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Political Polarization and Healthcare Decision-Making: Evidence from a Vaccine Experiment

Brandyn F. Churchill, Xiaoxue Sherry Gao, Rong Rong*

ABSTRACT

Policymakers try and alter health behaviors through information campaigns, yet their effectiveness depends on how the information compares to viewers' initial beliefs and their perceptions of its value. We experimentally test whether political identity influences how individuals respond to information about the COVID-19 vaccine. We find that Democrats and Republicans similarly overestimated the frequency and severity of COVID-19 infections, as well as the Republican vaccination rate. Participants were not better at predicting the COVID-19 experiences of their concordant party. However, participants who learned they had underestimated the discordant party vaccination rate were more likely to report an intent to vaccinate.

JEL Codes: I12; I18; C93; D83; H51
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* Churchill is an Assistant Professor of Public Administration and Policy at American University, bchurchill@american.edu. Gao is an Assistant Professor of Resource Economics at University of Massachusetts Amherst, sherrygao@resecon.umass.edu. Rong is an Associate Professor of Resource Economics at University of Massachusetts Amherst, rrong@umass.edu. This study was approved by IRB at the University of Massachusetts Amherst (#5395) and pre-registered at Open Science Framework, https://osf.io/qnre7. All errors are our own.

1. Introduction

The United States has experienced a rapid increase in political polarization over the last several decades (Pew Research 2014; Gentzkow et al. 2019) with Democrats and Republicans reporting clear disagreements about most policy issues (Dias and Lelkes 2022; Gallup 2023). Yet this partisan divide is also present for less obviously political aspects of daily life, including where individuals acquire information (Martin and Yurukoglu 2017; Angelucci and Prat 2024), their attitudes toward risk (Bernstein et al. 2022; Engelberg et al. forthcoming), and even their healthcare decision-making (Subramanian and Perkins 2010; Shin and McCarthy 2013). This latter fact was highlighted during the COVID-19 pandemic when Democrats and Republicans disagreed on both the severity of the pandemic (de Bruin et al. 2020; Milosh et al. 2021; Globig et al. 2022) and the appropriateness of government interventions intended to mitigate it (Grimalda et al. 2023; Hansen and Mano 2023). One of the more contentious areas of partisan disagreement involved government efforts to increase take-up of the COVID-19 vaccine (Sehgal et al. 2022; Facciani et al. 2023), in part due to an existing divergence in views on the benefits of vaccination (Sharfstein et al. 2021; Estep et al. 2022).

Vaccination is a textbook example of a positive externality. Individuals who receive a vaccine enjoy private benefits – through reductions in the likelihood of contracting an infection and disease severity – but also generate social benefits by reducing the transmission rate and lowering healthcare costs (Bärnighausen et al. 2014; White 2021). However, individuals will not fully account for these social benefits when weighing their decisions about whether to receive a vaccine, resulting in a vaccination rate below the social optimum. To address this market imperfection, governments have adopted a variety

of strategies to increase vaccination rates, including for COVID-19. For example, during the pandemic, the U.S. federal government ensured that COVID-19 vaccines were available free of charge (Kaiser Family Foundation 2024) and explicitly mandated vaccination for certain federal employees (White House 2021). Additionally, governments and public health agencies sought to increase awareness about the benefits of vaccination through public information campaigns (Dhama et al. 2021; Schoch-Spana et al. 2021). Indeed, launching an information campaign is one of the most common approaches to try and alter health behaviors.[1]

Despite widespread use, it is not theoretically clear that information campaigns will have their intended effects on individual behavior. For one, the size of the effect can depend on the medium through which the message was conveyed (Ortega and Scartascini 2020) and the degree to which recipients relate to and trust the source of the information (Bargain and Aminjonov 2020; Alsan and Eichmeyer 2024). Moreover, it is possible for a campaign to have an effect opposite the intended direction depending on how the new information compares to individuals' initial health beliefs (Viscusi 1990; Arni et al. 2021). For example, consider two individuals deciding whether to receive a COVID-19 vaccine. The first person believes that only 10 percent of people will contract the disease during the year, while the second person believes that 40 percent of people will contract it. An information campaign informing them that 20 percent of people contract COVID-19 will serve as a positive information shock to the first person who may subsequently decide to get

[1] Researchers have studied information campaigns regarding tobacco use (Hsieh et al. 1996; DeCicca et al. 2007), drug use (Anderson 2010), HIV/AIDS (de Walque 2007; Dupas 2011), antibiotic use (Filippini et al. 2013), breast cancer screening (Jacobsen and Jacobsen 2011), and pollution (Barwick et al. 2024), among other topics.

vaccinated. However, this same information will serve as a negative information shock to the second person who may be discouraged from vaccinating.

In this paper, we provide novel evidence on the importance of political identity in healthcare decision-making. Using an online research platform, we elicited health beliefs from 579 participants, half of whom identified as Democrats and half of whom identified as Republicans. Participants were asked to make predictions about the COVID-19 experiences of individuals over the prior 12 months, including (i) the share who had a COVID-19 infection, (ii) the share of those infected who required medical intervention, (iii) the share receiving a COVID-19 vaccine, (iv) the share of those vaccinated experiencing vaccine side effects, and (v) the share of those vaccinated who reported doing so primarily to protect others. Approximately half of the participants were asked to make predictions about Democrats, while the other half were asked to make predictions about Republicans. We then randomly revealed to each participant the actual share corresponding to one of the five beliefs that we obtained from a pre-experiment survey of 100 Democrats and 100 Republicans, and we conceptualize this reveal as an "information shock" that depends on both the participants' initial beliefs and the concordance between their own political affiliations and the political identity serving as the basis for the reveal.

There is substantial variation in individual predictions for all five shares, regardless of political affiliation, highlighting the potential differential effects of information campaigns among the intended population. On average, we show that Democrats and Republicans similarly overestimated the frequency and severity of COVID-19 infections.[2]

[2] In related work, Abel et al. (2021) found that individuals overestimated their own COVID-19 risk, as well as the risk faced by young people. However, they also found that individuals underestimated the risk faced by older adults.

While members of both parties accurately predicted the share of Democrats who had received a COVID-19 vaccine, participants overestimated the share of vaccinated Republicans by 11-12 percentage points. We also find that Democrat and Republican participants underestimated both (i) the share experiencing side effects following vaccination and (ii) the share of vaccinated individuals who reported doing so to protect others. Overall, there is little evidence that participants did a better job at predicting the COVID-19 experiences of members of their own political party compared to the experiences of members of the opposite political party.

Next, we document a positive relationship between the vaccination rate information shock and the likelihood that participants reported an intent to receive a COVID-19 vaccine. Participants who had initially underestimated the share of individuals vaccinated against COVID-19 – and therefore received a positive information shock – were subsequently more likely to report that they intended to receive a vaccine. Likewise, those who had overestimated the share were less likely to report that they intended to vaccinate. This pattern is consistent with evidence that individuals were more likely to report an intention to vaccinate after learning about the share of people within their country willing to accept a COVID-19 vaccine (Moehring et al. 2023). Interestingly, we show that the relationship was driven entirely by participants learning about the vaccination rate among members of the opposite political party. In conjunction with our finding that individuals generally overestimate vaccination rates, our results suggest that efforts to inform the public about low vaccination rates may inadvertently discourage vaccine take-up. Finally, we do not find evidence of a relationship between any of the other four information shocks and participants' vaccination intentions, regardless of political concordance.

We contribute to several notable literatures. By providing the first causal evidence that individuals respond differently to healthcare-related information based on political concordance, we add to a body of work studying how information and health beliefs influence individuals' healthcare decisions (Thornton 2008; Oster et al. 2013; Hoy et al. 2014; Kim et al. 2019; Derksen et al. 2022). Our findings also build on prior work on how political polarization affects how individuals acquire and process information (DellaVigna and Kaplan 2007; Gentzkow and Shapiro 2010; Allcott and Gentzkow 2017; Levy 2021; Bowen et al. 2023). Finally, we most directly add to a growing literature studying the economic and policy determinants of vaccination (Ward 2014; Oster 2018; Carpenter and Lawler 2019; Alsan et al. 2019; Churchill 2021; Humlum et al. 2024).

The rest of the paper proceeds as follows: Section 2 reviews the existing literature on the role of information and political polarization in shaping healthcare decision-making, particularly with regards to vaccination. Section 3 details the pre-experiment survey we used to obtain COVID-related information by political affiliation, our method for eliciting health beliefs, and our empirical strategy for exploring whether individuals differentially respond to information shocks based on the experiences of those of the same or opposite political party. Section 4 reports our results, while Section 5 discusses the implications and limitations of our results and suggests avenues for future research.

2. Existing Literature

This paper builds on a broad literature studying the roles of information and beliefs in healthcare decision-making (Ganguly and Tasoff 2017; Miller and Tucker 2018; Schwardmann 2019; Iizuka et al. 2021), which has shown that both patients' (Lange 2011; Godlonton and Thornton 2013; Arni et al. 2021) and physicians' beliefs (Alexander and

Christakis 2008; Epstein and Nicholson 2009; Singh 2021) are important determinants of healthcare utilization and health behaviors. Yet healthcare utilization may in turn influence health beliefs. Leveraging a natural experiment in the United Kingdom where individuals could choose to receive a COVID-19 vaccine without picking a particular brand, Prati and Saucet (2024) found that, prior to vaccination, patients held similar views of the Pfizer and Moderna vaccines. However, after vaccination, they were more likely to favorably update their beliefs about the vaccine brand they had received and incorrectly reported that they had held the beliefs the entire time.

By showing that individuals update their beliefs differently depending on whether the new information pertains to members of the same or opposite political party, we add to a rich literature highlighting the importance of political polarization in shaping how individuals acquire and process information (Bernhardt et al. 2008; Campante and Hojman 2013; Halberstam and Knight 2016; Charness et al. 2021). We also build on literature documenting the consequences of polarization for economic outcomes (Duell and Valasek 2019; Coibion et al. 2020; Bertrand and Kamenica 2023), including health (Hersh and Goldenberg 2016; Painter and Qiu 2021; Ash et al. 2023). Indeed, Allcott et al. (2020) found that Republicans believed that the COVID-19 pandemic was less severe than Democrats, and several papers have found that political attitudes are associated with differences in vaccination rates (Suryadevara et al. 2019; Krupenkin 2021). Conducting a large-scale survey experiment in Turkey, Kaba et al. (2024) documented a strong correlation between political identity and whether individuals held pro- or anti-vaccine beliefs toward the COVID-19 vaccine. They then showed that pro- and anti-vaccine groups

held negative views of each other, but that messaging appealing to shared social identities mitigates outgroup discrimination.

Most directly, we add to a growing body of work exploring the economic determinants of vaccination. Part of this literature has shown that reducing cost-sharing increases vaccine take-up (Bouckaert et al. 2020; Churchill and Henkhaus 2023; Humlum et al. 2024), though there is mixed evidence whether monetary incentives do (Alsan et al. 2019; Campos-Mercade et al. 2021) or do not increase vaccination rates (Chang et al. 2023). There is also evidence that individuals are more likely to get vaccinated when they are more aware of the benefits of vaccination, either due to increased salience generated by disease outbreaks (Oster 2018; Schaller et al. 2019; Giulietti et al. 2023), prior infection (Jin and Koch 2021), or government recommendations (Ward 2014; Lawler 2017, 2020; Churchill et al. forthcoming). Indeed, messaging emphasizing personal health benefits is predictive of COVID-19 vaccination (Ashworth et al. 2021; Kaplan and Milstein 2021), though there is evidence that Republicans are also motivated by economic considerations (Zhong and Broniatwski 2023). In a particularly relevant study, Alsan and Eichmeyer (2024) experimentally showed that racially concordant non-experts were most effective at promoting influenza and COVID-19 vaccination intent among Black men in the U.S. without a college degree.

Individuals' vaccination decisions appear to also be related to the vaccination decisions of others. In a working paper, Rao et al. (2017) leveraged variation in resident hall assignment and found that students with friends in residential halls with influenza vaccination clinics were themselves more likely to receive a flu vaccine. Yet people also appear to be influenced by the vaccination behaviors of those outside their immediate social

network. Moehring et al. (2023) found that presenting people with normative information on the share of respondents in their country willing to accept a COVID-19 vaccine increased their vaccination intentions, and there is evidence that people vaccinate in hopes of influencing others to do the same (Esguerra et al. 2023). Finally, several papers have shown that school (Abrevaya and Mulligan 2011; Carpenter and Lawler 2019; Churchill 2021; Hair et al. 2021) and employer vaccination requirements (Wen 2020; White 2021) increase vaccination rates, including in the context of the COVID-19 vaccine (Karaivanov et al. 2022; Acton et al. forthcoming).

3. Experimental Design and Empirical Approach

3.1 Pre-Experiment Survey

We conducted a pre-experiment survey on Prolific of 100 Democrats and 100 Republicans about their experiences with COVID-19 during the prior 12 months. Prolific is an online platform connecting researchers with study participants that is increasingly being utilized within experimental economics (Adena and Harke 2022; Butera et al. 2022; Brañas-Garza et al. 2023; Grodeck and Grossman 2024). For our purposes, a key advantage of Prolific is that it allows researchers to recruit individuals based on a variety of characteristics, including political affiliation. We recruited individuals who resided in the United States and were registered Democrats or Republicans. Given the seasonality of COVID-19 infections (Sajadi et al. 2020; Shamsa et al. 2023; Wiemken et al. 2023), we collected responses from May 12th through May 16th of 2024, so that individuals were more likely to remember their recent experiences with the virus. The survey was estimated to take ten minutes, and participants earned $3 for completing it (i.e., the survey had an estimated hourly wage of $18). The survey is included as Appendix A.

We asked respondents (i) whether they had tested positive for COVID-19 (either using an at-home test or at a physician's office), (ii) whether they had required medical intervention for a COVID-19 infection (either visiting a physician to address the symptoms or receiving an anti-viral prescription, such as Paxlovid, Veklury, and Lageviro, to treat the infection), (iii) whether they had received a COVID-19 vaccine (either an initial shot or a booster), (iv) whether those who had received a COVID-19 vaccine had experienced side effects from vaccination, and (v) to rank seven potential reasons for receiving the vaccine in terms of their importance from 1 to 5, with higher numbers indicating a higher importance and ties being permitted.[3] Only those who reported a COVID-19 infection were asked about whether they required medical intervention to manage the infection. Likewise, only those who reported receiving a COVID-19 vaccine were asked whether they had experienced side effects and about their motivation for getting vaccinated. We classified individuals as vaccinating to protect others if they ranked "Protecting Others Within My Household" or "Protecting Others Outside My Household" among the most important reasons that they decided to vaccinate.

Table 1 reports the shares from our pre-experiment survey. We find that Democrats and Republicans reported similar infection and severity rates. Approximately 20 percent of individuals reported testing positive for COVID-19 during the prior 12 months, while a quarter of those infected reported seeking medical care to manage the infection. Yet there are stark differences in vaccination by political identity. While 46 percent of Democrats reported receiving a COVID-19 vaccine during the prior 12 months, only 28 percent of

[3] We provided individuals with a list of common side effects and adverse events compiled by Centers for Disease Control and Prevention (https://www.cdc.gov/vaccine-safety/vaccines/covid-19.html). However, we also allowed individuals to list additional side effects via an "Other" option.

Republicans reported doing the same. These shares are consistent with the Household Pulse Survey cycle where almost 40 percent of respondents reported receiving a recent COVID-19 vaccine.[4] Among those receiving a COVID-19 vaccine, over 80 percent of both Democrats and Republicans reported experiencing vaccine side effects, a figure that is consistent with clinical trial evidence (Baden et al. 2021) and later surveys of vaccinated individuals (Cohen et al. 2022; Dhamanti et al. 2023).[5] Finally, we found that 72 percent of vaccinated Democrats and 64 percent of vaccinated Republicans said that protecting others was among the most important factors in their vaccination decision.

3.2 Experiment

We ran an experiment on Prolific designed to elicit participants' beliefs on five COVID-related topics through a series of betting tasks. Specifically, we sought to learn participants' views on the likelihood of (i) contracting COVID-19, (ii) requiring medical intervention conditional on contracting COVID-19, (iii) others being vaccinated against COVID-19, (iv) experiencing side effects after receiving a COVID-19 vaccine, and (v) others receiving a COVID-19 vaccine to protect others.[6] Because our aim was to understand how individuals' beliefs are influenced by the experiences of members of the same and opposite political parties, we had four treatment groupings (i.e., Democrats asked about Democrats,

[4] In the Household Pulse Survey cycle that overlaps with our sample period (April 30th – May 27th), 42,447,950 individuals (23.2 percent) reported receiving a COVID-19 vaccine since September 2023. An additional 30,153,286 individuals (16.4 percent) reported receiving a vaccine between September 2022 and September 2023.

[5] For example, Cohen et al. (2022) surveyed employees at a large academic health center and found that 13.0 percent of those vaccinated experienced no side effects, 65.2 percent experienced minor side effects, 20.0 percent experienced moderate side effects, and 1.7 percent experienced severe side effects. The patterns were similar for the second dose.

[6] Prior work suggests that individuals' behaviors are more responsive to changes in risk perceptions, as opposed to the mathematically equivalent changes in COVID-19 case counts (Heffetz and Ishai 2021).

Democrats asked about Republicans, Republicans asked about Democrats, and Republicans asked about Republicans).

We recruited participants from August 1st through August 4th of 2024, prior to the start of the traditional COVID-19 vaccination season, when individuals were likely to be weighing whether to receive a COVID-19 vaccine. We had 598 participants complete the experiment. However, we excluded 19 individuals whose self-reported political affiliation was inconsistent with their Prolific registration.[7] The experiment was expected to take 30 minutes. All participants earned a fixed payment of $5, though participants could earn an additional $10, depending on the accuracy of their prediction and a randomization process (for a total of $15, or an hourly rate of $30). Importantly, this later reward was designed so that individuals' payoffs were maximized when they revealed their beliefs truthfully (i.e., it was incentive compatible), which has been shown to yield beliefs that better explain the relevant decisions than those elicited using only a fixed payment (Gächter and Renner 2010; Wang 2011; Schlag et al. 2015; Trautmann and van de Kuilen 2015).

To elicit the beliefs, we asked participants to bet on whether a randomly selected respondent from our pre-experiment survey had answered "Yes" or "No" for each of the five questions. The participants placed their bets by allocating 100 tokens between these two outcomes, and their allocations determined the chances of receiving the additional $10 bonus payment depending on whether the randomly drawn respondent had answered "Yes" or "No" (Hossain and Okui 2013; Schlag and van der Weele 2013). Under this procedure, known as the Binarized Scoring Rule, participants maximize their payoffs by allocating

[7] This includes 11 individuals registered on Prolific as Democrats who self-identified as independent (6), Republican (3), and "None of the above" (2). This also includes 8 individuals registered on Prolific as Republicans who identified as independent (4), Democrat (3), and "Other" (1).

their tokens in a way such that the percentage of tokens allocated to "Yes" is equal to their subjective belief about the percentage of "Yes" responses in the pre-experiment survey. To reduce the cognitive burden required for participants to understand the incentive structure (Danz et al. 2022), we presented payoffs using a visual interface whereby participants used a slider to allocate tokens and instantly saw the calculated payoffs displayed as an intuitive bar chart (Anderson et al. 2014). We allowed participants to familiarize themselves with this interface using a practice bet, and we followed the recommended best practice and emphasized that participants were best off allocating their tokens based on their true beliefs (Haaland et al. 2023).[8]

We report summary statistics in Table 2.[9] Column 1 reports statistics for the full sample, column 2 for Democrats, and column 3 for Republicans. Similar to prior work (Alsan and Eichmeyer 2024), we find that almost 38 percent of participants reported an intent to receive a COVID-19 vaccine. However, this figure masks substantial heterogeneity by partisan affiliation. On average, Democrats were considerably more likely to report an intention to receive a COVID-19 vaccine (50 percent vs. 25 percent). Consistent with our pre-experiment survey, we find that over 40 percent of Democrats reported previously receiving a COVID-19 vaccine compared to approximately 30 percent of Republicans. We also find that, while both Democrats and Republicans had similar predictions about the share of individuals contracting COVID-19, Republicans predicted a higher severity rate among those infected than Democrats. We also find that Republicans

[8] The interface is shown in Appendix Figure B1.
[9] We report additional summary statistics in Appendix Table B1.

predicted a higher vaccination rate than Democrats, while Democrats predicted a higher side effect rate among the vaccinated than Republicans.

To assess whether these aggregate summary statistics mask heterogeneity by political concordance, Figure 1 shows distribution of the five beliefs for each of our four political groupings. For reference, the black line denotes the actual share from the pre-experiment survey. We also report the average prediction errors in Table 3. A few patterns emerge. Participants from both parties generally overestimated the likelihood of contracting COVID-19 and the severity of infections. For example, Democrat and Republicans both predicted that over 40 percent of Democrats had contracted COVID-19 during the prior 12 months – an approximate 25 percentage point overestimation compared to the figure obtained in our pre-experiment survey (Panel A column 1). Likewise, both Democrats and Republicans overestimated the share of Republicans who had been infected by almost 20 percentage points (Panel B column 1).

Participants were most accurate when predicting the share of Democrats who had received a COVID-19 vaccine during the prior 12 months (Panel A column 3), though members of both parties overestimated the share of Republicans who had received a vaccine by 11-12 percentage points (Panel B column 3). Yet, participants generally underestimated the share of both Democrats and Republicans who reported experiencing side effects following their COVID-19 vaccination (Panels A and B column 4), as well as the share of individuals who reported "protecting others" as a key driver in their decision to receive a COVID-19 vaccine (Panels A and B column 5).[10] Interestingly, we show in

[10] Appendix Table B2 reports the predictions errors overall and by political concordance without separating out predictions for Democrats and Republicans.

Appendix Figure B2 that participants did not have statistically more accurate predictions for members of their same political party.

After we elicited each participant's initial health beliefs, we randomly selected one of the five beliefs to be used to calculate payment. We then selected a random respondent from the pre-experiment survey and used the corresponding response (i.e., "Yes" or "No") to determine the participant's payment. Participants were informed of the randomly drawn response, their payments, and – importantly for identification – the actual percentage of respondents coded as "Yes" in the pre-experiment survey for the randomly selected question. After revealing this information, participants were asked to complete the questionnaire from the pre-experiment survey that also asked whether they intended to receive a COVID-19 vaccine in the next 12 months. While we do not have information on whether participants eventually received a COVID-19 vaccine, prior evidence shows that vaccine intent is predictive of vaccination status (Moehring et al. 2023).

3.3 Empirical Approach

We conceptualize the step in our experiment where one of the actual figures from the pre-experiment survey was revealed to the participant as an "information shock" that depends not only on the actual percentage in the randomly selected question but also on the participant's initial belief (Cruces et al. 2013). Let us modify our prior example such that a participant believed that 40 percent of Republicans had received a COVID-19 vaccine during the prior 12 months. In our pre-experiment survey, only 28 percent of Republicans reported receiving a COVID-19 vaccine, so the participant is revealed to have overestimated the share who were vaccinated by 12 percentage points. However, had the participant's initial belief been that 20 percent of Republicans were vaccinated, the

participant would have underestimated this share by 8 percentage points. As such, the "information shock" is the negative of the degree to which participants learn that they had overestimated or underestimated the relevant shares (i.e., individuals overestimating the share experienced a negative information shock, while those underestimating the share experienced a positive information shock).

Figure 2 plots the distributions of initial beliefs among the subset of participants who were later revealed the corresponding share from our pre-experiment survey. Due to random assignment, the number of participants who received each of the information shocks varied slightly. We also report the average prediction errors for these subgroups in the final two panels of Table 2. Reassuringly, the average prediction errors for participants who were revealed the actual shares (Panels C and D) are generally consistent with the average prediction errors for the full sample (Panels A and B). Meanwhile, Figure 3 shows the share of participants who reported an intent to receive a COVID-19 vaccine separately by the information category that was revealed to them. Participants who learned the COVID-19 vaccination rate were the least likely to report an intent to receive the vaccine, while those who learned the side effect rate were the most likely.[11]

To estimate the relationship between the information shock and the subsequent decision whether to receive a COVID-19 vaccine, we estimate the following equation:

$$VAX_i = \alpha + \sum_{b=1}^{5} \beta_b \cdot INFO_{bi} + X_i'\gamma + \varepsilon_i \quad (1)$$

where the dependent variable is an indicator for whether the respondent, *i*, reported an intention to receive a COVID-19 vaccine.[12] The independent variables of interest denote

[11] Appendix Figure B3 reports these shares based on the political concordance of the information shock.
[12] While we report estimates obtained using ordinary least squares to facilitate a straightforward interpretation of the coefficients, we also report results estimated using a logistic model in the appendix.

the size of the information shock that the respondent received regarding belief *b*. For participants who were revealed the actual value corresponding to belief *b* in the pre-experiment survey, this is the difference between the revealed value and their initial belief. For those who were not revealed the value of belief *b*, this variable is zero. For the belief elicitation tasks to have remained incentive compatible, every participant had to receive an information shock related to one of the beliefs. As such, our coefficients of interest are identified by comparing participants who received a non-zero information shock to participants whose prior health beliefs matched the actual share from our pre-experiment survey.[13]

We include a vector of pre-registered individual-level characteristics, X, to increase the precision of our estimates and account for any incidental differences between the treatment groups. Specifically, we include age and age squared, as well as indicators for race/ethnicity (Black, Hispanic, white, with all others omitted), gender (male with non-male omitted), educational attainment (less than high school, some college, with college graduate omitted), income level (less than $50K, $50K-$100K, with $100K+ omitted), whether there is an elderly individual within the household, whether the participant reported having health insurance coverage, whether the participant reported having a primary care physician, and whether the participant had previously opted to receive a COVID-19 vaccine. However, we show in the appendix that our results are robust to excluding these covariates.

[13] In this sense, our study is similar to Alsan and Eichmeyer (2024) who compared the effects of receiving health messaging from non-experts to the effects of receiving messaging from experts without including a pure control group that did not receive any messaging.

To explore the role of political identity in shaping health beliefs, we leverage the fact that some participants were revealed information based on the experiences of members of their concordant political party, while others were revealed information based on the experiences of those in the discordant party. As such, we estimate the following pre-registered specification:

$$VAX_i = \alpha + \sum_{b=1}^{5} \beta_b \cdot \text{INFO FROM SAME PARTY}_{bis} + \sum_{b=1}^{5} \delta_b \cdot \text{INFO FROM OPPOSITE PARTY}_{bis} + X_i'\gamma + \varepsilon_i \quad (2)$$

where the independent variables of interest denote the information shock to belief *b* for person *i* based on the experiences of those in the same or opposite political party *s*.

Finally, we test whether the importance of political concordance in health information shocks varied for Democrats and Republicans using the following pre-registered specification:

$$VAX_i = \alpha + \sum_{b=1}^{5} \beta_b \cdot \text{DEM INFO DEM}_{bips} + \sum_{b=1}^{5} \delta_b \cdot \text{DEM INFO GOP}_{bips} + \sum_{b=1}^{5} \theta_b \cdot \text{GOP INFO DEM}_{bips} + \sum_{b=1}^{5} \mu_b \cdot \text{GOP INFO GOP}_{bips} + X_i'\gamma + \varepsilon_i \quad (3)$$

where the independent variables of interest denote the information shock to belief *b* for person *i* who is a member of political party *p* based on the experiences of those in the same or opposite political party *s*.

4. Results

We begin by exploring the relationship between our five information shocks and whether participants reported that an intent to receive a COVID-19 during the next 12 months. Figure 4 plots the results obtained from estimating equation (1).[14] We find suggestive evidence that receiving a positive (negative) information shock about the COVID-19

[14] We also report these results in Appendix Table B3 obtained using both a linear and logistic regression.

vaccination rate was related to an increase (decrease) in the likelihood that participants reported that they would receive a COVID-19 vaccine. While the estimate is not statistically significant at conventional levels ($p = 0.16$), it implies that participants who had underestimated (overestimated) the COVID-19 vaccination rate by a standard deviation were 13 percent more (less) likely to report an intent to receive a COVID-19 vaccine after learning the actual vaccination rate ($100 \times (0.0019 \times 26.12)/0.3782 = 13.12$).[15]

Next, we test whether the information shocks were differentially salient if they were based on the experiences of members of the same or opposite political party. Figure 5 plots the estimates obtained using equation (2) where we interact the treatment variables with an indicator for political concordance. The lighter grey triangles denote the estimates when the information shocks were based on the experiences of members of the same political party, while the darker squares denote the estimates when the information shocks were based on the experiences of members of the opposite political party. Interestingly, we find no evidence that participants' vaccine intentions were influenced by information shocks coming from members of their own political parties; the point estimates are small in magnitude and statistically insignificant. However, we find that participants' vaccination intentions were influenced by learning the vaccination rate among members of the opposite political party.[16] Participants who had underestimated (overestimated) the vaccination rate among members of the opposite political party by one standard deviation were 31 percent more (less) likely to report an intent to receive the COVID-19 vaccine after learning the

[15] We report the prediction errors for the full sample and by political concordance in Appendix Table B2.
[16] Appendix Figure B4 shows that these patterns are robust to the inclusion of the righthand side covariates. Appendix Figure B5 shows a similar pattern when using a logistic regression specification.

vaccination rate from our pre-experiment survey (100 × (0.0045 × 26.32)/0.3782 = 31.32). While sizable, this percent change is similar to prior evidence on the effects of racial concordance between health messengers and recipients on vaccination for Black men.[17]

If participants were solely weighing the personal costs and benefits of vaccination, then those who had initially underestimated the vaccination rate should have concluded that – due to the social protection provided by a higher vaccination rate – the risk of contracting COVID-19 was lower than they had previously thought. In this case, we would expect participants to have been less interested in receiving a vaccine. Moreover, we would also have expected participants to change their vaccination intentions when presented with new information about COVID-19 infection and severity rates. Instead, our results are consistent with prior evidence that individuals are more likely to report an intention to vaccinate after learning about the share of others who are willing to accept the vaccine (Moehring et al. 2023). However, it is perhaps surprising that we detect a larger change from learning about the opposite-party vaccination rate relative to the same-party vaccination rate. One possibility is that participants placed greater weight on the opposite-party information signal because they have less personal experience with members from this group.

In Figure 6, we report estimates from two exercises designed to increase confidence that the estimated change in vaccine intent is truly being driven by the information shock. First, we performed a placebo test whereby for each participant we randomly selected one

[17] For example, Alsan and Eichmeyer (2024) estimated that U.S. Black men without a college degree who received a video message about vaccination from a non-expert were 20 percent more likely to report an intent to receive a COVID-19 vaccine compared to those who received a signal from an expert (100 × 0.088/0.43 = 20.5). Likewise, Alsan et al. (2019) found that Black men randomly assigned to a Black male doctor were 56 percent more likely to agree to a flu shot conditional on any financial incentives from another part of the experiment.

of the non-treated beliefs and took the difference between the unrevealed share from our pre-experiment survey and the participant's initial belief. Reassuringly, there is no evidence that any of these placebo information shocks were related to changes in the likelihood that participants reported an intention to receive a COVID-19 vaccine (Panel A).[18] Second, we undertook a falsification test whereby we replaced our lefthand side variable with an indicator for whether the participant reported previously receiving a COVID-19 vaccine. The idea behind this test is that newly revealed information should not be related to past vaccination behaviors. Reassuringly, the point estimates are smaller in magnitude, generally opposite signed, and statistically insignificant (Panel B).[19] Overall, Figure 6 reinforces a casual interpretation of our results and suggests that the estimated relationship in Figure 5 is unlikely to have occurred by chance.

For our belief elicitation to remain incentive compatible, we had to reveal one of the actual figures from our pre-experiment survey to each participant. As a result, like prior work on the importance of messaging for increasing vaccine take-up (Alsan and Eichmeyer 2024), we do not have a purely untreated control group. We undertake two exercises to test whether this might be driving our results. First, Figure 7 reports results from re-estimating equation (2) but iteratively excluding participants who received each information shock. Though they are estimated using the same regression, Panel A reports the estimates corresponding to the same-party information shock, and Panel B reports the estimates from the opposite-party information shock. Regardless of the sample restriction, we continue to

[18] This placebo tests assumes that participants did not update any of their non-treated beliefs in response to the realized information shock, though cross-learning has been found in other contexts (Kendall et al. 2015; Coibion et al. 2023).

[19] Appendix Figure B6 shows that the patterns are unchanged when we control for whether participants reported that they would receive a future COVID-19 vaccine.

find that participants who had initially underestimated (overestimated) the vaccination rate among members of the opposite political party were more (less) likely to report an intention to receive a COVID-19 vaccine after learning the figure from our pre-experiment survey.

Next, in Figure 8 we report results from five separate regressions where we limit the sample to include only participants receiving each information shock. With this restriction, we explicitly use participants whose beliefs were equal to the actual figure revealed to them from our pre-experiment survey as a control group for those receiving non-zero signals. To put it another way, this restriction assures that all participants in the sample received the same category of information shock, and the variation comes from differences in the magnitude of the shock relative to their initial beliefs. When limiting the sample to include participants who were revealed the actual vaccination rate, we continue to find that those who had underestimated (overestimated) the vaccination rate among members of the opposite political party were subsequently more (less) likely to express an intent to receive a COVID-19 vaccine. Together, Figures 7 and 8 show that the estimated relationship is not being driven by the lack of a pure control group.

Given evidence that members of opposing political parties hold differing views of vaccination (Suryadevara et al. 2019; Krupenkin 2021; Kaba et al. 2024) and the COVID-19 pandemic (Allcott et al. 2020), in Figure 9 we examine whether political concordance in health information shocks differentially affected the vaccine intentions of Democrats and Republicans. The panels include results from the same regression, shown in equation (3). Panel A plots the results for Democrats, and Panel B plots the results for Republicans.[20] We show that Democrats who had initially underestimated (overestimated) the share of

[20] Appendix Figure B7 shows the same patterns when estimating the specification via logistic regression.

Republicans vaccinated against COVID-19 by a standard deviation were over 50 percent more (less) likely to report an intent to receive the COVID-19 vaccine after learning the share of Republicans vaccinated against COVID-19 ($100 \times (0.0092 \times 21.55)/0.3782 = 52.42$). Thus, it appears that Democrats' vaccination intentions are responsive to the vaccination decisions of Republicans.

Figure 9 shows suggestive evidence that Republicans who had underestimated (overestimated) the COVID-19 infection rate among members of their own party were more (less) likely to report an intent to receive a COVID-19 vaccine (Panel B), though the estimate is statistically insignificant. Indeed, we do not find evidence of statistically significant responses among Republicans for any of the information shocks, regardless of political concordance. However, we found suggestive evidence that Republicans who had previously received a COVID-19 vaccine were responsive to learning about the share of Democrats vaccinated against COVID-19. Given sample size constraints, these estimates are based on a small number of treated individuals and should be interpreted cautiously, though we report them in Appendix Figure B8 for completeness.

5. Discussion and Conclusion

Governments and public health officials routinely try and alter behaviors through information campaigns. Yet the effectiveness of these campaigns depends on how the new information compares to the initial health beliefs (Viscusi and Hakes 2008; Arni et al. 2021) and the degree to which individuals relate to and trust the information (Bargain and Aminjonov 2020; Alsan and Eichmeyer 2024). This latter point has taken on greater importance given the increase in political polarization over the last several decades (Pew Research 2014; Gentzkow et al. 2019) and the corresponding partisan divide in how

Democrats and Republicans approach healthcare decision-making (Subramanian and Perkins 2010; Shin and McCarthy 2013; Hersh and Goldenberg 2016; de Bruin et al. 2020; Facciani et al. 2023).

In this paper, we explore the role of political identity in influencing how individuals respond to healthcare information. Using an online research platform, we find that participants similarly overestimated the frequency and severity of COVID-19 infections among members of both political parties, and we find little evidence to support the notion that participants were better at predicting the experiences of members of their own political party. While members of both political parties accurately predicted the share of Democrats vaccinated against COVID-19, Democrats and Republicans similarly overestimated the vaccination rate among Republicans. Interestingly, we do not find any evidence that participants who learned that they had incorrectly estimated the infection or severity rate were more or less likely to report that they intended to receive the COVID-19 vaccine. However, we find clear and consistent evidence that participants who learned that they had underestimated (overestimated) the vaccination rate among members of the opposite political party were more (less) likely to report that they intended to receive a COVID-19 vaccine. In conjunction with our finding that individuals generally overestimate COVID-19 vaccination rates, our results suggest that efforts to inform the public about COVID-19 vaccination rates may inadvertently discourage vaccine take-up.

This study is subject to some limitations. For one, while we showed that participants who learned that they had underestimated the vaccination rate among members of the opposite political party were more likely to report an intention to receive the COVID-19 vaccine, we do not have information on whether they were eventually vaccinated. While

prior work has shown that vaccine intent is predictive of later vaccination status (Moehring et al. 2023), determining how political identity shapes healthcare decisions using medical records remains an important area for future research. Second, sample size constraints prevented us from performing particularly granular heterogeneity exercises, though theses analyses could be of interest to policymakers looking to effectively tailor public health messaging. Third, all participants in the study had to receive an information shock to maintain the incentive compatible nature of our belief elicitation. While we showed that our results persist when (i) iteratively dropping participants who received each information shock and (ii) only leveraging variation in the size of the information shock among participants who all received the same category of shock – indicating that our results are not being driven by the lack of a pure control group – this remains a limitation of our experimental design. Finally, our study does not allow us to say why participants were more responsive to learning about the experiences of members of the discordant political party compared to the experiences of members of the concordant party. Future studies should consider methods for disentangling the potential mechanisms. Despite these limitations, our study provides important new evidence on how political identity shapes how individuals respond to health information.

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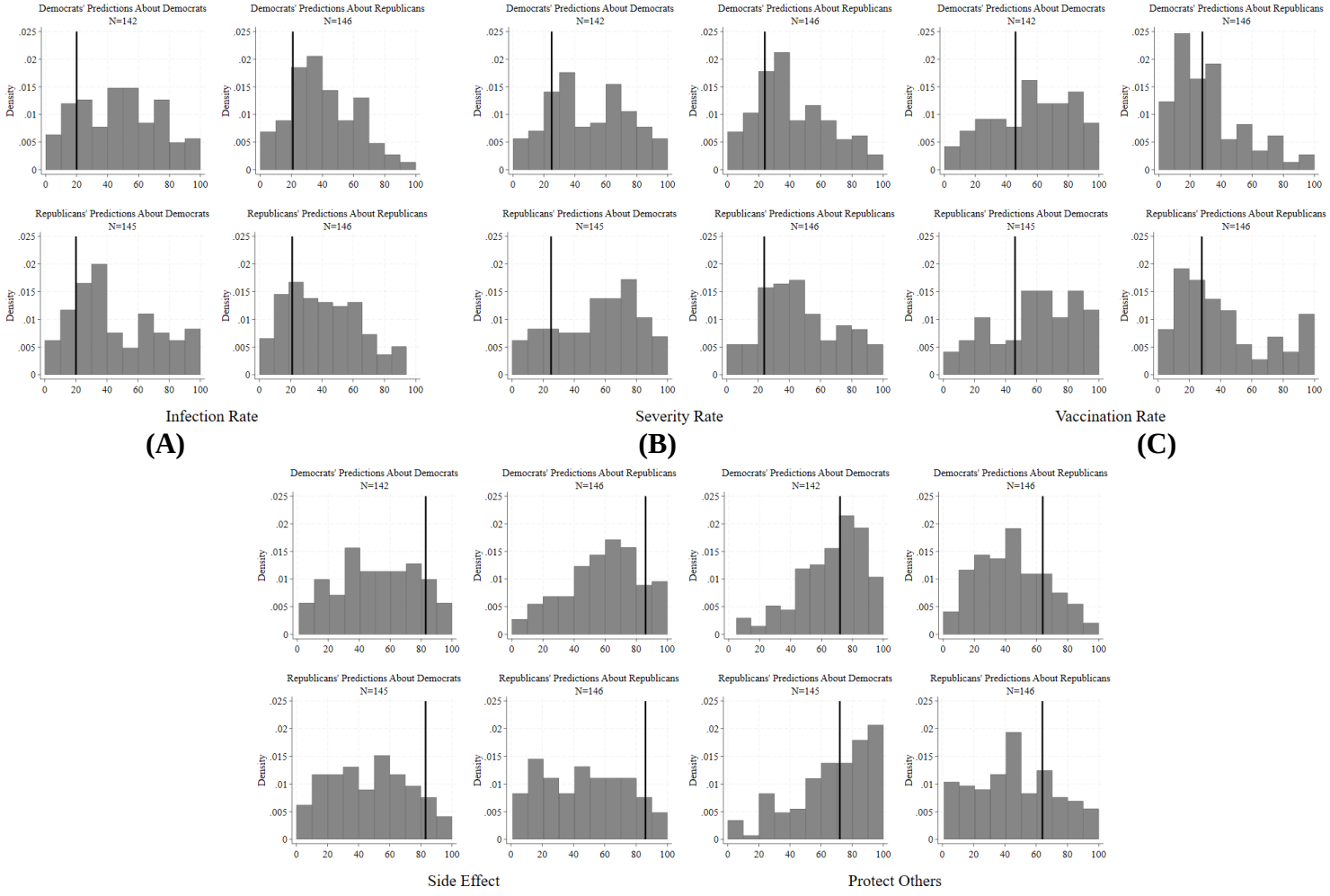
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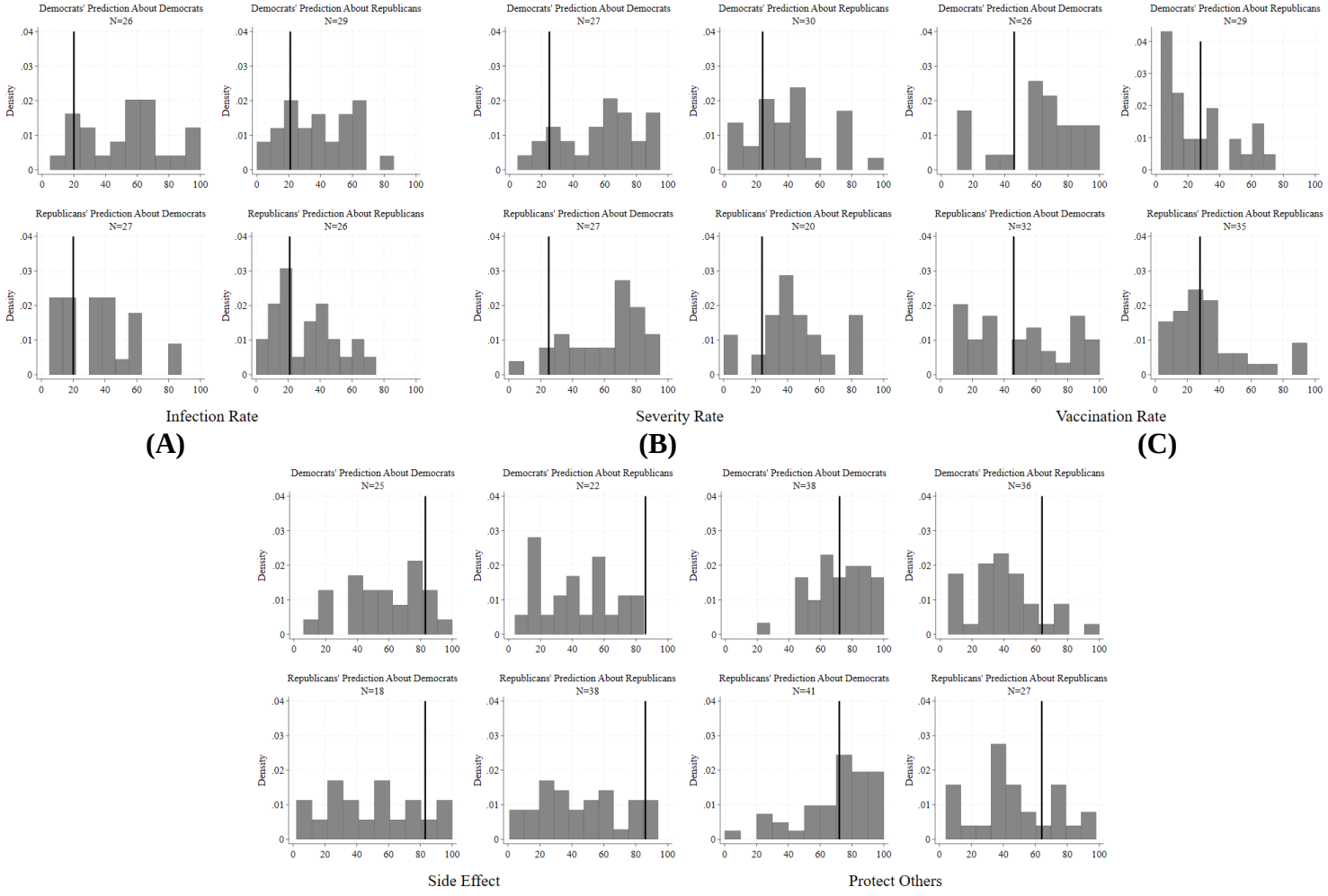
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Figure 1: Distribution of Beliefs Among the Full Sample



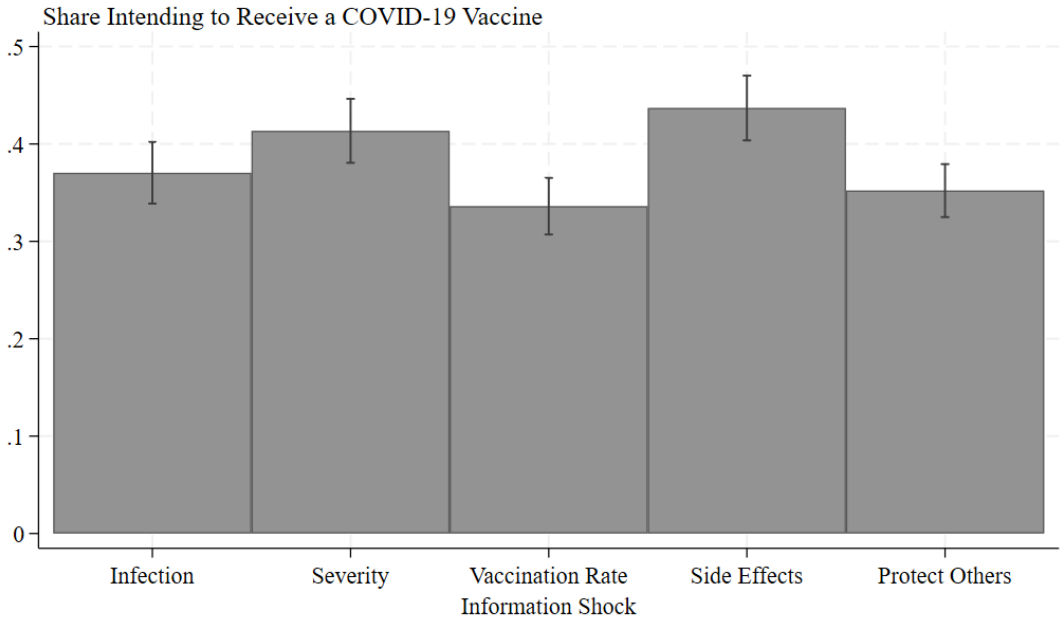
Note: The panels plot the distributions of beliefs for the full sample. The solid black line denotes the value obtained from our pre-experiment survey. Panel A plots the predicted share who contracted COVID-19, Panel B plots the predicted share who required medical intervention conditional on contracting COVID-19, Panel C plots the share who received a COVID-19 vaccine, Panel D plots the predicted share of individuals experiencing side effects conditional on receiving a COVID-19 vaccine, and Panel E plots the share of individuals who report "protecting others" as a primary reason that they opted to receive the vaccine.

Figure 2: Distribution of Beliefs Among Treated Individuals



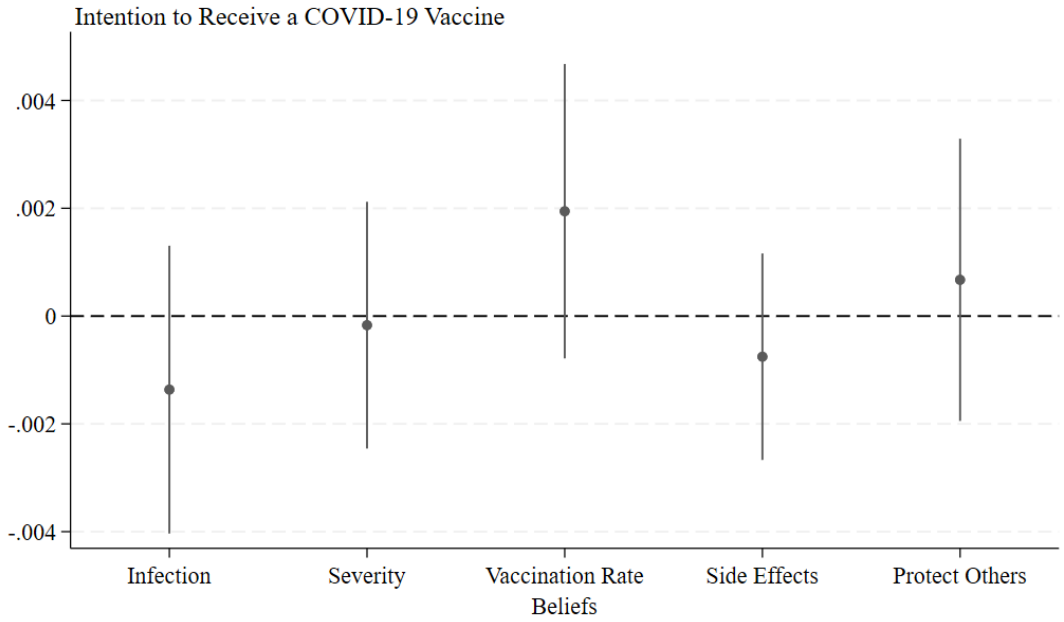
Note: The panels plot the belief distributions among those receiving shocks to those beliefs. The solid black line denotes the value obtained from our pre-experiment survey. Panel A plots the predicted share who contracted COVID-19, Panel B plots the predicted share who required medical intervention conditional on contracting COVID-19, Panel C plots the share who received a COVID-19 vaccine, Panel D plots the predicted share of individuals experiencing side effects conditional on receiving a COVID-19 vaccine, and Panel E plots the share of individuals who report "protecting others" as a primary reason that they opted to receive the vaccine.

Figure 3: Share of Participants in Each Treatment Group Who Reported an Intent to Receive a COVID-19 Vaccine



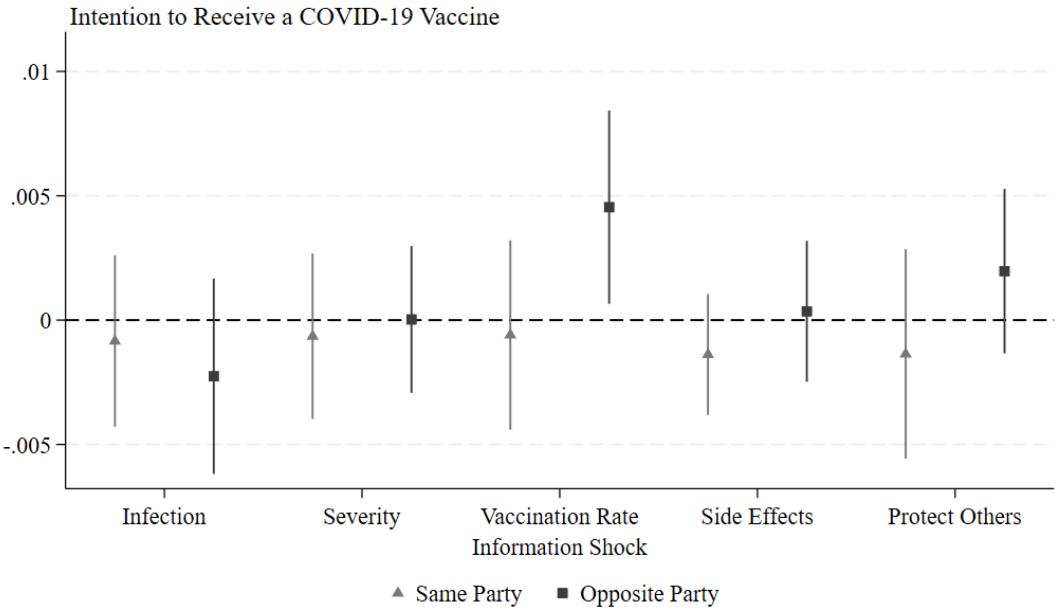
Note: The figure plots the share of participants who reported that they intend to receive a COVID-19 vaccine by the information shock that they received. The vertical bars denote the 95 percent confidence intervals.

Figure 4: Relationship Between COVID-Related Information Shocks and the Likelihood That Individuals Reported an Intent to Receive a COVID-19 Vaccine



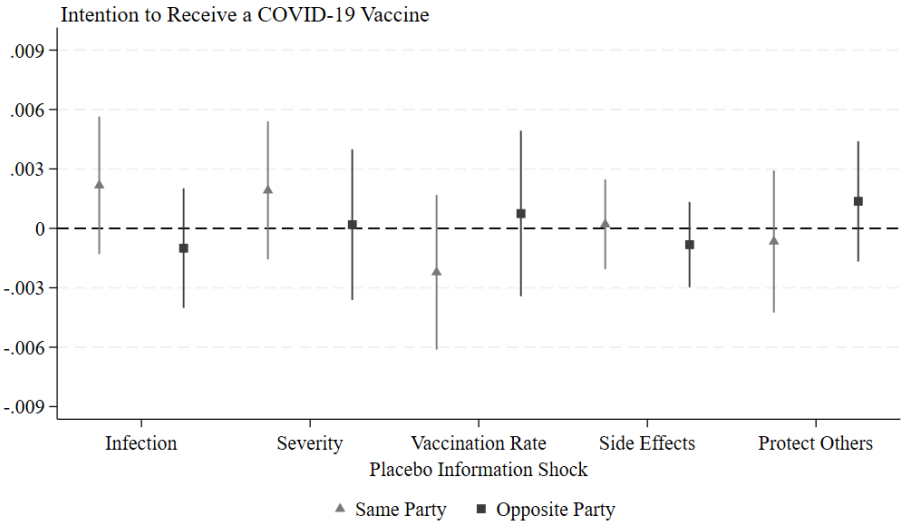
Note: The figure plots the estimates obtained from equation (1), which examines the relationship between shocks to beliefs about COVID-19 and whether individuals reported that they intend to receive a COVID-19 vaccination in the next 12 months. The relationship is estimated via ordinary least squares. The grey circles indicate the point estimates, and the vertical lines denote the 95 percent confidence intervals.

Figure 5: Vaccine Intentions Were Responsive to Learning the COVID-19 Vaccination Rate Among Members of the Opposite Political Party

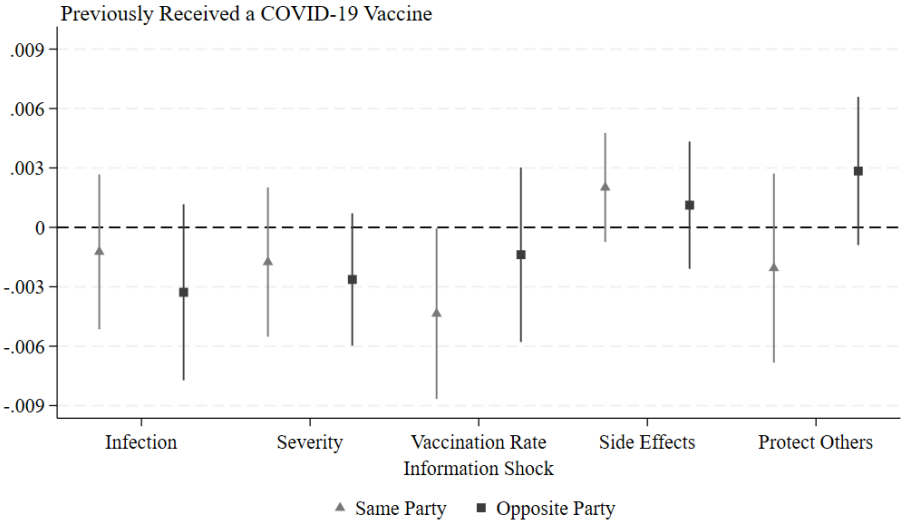


Note: The figure plots the estimates obtained from equation (2), which examines the importance of political concordance in shaping vaccination decision-making by separately considering whether the shocks to the individuals' COVID-19 beliefs are based on the experiences of those from the same or opposite political party. The relationship is estimated via ordinary least squares. The lighter grey triangles indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the same political party affiliation, while the darker grey squares indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the opposite political party affiliation. The vertical lines denote the 95 percent confidence intervals.

Figure 6: The Placebo Information Shocks Were Unrelated to Future Vaccine Intentions and the Actual Information Shocks Were Unrelated to Past Vaccine Decisions



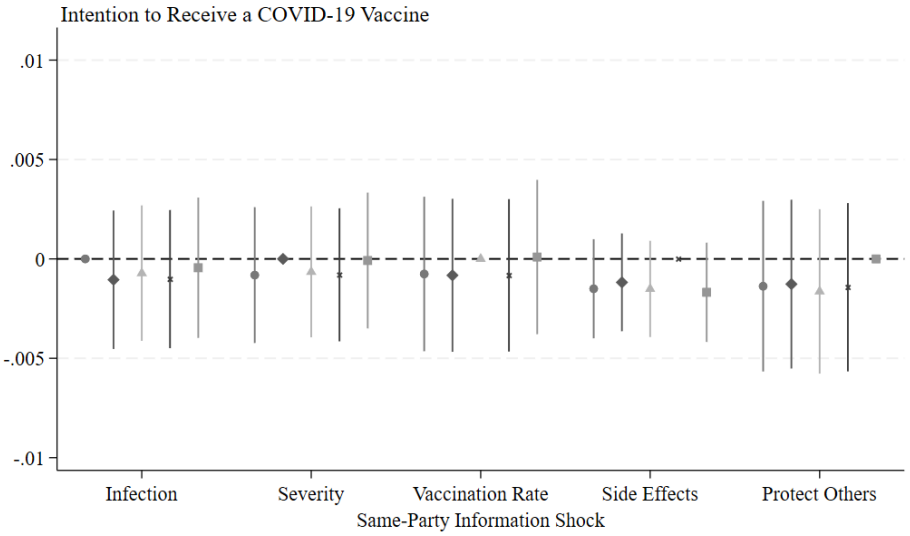
(A) Placebo Test



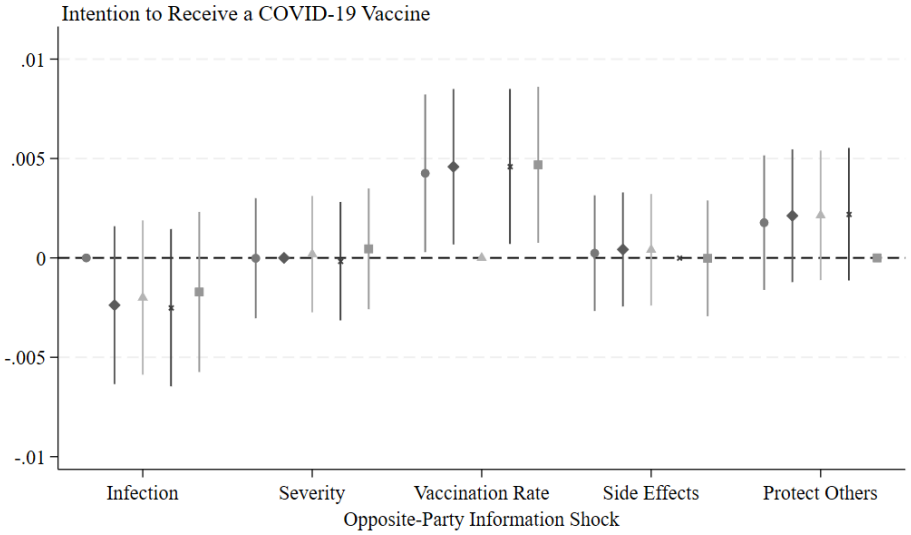
(B) Falsification Test

Note: Panel A reports results from a placebo exercise whereby participants are assumed to have been exposed to one of the other four information shocks. Panel B reports results examining the relationship between the actual information shocks and the likelihood that participants reported previously receiving a COVID-19 vaccine. The relationships are estimated via ordinary least squares. The figure plots the estimates obtained from equation (2), which examines the importance of political concordance in shaping vaccination decision-making by separately considering whether the shocks to the individuals' COVID-19 beliefs are based on the experiences of those from the same or opposite political party. The lighter grey triangles indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the same political party affiliation, while the darker grey squares indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the opposite political party affiliation. The vertical lines denote the 95 percent confidence intervals.

Figure 7: The Pattern is Robust to Iteratively Excluding Participants Receiving Each Treatment



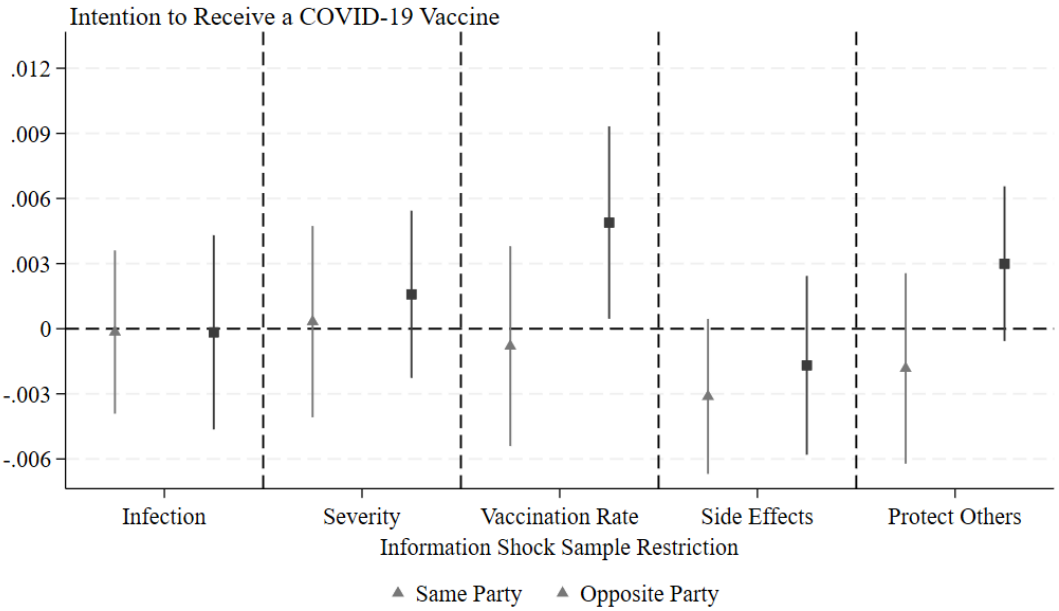
(A) Same-Party Information Shock Estimates



(B) Opposite-Party Information Shock Estimates

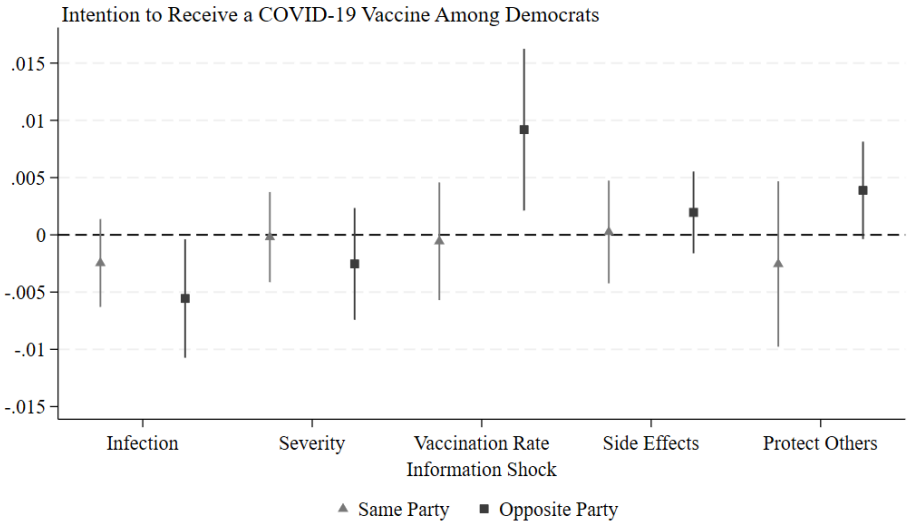
Note: Panels A and B plots estimates obtained from the single logistic regression specification, shown in equation (2), which examines the importance of political concordance in shaping vaccination decision-making by separately considering whether the shocks to the individuals' COVID-19 beliefs are based on the experiences of those from the same or opposite political party. The relationship is estimated via ordinary least squares. Panel A plots the estimates from receiving a same-party information shock, while Panel B plots the estimates from an opposite-party information shock. The circles denote a regression excluding observations that received first treatment, the diamonds denote a regression excluding observations that received the second treatment, the triangles denote a regression excluding observations that received the third treatment, the Xs denote a regression excluding observations that received the fourth treatment, and the squares denote a regression excluding observations that received the fifth treatment. The vertical lines denote the 95 percent confidence intervals.

Figure 8: The Pattern is Robust to Limiting Comparisons to Participants Who Received the Same Category Health Belief Shock

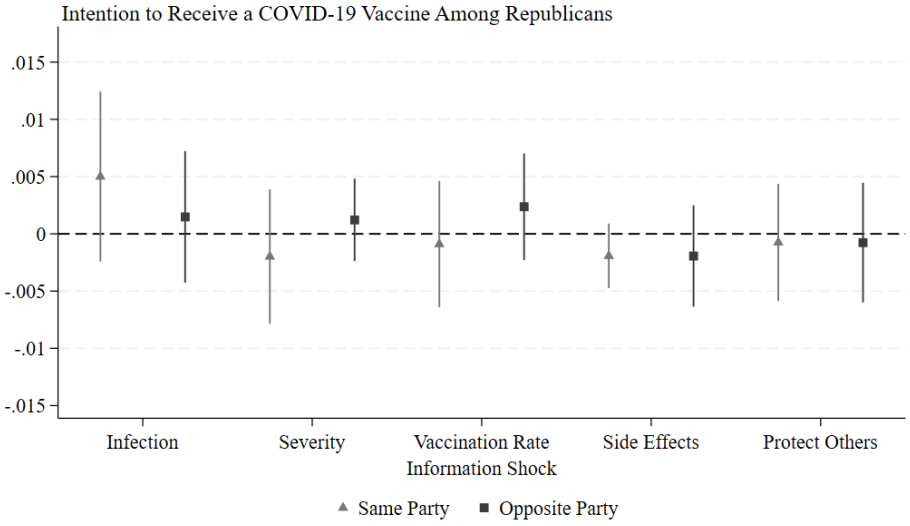


Note: The figure plots the estimates obtained from five separate regressions. In each regression, the sample is limited to individuals who received the same health belief information shock. The estimates are obtained using equation (2), which examines the importance of political concordance in shaping vaccination decision-making by separately considering whether the shocks to the individuals' COVID-19 beliefs are based on the experiences of those from the same or opposite political party. The relationship is estimated via ordinary least squares. The lighter grey triangles indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the same political party affiliation, while the darker grey squares indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the opposite political party affiliation. The vertical lines denote the 95 percent confidence intervals.

Figure 9: Democrats Were More Likely to Report an Intent to Receive a COVID-19 Vaccine After Learning the COVID-19 Vaccination Rate Among Republicans



(A) Estimates for Democrats



(B) Estimates for Republicans

Note: Panels A and B plots estimates obtained from a single regression, shown in equation (3), which examines how Democrats and Republicans respond to shocks to their beliefs about the COVID-19-related experiences of Democrats and Republicans. The relationship is estimated via ordinary least squares. Panel A plots the estimates for Democrats while Panel B plots the estimates for Republicans. The darker grey triangles indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the same political party affiliation, while the lighter grey squares indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the opposite political party affiliation. The vertical lines denote the 95 percent confidence intervals.

Table 1: Experiences of 100 Democrats and 100 Republicans with COVID-19 During the Prior 12 Months

	(1)	(2)	(3)	(4)	(5)
	Contracted COVID-19	Sought Medical Intervention Conditional on Having a COVID-19 Infection	Received a COVID-19 Vaccine	Experienced Side Effects Conditional on Receiving a COVID-19 Vaccine	Reported Protecting Others as a Primary Reason for Receiving the COVID-19 Vaccine
Democrats	20%	25%	46%	83%	72%
Republicans	21%	24%	28%	86%	64%

Note: The table reports the share of individuals from both major U.S. political parties in the pre-experiment survey who reported contracting COVID-19 (column 1), seeking medical treatment conditional on contracting COVID-19 (column 2), receiving a COVID-19 vaccine (column 3), experiencing vaccine side effects conditional on receiving a COVID-19 vaccine (column 4), and receiving the vaccine to protect others (column 5).

Table 2: Summary Statistics for Experiment Participants

	(1)	(2)	(3)
	Full Sample	Democrats	Republicans
COVID-19 Vaccination			
Plans to Receive a COVID-19 Vaccine	0.377	0.500	0.254
	(0.485)	(0.501)	(0.436)
Has Received a COVID-19 Vaccine	0.359	0.413	0.305
	(0.480)	(0.493)	(0.462)
Beliefs About Others' COVID-19 Experiences			
Share Contracting COVID-19	0.420	0.420	0.419
	(0.244)	(0.235)	(0.252)
Share of Infected with a Severe Infection	0.466	0.440	0.493
	(0.255)	(0.249)	(0.258)
Vaccination Rate	0.458	0.428	0.487
	(0.283)	(0.274)	(0.288)
Share with Side Effects from Vaccination	0.506	0.546	0.467
	(0.257)	(0.251)	(0.257)
Share Vaccinating to Protect Others	0.554	0.547	0.561
	(0.264)	(0.254)	(0.274)
Observations	579	288	291

Note: The table reports the summary statistics for experiment participants. Column 1 reports these statistics for the full sample, column 2 for Democrats, and column 3 for Republicans.

Table 3: Average Errors in Participants' Predictions About the Experiences of Democrats and Republicans with COVID-19 During the Past 12 Months

	(1)	(2)	(3)	(4)	(5)
	Contracted COVID-19	Sought Medical Intervention Conditional on Having a COVID-19 Infection	Received a COVID-19 Vaccine	Experienced Side Effects Conditional on Receiving a COVID-19 Vaccine	Reported Protecting Others as a Primary Reason for Receiving the COVID-19 Vaccine
Panel A: Average Error When Predicting the Experiences of Democrats, Full Sample					
Democrats	25.15	20.15	-0.85	-37.85	-26.85
	(25.07)	(25.07)	(25.07)	(25.07)	(25.07)
Republicans	23.67	18.67	2.33	-39.33	-28.33
	(27.05)	(27.05)	(27.05)	(27.05)	(27.05)
Panel B: Average Error When Predicting the Experiences of Republicans, Full Sample					
Democrats	17.92	14.92	10.92	-47.08	-25.08
	(21.51)	(21.51)	(21.51)	(21.51)	(21.51)
Republicans	19.23	16.23	12.23	-45.77	-23.77
	(23.28)	(23.28)	(23.28)	(23.28)	(23.28)
Panel C: Average Error When Predicting the Experiences of Democrats, Treated Group					
Democrats	32.43	31.37	15.46	-26.00	-0.842
	(26.32)	(24.83)	(26.81)	(25.24)	(18.13)
Republicans	16.00	35.78	3.88	-32.00	-3.80
	(22.07)	(24.70)	(30.24)	(28.98)	(23.84)
Panel D: Average Error When Predicting the Experiences of Republicans, Treated Group					
Democrats	17.86	17.93	0.17	-42.41	-23.44
	(22.87)	(24.50)	(21.55)	(24.05)	(22.30)
Republicans	9.88	20.30	5.34	-39.53	-16.93
	(19.31)	(23.09)	(24.09)	(26.20)	(25.14)

Note: Each panel reports the average difference between what the participants in our experiment predicted about the experiences of individuals with COVID-19 and the amount obtained in the pre-experiment survey. Positive values indicate that on average participants overestimated a particular share, while negative values indicate that the participants underestimated the share. Panel A reports the average error when individuals in the full sample made predictions about the experiences of Democrats, and Panel B reports the average error when individuals in the full sample made predictions about Republicans. Panels C and D report these same figures but only among the subset of individuals who later had the actual values from the pre-experiment survey revealed to them.

Appendix A: Pre-Experiment Survey

Online Survey Consent Form

You are being invited to participate in a research study titled "Health Experience Survey". This study is being done by Dr. Sherry Gao, Dr. Brandyn Churchill, and Dr. Rong Rong from the University of Massachusetts Amherst. You were selected to participate in this study because you are an active member of the Prolific.com community.

Why are we doing this research study?

The purpose of this research study is people's health-related experiences in the past 12 months. Who can participate in this research study? Anybody who is at least 18 years old and is part of the Prolific.com community can participate in this survey.

What will I be asked to do and how much time will it take?

If you agree to take part in this study, you will be asked to complete an online survey. This survey will ask about your health-related experience in the past 12 months, and it will take you approximately 10 minutes to complete.

Will being in this research study help me in any way?

You may not directly benefit from this research; however, we hope that your participation in the study may help us advance our research goal.

What are my risks of being in this research study?

We believe there are minimal risks associated with this research study; however, a risk of breach of confidentiality always exists and we have taken the steps to minimize this risk as outlined in a section below.

How will my personal information be protected?

To the best of our ability your answers in this study will remain confidential. We will minimize any risks by removing your Prolific ID from the dataset once we have confirmed all payments.

Will I be given any money or other compensation for being in this research study?

You will receive $3 for completing this survey. If you choose to exit the survey before its competition, you forfeit the payment entirely and we will have access to the data you provided up until the point of your exiting.

What happens if I say yes, but I change my mind later?

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate.

Who can I talk to if I have questions?

If you have questions about this project or if you have a research-related problem, you may contact the researcher(s), Dr. Sherry Gao (sherrygao@resecon.umass.edu) or Dr. Rong Rong

(rrong@umass.edu). If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.

By clicking "I agree" below you are indicating that you are at least 18 years old, have read this consent form and agree to participate in this research study. You are free to skip any question that you choose. You may print a copy of this page for your records.

- ○ I agree. (1)
- ○ I do not wish to participate. (2)

Thank you for considering participating in today's survey. Please enter your Prolific ID. The study is conducted by researchers at the University of Massachusetts Amherst. The study is approved by the university's Institutional Review Board and complies with the ethical conduct required in research of this type (Protocol ID #5397). You will be compensated $3 for completing today's survey. To receive this payment, please make sure you get to the last page and get the completion code. You will need to enter the completion code back at Prolific to get paid.

Please enter your Prolific ID below. Please make sure you enter it correctly so that you can receive the payment for participating in this survey on Prolific.

Q1 Have you received a COVID-19 vaccine (initial shot or booster) in the past 12 months?

- ○ No (1)
- ○ Yes (2)

Q5 Why did you choose to not receive a COVID vaccine in the past 12 months? For each of the reasons listed below, please indicate how important the reason is to your decision.

	Not at all important (9)	Slightly important (10)	Moderately important (11)	Very important (12)	Extremely important (13)
I was not recommended the vaccine by a healthcare professional (1)	○	○	○	○	○

I do not believe that the vaccine is medically necessary (2)	○	○	○	○	○
I am worried about the vaccine's safety or side effects (3)	○	○	○	○	○
The vaccine costs too much money (4)	○	○	○	○	○
It is difficult for me to schedule and travel to a vaccine appointment (5)	○	○	○	○	○
I am already fully vaccinated (6)	○	○	○	○	○
I have natural immunity (7)	○	○	○	○	○
It is against my religious and/or philosophical beliefs (8)	○	○	○	○	○
I believe the vaccine is not effective (9)	○	○	○	○	○
Another reason that is not mentioned above (10)	○	○	○	○	○

Q6 You said that you did not receive a COVID vaccine during the past 12 months. Have you **ever** received a COVID vaccine?

- ○ No (1)
- ○ Yes (2)

Q34 Why did you choose to receive a COVID vaccine in the past 12 months? For each of the reasons listed below, please indicate how important the reason is to your vaccination decision.

	Not at all important (15)	Slightly important (16)	Moderately important (17)	Very important (18)	Extremely important (19)
I believe that the COVID vaccine will reduce my **chance of infection**. (1)	○	○	○	○	○
I believe that the COVID vaccine will reduce **my symptoms if I become infected**. (2)	○	○	○	○	○
I believe that by getting the COVID vaccine I will reduce the chance other people **in my household** become infected. (3)	○	○	○	○	○
I believe that by getting the COVID vaccine I will reduce the chance other people **not in my**	○	○	○	○	○

household become infected. (4)					
The vaccine is free for me. (5)					
My doctor recommended it to me. (6)					
It is recommended or required by my employer or my school. (7)					
Another reason that is not mentioned above (8)					

Q3 Did you experience any of the following side effects from your **most recent** COVID vaccine?

Please check all that apply:

- ☐ Pain, swelling, or redness where the shot is given (1)
- ☐ Fever or chills (2)
- ☐ Tiredness (fatigue) (3)
- ☐ Headache (4)
- ☐ Muscle pain (5)
- ☐ joint pain (11)
- ☐ Nausea, vomiting (6)
- ☐ Swollen lymph nodes (7)
- ☐ Myocarditis (inflammation of the heart muscle) or pericarditis (inflammation of the lining outside the heart) (8)

☐ Another side effect that is not listed above (9) _____

☐ None of the above (10)

Q4 How many COVID vaccines (including boosters) have you received in total since the first COVID vaccine became available in 2020?

Q7 Have you contracted COVID in the past 12 months?

○ No (1)

○ Yes (2)

Q31 For your **most recent** COVID infection, did you contract it before or after receiving your **most recent** COVID vaccine?

○ Before vaccination (1)

○ After vaccination (2)

Q8 For your **most recent** COVID infection, did you receive any of the following positive diagnoses?

Please check all that apply.

☐ Positive antigen test self-administered at home (1)

☐ Positive PCR or antigen test administered by a healthcare provider (2)

☐ Positive diagnosis from a healthcare provider without a test (3)

☐ None of the above (4)

Q9 For your **most recent** COVID infection, did you experience any of the following symptoms? Please check all that apply.

☐ Fever or chills (1)

- [ ] Sore throat, congestion or runny nose (2)
- [ ] Cough (3)
- [ ] Shortness of breath or difficulty breathing (4)
- [ ] Fatigue (tiredness) (5)
- [ ] Muscle or body aches (6)
- [ ] Headache (7)
- [ ] New loss of taste or smell (8)
- [ ] Nausea or vomiting (9)
- [ ] Diarrhea (10)
- [ ] Persistent pain or pressure in the chest (11)
- [ ] Confusion (12)
- [ ] Inability to wake or stay awake (13)
- [ ] Pale, gray, or blue-colored skin, lips, or nail beds. (14)
- [ ] Another symptom that is not listed above (15) _____

Q10 For your **most recent** COVID infection, did you visit a physician to address the symptoms?

- ○ No (1)
- ○ Yes (2)

Q11 For your **most recent** COVID infection, did you receive an anti-viral prescription (such as Paxlovid, Veklury, and Lageviro) to treat the infection?

- ○ No (1)
- ○ Yes (2)

Q14 For your **most recent** COVID infection, how long did it take for you to fully recover from the infection (i.e. free of all symptoms)?

- ○ 0 day (It was asymptomatic.) (1)
- ○ 1-3 days (2)
- ○ 4-7 days (3)
- ○ 8-14 days (4)
- ○ 14-30 days (5)
- ○ More than 30 days (6)

Q15 For your **most recent** COVID infection, how many days of work/school did you miss because of this COVID infection?

- ○ 0 days (I did not miss any work or school) (1)
- ○ 1-3 days (2)
- ○ 4-7 days (3)
- ○ 8-14 days (4)
- ○ 14-30 days (5)
- ○ More than 30 days (6)
- ○ I am not employed or in school (7)

Q16 In general, what is your political affiliation?

- ○ Democrat (1)
- ○ Republican (2)
- ○ Independent (3)
- ○ Other (4) _____
- ○ None of the above (5)

Q33 On a scale of 1 to 7, please choose your position on the political spectrum below.

	Core Liberal	Lean Democrat	Neutral	Lean Republican	Core Republican	I am not political.
	1	2	3	4	5	6	7
Your Political Position ()						



Q17 Which year were you born?

_____

Q37 What is your ethnicity?

- ○ Hispanic (2)
- ○ Non-Hispanic (3)

Q18 What is your race?

- ○ White or Caucasian (1)
- ○ Black or African American (2)
- ○ Asian or Pacific Islander (4)
- ○ American Indian or Alaska Native (3)
- ○ Multiracial (8)
- ○ Other (6) _____

Q19 What is the gender you identify with?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Prefer not to say (4)

Q20 What is the highest education level you have attained?

- ○ Less than high school graduate (1)
- ○ High school graduate or GED (2)

- ○ Some college or associate degree (3)
- ○ Bachelor's degree (5)
- ○ Master's Degree (7)
- ○ Doctoral Degree (8)

Q22 What is your current employment status?

- ○ Employed full time (1)
- ○ Employed part time (2)
- ○ Unemployed looking for work (3)
- ○ Unemployed not looking for work (4)
- ○ Retired (5)
- ○ Full time student (6)
- ○ Disabled (7)

Q21 What is the range of your annual pre-tax household income?

- ○ Less than $10,000 (1)
- ○ $10,000 - $19,999 (2)
- ○ $20,000 - $29,999 (3)
- ○ $30,000 - $39,999 (4)
- ○ $40,000 - $49,999 (5)
- ○ $50,000 - $59,999 (6)
- ○ $60,000 - $69,999 (7)
- ○ $70,000 - $79,999 (8)
- ○ $80,000 - $89,999 (9)
- ○ $90,000 - $99,999 (10)
- ○ $100,000 - $149,999 (11)
- ○ More than $150,000 (12)

Q23 How many people currently reside in your household?

_____

Q24 What is the age of the **oldest** member of your household who resides with you?

- In Years (1) _____

Q26 What is the age of the **youngest** member of your household who resides with you?

- In Years (1) _____

Q28 Do you currently have health insurance?

- No (1)
- Yes (3)
- I am not sure. (4)

Q30 Do you have a medical professional you see for routine visits and checkups, often referred to as a Primary Care Provider (PCP)?

- No (1)
- Yes (2)

Q27 Choose the option that best reflects your current physical health status.

	Poor (1)	Fair (2)	Good (3)	Very Good (4)	Excellent (5)
I would describe my physical health as... (1)					

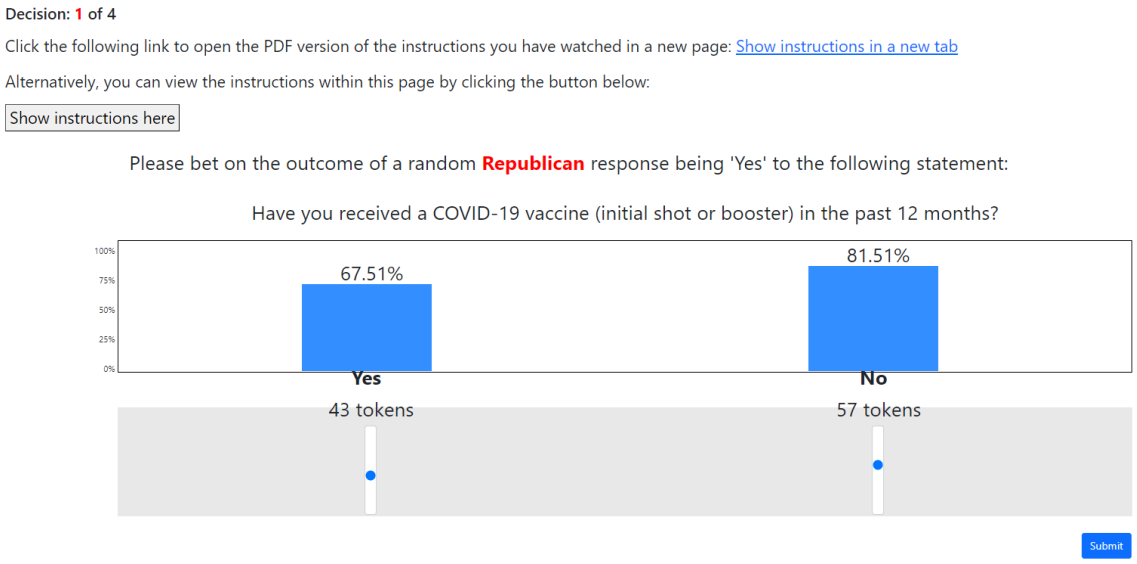
Q35 Have you experienced any of the following health conditions in the past 12 months?

Please check all that apply.

- ☐ Pregnancy (1)
- ☐ Chronic kidney, liver, or lung disease (2)
- ☐ Obesity, overweight, or physically inactive (3)
- ☐ Smoker (current or ever in your lifetime) (4)
- ☐ Substance use disorder (such as alcohol, opioid, or cocaine use disorder) (5)
- ☐ Diabetes (type 1 or type 2) (6)
- ☐ Cancer (currently or ever in your lifetime) (7)
- ☐ Heart failure, coronary artery disease, high blood pressure, or cardiomyopathies (8)
- ☐ Diseases that cause weakened immune systems, including HIV (9)
- ☐ Solid organ or blood stem cell transplant (10)
- ☐ Stroke or cerebrovascular disease (11)
- ☐ Cystic fibrosis (12)
- ☐ Sickle cell disease or thalassemia (13)
- ☐ Dementia or Alzheimer's disease (14)
- ☐ Tuberculosis (15)
- ☐ Depression, depression, and schizophrenia spectrum disorders, or other mood disorders (16)
- ☐ Disabilities (e.g., ADHD, cerebral palsy, birth defects, learning disabilities, spinal cord injuries, Down syndrome) (17)

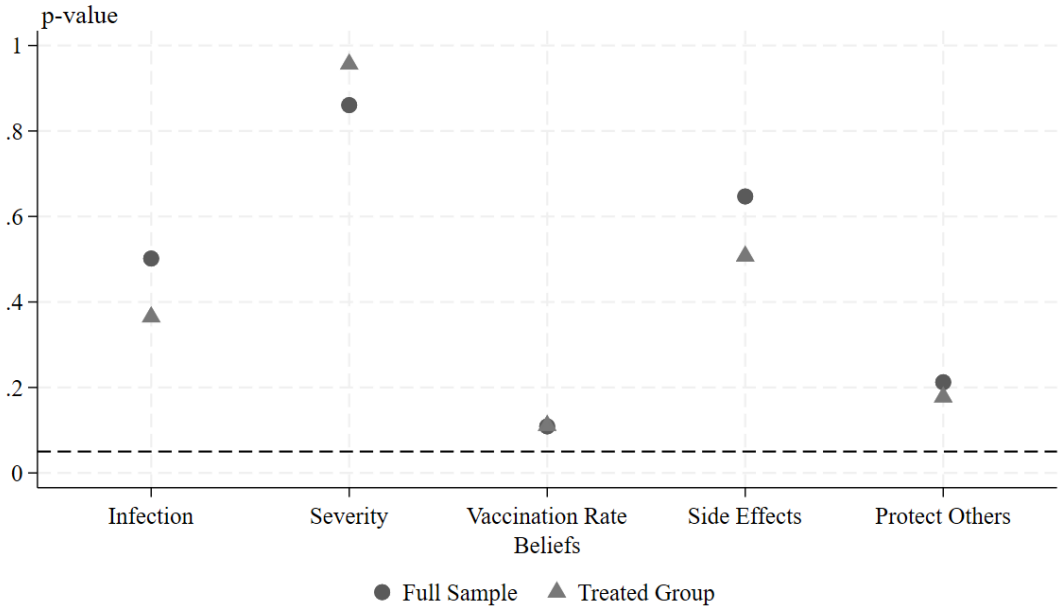
Appendix B

Appendix Figure B1: Bet Infographic



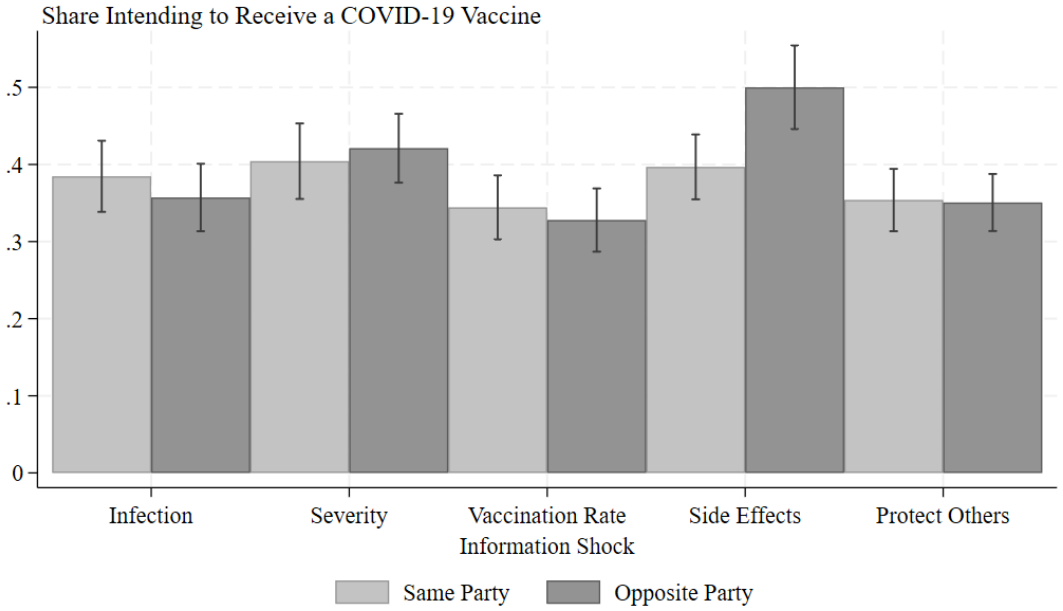
Note: The figure shows the infographic displayed to participants that allowed them to see the relationship between their token allocation and the likelihood that would win if a randomly drawn respondent had answered “yes” or “no” to the relevant question.

Appendix Figure B2: P-Values Showing That Participants Did Not More Accurately Predict The COVID-19 Experiences of Members of Their Own Political Party



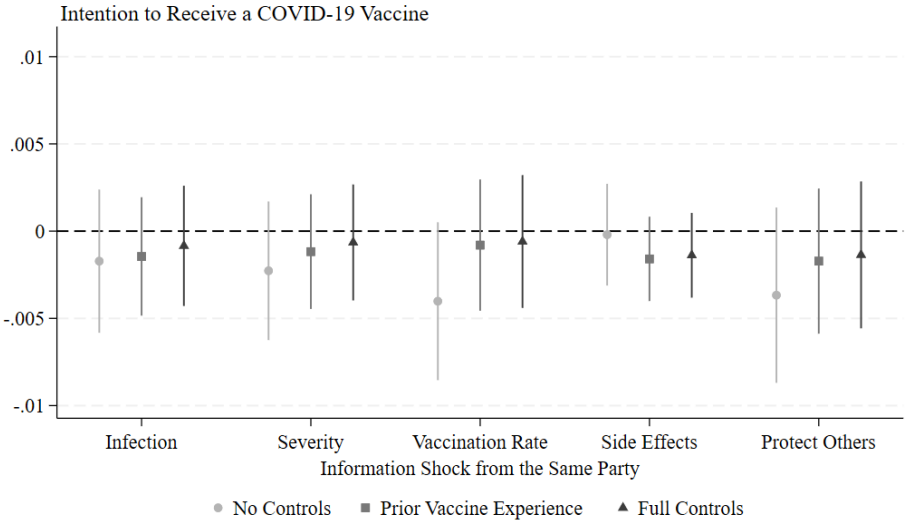
Note: The figure plots the p-values obtained from two-sided t-tests examining whether participants were differentially likely to predict the COVID-19 experiences of members of the same or opposite political party.

Appendix Figure B3: Share of Participants in Each Treatment Group Who Reported an Intent to Receive a COVID-19 Vaccine, by Political Concordance of the Treatment

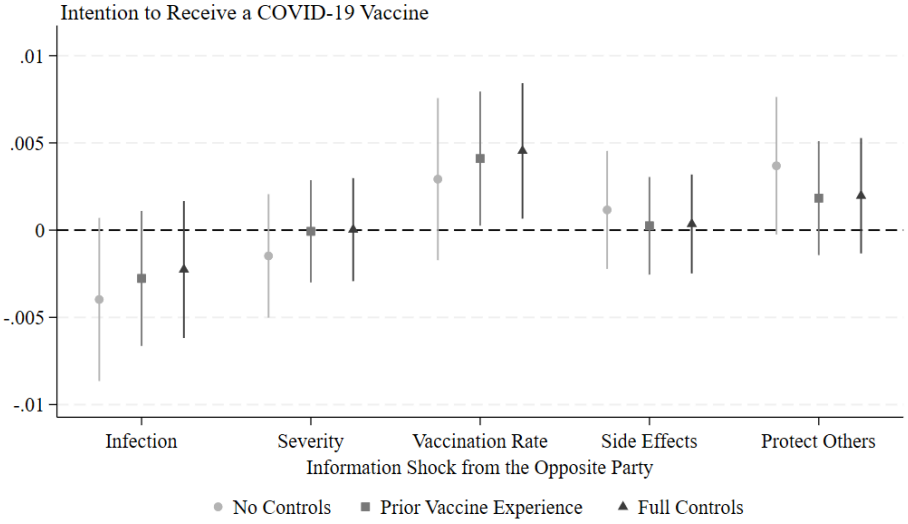


Note: The figure plots the share of participants who reported that they intend to receive a COVID-19 vaccine by the information shock that they received. The lighter grey shading indicates the vaccination intention among participants who received an information shock based on the experiences of members of their same political party, while the darker grey shading indicates the vaccination intention among participants who received an information shock based on the experiences of members of the opposite political party. The vertical bars denote the 95 percent confidence intervals.

Appendix Figure B4: The Relationship Between the Opposite-Party Vaccination Rate Information Shock and the Likelihood That Participants Reported an Intent to Receive a COVID-19 Vaccine Is Robust to The Exclusion of Covariates



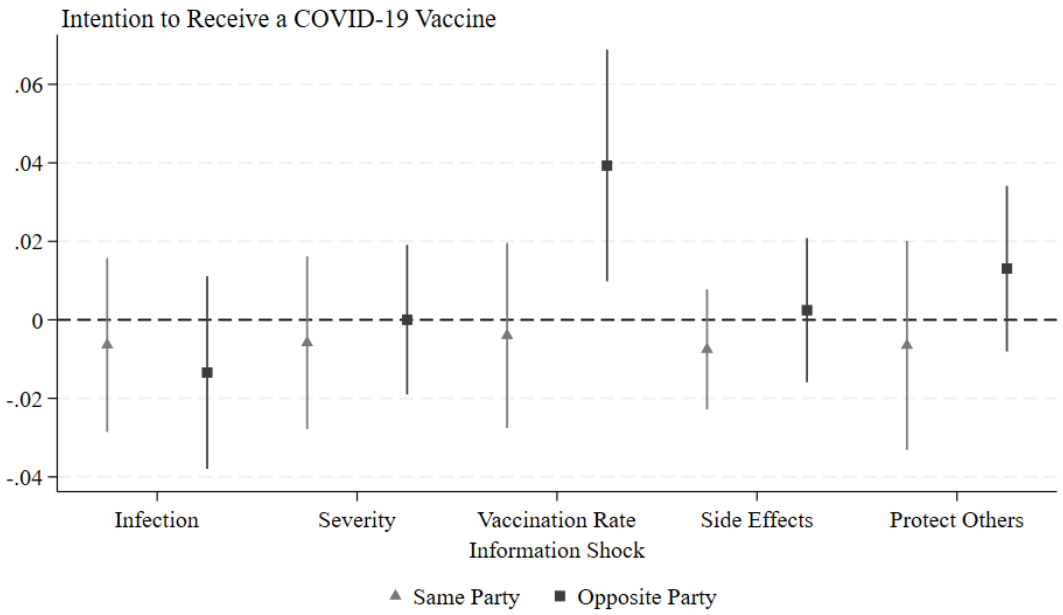
(A) Same-Party Information Shock Estimates



(B) Opposite-Party Information Shock Estimates

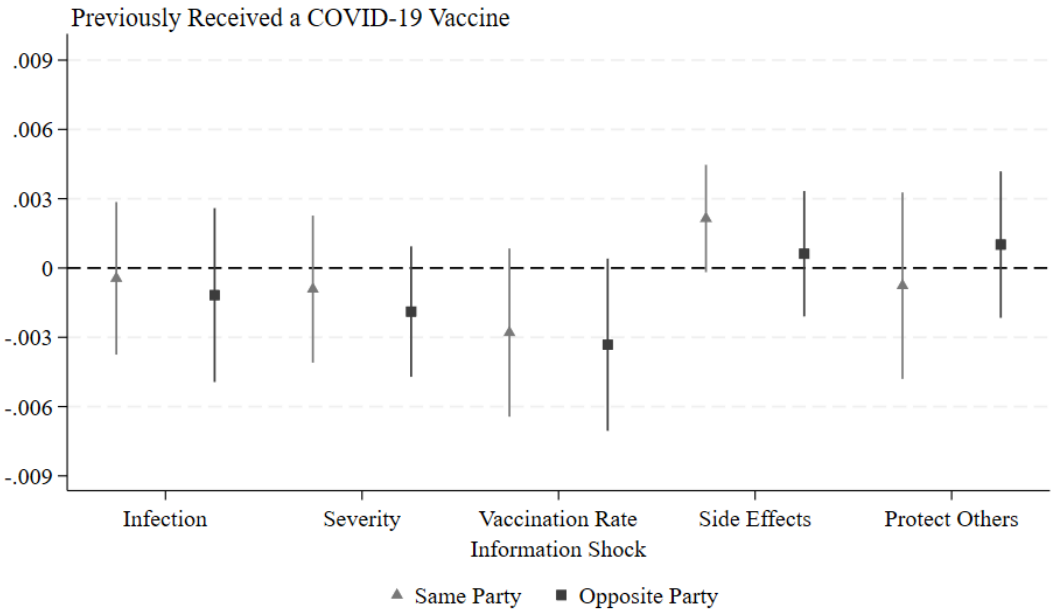
Note: The figure plots the estimates obtained from equation (2), which examines the importance of political concordance in shaping vaccination decision-making by separately considering whether the shocks to the individuals' COVID-19 beliefs are based on the experiences of those from the same or opposite political party. The estimates are obtained via ordinary least squares. Panel A plots the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the same political party affiliation, while Panel B plots the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the opposite political party affiliation. The vertical lines denote the 95 percent confidence intervals. The lightest grey circles show results without any control variables, the grey squares indicate results when controlling for prior vaccination history, and the darkest grey triangles indicate results when including demographic characteristics.

Appendix Figure B5: The Pattern is Robust to Using a Logistic Regression



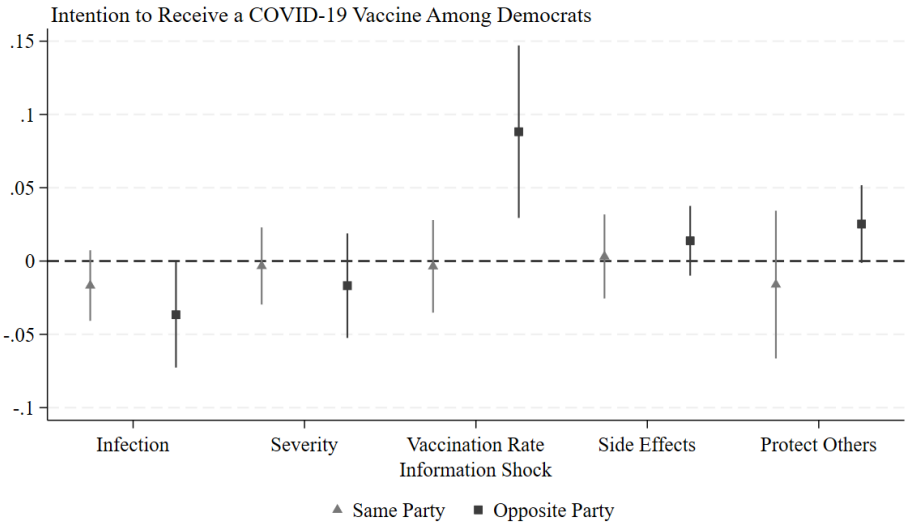
Note: The figure plots the estimates obtained from equation (2), which examines the importance of political concordance in shaping vaccination decision-making by separately considering whether the shocks to the individuals' COVID-19 beliefs are based on the experiences of those from the same or opposite political party. The specification is estimated using logistic regression and the coefficients are the log odds ratios. The lighter grey triangles indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the same political party affiliation, while the darker grey squares indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the opposite political party affiliation. The vertical lines denote the 95 percent confidence intervals.

Appendix Figure B6: The Falsification Test is Robust to Controlling for Future Vaccination Intention

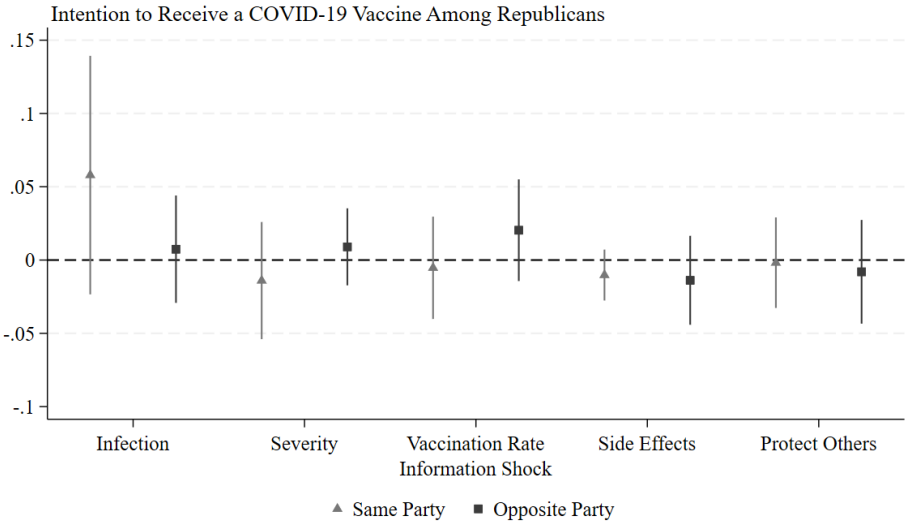


Note: The figure reports results examining the relationship between the actual information shocks and the likelihood that participants reported previously receiving a COVID-19 vaccine after controlling for future vaccine intentions. The figure plots the estimates obtained from equation (2), which examines the importance of political concordance in shaping vaccination decision-making by separately considering whether the shocks to the individuals' COVID-19 beliefs are based on the experiences of those from the same or opposite political party. The estimates are obtained via ordinary least squares. The lighter grey triangles indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the same political party affiliation, while the darker grey squares indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the opposite political party affiliation. The vertical lines denote the 95 percent confidence intervals.

Appendix Figure B7: The Relationship Between Learning the Opposite-Party Vaccination Rate and Democrats' Vaccination Intentions is Robust to Using Logistic Regression



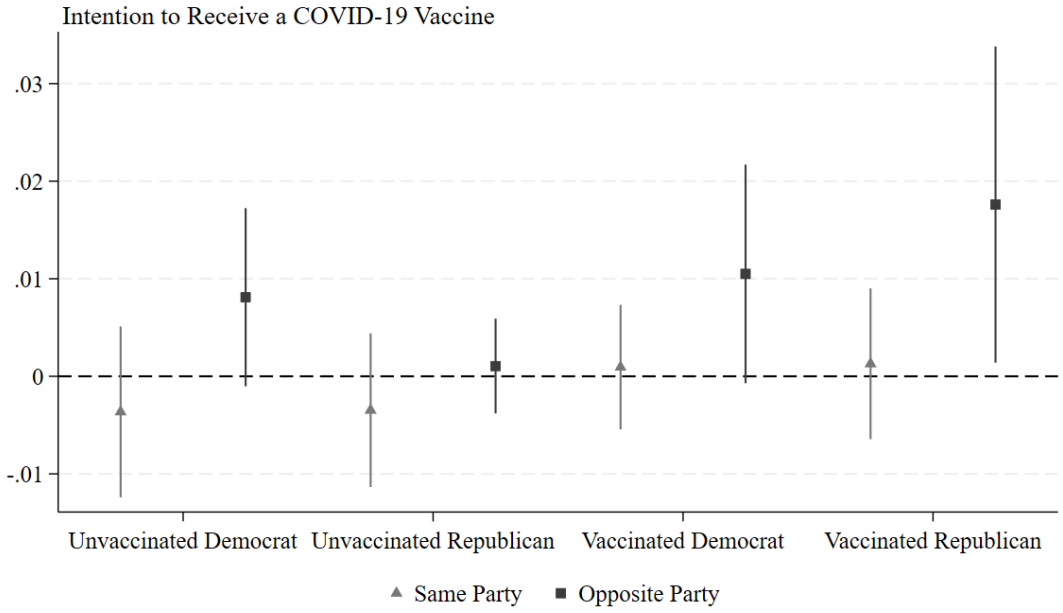
(A) Estimates for Democrats



(B) Estimates for Republicans

Note: Panels A and B plots estimates obtained from the single regression, shown in equation (3), which examines how Democrats and Republicans respond to shocks to their beliefs about the COVID-19-related experiences of Democrats and Republicans. The estimated are obtained via logistic regression and are log odds ratios. Panel A plots the estimates for Democrats while Panel B plots the estimates for Republicans. The darker grey triangles indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the same political party affiliation, while the lighter grey squares indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the opposite political party affiliation. The vertical lines denote the 95 percent confidence intervals.

Appendix Figure B8: There is Suggestive Evidence That Participants from Both Parties Who Were Previously Vaccinated Were More Likely to Report an Intention to Receive a COVID-19 Vaccine After Learning the COVID-19 Vaccination Rate Among Members of the Opposite Political Party



Note: The figure plots estimates obtained from a specification that augments equation (3) with an indicator for whether the participant reported previously receiving a COVID-19 vaccine. For brevity, we only report the estimates on the information shock of interest which measures the difference between participants' initial beliefs and the revealed vaccination rate among members of the same or opposite political party. The estimates are obtained via ordinary least squares. The darker grey triangles indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the same political party affiliation, while the lighter grey squares indicate the estimates from when an individual received a shock to their beliefs based on the experiences of someone with the opposite political party affiliation. The vertical lines denote the 95 percent confidence intervals.

Appendix Table B1: Additional Summary Statistics for Experiment Participants

	Full Sample	Democrats	Republicans
Age	39.58	38.04	41.10
	(13.45)	(12.68)	(14.03)
Elderly Person in the Household	0.126	0.125	0.127
	(0.332)	(0.331)	(0.334)
Has Health Insurance	0.888	0.896	0.880
	(0.316)	(0.306)	(0.326)
Has a Primary Care Provider	0.758	0.750	0.766
	(0.429)	(0.434)	(0.424)
White	0.656	0.594	0.718
	(0.475)	(0.492)	(0.451)
Black	0.233	0.243	0.223
	(0.423)	(0.430	(0.417)
Other	0.111	0.163	0.058
	(0.314)	(0.370)	(0.235)
Female	0.582	0.639	0.526
	(0.494)	(0.481)	(0.500)
Male	0.409	0.344	0.474
	(0.492)	(0.476)	(0.500)
Non-Binary/Other Gender	0.009	0.017	0.000
	(0.093)	(0.131)	(0.000)
At Most a High School Degree	0.119	0.111	0.127
	(0.324)	(0.315)	(0.334)
Some College	0.316	0.319	0.313
	(0.466)	(0.467)	(0.464)
College Graduate	0.565	0.569	0.560
	(0.496)	(0.496)	(0.497)
Household Income < $50K	0.283	0.288	0.278
	(0.451)	(0.454)	(0.449)
Household Income $50K-$100K	0.392	0.417	0.368
	(0.489)	(0.494)	(0.483)
House Income $100K+	0.325	0.295	0.354
	(0.469)	(0.457)	(0.479)
Observations	579	288	291

Appendix Table B2: Prediction Errors for Additional Groups

	(1)	(2)	(3)	(4)	(5)
	Contracted COVID-19	Sought Medical Intervention Conditional on Having a COVID-19 Infection	Received a COVID-19 Vaccine	Experienced Side Effects Conditional on Receiving a COVID-19 Vaccine	Reported Protecting Others as a Primary Reason for Receiving the COVID-19 Vaccine
Panel A: Full Sample					
Overall	21.46	22.15	8.83	-33.89	-12.56
	(24.43)	(25.40)	(26.37)	(25.62)	(25.05)
Same Party	22.15	22.34	10.60	-34.39	-11.25
	(24.30)	(25.13)	(27.36)	(26.57)	(24.91)
Opposite Party	20.78	21.97	7.09	-33.41	-13.85
	(24.56)	(25.70)	(25.28)	(24.68)	(25.16)
Panel B: Treated Group					
Overall	18.98	26.51	5.89	-35.54	-26.43
	(23.98)	(25.19)	(26.12)	(26.43)	(10.49)
Same Party	21.15	26.66	9.66	-34.16	-7.52
	(25.53)	(24.48)	(25.57)	(26.47)	(22.60)
Opposite Party	16.96	26.39	2.11	-37.73	-12.99
	(22.30)	(25.98)	(26.32)	(26.56)	(25.01)

Note: Each panel reports the average difference between what the participants in our experiment predicted about the experiences of individuals with COVID-19 and the amount obtained in the pre-experiment survey. Positive values indicate that on average participants overestimated a particular share, while negative values indicate that the participants underestimated the share. Panel A reports the average error when individuals in the full sample made predictions about the experiences, and Panel B reports these same figures but only among the subset of individuals who later had the actual values from the pre-experiment survey revealed to them.

Appendix Table B3: Baseline Relationship When Not Accounting for Political Concordance

	(1)	(2)
	Ordinary Least Squares	Logistic Regression
Share Contracting COVID-19	-0.001	-0.008
	(0.001)	(0.009)
Share of Infected with a Severe Infection	-0.000	-0.001
	(0.001)	(0.008)
Vaccination Rate	0.002	0.013
	(0.001)	(0.009)
Share with Side Effects from Vaccination	-0.001	-0.005
	(0.001)	(0.006)
Share Vaccinating to Protect Others	0.001	0.004
	(0.001)	(0.008)
R^2	0.344	
Observations	579	579

Note: The table reports the estimates obtained from equation (1), which examines the relationship between shocks to beliefs about COVID-19 and whether individuals reported that they intend to receive a COVID-19 vaccination in the next 12 months. Column 1 is estimated via ordinary least squares, while column 2 is estimated via logistic regression and reports the log odds ratios.