Rallying in fear? Estimating the effect of the UK COVID-19 lockdown with a natural experiment

ANDREW C. EGGERS1 & ROBIN HARDING2
1Department of Political Science, University of Chicago, USA; 2Department of Politics and International Relations, University of Oxford, UK

Abstract. We use a natural experiment to study how the announcement of the UK COVID-19 lockdown affected citizens’ attitudes towards the pandemic and the government’s response to it. On the day of the lockdown announcement, YouGov ran a survey that captured responses before and after the announcement. Comparison of these responses suggests that the lockdown announcement made people more supportive of the government’s response to the crisis but also (perhaps surprisingly) more concerned about the pandemic. Analysis of heterogeneous treatment effects suggests that the announcement narrowed gaps in perceptions of the crisis, increasing support for the government’s response especially among those who had been least supportive and increasing concern about the pandemic especially among those who had been least concerned. Overall, the findings highlight a tension inherent in governing during times of crisis: actions that increase people’s confidence in government and induce compliance with government directives may also tend to increase anxiety among the population.

Keywords: COVID-19; public opinion; rally effects

Introduction

One remarkable aspect of the COVID-19 pandemic is the way in which publics in Europe and elsewhere embraced lockdowns. When China responded to the disease by imposing quarantines and lockdown restrictions in January 2020, many commentators concluded that similar measures would not be possible in less authoritarian countries.1 And yet not only have lockdowns been imposed, they appear to have been popular and increased support for governments (Bol et al. 2020; Cunningham 2020). The idea that citizens around the world approved of their governments responding seriously to the threat of COVID-19 fits with the claim that public health crises can generate widespread anxiety, which has been found to make people supportive of protective, risk-averse policies (Albertson & Gadarian 2015; Lambert et al. 2011).

Although recent research has provided evidence that support for government has increased even as governments have imposed lockdowns, doubt remains about the causal relationship between lockdowns and government support. The best efforts have compared survey respondents interviewed in the weeks before and after lockdowns were introduced, showing an increase in incumbent support across many countries (Bol et al. 2020). But in such a turbulent time, it is difficult to attribute differences in attitudes even a week before and after a lockdown to the lockdown itself rather than to other developments; in particular, we do not know to what extent it was the government’s policy as opposed to downstream effects of those policies (e.g., economic disruption or feelings of neighbourhood solidarity) that shifted people’s attitudes. More broadly, it remains unclear how much government actions shape citizens’ attitudes and perceptions (during this pandemic or in other circumstances) rather than simply respond to them.
In this research note, we address these problems with a natural experiment that provides an unusual opportunity to measure how the lockdown announcement in the UK affected citizens’ perceptions of the pandemic and the government’s response to it. At 8:30 PM on 23 March 2020, UK Prime Minister Boris Johnson announced a substantial tightening of social distancing policy in a rare televised address that reached over 40% of the population. Earlier that day, YouGov began collecting responses to a survey primarily about the pandemic and the government’s handling of it; responses continued until early the next day. Whether a respondent took the survey before or after the broadcast was not random, but given the method used to recruit respondents we argue that (at least after covariate adjustment) the pre- and post-broadcast sub-samples are comparable. (Placebo tests using similar surveys administered on other days support this argument.) Thus the comparison of pre- and post-broadcast survey responses offers a unique opportunity to measure the immediate effect of the lockdown announcement on public attitudes about the pandemic.

We find that Johnson’s broadcast improved perceptions of the government’s response to the crisis, making people more likely to believe that the government was handling the outbreak well and taking it seriously enough. We also find that the broadcast increased personal concerns about the pandemic, making people more fearful for their future, less confident that they would recover if they caught the virus and more likely to report staying at home. This combination of findings may seem somewhat surprising: people seem to have viewed the lockdown as an appropriate response to the pandemic, but they were not reassured by the introduction of the lockdown. On the contrary, the lockdown announcement made people more concerned on average. We offer a compositional explanation for this pattern of findings, showing that the lockdown announcement raised concern especially among those who had been least worried about the pandemic and increased support for government especially among those who had been least supportive. Thus the overall pattern of results arises at least in part because the lockdown announcement had heterogeneous effects across respondents.

In the following section, we discuss relevant work on the impact of COVID-19 on support for governments and describe the context and content of the UK lockdown announcement on 23 March. In the third section, we discuss the data and research design. We present results in the fourth section and offer some conclusions in the last section.

**Context**

*Relevant literature*

Several studies have looked at the impact of the COVID-19 pandemic on political attitudes and behaviour, with a number focusing in particular on support for incumbents. Survey data from countries around the world have demonstrated rally effects, whereby support for governments rose during the pandemic (Jennings 2020). Looking within specific countries, studies have found evidence of increased government support during the pandemic in Germany and Sweden (Esaiasson et al. 2020; Leininger & Schaub 2020). These effects have been linked to governments’ handling of the crisis. For example, Cunningham (2020) provides evidence that governments’ performance in dealing with the pandemic is associated with the size and duration of increases in support. Focusing on specific policy responses, Bol et al. (2020) show that the introduction of lockdowns was associated with increases in political trust, democratic satisfaction and incumbent support in seven European countries.
Like us, Bol et al. (2020) study responses from surveys that were in the field when lockdowns were introduced. Their analysis is notable because it studies the relationship between lockdowns and government support across several European countries using multiple outcome measures. Unfortunately, because their analysis compares responses collected over a period of days and in some cases weeks before and after the lockdowns were introduced, it is hard to disentangle the effects of the lockdowns themselves from other events happening at the same time, such as daily reports of the progress of the virus across the world. Whether the relationship between lockdowns and government support is causal therefore remains uncertain.

The idea that support for governments rose in response to the imposition of COVID-19 lockdowns fits with existing research on emotional responses to national crises, which has shown that anxiety during times of crisis can induce a desire for security and increase support for symbols of security, such as the government or president (Doty et al. 1991; Hetherington & Suhay 2011). This research also implies that anxiety leads to increased risk avoidance and greater support for cautious policies (Huddy et al. 2007; Lambert et al. 2011). Focusing specifically on public health crises, Albertson and Gadarian (2015) show that disease outbreaks increase anxiety, an emotion that they argue generates preferences for protective, risk-averse policies. Therefore, we might also expect that any increase in support for governments following the introduction of lockdowns might be accompanied by a reduction in concern about the pandemic, as people become reassured that the government is responding appropriately.

Boris Johnson’s 23 March announcement

Boris Johnson’s lockdown announcement was delivered via a rare televised address to the nation at 8:30 PM on 23 March 2020. In the week before the broadcast, Johnson had appeared in daily briefings communicating the government’s coronavirus advice and announcing new restrictions: he urged citizens to work from home and to avoid pubs and restaurants, he announced that most schools would be closed from 20 March, and on 22 March he ordered all pubs, restaurants, gyms and other social venues across the country to close. The lockdown announcement took the government’s response a significant step further. Britons were now permitted to go outside only to buy basic necessities, meet a medical need, exercise once a day or to go to work if they absolutely could not work from home. Johnson also announced that citizens would face police fines for failure to comply with these new measures. These measures represented an unprecedented restriction on freedom of movement during peacetime in the UK, bringing the UK closer to the measures already taken by many other countries across Europe and elsewhere in the world.

Beyond the restrictions it introduced, the lockdown announcement was also notable for its mode of delivery. At shortly after 4:00 PM on the day of the broadcast, the government announced that the daily briefing would be replaced by an address to the nation by the Prime Minister, although the specific time of the address was not announced until after 6:00 PM. Since it is not possible to separate out the effects of these different aspects of the announcement (its mode of delivery and informational content), we can therefore think of exposure to the broadcast as a compound treatment. The address was simultaneously broadcast across six television channels: BBC One, ITV, Channel 4, Channel 5, Sky News and BBC News. It was watched by more than 27 million viewers, representing over 40% of the UK population, making it a hugely significant event both in its nature and content.
Figure 1. Responses to YouGov’s COVID-19 survey on 23 March 2020.

Research design

YouGov fielded the first of a series of nationally representative Coronavirus tracker surveys on the day of Boris Johnson’s broadcast. The survey asks respondents a series of questions about the severity of the virus, their behaviour in response to it and the government’s handling of the crisis. The first response was collected at 4:51 PM, over 3.5 hours before the broadcast. Responses were collected until early the next day. Figure 1 shows the distribution of responses over the course of the evening.8 Responses to the right of the vertical dashed line were collected after the broadcast was shown; those to the left were collected before the broadcast.

That the PM’s address was announced at 4 PM means some respondents may have anticipated the introduction of a lockdown prior to the broadcast. For respondents who correctly anticipated what policy would be introduced, the treatment was essentially exposure to a distinctive type of announcement, rather than the information it conveyed about the new government policy. For all other respondents, the treatment was a combination of the nature and informational content of the broadcast. This means the treatment effect we estimate is a weighted average of these two aspects of the announcement.

If it were randomly determined when a given respondent completed YouGov’s COVID-19 survey, and if other determinants of COVID-19 attitudes remained fixed over the relevant time period, then a simple comparison of respondents who took the survey after the broadcast versus before the broadcast would yield an unbiased estimate of the effect of the broadcast. In fact, it is not randomly determined when a given respondent completes a YouGov survey, so we must be alert to possible confounding factors that differ between the two groups of respondents. In order to focus on the most important threats to inference, it is important to consider the specific mechanism by which YouGov collects surveys responses.
YouGov enrolls a large panel of potential survey respondents, whom we will call panelists. YouGov sends out an automated stream of emails to these panelists inviting them to respond to surveys; crucially, these emails do not specify the content or purpose of any specific survey. When a panelist clicks on the link in one of YouGov’s emails, YouGov directs the panelist to an open survey that needs responses from someone matching the panelist’s demographic profile. For each survey, this process continues until fixed demographic targets have been met.9

Given this mechanism, we can be somewhat reassured that panelists who took the survey after versus before the broadcast do not differ in their desire to share an opinion about the COVID-19 pandemic. There may or may not be a relationship between how quickly panelists respond to invitation emails and their attitudes about the COVID-19 crisis. But because invitation emails are sent out in several tranches, are not tied to specific surveys and are valid indefinitely, we could have fast responders in the post-broadcast period and slow responders in the pre-broadcast period. Perhaps more importantly, our survey respondents received invitation emails at different times; some who took the survey early may be responding to an email from several days before, while others who took the survey late may be responding to an email they received only seconds before.

On the other hand, the mechanism does raise the concern that panelists who responded before the broadcast versus after the broadcast may differ in the demographic characteristics on which YouGov seeks to make their surveys representative. If YouGov’s algorithm detected that the proportion of Conservative voters was lower than its target in the first tranche of respondents, for example, it would thereafter disproportionately direct Conservative-supporting panelists into the survey; YouGov’s intention, after all, is to achieve overall representativeness, not to make later respondents and earlier respondents comparable. This is a potentially serious challenge.

Figure 2 presents the results of variable-by-variable balance tests comparing respondents who took the survey after the broadcast versus before. (Each estimate is the coefficient on ‘treated’, that is ‘took the survey after 8:30 pm’, in an Ordinary Least Squares (OLS) regression where the named covariate is the outcome; here and throughout the paper, we depict heteroskedasticity-robust 95% confidence intervals.) There is good balance on most covariates, but (consistent with the sampling mechanism just described) there is some notable imbalance. Respondents taking the survey after the broadcast are less likely to be from social grades classified as working class and are more highly educated on average; they are also less likely to have children at home and less likely to have voted Conservative in 2019. Regressing the treatment indicator on all of the covariates, we can reject the null hypothesis that all coefficients are 0 ($p = 0.004$).

Fortunately, the variables in Figure 2 are precisely the variables YouGov uses to direct panelists to surveys; therefore in estimating the effect of the broadcast, we can control for all of the inputs to YouGov’s assignment algorithm. If, for example, Conservative voters who take the survey before the broadcast are comparable to those who take the survey after the broadcast (at least conditional on other covariates), but there is a different proportion of Conservative voters before and after the broadcast (for whatever reason, possibly exacerbated by YouGov’s sampling mechanism), then controlling for prior vote should be sufficient to produce an unbiased estimate of the effect of the broadcast.

It remains possible that, even controlling for observed covariates, our treatment and control groups differ in important ways. Notably, members of our treatment group chose to respond to a survey later in the day than members of our control group, and there is some evidence that people who respond to surveys at different times of day differ in characteristics such as sleep behaviour, depression and anxiety (for which we do not have measures).10 Also, late respondents may have...
been affected by other news that arrived while the survey was in the field, making it difficult to disentangle the effect of Johnson’s broadcast from other events. To partially address these concerns, below we conduct placebo population tests that reproduce our analysis using surveys administered one and two weeks later, when no major events took place; as explained below, we see similar levels of covariate imbalance in these surveys but find no systematic ‘effects’ of taking the survey later versus earlier, assuaging concerns that our findings are the result of unmeasured confounding.

**Analysis**

*Outcome variables and estimation strategy*

We study the effect of the lockdown announcement on all survey items measuring support for the government’s COVID-19 response or concern about the pandemic. For clarity of presentation, we construct binary measures for each item, with 1 indicating greater government support or more concern and 0 less. (Full coding details appear in Table A1 in the Appendix.) We then estimate three linear probability models: (1) without controls (to show raw differences), (2) adjusting for the full set of covariates listed in Figure 2, (3) adjusting for that set of covariates interacted with an indicator for whether the respondent voted for the Conservative Party in the 2019 General
Average treatment effects

We start with average effects of the broadcast. Figure 3 shows the treatment effect coefficients for each outcome from each of the three models described above. The broadcast appears to have increased support for the government’s response and increased concern about the pandemic. In particular, it made people significantly more likely to think the government is taking coronavirus seriously enough and that the government is handling the outbreak well. At the same time, it made people significantly more likely to say that they fear for their future, that they are not confident they would recover well if they caught the virus and that they have started not going out at all.

For three of the other measures of personal concern, the coefficient of the treatment variable is positive but not significant. These capture whether the respondent thinks: (1) that they are likely to catch the virus; (2) that the outcome of the crisis will be worse than typical flu; and (3) that the economy will be damaged for many years. Given that the lockdown was intended to limit transmission of COVID-19, it is unclear whether we should expect its announcement to have made respondents more likely to think they would catch the virus. Only for the question measuring
whether the crisis has made respondents feel worse about the state of society is the estimated coefficient on the treatment negative, and this is also not significant.

We also measure the effect of the broadcast on aggregate measures combining multiple survey items. We find a positive and significant effect on the average of the two government support items; we also find positive and significant effects on the average of the seven personal concern items and the average of the four items that most directly address the risk to the respondent’s own health (rows 4–7 in Figure 3).

Placebo population tests

To address concerns (discussed above) that respondents who took the survey later versus earlier differed in outcome-relevant ways other than exposure to the broadcast, we reproduce our analysis using surveys conducted one and two weeks after Boris Johnson’s broadcast, when no notable news was released. In each survey, we assign the first $x$ respondents to ‘control’ and subsequent respondents to ‘treatment’, with $x$ chosen so that the proportion of treated respondents matches the 23 March survey. We find that covariate imbalance was if anything larger in these placebo surveys, with the $F$-statistic from a regression of treatment on all covariates being 2.27 (30 March) and 5.99 (6 April) compared to 1.95 (23 March); this suggests that the covariate imbalance we observe on 23 March is a feature of time-of-day effects and YouGov’s recruitment algorithm rather than a result of the lockdown announcement. (The Appendix includes bivariate balance tests for the placebo surveys.) Figure 4 shows that we do not find ‘effects’ of taking the survey later on any of our personal concern outcomes in either of the placebo surveys, which bolsters our confidence that the effects we find for 23 March are the result of the broadcast rather than differences between early and late respondents or other flaws in our design.

Decomposing the average effect

The combination of findings we have presented so far may seem somewhat surprising. The increase in support for the government’s pandemic response suggests that a lockdown was considered appropriate. Why, then, did the lockdown announcement also increase the average level of concern about the pandemic?

We consider a compositional explanation: perhaps the lockdown announcement alarmed people who had been least concerned about the pandemic while increasing support for the government among people who had been least supportive. In his brief broadcast, Johnson emphasised in simple terms the threat posed by the pandemic — the ‘devastating impact of this invisible killer’, as he put it — including the possibility that the health system could be overwhelmed by a surge of infections, causing excess deaths among both COVID patients and others who need care. The broadcast may also have indirectly signalled the severity of the crisis both through the stringent rules it announced and through the extraordinary format. To viewers who were not yet taking the pandemic seriously, these signals may have finally brought home the severity of the crisis. To viewers who were taking the pandemic seriously, the main effect of Johnson’s broadcast may have been to show that, after a slow start, Johnson was finally taking appropriate actions. Thus the potentially surprising combination of average effects could arise because these effects took place among more or less disjoint groups of people.
To investigate this possibility, we fit models to predict respondents’ levels of concern about the pandemic (the average of the four items discussed above) and level of support for the government’s pandemic response (the average of the two items discussed above) in the pre-broadcast period and assess how treatment effects vary with these baseline attitudes. Specifically, for each outcome variable, we first fit three models designed to predict outcomes in the pre-broadcast period: ‘OLS 1’ refers to OLS regression of the outcome on our standard set of covariates in the pre-broadcast period only; ‘OLS 2’ refers to the same analysis where covariates are additionally interacted with whether the respondent supported the Conservatives in 2019; and ‘BART’ refers to the same analysis using Bayesian additive regression trees (Chipman et al. 2010) instead of OLS, which permits a more flexible relationship between covariates and the outcome and has been shown to perform well in predictive tasks (Hill 2011). We then use these models to generate predicted outcomes at baseline (i.e., in the pre-treatment period) for all units in the sample. Finally, we re-estimate our main specification separately by tercile of the predicted pre-broadcast attitude.

Figure 5 presents the results. Consistent with our conjecture, the lockdown announcement increased concern about the pandemic most among respondents who we predict to be least concerned about the pandemic beforehand (group 1 in the top left plot). Likewise, the lockdown announcement increased support for the government’s response most among respondents who we predict to be least supportive of the government’s response beforehand (group 1 in the bottom plot).
right plot). Notably, because pre-broadcast concern about the pandemic is negatively correlated with pre-broadcast support for the government’s response, few respondents were in both of the subsets where we find the largest effects. These findings thus lend some support to the idea that the broadcast reassured one group of respondents about the government’s policy response while worrying another group of respondents about the pandemic. In short, the lockdown broadcast appears to have narrowed perception gaps: it made the least concerned more concerned, and it made the least supportive more supportive.

Conclusion

This research note uses a rare natural experiment to show that the UK lockdown announcement increased support for the government’s response to the COVID-19 pandemic. We have also shown that, perhaps surprisingly, the lockdown announcement made people on average more concerned about the COVID-19 pandemic. Whether or not that was the government’s intention, it seems to have been aware of this consequence, since one Conservative MP noted during the height of the pandemic that ‘Our comms have been the best in Europe. We scared everyone
RALLYING IN FEAR?

Decomposing the average effects, we find evidence that this pattern of results stems from heterogeneous treatment effects: the lockdown announcement increased support for the government’s response among those who had been least impressed and generated concern among those who had been least worried, thereby narrowing perception gaps about the pandemic.

Taken together, the findings in this research note contribute to our understanding of how government policy responses affect citizens’ attitudes and behaviour during public health crises. In the case of the COVID-19 pandemic, widespread compliance with government directives (including quarantines, social distancing, testing and contact tracing) is required for limiting the effects of the virus on health and economic outcomes. Since compliance depends in part on people’s perceptions of virus risk, and of the government’s response (Webster et al. 2020), it is important to understand what influences those perceptions. Our results document an immediate impact of government policy on citizen attitudes that can be distinguished from the effects of economic disruption and other downstream consequences of that policy. Unfortunately, our design does not allow us to assess how long-lived these effects were; thus our analysis should be viewed as complementary to Bol et al. (2020) and other studies examining impacts over longer time frames.

These findings also highlight an inherent tension in governing during times of crisis, in that actions that increase people’s confidence in government and induce compliance with government directives may also tend to increase anxiety among the population. Heightened anxiety may have saved lives by inducing compliance, but the toll in terms of mental health remains relevant as we tally the losses from the COVID-19 pandemic.17

Acknowledgements

We thank YouGov for sharing the data and Anthony Wells helping us access it.

Appendix

Table A1. Coding of variables

| Outcome label                                    | Question text                                                                 | Coding                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------|
| Government taking coronavirus seriously enough  | Q0. Do you think overall the government is taking Coronavirus . . .?           | 1 if ‘About right’, ‘Too seriously’         |
| Government is handling the coronavirus outbreak well | Q2. How well or badly do you think the government is handling the Coronavirus outbreak . . .? | 1 if ‘Very well’, ‘Fairly well’             |
| I think I am quite likely or very likely to catch the virus over next year | Q11. How likely do you think you are to catch the virus over the next year? | 1 if ‘Quite likely’, ‘Very likely’          |
| I am not confident that I would recover well if I caught the virus | Q12. If you were to have Coronavirus, how confident are you that you would recover well? | 1 if ‘Not very confident’, ‘Not confident at all’ |

(Continued)

© 2021 European Consortium for Political Research
| Outcome label                                      | Question text                                                                 | Coding                                                                 |
|---------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------------------------------|
| I fear for my future                              | Q22. Which comes closest to how you see the future for you?                    | 1 if ‘I fear for my future’ (0 if ‘I think I’ll be OK’ and ‘Don’t know’) |
| Outcome of crisis will be much worse than typical flu, incl. millions of deaths | Q23. Which of these do you think is the more likely outcome of this crisis over the next year? | 1 if ‘Many millions dying throughout the world’ or ‘Hundreds of millions dying throughout the world’ (0 if ‘Many deaths, but not much worse than a typical flu’ or ‘Don’t know’) |
| Economy will be damaged for many years            | Q24. Which of these do you think is the more likely economic outcome of this crisis? | 1 if ‘The economy will be damaged for many years’ (0 if ‘The economy will bounce back quite quickly’, ‘The economy will be weakened for a few years’, ‘Don’t know’) |
| Crisis has made me feel worse about state of society | Q29. Has this crisis made you feel better or worse about the state of society, or has it made no difference? | 1 if ‘Worse’                                                                 |
| I have started not going out at all                | Q30. Have you changed your behaviour in any way to self-isolate? and Q33. To what degree have you self-isolated? | 1 if ‘Yes’ in response to Q30 and ‘I am not going out at all’ in response to Q33; missing if ‘No, I’m isolated anyway’ in response to Q30 |
Figure A1. Average effect of broadcast, dropping responses between 6:30-8:30pm.

Figure A2. Bivariate balance tests for main analysis (left) and placebo surveys (centre and right).
Notes

1. See, for example, ‘Could the US contain a coronavirus outbreak?’, Wired, 25 February 2020 (https://www.wired.com/story/could-the-us-contain-a-coronavirus-outbreak/), ‘China’s coronavirus lockdown – brought to you by authoritarianism’, The Washington Post, 27 January 2020 (https://www.washingtonpost.com/world/2020/01/27/chinas-coronavirus-lockdown-brought-you-by-authoritarianism/).

2. See also ‘COVID-19 has given most world leaders a temporary rise in popularity’, The Economist, 9 May 2020 (https://www.economist.com/graphic-detail/2020/05/09/covid-19-has-given-most-world-leaders-a-temporary-rise-in-popularity).

3. Bol et al. (2020)’s analysis includes a linear time trend and a variable capturing number of deaths; these likely address some but not all potential confounders.

4. Scholars have suggested various explanations for ‘rally effects’ in response to national crises (Mueller 1970). These include heightened patriotism in response to national threat, a lack of opposition criticism during crises and arguments about emotional responses to threats, specifically anger and anxiety (Hetherington & Nelson 2003; Lambert et al. 2011).

5. https://www.gov.uk/government/speeches/pm-address-to-the-nation-on-coronavirus-23-march-2020

6. ‘Boris Johnson’s speech in March is one of the most watched television moments ever’, The Daily Mail, 17 July 2020 (https://www.dailymail.co.uk/news/article-8534661/Boris-Johnsons-speech-March-one-watched-TV-moments-28-2million-viewers.html).

7. ‘Coronavirus: 27.1 million watch PM Boris Johnson’s TV address’, BBC, 24 March 2020 (https://www.bbc.co.uk/news/entertainment-arts-52018502).

8. Some responses were collected between midnight and the next morning; we omit these to address concern about time-of-day effects and concern about unobservable differences between difficult-to-reach panelist types and others.

9. The process is described at https://yougov.co.uk/topics/politics/articles-reports/2016/05/24/how-yougov-sample-our-polls.

10. See, for example, https://www.cloudresearch.com/resources/research/does-time-of-day-affect-survey-results/. These differences could reflect both selection into taking a survey at particular times of day and the effect of the time of the day (e.g., sunlight) on responses. We compare early evening responses (5–8:30 PM) to later evening responses (8:30 PM to midnight), which may produce smaller time-of-day effects.

11. We do this because prior vote is a particularly strong predictor of support for the government (and thus potentially an important confounder).

12. Variation in prior concern or support may correlate with political information and therefore potentially also with compositional differences in the compound treatment respondents receive (i.e., the balance across the nature and informational content of the broadcast). We lack data on political sophistication to evaluate this hypothesis effectively.

13. For the BART model, our prediction is the mean prediction across draws from the posterior.

14. For a similar approach to assessing treatment effect heterogeneity, see Enos et al. (2014).

15. The correlation between the terciles is −0.4. About 1 in 20 respondents are in tercile 1 for both moderators; the proportion would be 1 in 9 if the two were not related.

16. An unnamed Conservative MP, quoted by Sebastian Payne in the Financial Times, 1 May 2020. See also ‘Sage publishes evidence behind advice on lockdown following calls for more transparency’, ITV News, 5 May 2020 (https://www.itv.com/news/2020-05-05/sage-publishes-evidence-behind-advice-on-lockdown-following-calls-for-more-transparency), which suggests the 23 March announcement may have been intended to increase pandemic concern.

17. “U.N. warns of global mental health crisis due to COVID-19 pandemic”, Reuters, 14 May 2020 (https://www.reuters.com/article/us-health-coronavirus-mentalhealth/u-n-warns-of-global-mental-health-crisis-due-to-covid-19-pandemic-idUKKBN22Q0AO?editionredirect=uk).

References

Albertson, B. & Shana, K. G. (2015). Anxious politics: Democratic citizenship in a threatening world. Cambridge: Cambridge University Press.
Bol, Damien, Giani, M., Blais, A. & Loewen, P.J. (2020). The effect of COVID-19 lockdowns on political support: Some good news for democracy? *European Journal of Political Research* 60(2): 497–505.

Chipman, H.A., George, E.I. & McCulloch, R.E. (2010). BART: Bayesian additive regression trees. *The Annals of Applied Statistics* 4(1): 266–298.

Cunningham, K. (2020). The rally-round-the-flag effect and Covid-19. *The UK in a Changing Europe*. https://ukandeu.ac.uk/the-rally-round-the-flag-effect-and-covid-19/

Doty, R., Peterson, B.E. & Winter, D.G. (1991). Threat and authoritarianism in the United States, 1978-1987. *Journal of Personality and Social Psychology* 61: 629–640.

Enos, R.D., Fowler, A. & Lynn Vavreck, L. (2014). Increasing inequality: The effect of GOTV mobilization on the composition of the electorate. *The Journal of Politics* 76(1): 273–288.

Esaiasson, P., Sohlberg, J., Ghersetti, M. & Johansson, B. (2020). How the coronavirus crisis affects citizen trust in institutions and in unknown others: Evidence from ‘the Swedish experiment. *European Journal of Political Research*. In press. https://doi.org/10.1111/1475-6765.12419

Hetherington, M.C. & Suhay, E. (2011). Authoritarianism, threat, and Americans’ support for the war on terror. *American Political Science Review* 55(3): 546–560.

Hetherington, M.C. & Nelson, M. (2003). Anatomy of a rally effect: George W. Bush and the war on terrorism. *PS: Political Science and Politics* 36(1): 37–42.

Hill, J.L. (2011). Bayesian nonparametric modeling for causal inference. *Journal of Computational and Graphical Statistics* 20(1): 217–240.

Huddy, L., Feldman, S. & Cassese, E. (2007). On the distinct political effects of anxiety and anger. In W. Russell Neuman, G.E. Marcus, A.N. Crigler & M. MacKuen (eds), The affect effect: Dynamics of emotion in political thinking and behavior. Chicago: Chicago University Press.

Jennings, Will. (2020). Covid-19 and the ‘rally-round-the flag’ effect. *The UK in a Changing Europe*. https://ukandeu.ac.uk/covid-19-and-the-rally-round-the-flag-effect/

Lambert, A.J., Schott, J.P. & Scherer, L. (2011). Threat, politics, and attitudes: Toward a greater understanding of rally-round-the-flag effects. *Current Directions in Psychological Science* 20(6): 343–348.

Leininger, A. & Schaub, M. (2020). Voting at the dawn of a global pandemic. Working Paper. https://osf.io/preprints/socarxiv/a32r7

Mueller, J.E. (1970). Presidential popularity from Truman to Johnson. *American Political Science Review* 64(1): 18–34.

Webster, R.K., Brooks, S.K., Smith, L.E., Woodland, Wessely, S. & Rubin, G.J. (2020). How to improve adherence with quarantine: Rapid review of the evidence. *Public Health* 182: 163–169.

Address for correspondence: Robin Harding, Department of Politics and International Relations, University of Oxford, Oxfords OX1 3UQ, UK. Email: robin.harding@politics.ox.ac.uk

© 2021 European Consortium for Political Research