**Appendix**

Table A1: Study 1 Participant Demographics

----------------------------------------------------------------------------------

 Overall Control Health Economic Combined

----------------------------------------------------------------------------------

% Who had 0.06 0.05 0.10 0.05 0.09

COVID-19

% With family/friends 0.55 0.56 0.57 0.52 0.58

who had COVID-19

Mean Age 37.60 37.65 38.50 37.48 36.49

(in years) (14.11) (13.61) (14.93) (14.01) (13.98)

% Female 0.51 0.54 0.54 0.44 0.53

% Non-Hispanic 0.72 0.71 0.72 0.73 0.70

White

Median Education 4-Year 4-Year 4-Year 4-Year 4-Year

 College College College College College

Median Income 60,000- 60,000- 60,000- 50,000- 70,000-

 69,999 69,999 69,999 59,999 79,999

Mean Rural 0.47 0.49 0.47 0.47 0.44

(0 = Urban, 1= Rural) (0.27) (0.25) (0.26) (0.28) (0.27)

% Northeast 0.20 0.19 0.18 0.22 0.21

% West 0.22 0.27 0.19 0.23 0.20

% South 0.38 0.36 0.43 0.32 0.41

% Midwest 0.20 0.18 0.20 0.22 0.18

----------------------------------------------------------------------------------

Standard deviations where appropriate in parentheses

Table A2: Study 1 Distribution of Liberals, Moderates, and Conservatives between Conditions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Control | Health | Economic | Combined | Total |
| Liberals | 76 | 69 | 61 | 72 | 278 |
| Moderates | 26 | 26 | 29 | 24 | 105 |
| Conservatives | 52 | 52 | 59 | 56 | 219 |
| Total | 154 | 147 | 149 | 152 | 602 |

Table A3: Study 1 – Interaction with Three-Point Ideology

-----------------------------------------------------------------------------

 Individual Individual Policy Policy

 Behavior Behavior Support Support

 (Main effect) (Interacted) (Main effect) (Interacted)

-----------------------------------------------------------------------------

Health 0.03 0.01 0.05 -0.00

Message (0.02) (0.03) (0.03) (0.04)

Economic 0.03 0.01 0.04 0.01

Message (0.02) (0.03) (0.03) (0.04)

Combined 0.04+ -0.02 0.04 -0.03

Message (0.02) (0.03) (0.03) (0.04)

3-pt Ideology -0.17\*\* -0.22\*\* -0.35\*\* -0.44\*\*

(Conservative) (0.02) (0.03) (0.03) (0.05)

Health x 0.04 0.11

Ideology (0.04) (0.07)

Economic x 0.03 0.08

Ideology (0.04) (0.07)

Combined x 0.13\*\* 0.17\*

Ideology (0.04) (0.07)

Self had -0.04 -0.03 -0.07 -0.06

COVID-19 (0.03) (0.03) (0.05) (0.05)

Family/Friends 0.03+ 0.03+ 0.01 0.01

Had COVID-19 (0.01) (0.01) (0.02) (0.02)

Age 0.00\* 0.00\* -0.00 0.00

(In years) (0.00) (0.00) (0.00) (0.00)

Female -0.00 -0.00 0.03 0.03

 (0.01) (0.01) (0.02) (0.02)

Non-Hispanic -0.03+ -0.03+ -0.04 -0.04

White (0.02) (0.02) (0.03) (0.03)

Education 0.06\* 0.06\* 0.04 0.04

 (0.03) (0.03) (0.05) (0.05)

Income 0.03 0.03 -0.01 -0.01

 (0.02) (0.02) (0.04) (0.04)

Rural -0.01 -0.01 -0.04 -0.05

 (0.03) (0.03) (0.04) (0.04)

West 0.01 0.02 0.04 0.04

(Compare NE) (0.02) (0.02) (0.03) (0.03)

South 0.01 0.01 -0.02 -0.01

 (0.02) (0.02) (0.03) (0.03)

Midwest -0.02 -0.02 -0.03 -0.03

 (0.02) (0.02) (0.03) (0.03)

Constant 0.79\*\* 0.80\*\* 0.87\*\* 0.90\*\*

 (0.04) (0.04) (0.06) (0.06)

-----------------------------------------------------------------------------

Observations 558 558 558 558

R-squared 0.196 0.212 0.310 0.318

-----------------------------------------------------------------------------

Standard errors in parentheses

Comparison condition: Control

+ p<0.10, \* p<0.05, \*\* p<0.01

Table A4: Study 2 Participant Demographics

----------------------------------------------------------------------------------

 Overall Control Health Economic Combined

----------------------------------------------------------------------------------

% Who had 0.12 0.10 0.13 0.13 0.12

COVID-19

% With family/friends 0.53 0.53 0.50 0.57 0.53

who had COVID-19

Mean Age 47.58 48.27 47.47 47.60 47.10

(in years) (17.08) (16.72) (16.72) (18.02) (16.82)

% Female 0.53 0.54 0.52 0.55 0.50

% Non-Hispanic 0.72 0.75 0.70 0.73 0.71

White

Median Education Some Some Some Some Some

 College College College College College

Median Income 40,000- 40,000- 40,000- 40,000- 40,000-

 44,999 44,999 44,999 44,999 44,999

Mean Rural 0.51 0.51 0.50 0.55 0.50

(0 = Urban, 1= Rural) (0.34) (0.34) (0.34) (0.33) (0.34)

% Northeast 0.21 0.22 0.20 0.21 0.20

% West 0.20 0.18 0.17 0.23 0.22

% South 0.40 0.40 0.43 0.37 0.39

% Midwest 0.20 0.20 0.20 0.19 0.19

----------------------------------------------------------------------------------

Standard deviations where appropriate in parentheses

Excludes participants who failed the attention check

Table A5: Study 2 Distribution of Liberals, Moderates, and Conservatives between Conditions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Control | Health | Economic | Combined | Total |
| Liberals | 123 | 142 | 145 | 145 | 555 |
| Moderates | 148 | 188 | 177 | 156 | 669 |
| Conservatives | 127 | 135 | 142 | 164 | 568 |
| Total | 398 | 465 | 464 | 465 | 1792 |

(Excludes participants who failed the attention check)

Table A6: Study 2 – Interaction with Partisanship

-----------------------------------------------------------------------------

 Individual Individual Policy Policy

 Behavior Behavior Support Support

 (Main effect) (Interacted) (Main effect) (Interacted)

-----------------------------------------------------------------------------

Health -0.04\*\* -0.02 -0.05\* -0.02

Message (0.02) (0.03) (0.02) (0.03)

Economic -0.04\* -0.01 -0.05\* -0.04

Message (0.02) (0.03) (0.02) (0.03)

Combined -0.04\* -0.03 -0.03 -0.03

Message (0.02) (0.03) (0.02) (0.03)

Partisanship -0.28\*\* -0.23\*\* -0.42\*\* -0.40\*\*

(Republican) (0.02) (0.04) (0.02) (0.04)

Health x -0.06 -0.05

Ideology (0.04) (0.06)

Economic x -0.07 -0.03

Ideology (0.04) (0.06)

Combined x -0.03 0.02

Ideology (0.04) (0.05)

Self had 0.01 0.01 -0.02 -0.02

COVID-19 (0.02) (0.02) (0.02) (0.02)

Family/Friends 0.01 0.01 -0.00 -0.00

Had COVID-19 (0.01) (0.01) (0.01) (0.01)

Age 0.00\*\* 0.00\*\* 0.00\*\* 0.00\*\*

(In years) (0.00) (0.00) (0.00) (0.00)

Female 0.03\*\* 0.03\*\* 0.04\* 0.04\*

 (0.01) (0.01) (0.01) (0.01)

Non-Hispanic -0.02 -0.02 -0.01 -0.01

White (0.01) (0.01) (0.02) (0.02)

Education 0.02 0.02 -0.01 -0.01

 (0.02) (0.02) (0.03) (0.03)

Income 0.03 0.03 -0.01 -0.01

 (0.02) (0.02) (0.03) (0.03)

Rural -0.02 -0.02 -0.04\* -0.04\*\*

 (0.02) (0.02) (0.02) (0.02)

West -0.01 -0.01 -0.01 -0.01

(Compare NE) (0.02) (0.02) (0.02) (0.02)

South -0.04\* -0.04\* -0.04\* -0.05\*

 (0.02) (0.02) (0.02) (0.02)

Midwest -0.07\*\* -0.07\*\* -0.07\*\* -0.07\*\*

 (0.02) (0.02) (0.02) (0.02)

Constant 0.83\*\* 0.81\*\* 0.81\*\* 0.80\*\*

 (0.03) (0.03) (0.04) (0.04)

-----------------------------------------------------------------------------

Observations 1401 1401 1400 1400

R-squared 0.228 0.229 0.283 0.284

-----------------------------------------------------------------------------

Standard errors in parentheses

Comparison condition: Control

+ p<0.10, \* p<0.05, \*\* p<0.01

**Post-Hoc Testing**

In our preregistered Study 2 analyses, we fail to replicate the effects found in Study 1. In this section, we report exploratory tests meant to identify any obvious explanations for this failure to replicate beyond the simplest explanation of an unreliable effect. Overall, these exploratory tests fail to identify any potential avenues for further research. While we describe these tests below, the results replicate Table 2 of the main text and are thus omitted for brevity. The tests are included in the replication files and are also available upon request.

First, we tested whether the construction of the ideology variable affected the results. For instance, it may be that the interaction between ideology and condition is nonlinear, with different effects at different levels of ideology. We thus examined ideology as a seven-point categorical variable, omitting extreme liberals as the reference category. However, the interaction between condition and ideology was not significant at any level of ideology.

Second, we theorized that the Lucid users surveyed in Study 2 may have been less attentive than the Prolific users surveyed in Study 1, and thus experienced less of a treatment effect – especially as the experiment in Study 1 included a writing task, while Study 2 included only a brief multiple-choice attention check. We thus employed two potential measures of survey attention in addition to the attention check already included: excluding participants who spent less than the minimum estimated time on the survey (five minutes), and a control for whether participants took the survey on their phones or on a computer. Including these measures, however, has no effect on the results reported in Table 2. There is also no consistent interaction between mode, ideology, and condition.

Finally, we examined whether changes in the pandemic between Study 1 (conducted in March 2021) and Study 2 (conducted in September 2021) might explain the change in condition effects. In particular, we theorized that individuals who were vaccinated or individuals who were less concerned about the pandemic might be less responsive to the treatments or might resent the reminder that the pandemic was ongoing. Fortunately, an unrelated study included on the survey module *before* the questions included in this study asked participants whether they were fully vaccinated against COVID-19, and their concern about the public health risks of COVID-19. Once again, including these measures either as controls or as a three-way interaction with ideology and condition has no effect on the results reported in Table 2.

**Human Subjects Research**

This study contained no deception and no identified source of harm to participants, and was approved as exempt research by IRB review. Participants in Study 1 were compensated with $0.95 for a study of about 6 minutes, or an hourly wage of $9.50. Participants in Study 2 were compensated by an amount of no more than $1 determined by Lucid – their standard practice for any study of less than 10 minutes. Consent was obtained prior to the beginning of the study, and participants also had the opportunity to withdraw their data from analysis after being debriefed. No identifying information was collected from participants.

**Study 1 Question wording**

*Message framing [randomly assigned]*

On the following page you will be presented with a brief paragraph. We are interested in gauging people's reactions to this paragraph. Please take the time to read the paragraph on the following page carefully:

*Health condition*

The COVID-19 pandemic has sickened over 100 million people, according to official counts. More than 2 million people have died, and the virus has been detected in nearly every country. There have been almost 30 million cases of coronavirus in the United States, with more than 500,000 deaths - the result of almost uncontrolled spread. The United States has become the largest hot spot of infection, with more reported cases than any other nation. As a result, the average life expectancy among Americans dropped by an entire year in 2020. While COVID-19 vaccines are beginning to be administered, the United States faces a few more long and deadly months before vaccines are widely accessible.

*Economic Condition*

The COVID-19 pandemic has led governments around the world to restrict economic activity, leading to a global recession. After a decade of recovery from the financial crisis, the global GDP is expected to shrink for the first time since 2009. In the United States, the unemployment rate rose to almost 15% in April, before falling to about 7% in November—a number that is double the unemployment rate in February 2020, before COVID-19 became widespread in the US. Service industry workers have suffered most of all, as restaurants, movie theaters, and many other gathering-places are closed or restricted. While COVID-19 vaccines are beginning to be administered, the United States faces a few more long and impoverished months before vaccines are widely accessible.

*Health/Economic Combined Condition*

The COVID-19 pandemic has sickened over 100 million people, according to official counts. More than 2 million people have died, and the virus has been detected in nearly every country. There have been almost 30 million cases of coronavirus in the United States, with more than 500,000 deaths - the result of almost uncontrolled spread. The United States has become the largest hot spot of infection, with more reported cases than any other nation. As a result, the average life expectancy among Americans dropped by an entire year in 2020. The COVID-19 pandemic has also led governments around the world to restrict economic activity, leading to a global recession. After a decade of recovery from the financial crisis, the global GDP is expected to shrink for the first time since 2009. In the United States, the unemployment rate rose to almost 15% in April, before falling to about 7% in November—a number that is double the unemployment rate in February 2020, before COVID-19 became widespread in the US. Service industry workers have suffered most of all, as restaurants, movie theaters, and many other gathering-places are closed or restricted. While COVID-19 vaccines are beginning to be administered, the United States faces a few more long, deadly, and impoverished months before vaccines are widely accessible.

*Control Condition*

Squirrels are rodents. There are around 280 different species of squirrel. Most squirrels are small and have big eyes and bushy tails. Their large eyes help them skillfully climb trees and avoid predators. Squirrels eat mostly nuts, fruits and seeds. Squirrels are born blind. Flying squirrels can’t fly like birds but they can glide between trees. Flying squirrels have been known to glide for distances of up to 90 metres (295 ft). Chipmunks are small squirrels with stripes. Chipmunks have cheek pouches which help them carry food. Many chipmunk species hoard food such as nuts, berries, egg and grains for the winter.

*Writing task [COVID-19 Conditions]*

Please think about the excerpt and then briefly describe what you see as the negative effects and impacts of the coronavirus pandemic. You can write about the negative effects, past, present, and future, on yourself, on people close to you, and the national/global community. Take a minute or two to write out your answer.

*Writing task [Control Condition]*

Please think about the excerpt and then briefly describe what was most interesting to you and any effects you think your daily life has on squirrels. You can write about the effects of yourself, the people close to you, or the nation as a whole. Take a minute or two to write out your answer.

*Emotions [Order Randomized]*

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the bubbles next to that word. Indicate to what extent you feel this way right now, that is, at the present moment.

Alert

* Very slightly or not at all
* A little
* Moderately
* Quite a bit
* Extremely

Upset

Distressed

Proud

Hostile

Encouraged

Angry

Irritable

Attentive

Nervous

Jittery

Anxious

*COVID-19 Individual Behaviors [Order Randomized]*

During the uncertain times of the COVID-19 pandemic, there are many actions you may take in response. Please read each action and rate how likely you are to take this action during the pandemic.

Wash your hands more often and/or for a longer amount of time

* Extremely likely
* Very likely
* Somewhat likely
* Somewhat unlikely
* Very unlikely
* Extremely unlikely

Keep a distance of six feet between yourself and other people outside your home

Reduce your trips outside of home

Wear a mask or other protection over your nose and mouth when you are outside your home

Order takeout, groceries, or make other purchases online, rather than go to a physical store

Get the COVID-19 vaccine when one is made available to you

* Extremely likely
* Very likely
* Somewhat likely
* Somewhat unlikely
* Very unlikely
* Extremely unlikely
* I have already received a COVID-19 vaccine

*COVID-19 Policy Attitudes [Order Randomized]*

How much do you approve of the following ways to deal with the effects of the COVID-19 pandemic?

Mandatory mask-wearing in public places

* Strongly approve
* Somewhat approve
* Slightly approve
* Slightly disapprove
* Somewhat disapprove
* Strongly disapprove

Limits on in-person worship or church services

Limits on in-door dining

Lockdown of all non-essential travel outside the home

Closure of schools

*Ideology*

We hear a lot of talk these days about liberals and conservatives. Here is a seven-point scale on which the political views that people might hold are arranged from extremely liberal to extremely conservative. Please select the one most closely related to the views you hold.

* Extremely liberal
* Liberal
* Slightly liberal
* Moderate/middle of the road
* Slightly conservative
* Conservative
* Extremely conservative

*Demographics*

What is your age?

[Free response]

What is your gender?

* Male
* Female
* Other [free response]

Which of the following ethnicities describes you? Select all that apply.

* Latino/Hispanic
* Black/African-American
* Asian/Asian-American
* White/Caucasian
* Native American
* Other [free response]

What is the highest level of education that you have completed?

* Less than High School
* High School/GED
* Some College
* 2-year College Degree
* 4-year College Degree
* Master’s Degree
* Doctoral Degree (Ph.D., J.D., M.D., etc.)

What is your total family income (including parent income if they listed you as a dependent)?

* Less than $10,000
* $10,000-19,999
* $20,000-29,999
* $30,000-39,999
* $40,000-49,999
* $50,000-59,999
* $60,000-69,999
* $70,000-79,999
* $80,000-89,999
* $90,000-99,999
* More than $100,000

In what state do you currently reside?

[Drop down list of 50 states, DC, and US Territories]

Use the scale below to indicate what kind of place you live in most of the time, where 0 is very urban, 2 is suburban, 4 is very rural, and the other numbers are in between. Please note you must move or click the slider to indicate a response.

[5-point Slider]

Have you ever tested positive for COVID-19?

* Yes
* No

Do you have any family members or close friends who have ever tested positive for COVID-19?

* Yes
* No

**Study 2 Question Wording**

*Message framing [randomly assigned]*

On the following page you will be presented with a brief paragraph. We are interested in gauging people's reactions to this paragraph.

**Please take the time to read the paragraph on the following page carefully.**

*Health condition*

The COVID-19 pandemic has sickened over 200 million people around the world, according to official counts. More than 4 million people have died, and the virus has been detected in nearly every country. Our country is of course not exempt from the struggles of the rest of the world. There have been more than 30 million cases of coronavirus in the United States, and more than 600,000 deaths - the result of almost uncontrolled spread. The United States has become the largest hot spot of infection, with more reported cases than any other nation. As a result, the average life expectancy among Americans dropped by an entire year in 2020. Public health will likely remain a key issue throughout 2021 as we continue to combat the pandemic. While COVID-19 vaccines are being administered, the United States faces a few more long and deadly months before the threat of COVID-19 lessens.

*Economic Condition*

The COVID-19 pandemic has led governments around the world to restrict economic activity in order to try and limit the spread of the virus. This has unfortunately resulted in a global recession. After a long decade of recovery from the financial crisis, the global GDP in 2020 shrank for the first time since 2009. Our country is of course not exempt from the struggles of the rest of the world. In the United States the unemployment rate has been almost doubled from February 2020, before COVID-19 became widespread in the US. Service industry workers have suffered most of all, as restaurants, movie theaters, and many other gathering-places have been closed or restricted. Overall, economic hardship is widespread throughout the US, and the economy will likely remain a key issue throughout 2021. While COVID-19 vaccines are being administered, the United States faces more long and impoverished months before the threat of COVID-19 lessens.

*Health/Economic Combined Condition*

The COVID-19 pandemic has sickened over 200 million people, according to official counts. More than 4 million have died worldwide. The United States has become the largest hot spot of infection, with more than 40 million cases and more than 600,000 deaths – more than any other nation. Americans’ average life expectancy dropped by an entire year in 2020. The COVID-19 pandemic has also led to a global recession as governments restrict economic activity. The global GDP in 2020 shrank for the first time after a decade of recovery from the financial crisis. In the United States the unemployment rate has been almost doubled from February 2020, before COVID-19 became widespread. Service workers have suffered most of all, as restaurants, movie theaters, and many other gathering-places have been closed or restricted. While COVID-19 vaccines are being administered, the United States faces more long, deadly, and impoverished months before the threat of COVID-19 lessens.

*Control Condition*

Squirrels are rodents indigenous to the Americas, Eurasia, and Australia. There are around 280 different species of squirrel, including chipmunks, groundhogs, and prairie dogs. The squirrels most of us are familiar with are small and have big eyes and bushy tails. Their large eyes help them skillfully climb trees and avoid predators. Squirrels eat mostly nuts, fruits and seeds. Squirrels are born blind, and are completely dependent on their parents for the first two to three months. Flying squirrels can’t fly like birds but they can glide between trees. Flying squirrels have been known to glide for distances of up to 90 meters (295 ft). Chipmunks are not a separate family of animals, but are actually small squirrels with stripes. Chipmunks have cheek pouches which help them carry food. Many chipmunk species hoard food such as nuts, berries, egg and grains for the winter. With squirrels endemic throughout the US, it is useful to know something about this interesting animal.

*Attention check [Order Randomized]*

What was the topic of the paragraph you just read?

* COVID-19
* Squirrels
* Television Entertainment
* North Korea

*COVID-19 Individual Behaviors [Order Randomized]*

During the uncertain times of the COVID-19 pandemic, there have been many actions individuals could take in response. Please read each action and rate how likely you would be to take this action if it was recommended during a future wave of COVID-19, or in response to a new variant of COVID-19 that is resistant to current vaccines.

Wash your hands more often and/or for a longer amount of time

* Extremely likely
* Very likely
* Somewhat likely
* Somewhat unlikely
* Very unlikely
* Extremely unlikely

Keep a distance of six feet between yourself and other people outside your home

Reduce your trips outside of home

Wear a mask or other protection over your nose and mouth when you are outside your home

Wear a mask or other protection over your nose and mouth when you are **indoors** (and outside your home)

Avoid crowded places

Avoid socializing with unvaccinated people

Order takeout, groceries, or make other purchases online, rather than go to a physical store

Get a vaccine or booster shot if one is recommended

*COVID-19 Policy Attitudes [Order Randomized]*

Thinking again of a future wave or new variant of COVID-19 that is resistant to current vaccines, how much would you approve of the following policies if they were recommended to deal with the pandemic?

Mandatory mask-wearing in public places

* Strongly approve
* Somewhat approve
* Slightly approve
* Slightly disapprove
* Somewhat disapprove
* Strongly disapprove

Limits on in-person worship or church services

Limits on in-door dining

Lockdown of all non-essential travel outside the home

Closure of schools

Limits on interstate travel

Limits on international travel

Establishing ‘vaccine passports’

Mandatory vaccination

*Ideology*

We hear a lot of talk these days about liberals and conservatives. Here is a seven-point scale on which the political views that people might hold are arranged from extremely liberal to extremely conservative. Please select the one most closely related to the views you hold.

* Extremely liberal
* Liberal
* Slightly liberal
* Moderate/middle of the road
* Slightly conservative
* Conservative
* Extremely conservative

*Party ID*

Responses derived from stored Lucid data

* Strong Republican
* Somewhat Republican
* Lean Republican
* Independent
* Lean Democrat
* Somewhat Democrat
* Strong Democrat

*Demographics*

[Responses derived from stored Lucid data for age, gender, race/ethnicity, education, and income.]

In what state do you currently reside?

[Drop down list of 50 states, DC, and US Territories]

Use the scale below to indicate what kind of place you live in most of the time, where 0 is very urban, 2 is suburban, 4 is very rural, and the other numbers are in between. Please note you must move or click the slider to indicate a response.

[5-point Slider]

Have you ever tested positive for COVID-19?

* Yes
* No

Do you have any family members or close friends who have ever tested positive for COVID-19?

* Yes
* No

*COVID-19 Concern*

[Used in post-hoc analysis]

In your view, have the public health risks posed by the novel coronavirus (COVID-19) been exaggerated?

* They definitely have
* They probably have
* They probably have not
* They definitely have not

How worried are you about the effects the novel coronavirus (COVID-19) might have on the health of the US population as a whole?

* Very worried
* Somewhat worried
* A little worried
* Not at all worried

*Vaccination Status*

[Used in post-hoc analysis]

Have you been fully vaccinated against COVID-19 in the past year?

* Yes
* No