

Finite Pool of Worry: Evidence and Qualifications

Findings Summary

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Abstract

The Finite Pool of Worry (FPW) hypothesis states that humans have finite resources for worry, so when we become more worried about one thing, it can max out our resources for worry and thereby decrease worry about other threats. A contrasting possibility is that worries spill over, such that worrying more about one thing makes humans generally more worried and therefore more worried about other threats. We test the FPW hypothesis at multiple levels of observation and across international cultural contexts. We leverage the existence of the COVID-19 pandemic as a natural experiment. In six cities across three countries (USA, Italy, and China) we measured self-reported worries about a variety of topics (economy, unemployment, terrorism, immigration and climate change) throughout the pandemic. We also monitored effects at macro levels by measuring news coverage and social media attention to these topics. We find that as attention to and worry about COVID-19 increased, *attention* to unrelated threats (climate change and terrorism) decreased at micro and macro levels. However, contradictory to the FPW hypothesis, we find that *worry* about unrelated threats increased as COVID-19 attention and worry increased. We also find that negative personal experience with COVID-19, including illness, death of loved ones and financial hardship, is positively correlated with other worries which further suggests that the positive association is causal. Our findings suggest that there is not a Finite Pool of Worry about threats as previously theorized, but rather a Finite Pool of Attention to threats.

I. COVID-19 attention on social media crowds out attention to other threats. In Figure 1, we show the relationships between attention to COVID-19 on social media and attention to other threats (terrorism, climate, economy, and unemployment) on social media. The evident pattern, which has been confirmed with inferential regression analysis, is that COVID-19 attention increases attention to the threats it is directly tied to (problems with the economy and unemployment), and decreases attention to threats that are not directly associated with it (climate change and terrorism). This pattern of results is robust across three countries.

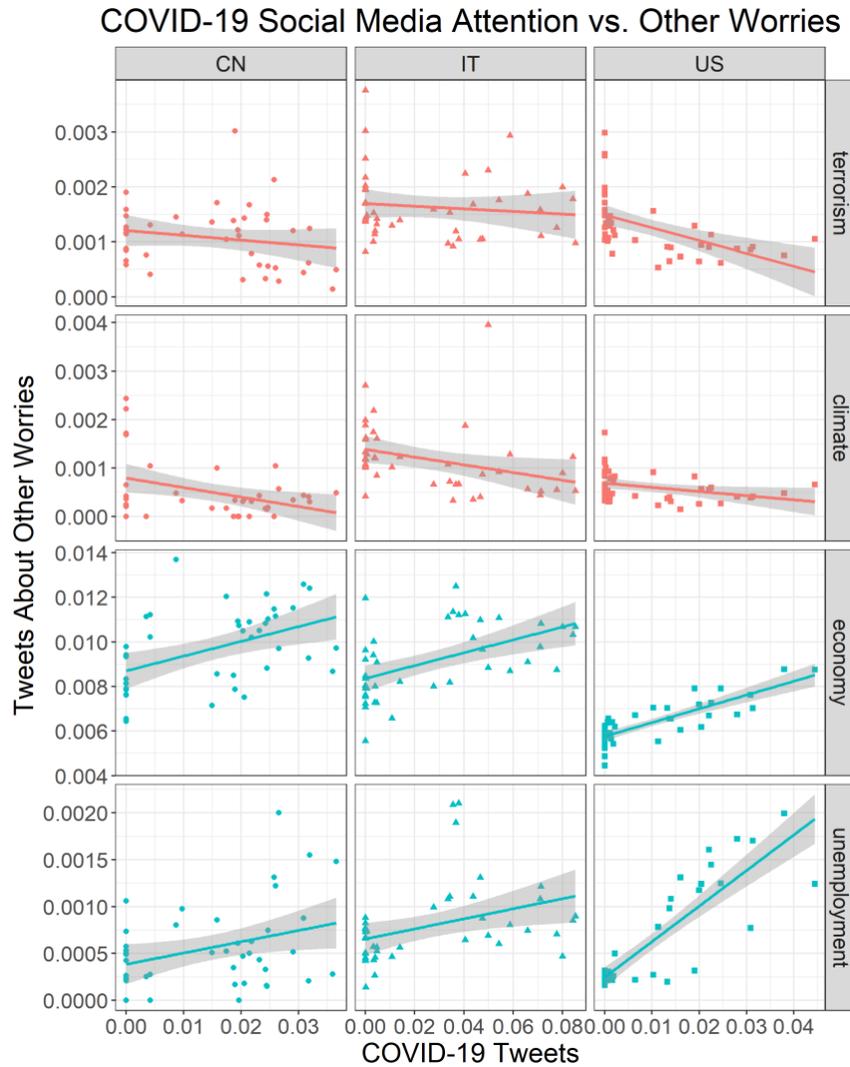


Figure 1. COVID-19 attention on social media crowds out attention to other threats. (Units are proportions of all social media messages.)

II. COVID-19 attention in news media crowds out attention to other threats. In Figure 2, we show the same pattern of results but looking at news media now instead of social media. Again, we see that COVID-19 attention increases attention to the threats it is directly tied to (problems with the economy and unemployment), and decreases attention to threats that are not directly associated with it (climate change and terrorism). This pattern of results is also here robust across three countries.

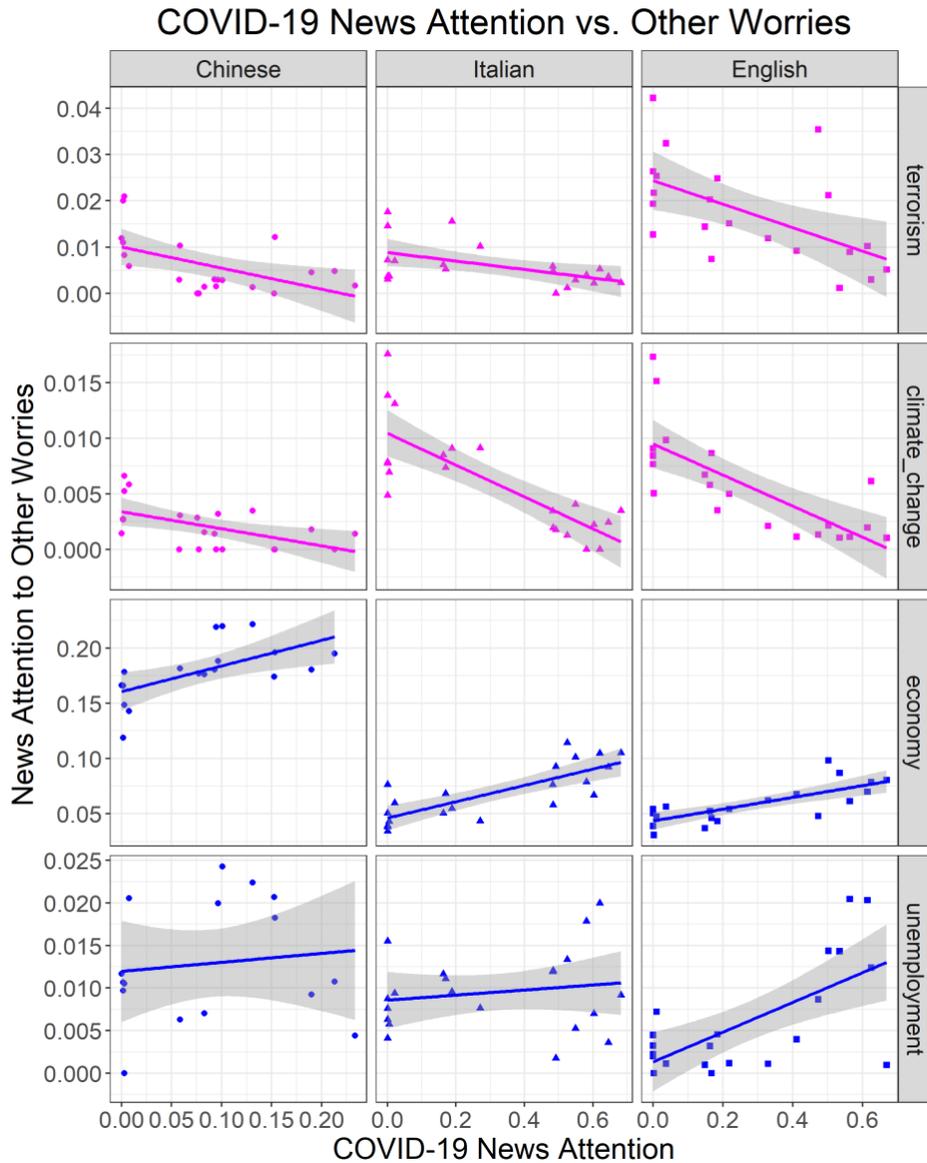


Figure 2. COVID-19 attention in news media crowds out attention to other threats. (Units are proportions of all news articles.)

III. COVID-19 prevalence crowds out attention to unrelated threats but does not reduce worry. Now we turn to analyze survey results (N=5,000 for US participants). In Figure 3 we show the effects of COVID-19 on worry and attention to four threats. Similar to the pattern of results shown above, we see that COVID-19 prevalence (quantified as daily death count) increases worry and attention to related threats (economic problems and unemployment). For other threats (climate change and terrorism), we see the same crowding-out effect of COVID-19 on attention to these threats in the forms of survey participants' self-reported discussions and thoughts about them. However, importantly, we do not see a crowding-out of worry about these threats. On the contrary, there is a positive effect of COVID-19 on worry about climate change and terrorism.

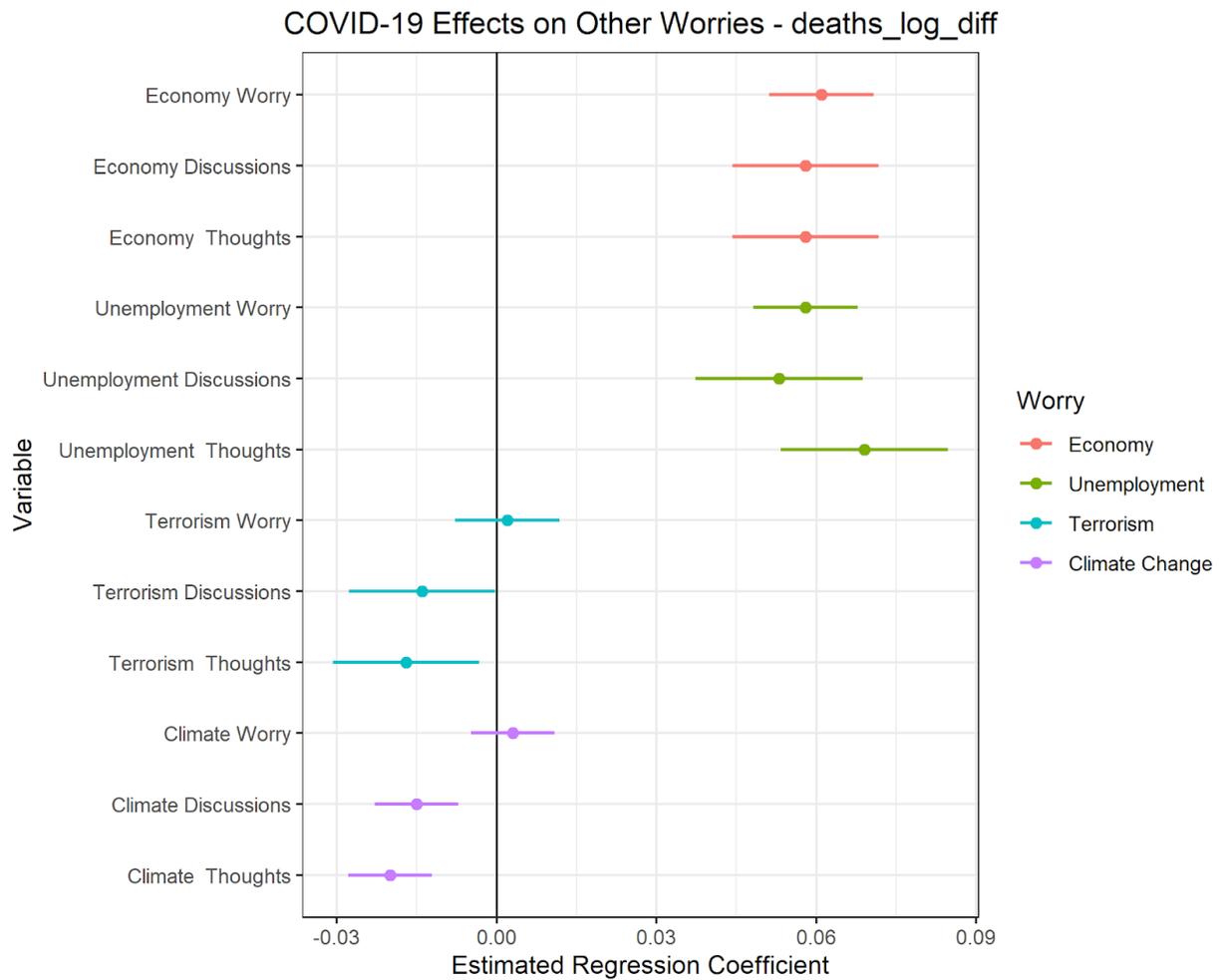


Figure 3. COVID-19 effects on worry and attention to related and unrelated threats.

IV. COVID-19 worry is strongly positively associated with climate worry. We focus in now on the the effects of COVID-19 attention and worry on worry about climate change in US participants. In Figure 4 we show the positive association we find. It is plausible that this relationship is simply due to ideology influencing both worries as a third variable, but when we model this relationship with regression analysis controlling for ideology and other covariates we find this relationship to be highly robust. This is further evidence that COVID-19 does not crowd-out climate change worry as many expected, but actually increases it.

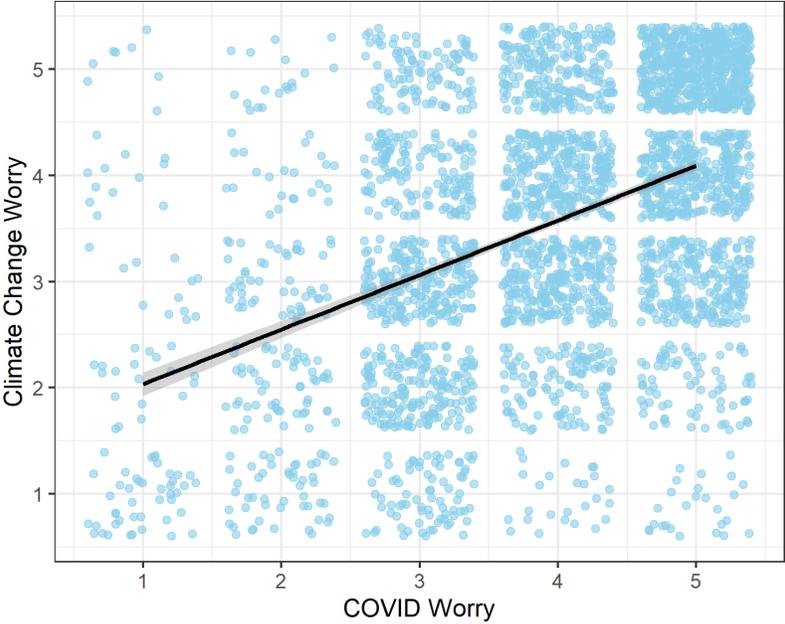


Figure 4. COVID-19 worry is strongly associated with climate worry in US participants.

V. The positive effect of COVID-19 on climate worry is generally robust across demographics. We find a slight interaction with age, such that the effect is stronger for older adults (Figure 5), but the positive association exists across age groups. We also see same effect across race groups (Figure 6), with a slightly stronger effect for whites compared to other races. We do not find any difference in the effect across genders. Interestingly, we see the positive effect also robust across ideologies (Figure 7), with stronger relationships for conservatives who usually have lower climate policy support.

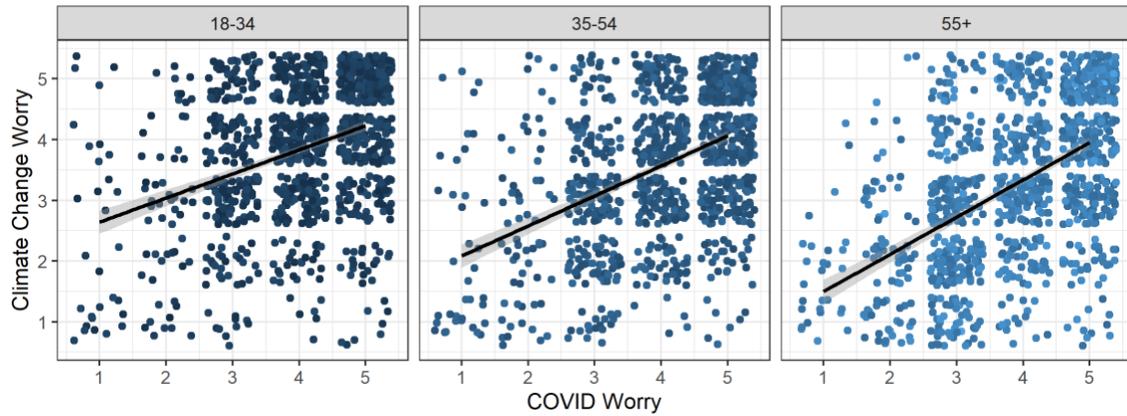


Figure 5. COVID-19 worry effect on climate worry by age group.

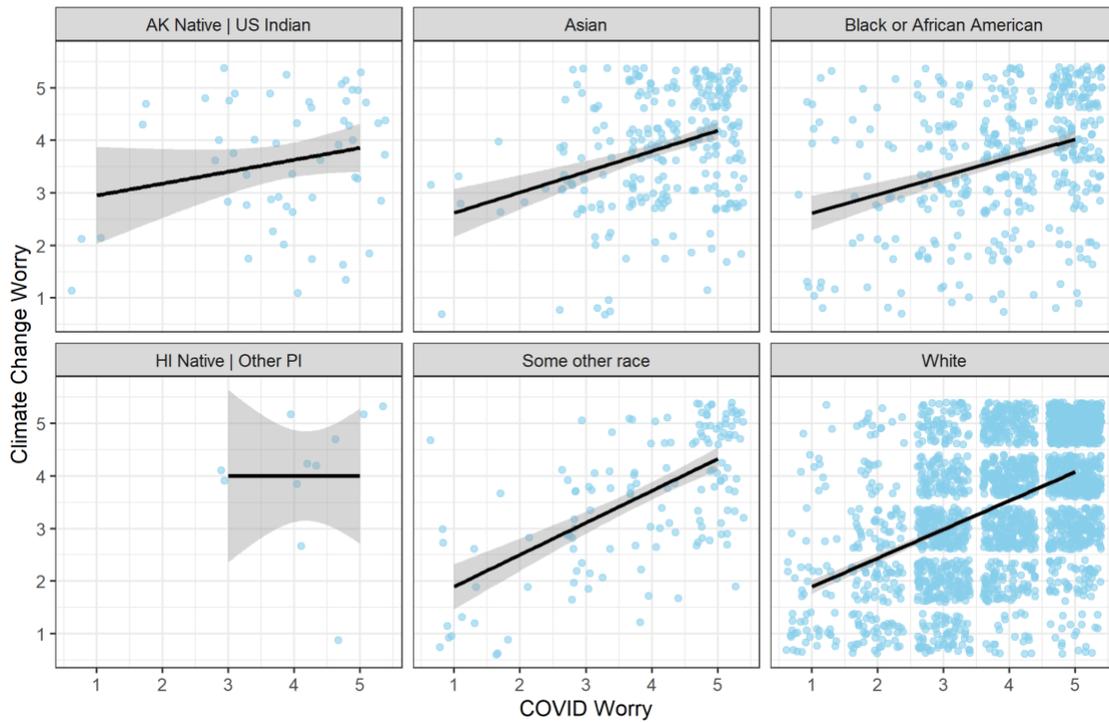


Figure 6. COVID-19 worry effect on climate worry by race group.

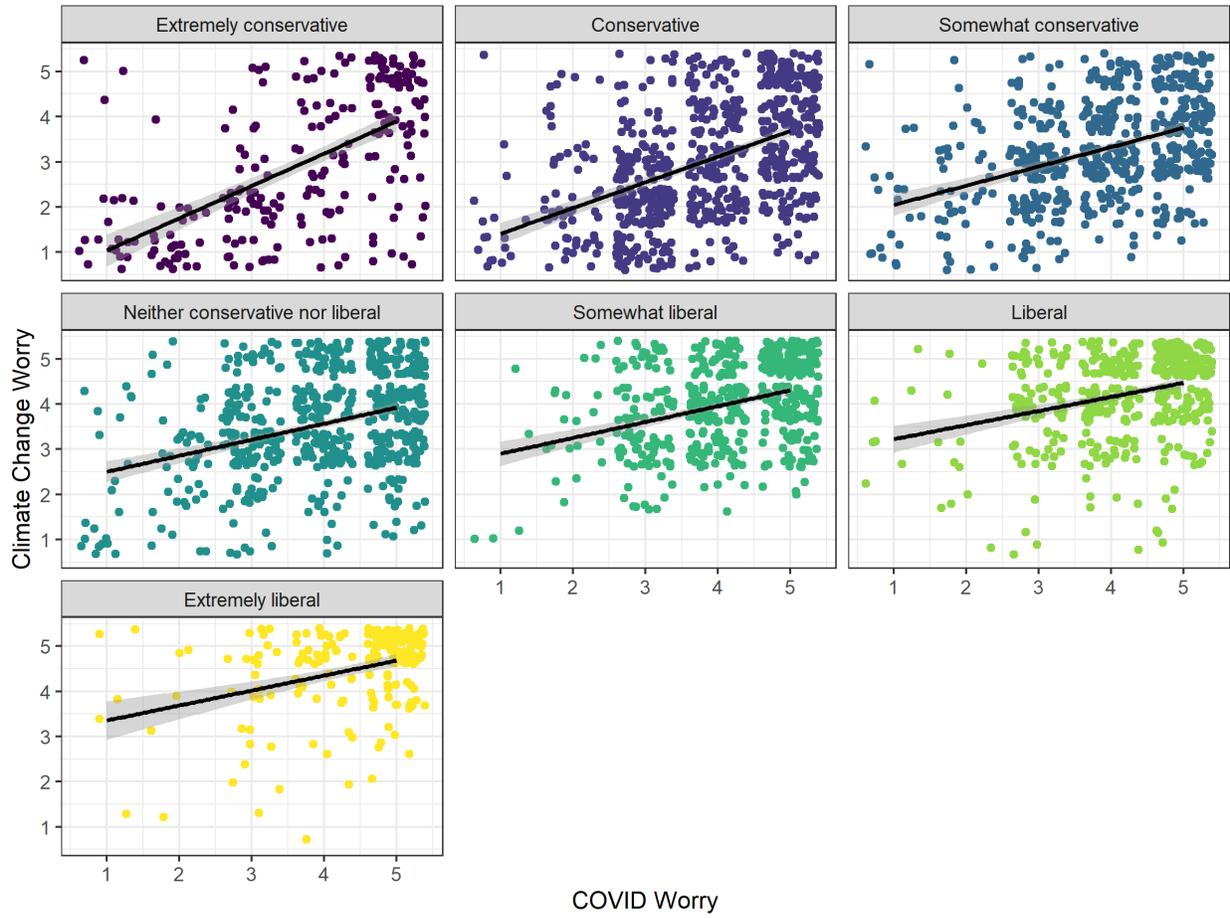


Figure 7. COVID-19 worry effect on climate worry by ideology.

VI. COVID-19 increases climate policy support. This analysis uses a second large US survey we administered. Given we have seen COVID-19 decreases *attention* to climate change while increasing *worry* about it, what is the aggregate effect on support for climate policies? We find the aggregate effect is positive, with higher COVID-19 worry associated with higher support for climate policies, shown in the second rows of the regression results in Table 1. We also find that greater personal experience with COVID-19 (such as having a family member ill) is associated with higher support for climate policies, shown in the first row in Table 1. This finding rules out further the possibility that the positive association is due to a third variable.

CV EXPERIENCE ON CC POLICY SUPPORT

	Action	Green Stim	Action	Green Stim
CV Experience	.09***	.09***		
CV Worry			.42***	.40***
Party-Ind	-.29***	-.34***	-.20***	-.25***
Party-Rep	-.53***	-.54***	-.39***	-.40***
Ideology	.21***	.19***	.18***	.17***
Age	-0.00**	-0.00	-0.00***	-0.00*
Income	-0.00	-.01	0.00	0.00
Education	.03**	.02	.02*	.01
Gender-Male	-.19***	-.12**	-.14***	-.06
Gender-Other	-.75**	-.40	-.51*	-.07
Region-NE	.11*	.11	.07	.09
Region-S	.11**	.15*	.10**	.16**
Region-W	.14***	.17*	.14***	.17**
Constant	3.39***	3.32***	2.13***	2.06***
Observations	5,059	2,517	5,059	2,517
R ²	.15	.13	.24	.20
Adjusted R ²	.15	.13	.23	.20
Residual Std. Error (df = 5046)	1.01	1.05	.96	1.00
F Statistic (df = 12; 5046)	75.78***	31.86***	129.48***	53.05***

Notes: *P < .05 **P < .01 ***P < .001

Table 1. COVID-19 experience and worry predicts higher support for climate policies. In this regression table we show support for “Action” (taking action on climate change by supporting green policies) and a “Green Stim” policy (the government subsidizing green infrastructure development to aid economic recovery). These are only two policy questions we show here, but we repeated this analysis with a large set of different climate policy questions and find the same results.

Conclusions

It may seem intuitive to some to expect that a crisis like COVID-19 would crowd-out worries about threats that are not directly related to it, such as climate change. We do see this crowding-out effect on *attention* to climate change. When COVID-19 is more prevalent, the news covers climate change less, people discuss it less in social media, people discuss it less with each other, and people think about it less often. However, the effect of COVID-19 on climate worry is the opposite. We find robust evidence from two large-scale surveys that COVID-19 prevalence increases worry about climate change and thereby increases support for climate policies. We see that this effect is generally robust across demographic groups.

Methodology

Social media and news data. Findings I and II regard the prevalence of COVID-19 and other threats in social media and the news. We monitored social media (Twitter) by capturing a generic sample of Tweets every two minutes from our target cities (NYC and Dallas for the US). We monitored news coverage by downloading the 100 top English language news articles every day from the Google News API. For both data sources, analyze data collected data from January 2019 through May 2020. We identified messages and news articles about our target topics using keyword lists developed to identify discussions of these topics in textual data.

Survey A. Findings III through V are based on a large-scale survey we conducted over the same time frame. We sampled $N \sim 5,000$ US participants from the city centers and metropolitan areas of NYC and Dallas. While this is not a representative sample of the US, we chose these cities as they are ideologically diverse. We also chose to sample from the larger metropolitan areas around each city to ensure ideological diversity in our sample. Beyond our geographic targeting, we set quotas to ensure a balance of ideologies, ages, and genders in this sample.

Survey B. Finding VI is from a second survey which was conducted in May 2020. This survey was nationally representative of US citizens on sex, race, age, ethnicity, education, region, income, and political affiliation with $N \sim 5,000$ participants.

Any questions on methodological details can be directed to Matthew Sisco at ms4403@columbia.edu.