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**PARTISAN SOLUTIONS FOR PARTISAN PROBLEMS:
ELECTORAL THREAT AND REPUBLICANS'
OPENNESS TO THE COVID-19 VACCINE**

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ABSTRACT

Attitudinal differences among partisan identifiers are commonplace in the American political landscape. As a prominent example, group identities such as Republican Party identification increasingly inform attitudes against vaccination. What kinds of frames can counter this powerful influence of partisanship on citizens' attitudes? Recent research suggests that, in some cases, leveraging—rather than circumventing—partisan motivations may serve to reduce attitudinal differences, including differences in attitudes toward vaccination. We apply this logic to the partisan gap in openness to the COVID-19 vaccine specifically. Using this important issue as a test case, we theorize that partisans' psychological aversion to electoral loss presents a unique opportunity for the deployment of framing messages designed to increase vaccine openness. We therefore analyze the effects of a "Shot to Win" (STW) message, which frames vaccination as a means of ensuring that a party's members remain healthy enough to vote and defeat the opposing party in upcoming elections. Results of a pre-registered survey experiment provide evidence that STW messaging increases Republican identifiers' openness to COVID-19 vaccination across a variety of attitudinal and behavioral outcomes. More broadly, these results exemplify how partisan identity might be effectively leveraged in service of the public interest.

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Keywords: vaccination; COVID; negative partisanship; electoral stakes; framing

Partisan identifiers in the U.S. are divided along manifold lines—e.g., attitudes toward diversity and socio-demographic groups (Kane, Mason, and Wronski 2021), environmental protection (DeNicola and Subramaniam 2014), and vaccination (Jones and McDermott 2022). Absent efforts to reduce these divisions, social problems that require broad-based support (e.g., environmental destruction and harmful viruses) are likely to remain perennial wellsprings of political contention and partisan polarization.

How can such divisions be reduced? Recent research, often grounded in social identity theory (SIT), offers a variety of (sometimes diverging) recommendations. One approach seeks to circumvent partisan considerations via, for example, highlighting common identities and patriotic sentiments (Dawkins and Hanson 2022; Levendusky 2018). Though this technique has found empirical support, it is far from a panacea. In contrast, an alternative approach recommends directly invoking and leveraging—rather than ignoring—partisan identities. For example, Hornsey and Lewandowsky (2022) argue that climate-change skeptics (who are often conservative and/or Republican) can potentially be persuaded when conservative arguments for environmentalism are invoked by Republican sources. Such evidence suggests that a *problem* that possesses a fundamentally partisan character can potentially be addressed using *techniques* that also possess a partisan character.

Scholarly efforts to deploy this approach, however, have thus far been limited, both in their form and with respect to the particular issues they address. To close this gap, we apply a form of this approach to an issue with strong partisan divisions: vaccination. The specific case we investigate is that of vaccination against the coronavirus and the COVID-19 disease, one of the most salient socio-political issues in recent history. To reduce partisan divisions on this issue, we propose priming *electoral threat* as a method to increase prosocial behavior—in this case, vaccination against the novel coronavirus.

Public opposition to vaccination against viral disease has emerged as a major concern in the contemporary United States, with serious implications for public health and the national economy

(Charumilind et al. 2021). The ability of the U.S. to combat COVID-19 and other transmissible diseases in the future depends, of course, upon the extent to which Americans remain open to vaccination and vaccine information—that is, whether they seek out accurate information about vaccines, elect to receive vaccines, and continue to receive vaccine “booster shots” in subsequent years.

Yet, despite the ongoing urgency of increasing public openness to vaccines, and to the COVID-19 vaccine in particular, such attitudes have come to exhibit a *partisan* political character. Republicans, in particular, are substantially less likely to receive vaccination compared to Democrats and, even among vaccinated adults, Republicans have displayed relatively greater skepticism towards the vaccine’s effectiveness, greater concern about its health risks, greater criticism of public pressure to vaccinate, and more positive sentiment toward individuals who choose to forgo the vaccine (see Tyson et al. 2021). Remarkably—and perhaps because of—skepticism toward the COVID-19 vaccine, Republican opposition toward requirements that children be vaccinated against measles, mumps, and rubella (MMR) in order to attend public school, has doubled since 2019 (Funk et al. 2023).

To close the partisan gap on vaccination—specifically, skepticism towards the COVID-19 vaccine—recent research has explored various types of pro-vaccination messaging. Of particular importance for the present study is scholarship that has attempted to directly invoke, rather than circumvent, partisan instincts. Pink et al. (2021), for example, offer experimental evidence that cues from partisan elites can effectively increase vaccine intentionality (see also Larsen et al. 2022).

In this article, we further investigate how engaging partisan identities may increase the efficacy of pro-vaccination messaging. Specifically, we draw upon political science literature documenting the rise in partisan polarization along affective and identity-based lines (Iyengar et al. 2019; Mason 2016). We theorize that partisans can be persuaded to support prosocial behaviors and attitudes through messaging that invokes interrelated components of Americans’ partisan identities: antipathy toward

members of the out-party (so-called “negative partisanship” (Abramowitz and Webster 2018)) and, relatedly, a strong emotional aversion to the prospect of losing elections to that out-party (Huddy, Mason, and Aarøe 2015). We therefore hypothesize that partisans may increase vaccine openness if the COVID-19 vaccine is framed as a means of protecting the in-party from electoral defeat to the out-party in upcoming national elections—i.e., protecting the group from a viable threat to its status in the political realm (Huddy 2013). With Republicans being disproportionately skeptical of vaccines and also disproportionately impacted by COVID-19 in terms of their physical health (Wood and Brumfiel 2021), it is plausible that the asymmetric impact of COVID-19 across partisan lines has affected, and will continue to affect, electoral margins (Wood and Brumfiel 2021). Thus, messaging that warns of these potential electoral consequences should be capable of leveraging partisans’ desire to defeat the opposing party and, in so doing, promote greater openness to the COVID-19 vaccine among American partisans. In short, we propose that vaccine openness should increase when vaccination is framed as a means of avoiding electoral defeat to the out-party.

We test this expectation empirically using a novel, large-scale survey experiment conducted in 2021 (N =1,217). Respondents to our surveys were randomly assigned to one of three experimental treatment groups. One group read a vignette that warned of the potential electoral consequences of remaining unvaccinated. We refer to this as our Shot to Win (*STW*) treatment. Cognizant that our *STW* treatment could implicitly function as an elite cue (see Pink et al. 2021), we included an explicit elite cue within the *STW* text, and randomly assigned a second group to read *only* this elite cue message (*EC*). A third group received no persuasive message (*Control*). This design was employed to examine the effects of messaging about electoral consequences on partisans’ vaccine beliefs and intentions, relative to more generic partisan-oriented cues. Crucially, therefore, this design enables us to statistically

estimate the effect of *STW* relative to no persuasion, as well as the effect of *STW* net of its efficacy as a generic elite partisan cue.

The results of our experiment demonstrate that *STW* messaging consistently increases Republicans' openness towards vaccination relative to generic messaging. Specifically, invoking the threat of electoral loss improves Republicans' willingness to seek out information about vaccines, to persuade others to get vaccinated, and to pursue the vaccine themselves. While Democrats were also shown *STW* messaging (i.e., warning of potential electoral loss against Republicans if more Democrats did not get vaccinated), these partisans exhibited more modest, less directionally consistent effects, perhaps due to ceiling effects that resulted from high initial openness to vaccination. More broadly, however, the results provide initial evidence that messaging invoking the threat of electoral loss can be deployed in service of goals which enhance public safety and the public good.

Notably, however, in a follow-up experiment conducted in early 2023, shortly after the 2022 U.S. midterm elections (see the Supplementary Information for details), we found little further evidence that *EC* messaging affected openness to vaccination (see Pink et al. 2021), and no evidence that *STW* was able to significantly change perceptions of electoral outcomes. In other words, our manipulation check indicated a failed manipulation (Kane & Barabas 2019).¹ Taken together, the results of our survey experiments suggest that electoral risk-based framing efforts may be most effective when relevant issues are either more salient in the media environment and/or before partisans have been extensively “pre-treated” by various frames in the real-world (e.g., see Druckman and Leeper 2012).

¹ Experimental manipulation checks provide evidence that subjects have “received the treatment”—that is to say, that they have internalized the information contained in the treatment. A failed manipulation check, therefore, suggests that partisans possessed the information contained in the treatments prior to exposure, or that this information was disregarded (or ignored) experimental subjects.

COVID-19 & PARTISAN DIVISIONS OVER VACCINATION

While vaccination is not the only tool to combat public health crises of this nature, widespread implementation of this technology allows us to protect vulnerable populations more effectively (as seen in the contemporary case of COVID-19, but also in the longstanding and perennially important examples of polio, measles, mumps, rubella, tetanus, and hepatitis). Refusal of CDC-recommended vaccination schedules by members of the public can lead to outbreaks of both emergent and historically deadly diseases (e.g., Meadows, Tang, and Liu 2019).

Though majorities of both partisan groups have now been vaccinated against COVID-19, Democrats are more than 20 percentage points more likely to have been vaccinated than Republicans (Funk and Gramlich 2021; Coleman 2023), and Republicans have been less inclined to openly advocate for vaccination (Lerer 2021). Further, recent evidence suggests that Republican skepticism toward COVID-19 vaccination may be “spilling over” to attitudes about standard childhood vaccines (Motta 2023); a possibility substantiated by the recent, and dramatic, shift in Republican opposition to MMR requirements in public schools (Funk et al. 2023). A key concern, then, is how partisans’ attitudinal divisions over public health issues—including vaccination—can be effectively addressed in coming years.

FRAMING, ELECTORAL THREAT & LEVERAGING PARTISAN MOTIVATIONS

What types of framing can be deployed to increase openness to vaccination? Some effective messages have emphasized the personal and societal benefits of vaccination (Ashworth et al. 2021), for example. Such efforts, by design, ignore the partisan component of vaccine openness, aiming instead to prime motivations that transcend party lines.

In contrast, other research has more explicitly invoked the partisan nature of vaccine opposition (e.g., Jones and McDermott 2022; Sylvester et al. 2022; Zhong and Broniatowski 2023). For example, in Pink et al.'s (2021) recent study, endorsements from partisan elites increased partisan vaccination intentions by 7% among Republicans and 5.7% among Democrats, while a large-scale experiment by Larsen et al. (2023) found that randomly airing YouTube ads of Donald Trump endorsing the vaccine yielded an uptick in vaccination rates at the county level. Sylvester et al. (2022) similarly show, in a survey experimental setting, that co-partisan source cues have a strong impact on the willingness of Republican identifiers to consider vaccination. In another experimental framing study, Zhong and Broniatowski (2023) demonstrate that the economic frames used on Twitter by pro-Republican accounts (which emphasized the need for Americans to get vaccinated in order to assist the economic recovery from the COVID-19 pandemic) were effective in decreasing Republican identifiers' vaccination hesitancy. A related literature confirms that frames and arguments designed to resonate with partisans' respective moral motivations are capable of influencing stances on a variety of political issues (e.g., Anson and Kane 2022; Feinberg and Willer 2015).

Such studies suggest that while vaccine opposition is a relatively durable attitude, and that Republicans are substantially less supportive of COVID-19 vaccines than Democrats, messaging that explicitly acknowledges the *partisan* nature of vaccine openness therefore has the potential to boost public adherence to vaccination—especially among Republicans.

We believe that a key mechanism underlying such findings is that partisan identity typically invokes a variety of powerful feelings and motivations. As with many social identities, a highly consequential aspect of partisan identity is that of feelings of animus toward members of a competing group—i.e., the out-party (Mason 2016; Van Bavel and Packer 2021). Indeed, much research documents how Americans have come to increasingly distrust and dislike members of the out-party

(Hetherington and Rudolph 2015), and even exhibit disproportionate attentiveness to affect-laden messages from trusted partisan elites (Webster 2021).² Thus, feelings of antipathy towards the out-party can underlie a variety of consequential behaviors. For example, recent evidence finds that partisans' willingness to share posts via social media stems from a desire to highlight negative stories about the out-party (e.g., Rathje et al. 2021).

A related element of partisan identity is that it heightens the symbolic importance of political events and, especially, political contests. In particular, partisans display a strong aversion to the prospect of electoral defeat to the opposing party (Huddy, Mason, and Aarøe 2015). While winning elections confers powerful psychological affirmation upon partisans on the winning side, the prospect of electoral *loss* may represent the ultimate form of status threat to partisan identifiers (Morrison, Fast, and Ybarra 2009). Consequently, extant research finds that electoral defeat elicits, for partisans, feelings of despair and unhappiness, and that these feelings are stronger than the feelings of joy elicited by electoral victory (Pierce, Rogers, and Snyder 2016).

We reason that this threat of electoral loss may not only exert a meaningful effect upon attitudes, but also potentially function as a strong incentive to engage in specific behaviors. Following this logic, we propose COVID-19 vaccine messaging that leverages the threat of electoral loss as a source of motivation for political partisans. With Republicans being disproportionately skeptical of vaccines, including the COVID-19 vaccine, and also disproportionately impacted by COVID-19 in terms of their physical health (Wood and Brumfiel 2021), partisan messaging that warns of electoral loss due to low vaccination rates is grounded in reality. That is, it is not unreasonable to suspect that asymmetric spread of the novel coronavirus across partisan lines could affect Republicans' future electoral margins.

² While scholarly definitions of “negative partisanship” differ, in this study we adhere to a definition which conforms to Lelkes’s (2021) description of “partisan disdain,” or negative affect towards the out-party.

In essence, such framing should lead partisans to weigh the prospect of electoral defeat to the opposing party against whatever motivations underlie the decision to forego vaccination. Invoking this threat of electoral loss thus reorients pro-vaccine messaging in a way that highlights partisan unity and strength in the face of a shared opponent—i.e., the out-party. Given the strength of animosity toward the opposing party (Mason 2018), we reason that the motivation to avoid electoral loss can potentially lead partisan identifiers to update their openness to vaccination. We therefore aim to test the following hypothesis:

H1. *Messaging designed to invoke partisan threat of electoral loss will increase partisans' openness towards COVID-19 vaccination.*

Given the public health goal of maximizing public openness to vaccination, our study seeks to build upon past framing efforts by explicitly leveraging the prospect of electoral loss and, in particular, partisans' compelling desire to avoid it. While alternative framing strategies to increase openness to vaccination may, on their own, be met with skepticism by some partisans (perhaps especially Republicans), we suspect that the pro in-party (and anti out-party) nature of framing vaccination as a strategy for avoiding electoral defeat may avoid such resistance.

Finally, it is worth noting that in testing **H1**, we employ a broad, multi-faceted operationalization of “openness toward COVID-19 vaccination”. Consistent with existing research (Pink et al. 2021), we measure partisans' intentions to receive the vaccine. However, it is increasingly clear that additional outcomes—e.g., public desire for factual information about a COVID-19 vaccine, knowledge of how and where to obtain the vaccine, intentions to receive a “booster shot,” and willingness to encourage others to become vaccinated—will be crucial determinants of COVID-19's future trajectory in the United States. Our study, therefore, also builds upon existing research by employing a wider array of attitudinal and behavioral outcomes than has heretofore been the case.

DATA AND METHODS

To investigate **H1**, we fielded a preregistered³ survey experiment via Lucid,⁴ from September 22-23 of 2021, that included quotas ensuring that the sample would be nationally representative with respect to race/ethnicity, age, gender, and geographic region. The final sample included 1,561 adults, 1,217 of which leaned or identified with either the Republican or Democratic Party. We selected these partisans for a resulting study N of 1,217.

Following informed consent, survey respondents first indicated their preferred political party and vaccination status. (Approximating national polling data, only 60% of Republicans in our sample report having been vaccinated compared to 81% of Democrats.) Respondents were then randomized into one of three treatment conditions. Table 1 contains the full text of the experimental treatments below. One third of the sample of partisans was exposed to a *Control* condition, in which no vignette was presented to participants. Another third received an *Elite Cue* (EC) vignette (modeled after Pink et al. 2021), which contained a generic message from the Republican (Democratic) National Committee urging their respective co-partisans to seek vaccination. This cue condition also mentions Donald Trump (Joe Biden) in Republican (Democratic) conditions.

³ Data, code, and other replication materials for the study will be made available on osf.io upon publication at [link redacted for review]. Our project involved human subjects research and was classified as Exempt by the [redacted] Institutional Review Board (Protocol #2021-675). Informed consent was obtained through survey respondents' click-through acknowledgement after reading an informed consent script.

Preregistration information includes hypotheses, treatment text, and other key details of our design. We specify in this documentation that comparison of means using t-tests will be conducted to establish evidence to support our hypotheses. We report two omissions in our pre-registration. While we rely on one-tailed t-tests at the $p < 0.05$ level of statistical significance to inform our conclusions, this detail is not explicitly stated in the pre-registration information. Though implied in the design of the experiment, the pre-analysis plan does not explicitly state that the analysis will investigate treatment effects within partisan subgroups.

⁴ See <https://luc.id/quality/> for sampling details.

TABLE 1. Text Featured in Experimental Vignettes

Elite Cue (EC) Vignette Text	Shot to Win (STW) Vignette Text
<p><u>A Message from the Republican National Committee</u></p> <p>The Republican National Committee (RNC) often serves as the national voice of the Republican party. The Republican National Committee recently released the following statement regarding COVID-19 and vaccines:</p> <p><i>“We strongly agree with former President Trump and members of his administration, who have gone on record by encouraging all Americans to get the COVID-19 vaccine as soon as possible to stop the spread of the virus. Thank you, Donald Trump, for your leadership on this issue.”</i></p>	<p><u>A Message from the Republican National Committee: Vaccines Will Help Our Party Win!</u></p> <p>[The EC vignette text appeared here, in conjunction with the message below]</p> <p><i>“Based on our own research, if you don’t get vaccinated between now and the next election, you have a much higher risk of getting very sick. This means you might not be able to participate in the next election to help our party win.”</i></p> <p><i>“Please make sure you and your friends/relatives get vaccinated so you can help us defeat the Democrats in the next election. The stakes are very high: If we don’t get vaccinated against COVID-19, Democrats might keep their hold on Congress in the 2022 midterm elections. They might possibly even keep the White House in 2024.”</i></p> <p><i>“We just can’t take that risk. The COVID-19 vaccine is how we can keep Republicans healthy and strong. So let’s get vaccinated, let’s get protected, and let’s get out and WIN in 2022 and 2024!”</i></p>

Notes: Vignette text for EC and STW conditions.

Because it ties COVID-related illness to turnout, *STW* also differs from the *EC* condition in that it mentions negative health consequences of COVID-19. Though this difference represents a potential concern (Dafoe, Zhang, and Caughey 2018), it is important to note that news regarding COVID-related hospitalizations, deaths, etc. was ubiquitous at the time of the survey, meaning that such information was unlikely to exert its own treatment effect as a consequence of pre-exposure.⁵

⁵ Further, we find evidence for our key mechanism—i.e., that *STW* significantly affected perceptions of electoral consequences—and little evidence for alternative mechanisms (see discussion of manipulation checks and robustness tests below).

We test **H1** by comparing the *Control* and *EC* conditions to our primary experimental condition of interest, which we label *Shot to Win (STW)*. In this condition, respondents read the same message from their respective national party committee contained in *EC*, before exposure to additional information urging respondents to seek vaccination due to the electoral consequences of in-party members becoming sick. The treatment frames vaccination as consequential for the 2022 and 2024 elections, enjoining respondents to “get vaccinated, get protected, and... get out and WIN.”

Next, respondents were asked a variety of questions to gauge openness to COVID-19 vaccination. As shown in Table 2, these measures included: (1) an opportunity be provided, at the close of the survey, with a link to factual vaccine information from the Centers for Disease Control and Prevention (CDC), as well as (2) a link to CDC guidance on where to obtain the vaccine; (3) respondents’ self-reported likelihood of obtaining the vaccine (if unvaccinated) or, (4) a coronavirus booster shot (if already vaccinated) once they become available; and, (5) respondents’ self-reported likelihood of encouraging vaccine-hesitant family members to get vaccinated. The first two outcomes are binary measures (“No” (0) or “Yes” (1)), while the remaining outcomes were measured on 5-point scales ranging from “Extremely unlikely” (1) to “Extremely likely” (5). All outcomes were then rescaled to range from 0 to 1 to allow for easier interpretation and comparison. See the SI for additional information on question wording, study design, and preregistration.

TABLE 2. Dependent Variable Measures

Measure	Question Text [Condition]	Response Options (Score)
<i>Get Vaccinated</i>	[IF UNVACCINATED]: If you had an opportunity to receive the COVID-19 vaccine in the very near future, how likely are you to accept the offer?	Extremely Unlikely (1); Somewhat Unlikely (2); Neither Likely nor Unlikely (3); Somewhat Likely (4); Extremely Likely (5)
<i>Stay Vaccinated</i>	[IF VACCINATED]: A “booster” is a vaccine dose that helps improve your body’s ability to fight infection. If you had an opportunity to receive a COVID-19 vaccine booster in the very near future, how likely are you to accept the offer?	Extremely Unlikely (1); Somewhat Unlikely (2); Neither Likely nor Unlikely (3); Somewhat Likely (4); Extremely Likely (5)
<i>Encourage Family to Vaccinate</i>	If you had a family member who was unsure whether or not to get vaccinated with the COVID-19 vaccine, how likely would you be to encourage them to get the vaccine?	Extremely Unlikely (1); Somewhat Unlikely (2); Neither Likely nor Unlikely (3); Somewhat Likely (4); Extremely Likely (5)
<i>Receive Vaccine Info</i>	If you’d like, at the end of the survey, we can provide you with an online link to accurate, established facts regarding COVID-19 and vaccines. Would you like us to include this information at the end of the survey?	No (0); Yes (1)
<i>Determine Vaccine Clinic Location</i>	If you’d like, at the end of the survey, we can provide you with an online link to information about where you can get vaccinated in your area. Would you like us to include this information at the end of the survey?	No (0); Yes (1)

Notes: Outcome measures for all conditions.

RESULTS

Before turning to the results of the study, we present manipulation check and balance test results to assess the receipt of the treatments by experimental subjects (e.g., Kane & Barabas 2019) and independence of random assignment from potentially confounding variables (Gerber et al. 2014), respectively.

Manipulation checks indicated that the *STW* treatment condition was successfully received by treated respondents. Among all respondents, compared to *Control*, respondents in *STW* reported an increase in the belief that their party would lose the 2022 election (if co-partisans refuse to vaccinate) of 5.9 percentage points ($p < 0.01$). Regarding the same possibility in the 2024

presidential election, respondents in *STW* reported a 6.7 percentage point increase relative to *Control* ($p < 0.01$). For Republicans alone, these differences were 8.0 ($p < 0.05$) and 10.3 ($p < 0.01$) percentage points, respectively.⁶⁷

Further manipulation checks tested whether respondents treated in the *STW* condition, relative to the *Control* condition, specifically invoked the inability to vote as a condition of not getting vaccinated (among other possibilities, including attending public meetings, following news about COVID-19, contacting members of Congress, and answering polls). Relative to the *Control*, *STW* respondents were roughly 6.5 percentage points more likely to specifically mention voting among these choices ($p < 0.05$). Results for Republicans alone were similar, exhibiting a 7.2 percentage-point increase relative to *Control* ($p = 0.05$) and a 5.3 percentage-point increase relative to the Elite Cue treatment ($p = .08$). In total, 62% of Republicans in the *STW* condition correctly selected that unvaccinated people might not “be able to get out and vote in upcoming elections,” indicating satisfactory attentiveness.

We also conducted balance tests to ensure that random assignment was successful. Specifically, we employed a multinomial logistic regression model, which regressed the trichotomous indicator of experimental condition (*Control*, *EC*, or *STW*) onto ideological self-placement (ranging from “very liberal” to “very conservative”), household income, education level, age, racial identification (nonwhite vs. white), gender identification, and region of residence (Northeast, Midwest, South, or West).

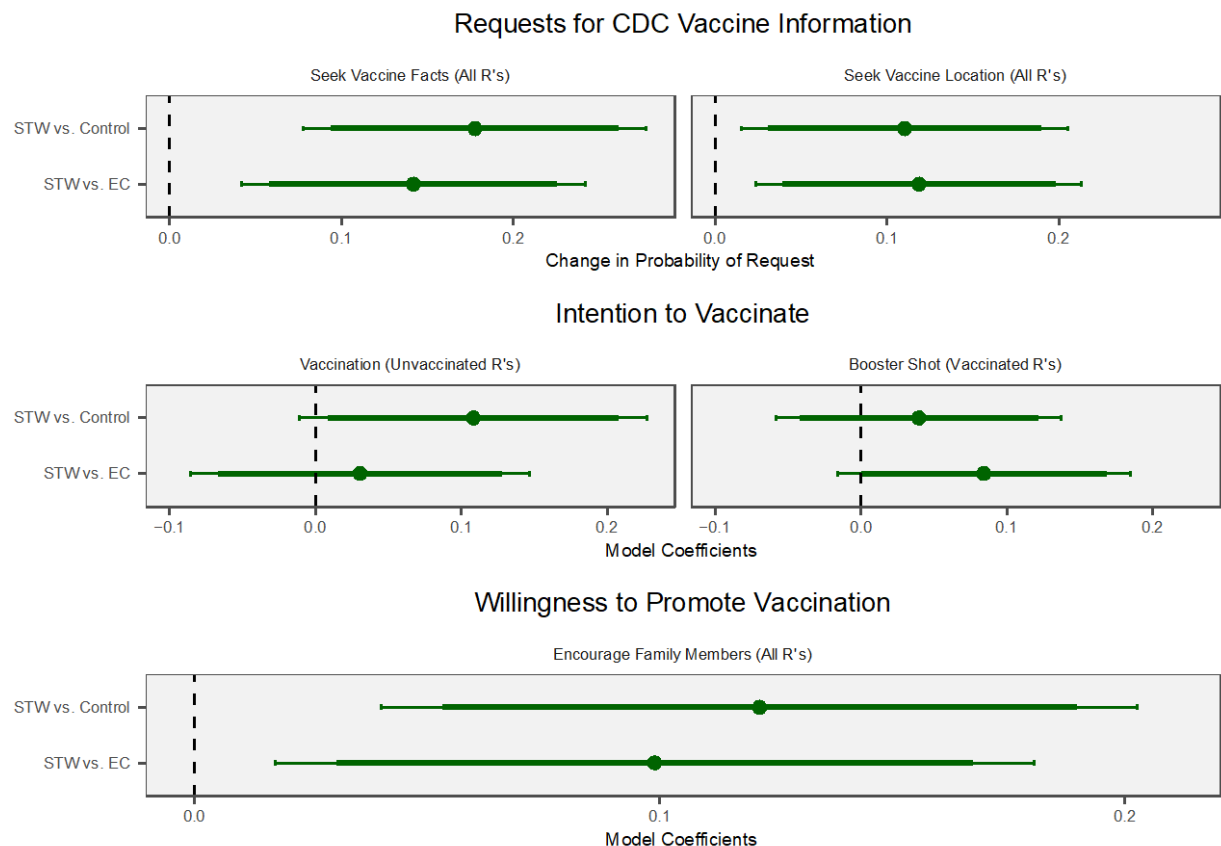
⁶ All reported p-values are based upon 1-tailed tests given directional expectations.

⁷ As a further robustness check for Republican respondents, the two SMCs were combined into a single additive scale ($r = .84$ ($p < .001$)). The *STW* treatment relative to *Control* (*EC*) predicts an increase of 9 (6) percentage points, with $p < .01$ ($p < .05$).

For the sample as a whole, this model yielded a non-significant χ^2 statistic ($p=.498$), with no variables being significantly predictive of treatment assignment at the $p<.05$ level. For Republican respondents only, this model was again non-significant ($p=.392$), though there was some evidence that respondents located in the Midwest and South were slightly more likely to be in the *STW* condition than in the *Control* condition. However, when the main results were re-analyzed with statistical controls for regional location, the estimated effect sizes did not meaningfully change compared to those reported in the manuscript (in fact, treatment effect estimates tended to be slightly larger when controlling for regional location).

Turning to the results of our experiment, we consistently find that the Shot to Win (*STW*) condition is capable of increasing Republicans' openness towards COVID-19 vaccination. Figure 1 displays the effects of *STW* treatment on Republican respondents. Within each panel of the figure, we see the contrast of *STW* relative to the *Control* (top estimate) as well as to the *EC* treatment (bottom estimate). For every single dependent variable measured in the study, the estimated effect of *STW* framing relative to both the *Control* and *EC* conditions was positively signed, providing strong evidence in favor of **H1**. The top panels indicate that the *STW* treatment motivated Republicans to be substantially more likely to request factual CDC information about the vaccines. This effect was on the order of 18 percentage points versus *Control* and 14 percentage points versus *EC* ($p<.001$ and $p<.01$, respectively). *STW* similarly increased Republicans' demand for CDC guidance on how to locate a vaccine provider: the effect of *STW* was 11 percentage points versus *Control* and 12 percentage points vs. *EC* ($p<.001$ and $p<.05$, respectively). (See SI Appendix F for all regression output.)

FIGURE 1. Effects of STW (vs. EC and Control) Among Republicans



Notes: All outcomes range from 0 to 1. Requests for CDC Vaccine Information outcomes (top row of figures) are based on logistic regression models; all other outcomes are OLS (significance tests were substantively identical when specifying ordered logistic regression models). Total number of Republicans/Republican leaners = 476 (60% of which were vaccinated). All coefficient estimates are reported in Table F1 of the SI document. CIs are 90% (thick bars) and 95% (thin bars).

The center panels of Figure 1 display results for vaccine intentionality. Beginning with the panel on the left, we see that, relative to the *Control*, the *STW* message increases willingness to obtain the vaccine among unvaccinated Republicans by 11 percentage points ($p < .05$). Relative to the *EC* treatment, the estimated effect is again positive (3 percentage points) though not significant at conventional levels ($p = .30$). The center-right panel indicates that, among vaccinated Republicans, the *STW* treatment also increases willingness to obtain a “booster” vaccine. *STW* framing resulted in an 8

percentage-point increase in booster vaccine willingness compared to the *EC* treatment group ($p < 0.05$); a 4 percentage-point increase relative to the *Control* did not attain conventional significance ($p = 0.21$).

Thus, the evidence for STW's effect on vaccine intentionality is weaker than for outcomes involving information requests. As vaccine intentionality is arguably the most consequential outcome featured, several points are worth noting here. First, it stands to reason that this outcome should also be the most difficult to change given that vaccination involves a substantial cost (time, money, anxiety, potential side effects, etc.), hence it perhaps unsurprising that evidence for STW framing is weakest here. Second, the unvaccinated subgroup (center-left panel) is by no means representative of the general population: they are Republicans who, despite pervasive evidence of the virus's threat and regular appeals from public figures to get vaccinated, had still not done so. To the extent this selection effect is occurring, we might expect these respondents' willingness to get vaccinated to be *especially* difficult to influence with a brief vignette. Finally, the center-left and center-right analyses involve different subgroups (respondents were either unvaccinated (left) or vaccinated (right)). This reduction in sample size, of course, results in a loss of statistical power to detect a significant effect. On this point, when we combine the *Get Vaccinated* and *Stay Vaccinated* outcomes to avoid a reduction in a sample size, we are able to estimate more precise effects of STW, yielding effects that (regardless of baseline) are positive and statistically significant (see SI for details).

Turning to the bottom panel of Figure 1, this result demonstrates that *STW* increases Republican willingness to encourage vaccine-hesitant family members to get vaccinated. Relative to the *Control*, *STW* increases this willingness by 12 percentage points ($p < 0.01$). Similarly, the *STW* vs. *EC* contrast in this case was 10 percentage points ($p < 0.01$). Because research shows that encouragement from family members can be a powerful influence for overcoming vaccine hesitancy (Kirzinger, Sparks, and

Brodle 2021), this finding is especially notable insofar as it suggests that the efficacy of *STW* messaging can potentially extend beyond only those who directly received it.

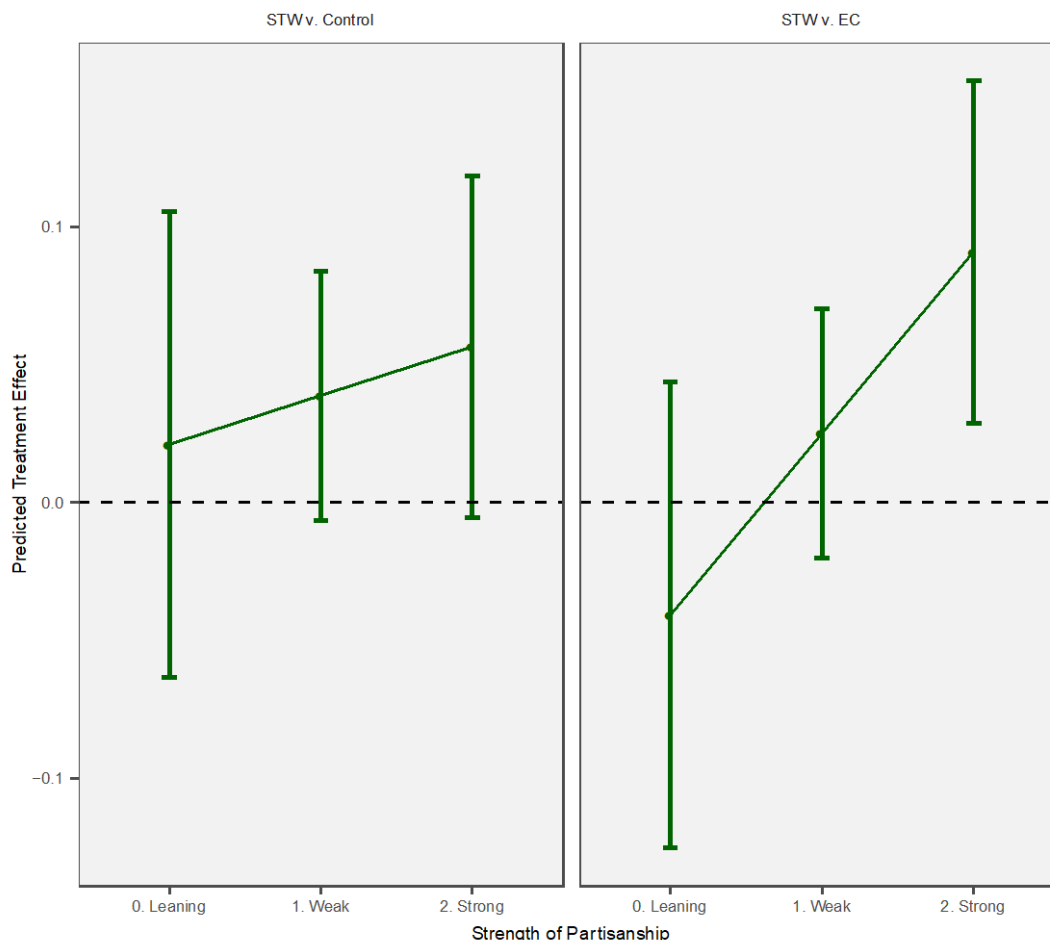
Overall, then, the results for *STW* framing are, in each case, signed in a positive direction (indicating an increase in Republican openness to the COVID-19 vaccine), and typically significant at conventional levels regardless of whether *Control* or *EC* is specified as the baseline. Nevertheless, a series of additional analyses were conducted to examine the robustness of these findings. We feature all details in the SI, but to summarize, we find that: (1) when specifying multivariate regression models that test the effects of STW on all outcomes *jointly*, the resulting *F*-test statistics provide even stronger evidence against the null hypothesis; (2) mediation analyses, combined with sensitivity analyses, provide additional evidence that the STW treatment (vs. EC) affects openness to the vaccine due to its effect on perceived electoral threat, and that these estimated effects would require a reasonably substantial confounder to be spurious; and, (3) tests of alternative mechanisms—namely, that STW increased fear of the virus more than EC, and that the STW vignette (by virtue of higher longer word count) required longer consideration of getting vaccinated—do not find significant support. Of course, while none of these robustness tests is without flaws, taken together, they offer substantial additional evidence that the STW framing is capable of increasing Republicans’ openness to the vaccine via priming concerns about losing elections to Democrats.

A series of exploratory analyses were also conducted to examine whether any substantial moderators were present—namely, respondents’ geographic region and partisan strength. Regional differences in legislative efforts to combat transmission of the virus, for example, suggest that respondents in some areas may simply be less susceptible to framing efforts regarding the vaccine. A simple binary variable was therefore created to measure whether a respondent resides in the U.S. South or not. Second, as the STW treatment directly engages partisan considerations (i.e., winning an

upcoming election), one's partisanship strength may also moderate the effect of STW (weak partisan identifiers, for example, might not be particularly concerned about the opposing party winning an election). Thus, using the 7-point measure of partisanship, respondents were coded as either "leaners" (=1), "partisans" (=2) or "strong partisans" (=3).

Overall, these analyses found that the estimated effects of *STW* framing were not significantly moderated by these partisans' geographic region (South vs. non-South) or partisan strength. A notable exception, however, is for the booster shot outcome: whereas stronger Republican partisanship was associated with lower willingness to obtain the booster shot in the *Control* and *EC* conditions, it was associated with *greater* willingness in the *STW* condition. In line with the logic underlying the *STW* frame, this result suggests that the threat of electoral defeat resonated more strongly with stronger (versus weaker) Republican identifiers (who were already vaccinated), leading to a larger increase in openness to the vaccine booster shot. In Figure 2, below, we demonstrate the treatment effects of *STW* relative to the *Control* (left side of the figure) and the *EC* treatment (right side of the figure), as Republican party identification strengthens. While these findings were not hypothesized in advance and, as such, should be interpreted cautiously, they are nevertheless consistent with our underlying theory: to the extent stronger partisans have a greater desire to win national elections over the opposing party, they should be even more susceptible to frames that emphasize the threat of electoral defeat.

FIGURE. 2. Booster Shot Openness by PID Strength among Republican Identifiers



Notes: Predictions derived from OLS regression models shown in Appendix F. Vertical bars reflect 95% confidence intervals surrounding treatment effect estimates. Republican respondents only (overall N = 476). Outcome ranges from 0 to 1 on continuous scale.

Finally, we conducted the same analyses featured in this study for Democratic respondents. Overall, we do not find consistent evidence that STW framing was capable of changing Democrats' openness to the COVID-19 vaccine, though there is some evidence that STW modestly increased Democrats' willingness to obtain a booster shot and encourage family members to get vaccinated. While we cannot confidently speak to why this asymmetry with Republican respondents is occurring, we wish to note several possible explanations. First, the limited effects of STW on Democratic respondents are

likely due, at least in part, to their already high openness to the COVID-19 vaccine in the control condition. A ceiling effect, in other words, likely poses a far greater challenge for STW's effectiveness for Democratic respondents vis-à-vis Republican respondents. Second, and related to the previous point, Democrats who were not open to the vaccine at the time of the study—i.e., the Democrats who could potentially be affected by STW framing—were likely to be relatively resistant to framing attempts. Specifically, given the widespread support of the vaccine and other efforts to counter COVID-19 among Democratic citizens and lawmakers, any self-identified Democrat who was resistant to the vaccine at the time of the study was likely rather resolute in their opposition and, therefore, difficult to persuade with a brief experimental vignette. Lastly, to the extent that Democrats systematically differ from Republicans—e.g., exhibiting less loyalty to party and concern about in-group norms (e.g., Cayton and Dawkins 2022)—we might reasonably expect that an appeal to avoid an electoral loss for the group would simply not carry the same weight that it does for Republicans. That said, we also do not find any evidence that stronger Democrats (i.e., those who likely care most about Democratic electoral victory) responded any more strongly to the STW treatment than weaker Democrats.

DISCUSSION & FOLLOW-UP STUDY

Overall, then, the results for *STW* framing are, in each case, signed in a positive direction (indicating an increase in Republican openness to the COVID-19 vaccine), and typically significant at conventional levels regardless of whether *Control* or *EC* is specified as the baseline. A series of manipulation checks and robustness tests (see the SI) provide further evidence for *Shot to Win* (STW) framing's effect on perceived electoral threat and, as a consequence, openness to vaccination. Though the evidence is somewhat more muted for vaccine intentionality (though see Appendix G), outcomes that could be thought of as intermediate steps toward getting vaccinated—

i.e., learning more information about the vaccine and where to obtain it—do find substantial support.

Naturally, because our outcome was measured contemporaneously with the treatment, it is likely that the effect of the STW frame will dissipate over time, perhaps most likely for those who will encounter counteractive framing in their respective information environment (e.g., Lecheler and de Vreese 2011). Second, it is also worth noting that partisan attitudes toward COVID-19 and the vaccine were already quite entrenched by the time our experiment was fielded. This implies that our test of STW may have been a conservative one insofar as Republican respondents had already been exposed (at the time of our study) to a wealth of communications instilling skepticism of the COVID-19 vaccine.

In light of our first experiment’s findings, we fielded a follow-up experiment in February of 2023 via Lucid (see Coppock & McClellan, 2019), shortly after the U.S. midterm elections in November of 2022. The experiment was nearly identical to the one described above, edited largely in terms of dates, references to upcoming elections, and stressing the need to not only receive the vaccine but also remain vaccinated (this is because booster shots were more widely available than during the first survey). As in the first study, we included a manipulation check. Specifically, we asked Republicans ($n = 1,184$) about the degree to which they thought it was likely that, “if other voters in your political party continue to refuse to get the COVID-19 vaccine, how likely is it that your party will lose the 2024 Presidential election?” As in the above experiment, our manipulation was designed such that, when Republicans were assigned to the *STW* condition (compared to either of the other conditions), perceived likelihood of electoral loss in 2024 was designed to *increase*. However, we did not find this to be the case. In other words, the manipulation itself failed (e.g.,

Mutz & Pemantle, 2015).⁸ Consequently, we do not find that the treatment exerted any significant increases in Republicans' vaccine openness.

Given recent research on the increase in inattentiveness among Lucid respondents since the onset of the coronavirus (Peyton, Huber, and Coppock 2022), we investigated whether the effect of the *STW* treatment on the manipulation check was significant among the more attentive (Kane, Velez, and Barabas 2023). It was not (see Supplemental Appendix H for additional details).

The failed manipulation check suggests that, perhaps because the study was fielded shortly after the U.S. midterm elections (in which Republican candidates performed poorly relative to expectations (Kapur 2022)), the threat of losing upcoming elections to Democrats was essentially moot. To the extent this is true, it would represent a clear case of a “pre-treatment effect” undermining our experiment (see Druckman and Leeper 2012).

More broadly, it may be that, on the issue of COVID-19, respondents in our second study were less susceptible to framing effects given the historic amount of coverage this issue has received since the first study was fielded. Corroborating this latter supposition, we also find that the *Elite Cue* treatment—which prior research has found to substantially and statistically significantly increase vaccine openness (Larsen et al. 2023; Pink et al. 2021)—never exerted a significant effect upon any of the outcome measures. When viewed in light of our first study's results, it appears that for large crises, some framing efforts may be more context-dependent than scholars have previously acknowledged. While citizens can, at times, be persuaded to change their attitudes and behavior by cues from elites and cues invoking polarization, it is possible that a combination of pre-treatment, issue fatigue, and/or attitude crystallization eventually constrains

⁸ The manipulation also failed among Democratic respondents.

public susceptibility to cues and other framing efforts. Future research would do well to examine how context can impact framing efficacy, particularly on issues of major national importance.

CONCLUSIONS

Despite efforts to the contrary by public health officials, vaccination is becoming an increasingly politically contested issue in the United States. Although many reasons may underlie this trend, opposition to vaccination is coming to possess a symbolic significance among right-leaning populists (e.g., Sharfstein et al. 2021). The correspondent growth of vaccine hesitancy has created dilemmas for state governments in recent times, as political forces swell in opposition to vaccine mandates and public health decrees. The result has been not only a poor record for the United States in handling the COVID-19 crisis relative to other countries, but the unfortunate reemergence of viral diseases that are rarely contracted in contemporary times. The coalescence of anti-vaccine politicians and citizens around this issue requires urgent scholarly attention—especially from scholars of political communication and framing.

Our findings offer several important implications for this emergent issue. First, our results suggest that, insofar as Republican elites grapple with the unpopularity of pro-vaccine messages among their constituents, the anti-out-party nature of shot-to-win (*STW*) framing could allow elected officials to openly advocate for vaccination while avoiding threats from anti-vaccination primary challengers who might otherwise accuse such appeals as being insufficiently loyal to the party. This provides a potential means of addressing urgent public health priorities, including COVID-19—which will likely remain so for years to come given the likelihood that new variants of continue to emerge. Facilitating vaccine promotion among Republican elites is vital for boosting Republican citizens' vaccination rates,

as rank-and-file voters are increasingly attentive to co-partisan message senders (Broockman and Ryan 2016).

More broadly, our findings offer an example of how extant partisan divisions can be leveraged in the service of pro-social behavior—an important possibility in contexts where attempts to foster public solidarity falter. The present results specifically show that the threat of electoral loss is a powerful psychological tool for partisan communicators. Electoral loss activates deep anxieties among rank-and-file partisan adherents and, thus, spurs them to consider behaviors that they might otherwise avoid. The key mechanism for our proof-of-concept, we argue, is the realistic connection between vaccination and election outcomes: insofar as vaccination serves to ensure that citizens remain healthy enough to actively engage in political events (e.g., elections), vaccination can be framed as a way of protecting the in-party from electoral defeat to the out-party.

It is not currently well known how this type of messaging might feed back into partisans' antipathy towards each other. Thus, we acknowledge that there are important ethical questions that naturally arise when employing such a strategy, and that such questions deserve further consideration and discussion in future work.

Nevertheless, this article's findings suggest that messaging that leverages—rather than circumvents—partisan antipathy may be useful to employ when public outcomes require urgent solutions and conventional, non-partisan messaging is no longer efficacious. Given the severity of the COVID-19 pandemic and the need for the public to remain open to not only COVID-19 vaccination, but also a variety of other vaccinations in coming years, our results suggest that such an approach may be an appropriate and effective tool for elites hoping to increase support for vaccines among the party rank-and-file.

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