How to distinguish climate sceptics, antivaxxers, and perpetual sceptics

Supplementary Information

Supplementary Table S1: Pairwise correlation matrix of the dependent variables

Sample	Climate sceptic – economy over climate change	Antivaxxer – economy over COVID-19
Pooled	0.24***	0.20***
Australia	0.37***	0.17***
Brazil	0.18***	0.23***
China	0.08***	-0.01
UK	0.34***	0.23***
India	0.07**	0.07**
Japan	0.35***	0.19***
South Africa	0.07**	0.18***
US	0.44***	0.30***

Note: Entries are Pearson's correlation coefficients for giving complete priority to the economy over combatting climate change and climate sceptics and giving complete priority to the economy over combatting COVID-19 and antivaxxers. *** denotes $p<0.001$, ** $p<0.01$ and * $p<0.05$.

Supplementary Table S2: Variables and coding strategy

Variable	**Description**	**Coding/ scale**
Age	Age in years	Range (18-99)
Gender	Binary variable	0=male, 1=female
Degree	Binary variable	0=no bachelor degree, 1= bachelor degree
EnvTop3	Rates the environment as a top-three priority	*Which of the following, if any, do you think are the most important issues facing your country at this time: health, immigration, crime, the economy, tax, pensions, education, family life & childcare, international relations, the environment and transport. (Select up to 3 answers)* 0=does not rate environment as top-three priority, 1=rates environment as top-three priority
HealthTop3	Rates health as a top-three priority	*Which of the following, if any, do you think are the most important issues facing your country at this time: health, immigration, crime, the economy, tax, pensions, education, family life & childcare, international relations, the environment and transport. (Select up to 3 answers)* 0=does not rate health as top-three priority, 1=rates health as top-three priority
Objective knowledge	Number of correct responses to energy, climate and virus knowledge questions	0 (0 correct science knowledge answers) to 9 (9 correct science knowledge answers)
Self-declared knowledge	Self-declared knowledge about energy production, delivery and usage	*How knowledgeable, if at all, would you say you are about how energy is produced, delivered and used?* 1 (not at all knowledgeable) to 5 (very knowledgeable)
Trust in scientists	Level of trust in university scientists for accurate information on sustainable energy and environmental issues	*To what extent, if at all, do you trust the following sources to provide you with accurate information on sustainable energy and environmental issues? Seven-point scale:* 1 (do not trust at all) to 7 (trust completely)
Perceived income sufficiency	Perceived income sufficiency	*Which of the following best describes how you feel about your household's income nowadays?* 1=living comfortably on present income, 2=coping on present income, 3=finding it

		difficult on present income, 4=finding it very difficult on present income, 5=prefer not to say, 6=don't know
ClimateResp	Attribution of responsibility to the individual versus other institutions for combatting climate change	*How much responsibility, if any, do you think individuals have solving climate change compared to other institutions (e.g. governments, businesses, charities)? 11-point scale:* From 0 (completely the responsibility of other institutions) to 10 (completely the individual's responsibility to solve)
CovidResp	Attribution of responsibility to the individual versus other institutions for combatting the COVID-19 pandemic	*How much responsibility, if any, do you think individuals have solving COVID-19 compared to other institutions (e.g. governments, businesses, charities)? 11-point scale:* From 0 (completely the responsibility of other institutions) to 10 (completely the individual's responsibility to solve)
Precautionism	Preference for taking immediate action to prevent a potentially serious societal problem versus waiting for more certain information	In general, do you think it is better to: take action in anticipation of what may become a serious problem based on uncertain information or wait to see if the problem develops into a serious problem and take action then? 11-point scale: From 0 (definitely take action immediately) to 10 (definitely wait and see)
Climate sceptic	Feels that climate change does not pose any threat to their country (and not an antivaxxer)	Do you think that climate change is a major threat, a minor threat or not a threat to your country? 0 = not a climate sceptic (a major or minor threat) 1 = climate sceptic (not a threat)
Antivaxxer	Would definitely not take a COVID-19 vaccine if offered one (and not a climate sceptic)	*It was recently announced that effective COVID-19 vaccines have been developed. If a COVID-19 vaccine is offered to you, how likely or unlikely are you take it?* 0 = not an antivaxxer (any of the following responses: Already taken it, would definitely take it, somewhat likely to take it, neither likely not unlikely to take it, somewhat unlikely to take it, and very unlikely to take it) 1= antivaxxer (would definitely not take it)
Double sceptic	Feels that climate change does not pose any threat to their country and would definitely not take a COVID-19 vaccine if offered one	0 = not a double sceptic 1 = double sceptic
EconOver Clim&Covid	Gives complete priority to economic growth over protecting the climate and public from COVID-19	0 = does not give complete priority to economic growth over protecting the climate and public from COVID-19 1 = gives complete priority to economic growth over protecting the climate and public from COVID-19
EconOver Clim	Gives complete priority to economic growth over protecting climate change (and does not give complete priority to economy over protecting the public from COVID-19)	*Some believe that economic growth should have priority even if that hinders protecting the climate. Others believe that protecting the climate should have priority even if that reduces economic growth. On a scale of 1 to 10, where would you place yourself, where 0 means economic growth should have priority and 10 means protecting the climate should have priority* 0 = economic growth should not have complete priority 10 = economic growth should have complete priority
EconOver Covid	Gives complete priority to economic growth over protecting the public from COVID-19 (and does not give complete priority to economy over protecting the climate)	*Some believe that economic growth should have priority even if that hinders protecting the public from COVID-19. Others believe that protecting the public from COVID-19 should have priority even if that reduces economic growth. On a scale of 1 to 10, where would you place yourself, where 0 means economic growth should have priority and 10 means protecting the public from COVID-19 should have priority* 0 = economic growth should not have complete priority 10 = economic growth should have complete priority

Supplementary Tables S3-S10: Descriptive Statistics for Country Samples

Discrete variables		
Variable	*N*	*% share*
Double sceptic	34	1.70
Climate sceptic	155	7.75
Antivaxxer	88	4.40
EconOverClim&Covid	30	1.50
EconOverClim	119	5.95
EconOverCovid	26	1.30
Gender		
Female	1020	51.00
Male	980	49.00
Educational attainment		
No completed education	7	0.35
Primary school only	23	1.15
Secondary education to Year 11 or below	229	11.45
Secondary education to Year 12	313	15.65
TAFE Certificate, Diploma	598	29.90
University and tertiary education (Undergraduate, Bachelor degrees)	567	28.35
Masters degree	211	10.55
Doctorate/PhD	38	1.90
Prefer not to answer	14	0.70
EnvTop3	801	40.05
HealthTop3	1144	57.20
Continuous variables		
Variable	*Mean*	*SD*
Age	46.98	17.42
Know. Index	3.94	1.81
Energy know. (self-decl.)	2.88	1.05
Trust scientists	4.97	1.44
Perceived income sufficiency	2.08	0.98
Climate resp.	5.87	2.17
Covid resp.	5.89	2.26
Precautionism	6.58	2.55

Supplementary Table S3: Descriptive statistics for Australia (n=2000)

Discrete variables		
Variable	*N*	*% share*
Double sceptic	23	1.15
Climate sceptic	73	3.65
Antivaxxer	72	3.60
EconOverClim&Covid	67	3.35
EconOverClim	150	7.50
EconOverCovid	62	3.10
Gender		
Female	1040	52.00
Male	960	48.00
Educational attainment		
Without formal education	4	0.20
Elementary education	30	1.50
Lower secondary education	26	1.30
Complete lower secondary education	55	2.75
Upper secondary education	715	35.75
University	794	39.70
Postgraduate degree	272	13.60
Master's degree	68	3.40
Doctor's degree	26	1.30
Prefer not to answer	10	0.50
EnvTop3	414	20.70
HealthTop3	1645	82.25
Continuous variables		
Variable	*Mean*	*SD*
Age	42.82	15.67
Know. Index	2.80	1.61
Energy know. (self-decl.)	3.21	1.17
Trust scientists	5.12	1.65
Perceived income sufficiency	2.11	.97
Climate resp.	5.87	2.67
Covid resp.	5.92	2.82
Precautionism	7.91	2.93

Supplementary Table S4: Descriptive statistics for Brazil (n=2000)

Discrete variables		
Variable	*N*	*% share*
Double sceptic	2	0.10
Climate sceptic	82	4.10
Antivaxxer	10	0.50
EconOverClim&Covid	11	0.55
EconOverClim	37	1.85
EconOverCovid	19	0.95
Gender		
Female	997	49.85
Male	1003	51.15
Educational attainment		
No formal schooling	4	0.20
Primary education incomplete	2	0.10
Primary education complete	14	0.70
Junior high school incomplete	8	0.40
Junior high school complete	31	1.55
Junior/ technical secondary school	32	1.60
Senior/ technical secondary school	81	4.05
Senior high school	123	6.15
College	352	17.60
University	1222	61.20
Postgraduate	129	6.45
Prefer not to say	2	0.10
EnvTop3	995	49.75
HealthTop3	1042	52.10
Continuous variables		
Variable	*Mean*	*SD*
Age	41.53	15.42
Know. Index	4.62	1.40
Energy know. (self-decl.)	3.21	0.94
Trust scientists	5.13	1.27
Perceived income sufficiency	1.54	0.66
Climate resp.	6.15	2.09
Covid resp.	6.10	2.31
Precautionism	6.58	2.52

Supplementary Table S5: Descriptive statistics for China (n=2000)

Discrete variables		
Variable	*N*	*% share*
Double sceptic	11	0.55
Climate sceptic	79	3.95
Antivaxxer	51	2.55
EconOverClim&Covid	24	1.20
EconOverClim	82	4.10
EconOverCovid	20	1.00
Gender		
Female	1023	51.15
Male	977	48.85
Educational attainment		
Primary education	11	0.55
Lower secondary education	336	16.80
Upper secondary education	409	20.45
Post-secondary education, but not university	367	18.35
First degree	540	27.00
Postgraduate degree	324	16.20
Prefer not to answer	13	0.65
EnvTop3	646	32.30
HealthTop3	1523	76.15
Continuous variables		
Variable	*Mean*	*SD*
Age	47.83	16.87
Know. Index	4.23	1.77
Energy know. (self-decl.)	2.77	1.03
Trust scientists	5.12	1.33
Perceived income sufficiency	1.96	0.89
Climate resp.	5.71	2.02
Covid resp.	5.63	2.26
Precautionism	6.71	2.43

Supplementary Table S6: Descriptive statistics for the UK (n=2000)

Discrete variables		
Variable	*N*	*% share*
Double sceptic	4	0.20
Climate sceptic	73	3.65
Antivaxxer	75	3.75
EconOverClim&Covid	146	7.30
EconOverClim	142	7.10
EconOverCovid	67	3.35
Gender		
Female	981	49.05
Male	1019	50.95
Educational attainment		
No formal schooling	6	0.30
School up to 2nd grade	6	0.30
School up to 4th grade	9	0.45
School up to 9th grade	13	0.65
SSC (10th grade)	59	2.95
HSC (12th grade)	152	7.60
Some college	176	8.80
Graduate/ Postgraduate – General	882	44.10
Graduate/ Postgraduate - Professional	686	34.30
Prefer not to answer	11	0.55
EnvTop3	670	33.50
HealthTop3	1103	55.15
Continuous variables		
Variable	*Mean*	*SD*
Age	38.61	14.88
Know. Index	4.11	1.34
Energy know. (self-decl.)	3.86	1.10
Trust scientists	5.49	1.50
Perceived income sufficiency	2.16	1.21
Climate resp.	4.98	3.02
Covid resp.	4.82	3.08
Precautionism	6.51	3.49

Supplementary Table S7: Descriptive statistics for India (n=2000)

Discrete variables		
Variable	*N*	*% share*
Double sceptic	12	0.60
Climate sceptic	85	4.18
Antivaxxer	51	2.52
EconOverClim&Covid	20	0.98
EconOverClim	41	2.01
EconOverCovid	16	0.79
Gender		
Female	1054	51.79
Male	981	48.21
Educational attainment		
Primary education/ junior high school	72	3.54
High school	643	31.60
Post-secondary education	419	20.59
First degree	801	39.36
Postgraduate degree	70	3.44
Doctorate or other advanced degree	16	0.79
Prefer not to answer	14	0.69
EnvTop3	370	18.18
HealthTop3	972	47.76
Continuous variables		
Variable	*Mean*	*SD*
Age	50.28	16.97
Know. Index	3.98	1.81
Energy know. (self-decl.)	2.69	0.98
Trust scientists	4.29	1.26
Perceived income sufficiency	2.41	0.98
Climate resp.	6.27	1.96
Covid resp.	5.99	2.20
Precautionism	4.78	2.34

Supplementary Table S8: Descriptive statistics for Japan (n=2035)

Discrete variables		
Variable	*N*	*% share*
Double sceptic	37	1.85
Climate sceptic	44	2.20
Antivaxxer	346	17.30
EconOverClim&Covid	89	4.45
EconOverClim	170	8.50
EconOverCovid	127	6.35
Gender		
Female	1028	51.40
Male	972	48.60
Educational attainment		
No schooling	1	0.05
Some primary	2	0.10
Completed primary	6	0.30
Secondary (grades 8-9)	31	1.55
Secondary (grades 10-11)	90	4.50
Secondary (matric or equivalent)	649	32.45
Post-secondary education, but not university	568	28.40
First degree	461	23.05
Postgraduate degree	178	8.90
Prefer not to answer	14	8.90
EnvTop3	174	8.70
HealthTop3	1275	63.75
Continuous variables		
Variable	*Mean*	*SD*
Age	39.19	14.87
Know. Index	4.22	1.46
Energy know. (self-decl.)	3.22	1.10
Trust scientists	5.18	1.51
Perceived income sufficiency	2.76	1.01
Climate resp.	5.36	2.58
Covid resp.	4.85	2.82
Precautionism	7.12	3.05

Supplementary Table S9: Descriptive statistics for South Africa (n=2000)

Discrete variables		
Variable	*N*	*% share*
Double sceptic	80	4.00
Climate sceptic	205	10.25
Antivaxxer	123	6.15
EconOverClim&Covid	82	4.10
EconOverClim	126	6.30
EconOverCovid	51	2.55
Gender		
Female	974	48.70
Male	1026	51.30
Educational attainment		
Some high school or less	42	2.10
High school degree or equivalent	319	15.95
Some college – no degree	440	22.00
2-year college/ technical degree	240	12.00
4-year college degree	624	31.20
Postgraduate degree	332	16.60
Prefer not to answer	3	0.15
EnvTop3	594	29.70
HealthTop3	1209	60.45
Continuous variables		
Variable	*Mean*	*SD*
Age	47.91	17.44
Know. Index	3.91	1.69
Energy know. (self-decl.)	2.99	1.07
Trust scientists	4.75	1.59
Perceived income sufficiency	1.96	1.04
Climate resp.	5.67	2.28
Covid resp.	5.68	2.44
Precautionism	6.56	2.52

Supplementary Table S10: Descriptive statistics for the US (n=2000)

Supplementary Table S11: Pooled model results showing effect of key drivers on the relative log odds of being a double sceptic, climate sceptic or antivaxxer

Parameter	Model		
	1A	2A	3A
	Climate sceptic and antivaxxer	Climate sceptic only	Antivaxxer only
Age	0.03	0.02**	-0.01T
Female	-0.23	-0.67T	0.19*
Degree	-0.40*	-0.09T	-0.33***
Prioritise environment	-1.66***	-1.44	-0.16
Prioritise health	-1.10***	-0.58T	-0.22**
Objective knowledge	-0.03	-0.16***	-0.01
Self-declared energy knowledge	0.15T	0.12**	0.01
Trust in scientists	-0.56***	-0.32**	-0.25***
Perceived income sufficiency	0.04	-0.04	0.25***
Climate responsibility	-0.01	-0.12***	0.04*
COVID-19 responsibility	-0.16***	0.04*	-0.01*
Precautionism	0.05	-0.06***	0.04**
N	203	796	816
R2	0.27	0.16	0.14

Table S11: Effects on the relative log odds of being a climate sceptic, antivaxxer or both (N=14956).

Note: The dependent variable is binary, taking the value of 1 if an individual response is categorized as the defined sceptic attitude towards climate change and COVID-19 and 0 otherwise. Model (1A) estimates the probability of an individual being both climate sceptic and antivaxxer, model (2A) climate sceptic but not antivaxxer and model (3A) antivaxxer but not climate sceptic. Country controls are included but not reported. Individual country regressions are reported in Table 3. *P<0.05, **P<0.01 and ***P<0.001.

Supplementary Table S12: Pooled model results showing effect of key drivers on the relative log odds of giving complete priority to the economy over climate protection or combatting COVID-19 or both

Parameter	Model		
	1B	2B	3B
	Prioritise economy over both climate and COVID-19	Prioritise economy over climate only	Prioritise economy over COVID-19 only
Age	0.01*	0.01***	7.09E-4
Female	-0.03	-0.07	-0.04
Degree	0.12	-0.23**	-0.23T
Prioritise environment	-0.87***	-0.90***	-0.16
Prioritise health	-0.66***	-0.22**	-0.58***
Objective knowledge	-0.15***	-0.20***	0.02
Self-declared energy knowledge	0.57***	0.23***	0.13**
Trust in scientists	-0.21***	-0.11***	-0.15***
Economic hardship	0.04	0.11**	0.11*
Climate responsibility	-0.12***	-0.01	-0.02
COVID-19 responsibility	-0.18***	0.03T	-0.13***
Precautionism	0.23***	0.11***	0.08***
N	469	867	388
R2	0.23	0.08	0.10

Table S12: Effects on the relative log odds of giving complete priority to the economy over climate protection or combatting COVID-19 or both (N=14956).

Note: The dependent variable is binary, taking the value of 1 if an individual response is categorized as the defined sceptic attitude towards climate change and COVID-19 and 0 otherwise. Model (1B) estimates the probability of an individual giving complete priority to the economy over combatting climate change and the pandemic, model (2B) the probability of giving complete priority to the economy over climate protection but not combatting COVID-19 and model (3B) the probability of giving complete priority to the economy over combatting COVID-19 but not climate protection. Country controls are included but not reported. Individual country regressions are reported in Table 4. *P<0.05, **P<0.01 and ***P<0.001.

In comparing tables S11 and S12 (similar to tables 1 and 2 in the main text), it is noteworthy that the numbers of climate sceptics and those who deprioritise climate is relatively comparable whereas more than twice as many respondents prioritise the economy over both climate and COVID-19 compared to the number that are both anti-vaxxers and climate sceptics.

Supplementary Table S13: Probability of making no lifestyle changes due to climate change or COVID-19

Trust in scientists	Model		
	1B	2B	3B
	No lifestyle changes due to climate change or COVID-19	No lifestyle changes due to climate change only	No lifestyle changes due to COVID-19 only
1	0.07***	0.16***	0.02***
2	0.05***	0.15***	0.02***
3	0.03***	0.13***	0.02***
4	0.03***	0.12***	0.02***
5	0.02***	0.11***	0.02***
6	0.02***	0.09***	0.01***
7	0.01***	0.08***	0.01***

Table S13: Predicted probability of making no lifestyle changes due to COVID-19, climate change or both issues depending on level of trust in scientists.

Note: The dependent variable is binary, taking the value of 1 if an individual reports making no lifestyle changes due to the specified issue combination and 0 otherwise. Model (1) estimates the probability of an individual reporting no lifestyle changes due to climate change and the pandemic, model (2) the probability of no lifestyle changes due to climate change but not COVID-19 and model (3) the probability of no lifestyle changes due to COVID-19 but not climate change. Country controls are included but not reported. Individual country regressions are reported in Table 4. *P<0.05, **P<0.01 and ***P<0.001.

Supplementary Tables S14-S15: Comparing political ideology, distrust in scientists, government and television news across non-sceptic and sceptic segments

Variable	Non-sceptic (n=14423)		Double sceptic (n=203)		Climate sceptic (n=796)		Antivaxxer (n=816)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Left-right orientation	5.44	0.03	7.45	0.21	7.06	0.11	5.98	0.13
Distrust scientists	1.90	0.01	3.94	0.13	3.07	0.06	2.56	0.06
Distrust government	3.21	0.02	4.41	0.14	3.48	0.07	4.06	0.07
Distrust TV news	2.84	0.01	5.07	0.11	3.76	0.07	3.74	0.07

Table S14: Descriptive statistics of key variables across sceptic and non-sceptic segments.

	Double vs. single sceptics				Non-sceptics vs. sceptics					
	Double sceptic vs. climate sceptic		Double sceptic vs. antivaxxer		Non-sceptic vs. double sceptic		Non-sceptic vs. climate sceptic		Non-sceptic vs. antivaxxer	
Variable	t-test statistic	p-value	t-test statistic	p-value	t-test statistic	p-value	t-test statistic	p-value	t-test statistic	p-value
Left-right orientation	36.39	0.000	125.50	0.000	-7.4E2	0.000	-1.20E3	0.000	-3.60E2	0.000
Distrust scientists	139.46	0.000	222.71	0.000	-1.6E3	0.000	-1.80E3	0.000	-1.10E3	0.000
Distrust government	133.26	0.000	50.46	0.000	-6.6E2	0.000	-2.90E2	0.000	-7.10E2	0.000
Distrust TV news	208.93	0.000	213.13	0.000	-1.9E3	0.000	-1.30E3	0.000	-1.30E3	0.000

Table S15: Comparing left-right orientation, distrust in scientists, government and television news across non-sceptic and sceptic segments.

Note: (Unequal) t-test statistics and associated p-value indicate that the difference in means is statistically significant at the 0.001 level in all cases.

Supplementary Tables S16-S17: The relationship between political orientation and climate scepticism, antivaxxism, correlated attitudes towards the importance of the economy over climate and COVID-19 mitigation

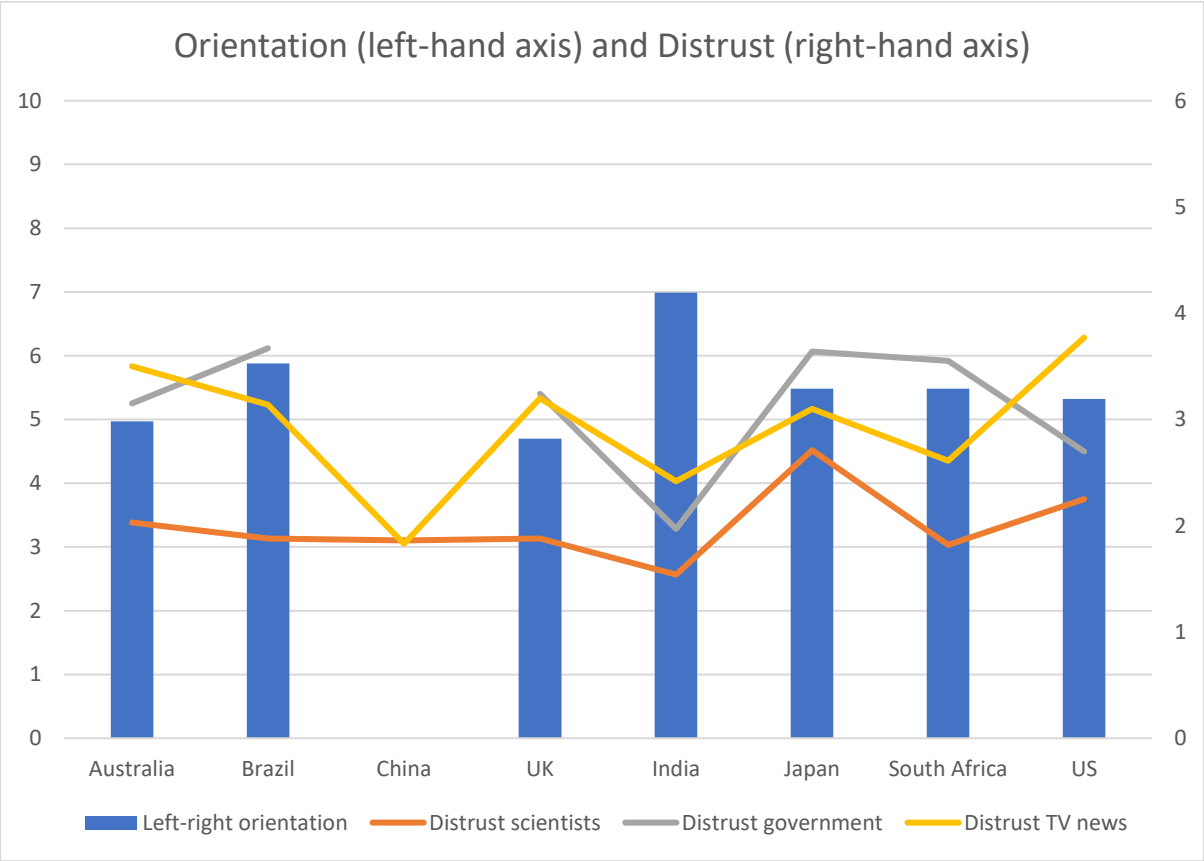
Parameter	Model		
	1A	2A	3A
	Climate sceptic and antivaxxer	Climate sceptic only	Antivaxxer only
Age	1.41E-5	3.34E-4***	-1.79E-4T
Female	-5.27E-3	-0.01***	5.55E-3T
Degree	-1.06E-3T	-3.13E-4	-0.01**
Prioritise environment	-0.01***	-0.04***	-4.95E-3
Prioritise health	-2.85E-3***	-0.01***	-0.01**
Objective knowledge	-7.30E-6	-3.33E-3***	-1.17E-4
Self-declared energy knowledge	-2.99E-4	-1.90E-3T	-3.85E-4
Trust in scientists	-1.57E-3***	-0.01***	-0.01***
Economic hardship	-4.87E-4T	-7.33E-4	0.01***
Climate responsibility	9.91E-6	-2.22E-3	2.08E-3**
COVID-19 responsibility	-5.27E-4***	6.00E-4	-1.97E-4
Precautionism	8.90E-5	-1.11E-3**	1.87E-3**
Political orientation	3.22E-4**	2.30E-3***	1.30E-3*
N	10192	10192	10192
R2	0.31	0.22	0.14

Supplementary Table S16. Probability of being a double or single sceptic including political orientation. Note: Results exclude China.

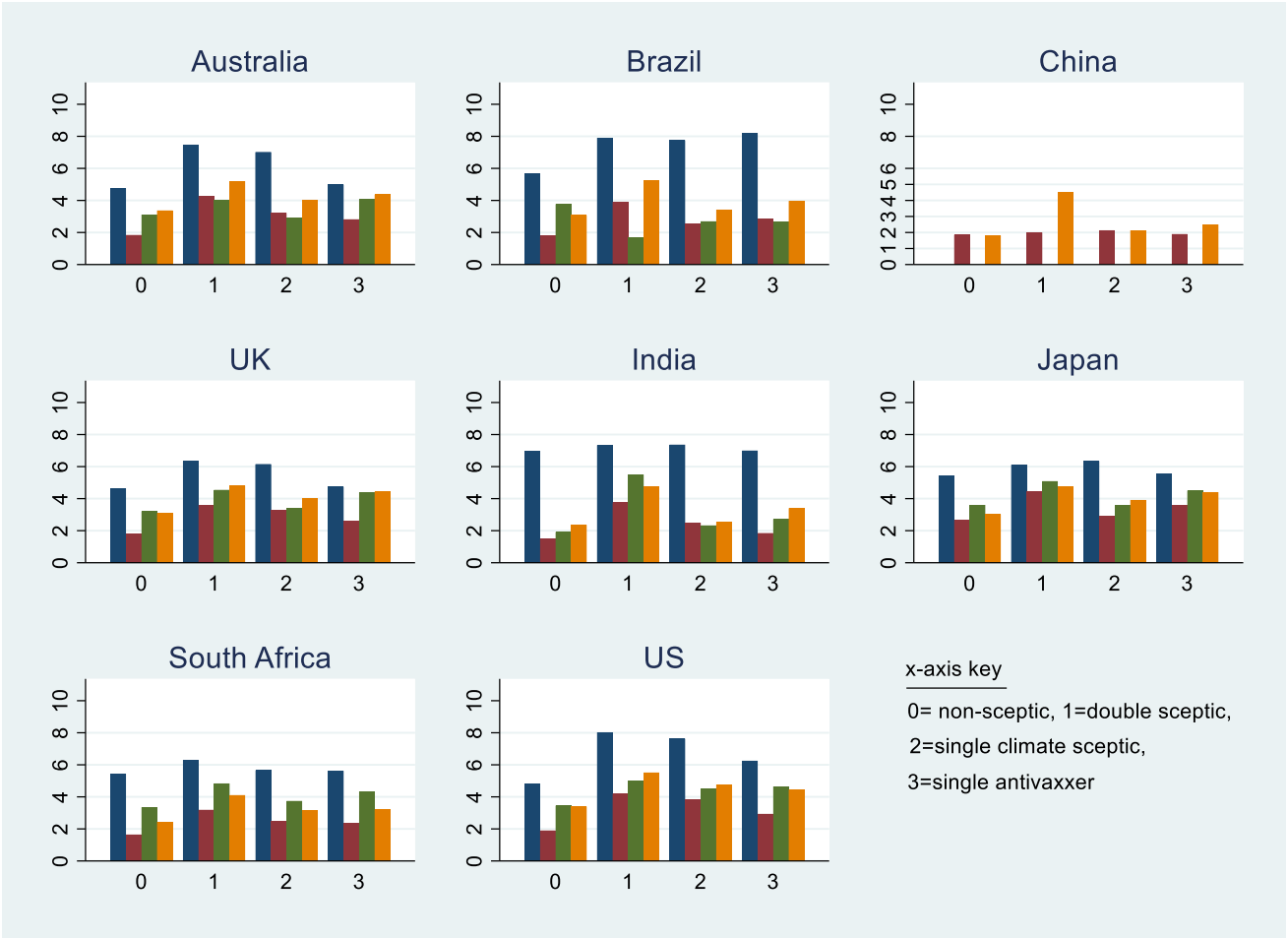
Parameter	Model		
	1B	2B	3B
	Econ over climate and COVID-19	Econ over climate only	Econ over COVID-19 only
Age	6.94E-5	5.45E-3***	-2.42E-5
Female	-2.12E-4	4.19E-4	7.90E-4
Degree	2.05E-3	-0.01**	-3.40E-3
Prioritise environment	-0.01***	-0.04***	-2.34E-3
Prioritise health	-0.01***	-3.55E-3	-0.02***
Objective knowledge	-0.02***	-0.01***	1.04E-3
Self-declared energy knowledge	0.01***	0.01***	1.55E-3
Trust in scientists	-2.56E-3***	-4.42E-3***	-2.10E-3**
Economic hardship	9.21E-4	0.01**	1.45E-3
Climate responsibility	-1.62E-3***	-2.66E-4	-4.87E-5
COVID-19 responsibility	-2.03E-3***	1.48E-3*	-1.67E-3***
Precautionism	2.89E-3***	4.34E-3***	1.34E-3**
Political orientation	2.10E-3***	0.01***	1.90E-3***
N	10192	10192	10192
R2	0.26	0.09	0.10

Supplementary Table S17. Probability of prioritising the economy over climate change and COVID-19 or climate change/ COVID-19 only. Note: Results exclude China.

Supplementary Figures S1-S2: Political orientation, trust in university scientists, national government and television news across countries and national sceptic segments



Supplementary Figure S1: Mean left-right orientation and distrust in university scientists, national government and television news across countries. Blue bars show the mean score respondents assigned when asked to locate themselves on a left-right political spectrum ranging from 0 (left) to 10 (right). Orange lines show mean levels of respondents' distrust in university scientists, grey lines their national government and yellow lines television news from 0 (completely trust) to 6 (do not trust at all). Chinese respondents were not asked questions on left-right orientation and distrust in national government.



Supplementary Figure S2: Mean values of four key variables across non-sceptic, double sceptic and single sceptic segments in separate country samples. The blue bars (left) show the mean score respondents assigned when asked to locate themselves on a left-right political scale from 0 (left) to 10 (right). Brown bars (second) show mean levels of respondents' distrust in university scientists, green bars (third) their national government and orange bars (fourth) television news from 0 (completely trust) to 6 (do not trust at all).

Supplementary Tables S18-S19: Associations with climate sceptics, antivaxxers, double sceptics and associated prioritisations of the economy across countries

Country	Age	Female	Prioritise env	Prioritise health	Know. index	Self-decl. energy know.	Trust	Economic hardship	Climate resp.	Covid resp.	Prec.	Adj. R2
Australia (n=1827)												
Climate sceptics & antivaxxers	2.96E-5	1.40E-3	-0.01*	-2.56E-3	2.58E-3	-1.77E-5	-3.10E-3**	1.11E-3	-6.87E-4	-2.55E-4	2.42E-4	0.27
Climate sceptics only	4.48E-4**	-0.01*	-0.06***	-0.01T	-3.00E-3*	4.24E-3*	-0.01**	-1.78E-3	-3.65E-3**	-8.65E-3	-1.66E-3*	0.28
Antivaxxers only	-3.70E-4T	2.90E-4	-3.72E-3	-0.01T	5.70E-4	-3.60E-3	-0.01***	0.01*	4.93E-3**	-8.72E-4	2.90E-3*	0.11
Brazil (n=1825)												
Climate sceptics & antivaxxers	2.14E-5	-3.61E-3T	X	-4.70E-3	1.33E-4	1.53E-3T	-1.70E-3*	-2.64E-4	-2.37E-4	-9.44E-4*	-3.34E-4	0.33
Climate sceptics only	3.96E-4T	-0.01*	-0.03***	-0.01	-1.12E-3	3.17E-4	-3.17E-3T	9.01E-4	1.04E-4	-1.21E-3	-1.77E-3T	0.08
Antivaxxers only	3.86E-4T	-0.01	-6.90E-4	-0.01	9.82E-4	4.31E-3	-0.01***	4.35E-3	-1.65E-3	1.19E-3	1.24E-3	0.07
China (n=1543)												
Climate sceptics & antivaxxers	7.95E-5	X	X	-1.23E-3	-2.76E-4	-5.16E-4	-7.30E-5	-1.36E-3	1.32W-4	1.04-e4	4.29E-4	0.20
Climate sceptics only	6.21E-4**	6.23E-4	-0.01T	-4.12E-3	-0.01**	-4.12E-3	-3.01E-3	-6.96E-5	0-2.80E-3	-0.01**	-3.25E-4	0.19
Antivaxxers only	8.48E-5	-3.16E-3	-3.55E-5	1.83E-3	1.12E-3T	4.77E-4	-2.68E-4	8.82E-4	2.45E-6	2.80E-4	-6.701E-5	0.10
UK (n=1866)												
Climate sceptics & antivaxxers	-3.75E-5	1.43E-3	-1.18E-3	-9.99E-4	3.50E-4	4.10E-4	-9.89E-4T	7.70E-4	-1.27E-4	-1.21E-4	7.42E-6	0.23
Climate sceptics only	7.57E-5	-0.01*	-0.02***	-0.01	-1.13E-3	1.98E-3	-0.01***	1.57E-3	-2.13E-3*	1.76E-4	-7.29E-	0.23
Antivaxxers only	-1.11E-4	4.30E-3	1.52E-3	-0.01	-2.67E-3T	-7.09E-4	-0.01**	4.20E-3	2.96E-3T	-5.90E-4	1.17E-3	0.07
India (n=1880)												
Climate sceptics & antivaxxers	-2.68E-6	-1.19E-4	6.48E-4	X	-5.17E-5	-1.31E-4	-6.71E-5	-1.39E-5	3.84E-5	1.17E-5	1.23E-5	0.35
Climate sceptics only	-4.48E-5	-0.01*	-0.01T	-0.02*	-1.00E-3	-0.01T	-4.66E-3*	-7.43E-4	-1.84E-3	9.00E-4	5.32E-4	0.08
Antivaxxers only	1.06E-4	-0.01	-0.01	-0.01	0.01*	-3.56E-3	-4,00E-4	0.01***	4,21E-4	1.83E-3	2.33E-3*	0.05
Japan (n=1665)												

Climate sceptics & antivaxxers	1.82E-6	-2.14E-3	-3.83E4	-1.20E-4	-3.56E-4	4.45E-5	-1.39E-2*	-4.26E-4	2.53E-4	3.02E-4	2.87E-4	0.27
Climate sceptics only	-4.20E-5	-0.03**	-0.03***	-0.01	-0.01**	0.01**	-3.76E-3	-4.91E-3	1.72E-3	-1.45E-3	-9.51E-4	0.08
Antivaxxers only	-4.01E-4**	4.22E-3	-0.01T	-1.54E-3	-2.46E-3*	2.52E-3	-0.01***	-2.35E-5	9.28E-4	-4.41E-4	1.99E-3*	0.12
South Africa (n=1899)												
Climate sceptics & antivaxxers	3.10E-4**	-0.01	X	-0.01T	-8.80E-4	9.19E-4	-4.82E-3***	-1.38E-3	-1.94E-4	-8.34E-4	7.62E-4	0.16
Climate sceptics only	1.27E-4	-2.72E-3	-0.01	-0.01	-2.80E-3	-5.55E-4	-3.93E-3*	-6.93E-4	3.97E-4	1.12E-3	-1.10E-3	0.05
Antivaxxers only	4.93E-4	0.04*	-0.01	-3.01E-3	-1.19E-4	3.12E-3	-0.03***	0.04***	2.21E-3	-6.70E-4	0.01*	0.06
US (n=1823)												
Climate sceptics & antivaxxers	-3.54E-5	-5.67E-4	X	-0.04***	-1.63E-3	3.14E-3	-0.01***	-3.90E-4	1.17E-3	-0.01***	1.67E-4	0.31
Climate sceptics only	7.74E-4***	-0.02**	-0.06***	-0.02**	-0.01**	3.81E-3	-0.01***	1.82E-3	-0.01**	8.91E-4	-1.61E-3	0.29
Antivaxxers only	-8.76E-4***	0.02**	-0.01	-0.01	-1.16E-3	-1.82E-3	-0.01***	0.01T	3.32E-3T	-2.44E-3	-2.00E-3	0.10

Table S18: Probability of being a double sceptic, climate sceptic or antivaxxer across countries.

Note: The dependent variable is binary, taking the value of 1 if an individual response is categorized as the defined sceptic attitude towards climate change and COVID-19 and 0 otherwise. For each country, Row 1 estimates the probability of an individual being both climate sceptic and antivaxxer, Row 2 climate sceptic but not antivaxxer and Row 3 antivaxxer but not climate sceptic. Country regressions include (unreported) education variables that denote the core distinctions between levels of educational attainment in each country as specified in Supplementary Tables 3-10. *P<0.05, **P<0.01 and ***P<0.001.

Country	Age	Female	Prioritise env.	Prioritise health	Know index	Self-decl. energy know.	Trust	Perceived income sufficiency	Climate resp.	Covid resp.	Prec.	Adj. R2
Australia (n=1827)												
Econ. Over climate & COVID-19	-7.77E-5	-1.45E-3	-4.79E-3T	-0.01*	-8.11E-4	2.47E-3*	-1.67E-3*	-5.83E-4	-1.05E-3*	-6.70E-4	-6.67E-4	0.23
Econ. over climate only	8.46E-4***	-0.01	-0.05***	-0.01	-4.39E-3**	0.01T	-0.01**	-1.30E-3	-3.63E-3*	3.16E-3*	3.91E-5	0.18
Econ. Over COVID-19 only	-1.10E-4	-1.00E-3	1.89E-3	-0.01T	-1,51E-3	4.16E-3**	-1.39E-3	1.33E-3	-1.92E-3	-1.13E-3T	9.29E-4	0.14
Brazil (n=1825)												
Econ. Over climate & COVID-19	-2.95E-5	-2.74E-3	-0.03***	-0.01T	-1.12E3	3.80E-3*	-3.36E-3**	7.59E-4	-2.18E-3*	-1.41E-3T	2.70E-3**	0.16
Econ. over climate only	2.07E-4	-0.01	-2.37E-3	-7.11E-6	-0.01**	0.01	-0.01*	0.01	-1.53E-3	2.26E-3	0.01***	0.07
Econ. Over COVID-19 only	2.13E-4	1.16E-3	-0.01	-1.62E-3	-1.58E-3	3.76E-3	-2.18E-3	-2.00E-3	-1.26E-3	-0.01***	-2.32E-4	0.11
China (n=1571)												
Econ. Over climate & COVID-19	2.65E-6	-3.22E-4	-1.93E-4	-1.67E-4	-2.09E-4	1.32E-4	8.36E-5	-1.11E-4	-1.50E-4	1.31E-6	8.54E-5	0.45
Econ. over climate only	-2.09E-5	3.27E-3	-0.01*	-1.57E-3	-1.07E-3	3.45E-3	-4.44E-4	0.01*	1.44E-3	1.02E-3	2.56E-3**	0.09
Econ. Over COVID-19 only	1.11E-4T	-6.90E-4	-1.00E-3	-7.27E-5	-7.40E-4	4.56E-4	-8.72E-4	2.60E-3*	2.79E-4	-2.35E-5	1.57E-3**	0.19
UK (n=1866)												
Econ. Over climate & COVID-19	-6.48E-5	-3.78E-3	-4.93E-3	-3.37E-3	-4.06E-4	2.01E-3T	-2.34E-3**	-4.54E-6	-7.03E-4	-1.46E-4	-5.33E-6	0.21
Econ. over climate only	5.71E-4**	-4.93E-3	-0.04***	-0.01	-3.10E-3*	-4.45E-3	-2.68E-3T	1.23E-4	-1.24E-4	-3.53E-4	2.90E-3**	0.15
Econ. Over COVID-19 only	-8.61E-5	1.07E-3	1.44E-3	-0.01**	2.69E-4	1.19E-5	-1.45E-3*	2.66E-4	3.78E-4	-6.98E-4T	1.73E-5	0.23
India (n=1880)												
Econ. Over climate & COVID-19	1.91E-4	3.95E-3	-0.01	-0.01T	-3.70E-3*	0.01***	1.11E-3	1.58E-3	-2.61E-3**	-2.80E-3**	0.01***	0.31

Econ. over climate only	-1.46E-5	0.02T	-0.02T	0.01	-0.01**	-7.29E-6	0.01T	0.01**	1.22E-3	-4.15E-4	0.01***	0.06
Econ. Over COVID-19 only	-1.62E-4	-0.01	0.01	-0.01	-1.57E-3	1.24E-3	-1.11E-3	2.65E-4	-1.79E-3	-8.02E-4	4.40E-3***	0.05
Japan (n=1773)												
Econ. Over climate & COVID-19	-5.24E-5	-1.90E-3	1.-3.90E-3	2.33E-3	-1.08E-3*	2.70E-3*	-1.98E-3*	-4.10E-5	1.10E-4	2.56E-4	5.24E-4	0.21
Econ. over climate only	-2.97E-5	-0.01**	-0.02*	-0.01	-1.92E-3T	4.22E-3*	6.79E-4	1.75E-4	1.97E-3T	1.50E-3T	2.22E-3**	0.15
Econ. Over COVID-19 only	-1.12E-4T	1.34E-3	-1.00E-3	2.90E-3	-1.77E-4	-9.13E-6	-9.01E-4	9.19E-4T	-6.03E-4	-2.35E-4	7.86E-4T	0.17
South Africa (n=1871)												
Econ. Over climate & COVID-19	4.01E-4T	3.37E-3	-0.01	-4.60E-3	-1.48E-3	-1.48E-3	-0.01***	-1.72E-3	5.52E-3	-3.04E-3**	0.01***	0.10
Econ. over climate only	-4.56E-4	0.01	-3.20E-3	-0.01	-0.02***	0.01**	4.72E-4	0.02**	0.01***	-2.40E-3	4.88E-3**	0.07
Econ. Over COVID-19 only	6.61E-4*	0.01	-0.01	-0.03**	0.01**	2.04E-3	-0.01*	0.01*	-1.40E-3	-3.80E-3*	2.03E-3	0.05
US (n=1862)												
Econ. Over climate & COVID-19	-1.66E-5	-0.01	X	-0.02**	-5.91E-4	4.88E-3T	-0.01***	-2.04E-3	2.689E-5	-0.01***	2.07E-3*	0.38
Econ. over climate only	7.78E-4***	-4.01E-5	-0.05***	-0.02**	-0.01**	0.02***	-3.91E-3T	2.62E-3	-0.01***	3.10E-3*	-7.99E-4	0.15
Econ. Over COVID-19 only	-3.26E-4*	-2.15E-3	-3.48E-3	-0.01*	-0.02***	5.69E-4	3.43E-3	-1.89E-3	8.30E-4	1.46E-3	-2.22E-3*	0.13

Table S19: Probability of giving complete priority to the economy over climate protection or protecting the public against COVID-19 or both.

Note: The dependent variable is binary, taking the value of 1 if an individual response is categorized as the defined sceptic attitude towards climate change and COVID-19 and 0 otherwise. For each country, Row 1 shows the probability of an individual giving complete priority to the economy over combatting climate change and the pandemic, Row 2 the probability of giving complete priority to the economy over climate protection but not combatting COVID-19 and Row 3 the probability of giving complete priority to the economy over combatting COVID-19 but not climate protection. Country regressions include (unreported) education variables that denote the core distinctions between levels of educational attainment in each country as specified in Supplementary Tables 3-10. *P<0.05, **P<0.01 and ***P<0.001.

Supplementary Tables S20-S21: Knowledge and trust in scientists estimates under different indices of energy knowledge

Parameter	Climate sceptic and antivaxxer		Climate sceptic only		Antivaxxer only	
	1	2	1	2	1	2
Knowledge	-0.04	-0.01	-0.18***	-0.15***	-0.02*	0.02
Trust in scientists	-0.56***	-0.57***	-0.32**	-0.32***	-0.25***	-0.26***
R2	0.27	0.27	0.16	0.16	0.14	0.14

Table S20: Probability of being double sceptic, climate sceptic or antivaxxer using different energy knowledge proxies. Model 1 assigns one point for each confident correct knowledge response as described in the Methods and Model 2 assigns 1 point for confident correct, 0.5 point for unconfident correct, -0.5 point for unconfident incorrect, -1 point for confident incorrect and 0 points for 'don't know' responses (confident knowledge index scores range from -8 to 8).

Parameter	Prioritise economy over both climate and COVID-19		Prioritise economy over climate only		Prioritise economy over COVID-19 only	
	1	2	1	2	1	2
Knowledge	-0.14***	-0.12***	-0.22***	-0.18***	0.05	0.02
Trust in scientists	-0.21***	-0.21***	-0.11***	-0.10***	-0.15***	-0.15***
R2	0.23	0.23	0.08	0.09	0.10	0.10

Table S21: Probability of prioritising the economy over climate change and COVID-19, only climate change and only COVID-19 using different energy knowledge proxies. Model 1 assigns one point for each confident correct knowledge response as described in the Methods and Model 2 assigns 1 point for confident correct, 0.5 point for unconfident correct, -0.5 point for unconfident incorrect, -1 point for confident incorrect and 0 points for 'don't know' responses (confident knowledge index scores range from -8 to 8).