



Elite party cues increase vaccination intentions among Republicans

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Overcoming the COVID-19 pandemic requires motivating the vast majority of Americans to get vaccinated. However, vaccination rates have become politically polarized, and a substantial proportion of Republicans have remained vaccine hesitant for months. Here, we explore how endorsements by party elites affect Republicans' COVID-19 vaccination intentions and attitudes. In a preregistered survey experiment ($n = 1,480$), we varied whether self-identified Republicans saw endorsements of the vaccine from prominent Republicans (including video of a speech by former President Donald Trump), from the Democratic Party (including video of a speech by President Joseph Biden), or a neutral control condition including no endorsements. Unvaccinated Republicans who were exposed to the Republican elite endorsement reported 7.0% higher vaccination intentions than those who viewed the Democratic elite endorsement and 5.7% higher than those in the neutral control condition. These effects were statistically mediated by participants' reports of how much they thought Republican politicians would want them to get vaccinated. We also found evidence of backlash effects against Democratic elites: Republicans who viewed the Democratic elite endorsement reported they would be significantly less likely to encourage others to vaccinate and had more negative attitudes toward the vaccine, compared with those who viewed the Republican elite endorsement or the neutral control. These results demonstrate the relative advantage of cues from Republican elites—and the risks of messaging from Democrats currently in power—for promoting vaccination among the largest vaccine-hesitant subgroup in the United States.

vaccination | polarization | COVID-19 | elite cues

The COVID-19 pandemic is the most severe public health crisis in more than a century. The rapid development of several vaccines against the virus offers a potential resolution to the crisis, making uptake of available vaccines necessary to contain the pandemic (1). Polling shows that the proportion of Americans who report intending to get vaccinated, or who have already gotten vaccinated, has risen from 45% in November 2020 to 71% in early June 2021 (2). However, this decline in vaccine hesitancy has not been evenly distributed across Americans. While initially hesitant groups that are largely Democrats—such as some racial minorities—have shown steadily declining hesitancy, the proportion of Republicans who report they do not intend to vaccinate or are unsure has remained high, at 64% in November 2020 and 51% in early June 2021 (2). Therefore, effectively motivating Republicans may be critical for containing the pandemic and constitutes a key public health challenge affecting all Americans.

We attempt to address this challenge by leveraging the theory of elite cues from political science. Research in political science shows that members of the public often follow cues from their party's elites and ignore, or do the opposite of, cues from the other party's elites (3, 4). Since the earliest months of the pandemic, virtually all COVID-19–related attitudes, beliefs, and behaviors have been heavily polarized along party lines (5, 6). That this pattern extends to COVID-19 vaccination intentions poses a serious problem for the Biden administration. Based on

the theory of elite cues, attempts by Biden and other Democrats to encourage COVID-19 vaccination should have limited effects on Republicans' vaccination intentions, or could even backfire, whereas messaging from Republican elites should be more successful.

Here, we test these predictions empirically. From March 17 to 24, we conducted a preregistered survey experiment ($n = 1,480$) in which study participants were randomly assigned to one of three conditions. Participants assigned to the *Republicans endorse* condition viewed a short video of former President Donald Trump endorsing vaccination. They then read a short essay highlighting vaccine endorsements by prominent Republicans and hailing Republicans' contributions to vaccine development and distribution (Fig. 1). While most prominent Republicans have supported vaccination, scant efforts by most Republicans to publicly promote vaccination means awareness of their support is likely low, allowing for a real-world test of elite party cues (4).

Individuals in the *Democrats endorse* condition viewed a short video of President Joseph Biden encouraging vaccination and then read a parallel essay highlighting Democrats' support for vaccination and role in development and distribution (Fig. 1). This condition is an externally valid baseline because it captures the types of endorsements that many respondents were already exposed to at the time. The *neutral control* condition featured a short video and essay about an unrelated topic—neckties—ensuring participants had a similar experience in terms of receiving content and were not more or less engaged or attentive across conditions.

Results

Fig. 2 shows the estimated effects of experimental conditions on vaccination intentions, advocacy, and attitudes. The estimates are based on preregistered linear models controlling for demographic characteristics (age, gender, race, education, and income) and, in the vaccination intention model, pretreatment vaccination intentions.

Among unvaccinated participants, we found that the Republicans endorse condition increased vaccination intentions, when compared to the Democrats endorse condition ($b = 0.028$ [0.006, 0.041], $t = 3.06$, $P = 0.002$, 7.0% higher for average respondent) and the neutral control ($b = 0.024$ [0.006, 0.042], $t = 2.63$, $P = 0.009$, 5.7% higher for average respondent). With respect to mechanism, this effect of condition on vaccination intentions was partially statistically mediated by belief that former President Donald Trump and “Republican leaders” would want the respondent to

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Fig. 1. Democrats endorse and Republicans endorse conditions included excerpts from speeches by President Joseph Biden and Donald Trump, respectively, and short essays. Images credit: (Left) C-Span and (Right) Flickr/Michael Vadon.

get a COVID-19 vaccine. This measure statistically mediated 28% (CI = [12%, 84%], $P < 0.001$) of the effect of the Republicans endorse condition relative to the Democrats endorse condition, and 47% (CI = [24%, 100%], $P < 0.001$) of the effect compared to the neutral control condition (see *SI Appendix* for more details). The effect was not significantly mediated by belief that Republican leaders deserve credit for the vaccination program, nor by respondents' estimates of the percent of Republicans likely to be vaccinated by August 2021. Results of these analyses suggest that the effect of the Republicans endorse condition on respondents' vaccination intentions was at least partly driven by respondents' perceptions that Republican leaders would want them to get vaccinated.

Additional measures showed evidence of backlash effects against Democratic leaders. Pooling over vaccinated and unvaccinated Republicans, the Democrats endorse condition reduced willingness to encourage others to get the vaccine, relative to the Republicans endorse condition ($b = -0.054$ [-0.097, -0.0096], $t = -2.4$, $P = 0.02$, 10.4% lower for the average respondent) and the neutral control ($b = -0.064$ [-0.10, -0.020], $t = -2.8$, $P = 0.004$, 12.2% lower for the average respondent), while the Republicans endorse condition did not differ significantly from the neutral control ($b = -0.01$ [-0.05, 0.03], $t = -0.4$, $P = 0.65$). Notably, the negative effect of the Democrats endorse condition was larger among vaccinated respondents (vs. Republicans endorse condition, $b = -0.086$, $P < 0.01$; vs. neutral condition, $b = -0.094$, $P < 0.01$) than among unvaccinated respondents (vs. Republicans endorse

condition, $b = -0.035$, $P = 0.02$; vs. neutral condition, $b = -0.021$, $P = 0.1$), perhaps because encouragement intentions among unvaccinated Republicans were already relatively low.

We also found that respondents in the Democrats endorse condition expressed more negative attitudes toward the vaccine—for example, perceptions that having many Americans get vaccinated will help the economy and that the vaccine's benefits outweigh its risks—than either the Republicans endorse or neutral control conditions. The effect size was similar for both vaccinated and unvaccinated respondents. Respondents' vaccine attitudes in the Republicans endorse condition did not differ significantly from those in the neutral control (Fig. 2). None of the experimental effects were moderated by education, gender, or race.

Discussion

Our findings have three important implications. First, research in political science has established how elite cues shape the attitudes of partisans in the mass public, and our results show this dynamic can be applied to improve vaccine intentions among Republicans. Further, we find evidence that the influence of elite endorsement obtained in part because it led the audience to believe they would be following what their leaders want. This constitutes one of the few findings on mediational processes of party cues (3); future tests would benefit from experimental tests of mediation. Other next steps include unbundling cues from party leaders and other partisans, testing the impact of competing party

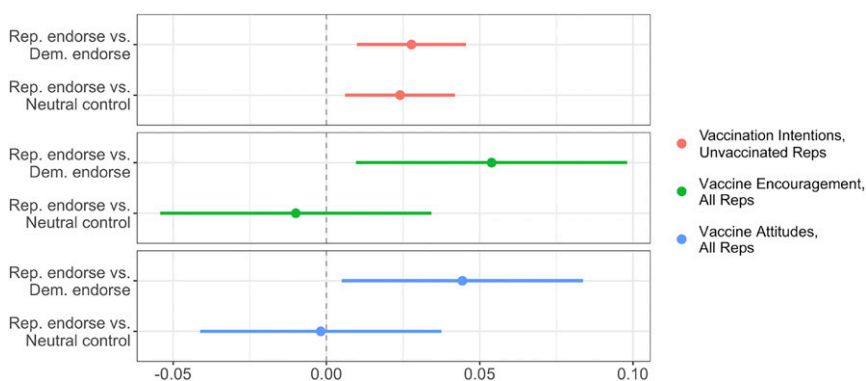


Fig. 2. Average treatment effects on vaccination intentions are among unvaccinated Republicans (Reps.), while average treatment effects for willingness to encourage family and friends to get the vaccine and vaccine attitudes are among all Republicans. All scales range from 0 to 1. Rep., Republicans. Dem., Democrats.

cues from various sources, and measuring the effect on actual vaccination behavior.

Second, our results extend prior research on the role of trusted sources in encouraging health behaviors. While trusted sources have been shown to be helpful during the Ebola and COVID-19 crises (7, 8), no prior causal evidence establishes the influence of elites on Americans' COVID-19 vaccine attitudes, nor the potential role of political elites in reducing polarization of health behaviors. Our results are also relevant for effectively intervening in other countries in which vaccine intentions are politically polarized.

Third, we clarify the mechanisms driving partisan gaps in vaccination observed in current public health data. Our findings suggest that Republicans are less likely to support vaccinations, because Republican elite cues have not been publicized as widely as those from Democrats. Our findings suggest that lower willingness to receive the vaccine among Republicans is not only driven by misinformation about the vaccine but also by low awareness of Republican elite cues.

Importantly, most prominent Republicans, including former President Donald Trump, have endorsed the vaccine. This suggests a previously underappreciated, but potentially efficacious, policy intervention may be to further publicize these existing vaccine endorsements. In addition to developing new messaging to target Republicans, these and other interventions will be necessary to actively ensure the country moves toward containing the pandemic—and continue the process of recovering from the pandemic.

Materials and Methods

From March 17 to 24, 2021, we recruited 1,480 participants via CloudResearch, Bovitz, and Amazon Mechanical Turk to the survey. We included participants

who passed a video attention check and identified as Republican or leaning Republican. Pretreatment, we measured whether or not participants had received the COVID-19 vaccine already (337 were already vaccinated) and vaccination intentions (see *SI Appendix*). Participants were randomly assigned to one of three conditions. In the Republicans endorse condition, respondents viewed a 2-min excerpt from a speech given by former President Donald Trump in which he claimed credit for the vaccine development, criticized the Biden administration's role, and encouraged people to get vaccinated. Respondents then read an essay detailing how the Trump administration and Republican politicians support and deserve credit for vaccine development and distribution. In the Democrats endorse condition, participants viewed a 2-min excerpt from a speech given by President Joseph Biden, in which he detailed efforts to increase vaccinations and encouraged all Americans to get vaccinated. Respondents then read a parallel essay that detailed how the Biden administration and Democratic politicians support and deserve credit for vaccine development and distribution. The neutral control condition featured an essay about the history of neckties and a video about how to tie a tie.

Participants next completed survey measures of vaccination intentions, attitudes toward the vaccine, willingness to encourage family and friends to vaccinate, belief that Republicans deserve credit for the vaccination program, belief that party leaders would want the respondent to vaccinate, and the percentage of Republicans the respondent believed will vaccinate (full text of treatments and survey items are provided in *SI Appendix*). Research was approved by the Stanford University Institutional Review Board. All subjects provided informed consent.

Data Availability. Data and analysis code files have been deposited in Open Science Framework (<https://osf.io/rb3cn/>).

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