust in National Institutions	.301	.344	.166	.219	.342	.076	.104	.424	1		
Perceived COVID-19 Health Risk	.251	.227	.223	.201	.172	.157	.159	.202	.096	1	
Age	.227	.168	.208	.268	.176	.187	.273	.206	.169	.130	1

Note: N = 1511

## B | Additional Tables

TABLE S5: Group differences across experimental treatment conditions

Variable	Germany		Spain	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
Authoritarian Disposition	.82	.44	.32	.72
Submission	2.591	.06	.72	.49
Aggression	.84	.43	.14	.87
Trust in Science	3.63	.03	.79	.45
Trust in National Institutions	2.32	.10	.51	.60
Perceived COVID-19 health risk	1.61	.20	1.48	.23

TABLE S6: Weighted linear regression analysis predicting authoritarian responses in Germany and in Spain

	Germany			Spain		
	1	2	3	4	5	6
COVID-19 Condition (Ref. Cat. Control Condition)	0.767*** (0.0748)	0.783*** (0.0738)	0.755*** (0.0667)	0.557*** (0.0718)	0.527*** (0.0720)	0.523*** (0.0701)
Climate Change Conditon (Ref. Cat. Control Condition)	0.191** (0.0804)	0.229*** (0.0752)	0.223*** (0.0699)	0.443*** (0.0735)	0.423*** (0.0734)	0.438*** (0.0724)
Authoritarian Disposition (mean-centered)	0.637*** (0.0302)	0.823*** (0.0431)	0.724*** (0.0435)	0.491*** (0.0287)	0.628*** (0.0397)	0.555*** (0.0394)
COVID-19 X Disposition		-0.189*** (0.0661)	-0.215*** (0.0601)		-0.204*** (0.0675)	-0.210*** (0.0659)
Climate Change X Disposition		-0.339*** (0.0671)	-0.331*** (0.0619)		-0.215*** (0.0655)	-0.227*** (0.0641)
Trust in Science (mean-centered)	0.323*** (0.0311)	0.105*** (0.0395)	-0.121*** (0.0461)	0.257*** (0.0270)	0.206*** (0.0374)	0.121*** (0.0392)
COVID-19 X Trust		0.314*** (0.0679)	0.297*** (0.0630)		0.171*** (0.0623)	0.142** (0.0620)
Climate Change X Trust		0.294*** (0.0647)	0.277*** (0.0634)		-0.00951 (0.0613)	-0.0232 (0.0619)
Trust in National Institutions			0.159*** (0.0207)			0.144*** (0.0299)
COVID-19 health risk			0.257*** (0.0333)			0.144*** (0.0267)
Age (in years)			0.000518 (0.00199)			0.00605** *
Medium Education (Ref. Cat. Low Education)			0.0812 (0.0766)			-0.0442 (0.0816)
High Education (Ref. Cat. Low Education)			-0.0232 (0.0846)			-0.0714 (0.0807)
Constant	4.416*** (0.0504)	4.397*** (0.0485)	2.528*** (0.210)	4.455*** (0.0487)	4.473*** (0.0482)	2.895*** (0.244)
Observations	1,480	1,480	1,480	1,511	1,511	1,511
R-squared	0.469	0.493	0.563	0.295	0.307	0.349

\*\* p<0.01, \* p<0.05

Robust standard errors in parentheses.

Post-stratification weights were calculated with the iterative proportional fitting algorithm.

TABLE S7: Full regression table for subdimensions of Authoritarianism

	DV: Auth. Submission		DV: Auth. Aggression	
	Germany	Spain	Germany	Spain
COVID-19 Frame (Ref. Cat: Control Group)	.920*** (.0693)	.969*** (.0810)	.415*** (.0765)	.155* (.0876)
Climate Change Frame (Ref. Cat: Control Group)	.280*** (.0756)	.744*** (.0852)	.256*** (.0816)	.238*** (.0866)
Auth. Disposition: Submission (mean-centered)	.488*** (.0536)	.331*** (.0544)	.0617 (.0501)	.0668 (.0528)
COVID-19 Frame # Submission	-.0220 (.0679)	-.0130 (.0712)	.0910 (.0726)	.0432 (.0744)
Climate Change Frame # Submission	-.154** (.0698)	.0400 (.0753)	-.0821 (.0739)	-.00216 (.0724)
Auth. Disposition: Aggression (mean-centered)	.170*** (.0432)	.179*** (.0471)	.682*** (.0432)	.537*** (.0468)
COVID-19 Frame # Aggression	-.0478 (.0578)	-.105 (.0641)	-.277*** (.0623)	-.253*** (.0682)
Climate Change Frame # Aggression	-.0107 (.0661)	-.119* (.0671)	-.342*** (.0702)	-.330*** (.0644)
Trust in Science (mean-centered)	-.0462 (.0461)	.119** (.0494)	-.145*** (.0536)	.169*** (.0503)
COVID-19 Frame # Trust in Science	.150** (.0622)	.109 (.0705)	.369*** (.0730)	.0698 (.0750)
Climate Change Frame # Trust in Science	.102 (.0627)	-.00513 (.0724)	.314*** (.0695)	-.104 (.0723)
Auth. Disposition: Conventionalism	-.00673 (.0281)	-.0270 (.0312)	-.0777** (.0369)	-.0645** (.0327)
COVID-19 health risk	.117*** (.0199)	.145*** (.0292)	.181*** (.0227)	.158*** (.0326)
Trust in National Institutions	.271*** (.0328)	.205*** (.0309)	.177*** (.0411)	.0599* (.0312)
Age (in years)	-.00450** (.00213)	.00226 (.00234)	.00321 (.00232)	.00896*** (.00241)
Medium Education (Ref. Cat. Low Education)	-.0199 (.0769)	-.140 (.0963)	-.0235 (.0876)	-.0240 (.0926)
High Education (Ref. Cat. Low Education)	-.145* (.0871)	-.148* (.0896)	-.117 (.0967)	-.0695 (.0920)
Constant	2.531*** (.203)	2.239*** (.260)	3.129*** (.247)	3.581*** (.274)
Observations	1,480	1,511	1,480	1,511
R-squared	.548	.365	.450	.259

Robust standard errors in parentheses

\*\*\* p&lt;.01, \*\* p&lt;.05, \* p&lt;.1