

Examining Partisan Asymmetries in Fake News Sharing and the Efficacy of Accuracy Prompt Interventions

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May 25, 2023

Current version of paper: <https://psyarxiv.com/y762k>

Abstract

The spread of misinformation has become a central concern in American politics. Recent studies of social media sharing suggest that Republicans are considerably more likely to share fake news than Democrats. However, such inferences are confounded by the greater supply of right-leaning fake news—Republicans may not be more prone to sharing fake news; rather, they may simply be more likely to be exposed to it. We disentangle these competing explanations by examining sharing intentions in a balanced information environment. Using a large national survey of YouGov respondents, we show that Republicans are indeed more prone to sharing ideologically agreeable fake news than Democrats, but that this gap is not large enough to explain differences in sharing observed online. Encouragingly, however, we also find that accuracy prompt interventions that reduce the spread of fake news are equally effective across parties, suggesting that fake news sharing among Republicans is not an intractable problem.

This working paper is not yet peer reviewed

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Introduction

While the rise of the internet once promised to expand and equalize access to political information, the growing supply of online misinformation amid rising levels of political polarization has caused widespread anxiety. Of particular concern is fake news, or disinformation—“fabricated information that mimics news media content in form but not in organizational process or intent” (Lazer et al., 2018). With 86% of Americans now consuming news online (Shearer, 2021) and 46% accessing news through social media (Mitchell et al., 2020), particular attention has been paid to online fake news in recent years. It has been estimated that over 25% of American adults—or 64 million people—visited a fake news website during the final weeks of the 2020 U.S. election (Moore et al., 2022), for example.

Especially concerning are recent observations that Republicans are substantially more likely to share fake news than Democrats (Grinberg et al., 2019; Guess et al., 2019). This asymmetry raises normative concerns about imbalanced democratic accountability and trust in democratic institutions, with both elites and citizens on one side of the political aisle less constrained by facts than those on the other. Yet the reasons for this asymmetry are not well understood. The prevailing perspective posits that Republicans are inherently more susceptible to sharing fake news, whether due to a greater likelihood of believing misinformation in general (Miller et al., 2016; Pasek et al., 2015), lower ability to distinguish real news from fake news (Basol et al., 2020; Garrett and Bond, 2021; Pennycook et al., 2021), or psychological traits associated with political bias (Jost et al., 2013; Jost, 2017).

However, higher levels of fake news sharing among Republicans may simply reflect the greater supply of right-leaning fake news in the information ecosystem. With the majority of fake news supporting conservative viewpoints (Benkler et al., 2018; Allcott and Gentzkow, 2017; Garrett and Bond, 2021), Republicans should be expected to share more fake news simply because they have greater exposure to it, even if Democrats are equally (or even more) prone to share fake content when they encounter it (Osmundsen et al., 2021). This is especially likely given the tendency for both Democrats and Republicans to be exposed to,

(Stroud, 2010; Bakshy et al., 2015) and preferentially share (Barberá et al., 2015; Osmundsen et al., 2021; Pennycook et al., 2021), ideologically agreeable content. The differential exposure confound leads to an observational equivalence in past work: evidence that Republicans share more fake news than Democrats can reflect either greater demand for, or supply of, fake news on the political right.

The present article addresses this confound, providing a strict test of partisan asymmetries in the willingness to share fake news using a large national survey of U.S. adult Facebook users recruited by YouGov in the months preceding the 2020 U.S. presidential election. We address the issue of observational equivalence faced by past work by examining news sharing in an information environment with a balanced supply of news, both in terms of veracity (true or false) and partisan alignment (left-leaning or right-leaning). Within this environment, respondents were each exposed to 20 political headlines—sampled randomly from a larger set of 59 recent headlines—and asked to report their likelihood of sharing each headline. We use this design to measure partisan differences in sharing discernment—the extent to which more true news is shared relative to false news.

We find that when sharing news that is ideologically agreeable, Democrats are significantly more discerning between real and fake news than Republicans: Democrats were 1.54 times more likely to share true news relative to false news, while Republicans were only 1.16 times more likely to share true news relative to false news. For ideologically disagreeable news, Democrats and Republicans are approximately equally discerning. Thus, we find evidence that Republicans do indeed have some greater predilection to share fake identity-confirming news. Therefore the patterns observed on social media cannot be entirely explained by differences in exposure. However, the magnitude of the difference in predilection observed here is not sufficient to explain why Republicans share between 200 and 500 percent more fake news than Democrats (Grinberg et al., 2019; Guess et al., 2019).

The finding that Republicans are at least somewhat more prone to sharing fake news lends urgency to the question of whether existing interventions are effective in increasing sharing

discernment, especially among Republicans. While most prior work on anti-misinformation interventions has focused on rectifying inaccurate beliefs (e.g. debunking or correcting falsehoods (Nyhan and Reifler, 2010; Wittenberg and Berinsky, 2020)), recent work has begun to target social media sharing. For example, a series of recent studies have found that prompting users to consider the concept of accuracy increases subsequent sharing discernment (Pennycook et al., 2020, 2021; Epstein et al., 2021; Roozenbeek et al., 2020; Rathje et al., 2021). Although these accuracy prompts have been shown to be effective overall, whether they work for Republicans has been contested (Roozenbeek et al., 2021; Rathje et al., 2022).

We address this question by randomly assigning a separate set of respondents in the same survey to receive one of three different accuracy prompt interventions, which shift attention to whether news is accurate (Pennycook and Rand, 2022). Unlike past work that examines partisan asymmetries in responsiveness to accuracy prompts (Roozenbeek et al., 2021; Rathje et al., 2022), we use a headline set that is balanced on partisan lean together with a higher quality sample of social media users. We find that accuracy prompts are equally effective in increasing sharing discernment among Democrats and Republicans, allaying concerns that they fail to work where our data suggest they are needed the most: among Republicans who encounter ideologically agreeable false content.

Together, our findings indicate that while Republicans are more prone to sharing fake news than Democrats, the magnitude of this asymmetry is insufficient to explain the large partisan differences in sharing observed in recent studies. Our findings also demonstrate that the problem of partisan asymmetries in sharing fake news is not intractable: contrary to recent claims, interventions aimed at improving discernment by increasing attention to accuracy can improve the veracity of political news shared by Republicans and Democrats alike. These results are especially promising given that one of the interventions we test, a 30-second public service announcement video, is more easily deployable online than previously tested interventions, and in fact was deployed at scale using targeted advertisements by a non-profit organization during the 2020 US election.

Individual Differences in Sharing Fake News

The questions of who is most prone to sharing fake news, and most resistant to interventions aimed at slowing its spread, are both practically and normatively consequential. Practically, a prerequisite to prescribing a remedy to the problem of fake news is understanding who is spreading it. Current methods of slowing the spread of fake news—including the targeted removal of specific users and content from social media (Yang et al., 2022), expert and crowd-sourced fact checks (Brashier et al., 2021; Pennycook et al., 2020; Yaqub et al., 2020), and interventions aimed at increasing digital literacy and attention to accuracy (Guess et al., 2020; Pennycook et al., 2021; Badrinathan, 2021)—require an understanding of who to target. Normatively, the preferential spread of fake news on one side of the political spectrum threatens to asymmetrically undermine democratic accountability and trust in democratic institutions. While any erosion of democratic norms is consequential, asymmetric erosion can lead to different sets of rules for members of opposing parties, leading them to respond to unfavorable political events and conditions (e.g., a lost election) in a manner that is untethered from reality.

A common claim in the growing literature on fake news and online misinformation is that Republicans and conservatives are more prone to spread fake news than Democrats and liberals (Grinberg et al., 2019; Guess et al., 2019). From a theoretical perspective, this claim is supported by decades of research suggesting psychological differences between liberals and conservatives that make the latter more prone to political bias. For instance, conservatives demonstrate higher levels of personality traits and cognitive styles expected to predispose one to political bias, including greater needs for cognitive closure, higher levels of dogmatism, and lower levels of self-reflection (Jost et al., 2013, 2017; Jost, 2017; Baron and Jost, 2019). More closely tied to the spread of fake news, conservatives are also more likely to resist information that challenges one’s worldview (Barberá et al., 2015; Nam et al., 2013) and rely on intuitive (Type 1) information processing (Jost et al., 2017; Jost and Krochik, 2014; Pennycook and Rand, 2019).

Past work on misinformation more broadly—including misperceptions, conspiracy theories, and political rumors—lend further support to the expectation that individuals on the political right are more likely to spread fake news and resist intervention. For instance, conservatives are more likely to believe in misinformation and conspiracy theories (Miller et al., 2016; Pasek et al., 2015; Van der Linden et al., 2021) and question historical (Americans landed on the moon), scientific (climate change is true), and public health (smoking causes cancer) findings (Lewandowsky et al., 2013). Recent work on social media specifically suggests that conservatives are more likely to believe online bots (Yan et al., 2021), a potential vector of transmission for fake news. While difficult to measure empirically, it is also possible that exposure to fake news itself causes people to develop conservative attitudes and identify as Republican.

However, there are also reasons to expect that liberals and conservatives might be equally prone to sharing fake news and responding to interventions. The most prominent of these takes the form of pushback against the supposed consequences of psychological differences between liberals and conservatives. While these well-documented differences should result in greater political bias in theory, recent work finds that this is not necessarily the case in practice (Kahan, 2013; Kahan et al., 2017; Ditto et al., 2018; Guay and Johnston, 2021; Frimer et al., 2017; Ryan and Aziz, 2021). Specifically, conservatives and Republicans do not appear to privilege ideologically agreeable information more than Democrats (Ditto et al., 2018, 2019; Tappin and McKay, 2019). In fact, many of the traits typically associated with conservatives, such as need for certainty, do not appear to be associated with this type of political bias at all (Guay and Johnston, 2021). Similarly, there is recent pushback on left-right asymmetries in belief in scientific findings. Specifically, Washburn and Skitka (2017) find that both liberals and conservatives were less likely to correctly interpret scientific results when results conflicted with their prior attitudes and McPhetres et al. (2021) find surprisingly little polarization across a large number of scientific issues.¹

¹Past work generally presumes that party identification—sometimes referred to as the ‘unmoved mover’—is causally prior to most behavior, including susceptibility to fake news. However, it is possible that exposure

Partisan Asymmetries in Sharing Fake News

With these theoretical expectations in mind, we turn to recent empirical work that examines whether the amount of fake news shared on social media differs by ideology or political party, typically by scraping a large sample of articles shared by Facebook or Twitter users. For instance, [Grinberg et al. \(2019\)](#) analyze articles shared by over 16,000 Twitter users, using the ideological composition of their follower networks to infer the partisanship of individual users. Some recent work goes a step further by linking social media data with user's survey responses, enabling more robust measures of respondent partisanship ([Guess et al., 2019](#)). Such studies have overwhelmingly concluded that fake news is shared more by social media users on the political right ([Grinberg et al., 2019; Guess et al., 2019; Allcott and Gentzkow, 2017](#)).

These designs are well-suited for describing the total amount of fake news that is shared by different subsets of the population. However, these studies face a common confound that limits the inferences that can be drawn about whether Republicans or Democrats are more prone to sharing fake (vs. real) news. Namely, the supply of fake news is asymmetric across partisan and ideological lines, with a far greater supply of fake news on the right than the left ([Benkler et al., 2018; Allcott and Gentzkow, 2017; Garrett and Bond, 2021](#)).

This confound results in an observational equivalence between two sides of the fake news asymmetry hypothesis. On the one hand, the observation that Republicans and conservatives are responsible for sharing a greater amount of fake news could result from a greater propensity to share fake news. That is, individuals on the political right may be more prone to share fake content upon being exposed to it, whether due to certain personality/cognitive traits thought to predispose one to political bias (e.g., [Jost et al. 2017](#)), lower trust in scientific findings (e.g., [Lewandowsky et al. 2013](#)), or some other factor (or set of factors). On the other hand, the result that Republicans and conservatives share more fake news could result even if Democrats and liberals are equally prone to share fake news. Given a perfect

to fake news causes people to be Republican over a long period of time.

partisan symmetry in the propensity to share fake news, the greater supply of fake news on the political right would still produce the apparent sharing asymmetry observed in past work.

The asymmetry in supply of fake news may be further exacerbated by the tendency of both Democrats and Republicans to not only be exposed to congenial information but also to preferentially share congenial information ([Guess et al., 2020](#); [Grinberg et al., 2019](#); [Pennycook et al., 2021](#)). The tendency to share congenial news could serve to exacerbate the confound that results in observational equivalence in studies examining partisan differences in sharing fake news.

This confound limits the inferences recent work can draw about how Democrats and Republicans differ in their underlying propensity to share fake news. For instance, [Guess et al. \(2019\)](#) find that conservatives are far more likely to share articles from fake news sources than liberals in 2016, but note that this asymmetry “is consistent with the pro-Trump slant of most fake news articles produced during the 2016 campaign... and thus might not represent a greater tendency of conservatives to share fake news than liberals conditional on being exposed to it.” Likewise, [Osmundsen et al. \(2021\)](#) observe that Republicans were more likely to share news from fake news sources, but note that this difference could be driven by large partisan asymmetries in the supply of fake news.

One potential method of addressing this confound is controlling for exposure to fake news when measuring asymmetries in fake news sharing. However, this approach is made challenging by the difficulty in measuring what content social media users are exposed to ([Lazer, 2020](#)) and the limited amount of left-leaning fake news that appears in random samples of social media users. Interestingly, [Grinberg et al. \(2019\)](#) use this approach in a secondary analysis and find that while approximately twice as many people on the political right shared fake news content during the 2016 election than people on the political left, this difference disappears when conditioning on exposure to fake news (pg. 4, Figure 4).

In this paper, we take up the task of directly testing for partisan asymmetries in news

sharing by measuring sharing behavior in a balanced information environment, where respondents from a large national sample of social media users recruited by YouGov are exposed to equal amounts of left- and right-leaning true and false news headlines. This balanced information environment enables us to draw inferences about how likely Democrats and Republicans are to share true (vs. false) news, and how this varies based on the political concordance of that news. While this approach departs from past observational social media studies by prioritizing internal validity, we take two steps to maximize generalizability and external validity. First, the 20 headlines shown to each respondent are sampled randomly from a larger set of 59 headlines that appeared on online news websites, which enables us to draw inferences about a wider range of headlines. Second, we use a sharing intentions measure that headline-level analyses find to be correlated with actual sharing behavior on social media—and, even more importantly, to show similar correlation patterns with a range of covariates as is observed using actual sharing ([Mosleh et al., 2020](#)).

Partisan Asymmetries in the Efficacy of Fake News Sharing Interventions

A second question concerns the extent to which Democrats and Republicans respond differently to interventions aimed at increasing sharing discernment. A growing body of research seeks to understand how to best combat the sharing of fake news, ranging from methods that train social media users to detect false content to attaching warning labels to false content or removing it entirely ([Baron and Jost, 2019](#); [Clayton et al., 2019](#); [Nyhan et al., 2019](#)). The question of for whom these interventions are more versus less effective has implications for how the interventions are designed and deployed.

Here, we investigate this question, with a particular focus on accuracy prompt interventions ([Byles et al., 2021](#); [Epstein et al., 2021](#); [Pennycook et al., 2020, 2021](#); [Roozenbeek et al., 2020](#), for a review see [Pennycook and Rand \(2022\)](#)). Past work has suggested that

even people who value accuracy may share false news because they simply forget to stop and consider whether it is true before sharing. Thus, prompts that redirect users' attention back to accuracy can improve the quality of the news they share, both in survey experiments and a field experiment on Twitter. A variety of different accuracy prompts have been shown to be effective (Epstein et al., 2021), and the approach works for a wide variety of headlines (Pennycook et al., 2020, 2021).

Despite this overall promise, however, recent work has raised questions about whether accuracy prompts are less effective for Republicans than for Democrats. For example, using quota-matched participants from Lucid evaluating headlines about COVID-19, Roozenbeek et al. (2020) found that an accuracy prompt was ineffective for Republicans, whereas Epstein et al. (2021) found that accuracy prompts worked equally well for liberals and conservatives. Using convenience samples from Amazon Mechanical Turk evaluating political headlines, Pennycook et al. (2021) found that accuracy prompts worked less well for Republicans than Democrats, but still significantly improved sharing discernment even for Republicans. Meta-analyzing the results of 5 accuracy prompt experiments, (Rathje et al., 2022) found that accuracy prompts were ineffective for Republicans; and meta-analyzing the result of 20 accuracy prompt experiments, Pennycook and Rand (2023) found that accuracy prompts were less effective for Republicans in convenience samples but not in more representative samples.² Overall, then, it remains unclear whether accuracy prompts can effectively reduce the share of fake political news among Republicans.

Therefore, in addition to examining partisan differences in the propensity of Americans to share fake news, we take up the question of whether accuracy prompt efficacy varies across partisanship. By using a more representative sample of users and a larger set of politically balanced headlines than prior work, we aim to more clearly understand if accuracy prompts can effectively increase the quality of political news shared by Republicans.

²Note that the data from the current study are included in this meta-analysis, but all of the other samples using political headlines are either convenience samples from Mechanical Turk or quota-matched samples from Lucid. Therefore, the current paper investigates partisan differences in this higher quality national sample from YouGov.

Data & Methodology

We recruited 2,015 U.S. adult survey respondents from YouGov approximately two months before the 2020 U.S. presidential election (August 28 - September 6, 2020).³ Respondents were self-reported U.S. Facebook users who were registered to vote. YouGov draws respondents from a demographically balanced panel of U.S. survey respondents who are invited to participate in individual surveys for compensation. All analyses are weighted according to gender, age, race, education, region, and past presidential vote based on registered voters in the U.S. Census Bureau’s November 2016 Current Population Survey. The balanced partisan and demographic nature of this sample is particularly important for drawing valid inferences about partisan asymmetries in sharing discernment. We measured respondents’ party identification on a 7-point scale ranging from “Strong Democrat” to “Strong Republican.”

Respondents were randomly assigned with equal probability to one of four experimental conditions that determined what, if anything, they were shown prior to the news sharing task. Respondents assigned to the control condition were shown nothing prior to the news sharing task. The remaining respondents were assigned to receive one of three interventions aimed at prompting them to consider accuracy, and thus increase the quality of the news they shared. The first two of these accuracy prompt interventions were adapted from prior work (Pennycook et al., 2021, 2020; Epstein et al., 2021). These included the Evaluation treatment, in which respondents were shown a single non-political news headline and asked to judge its veracity (Figure 1A)⁴; and the Importance + Norms treatment (Epstein et al., 2021), in which respondents were asked “Do you believe it’s important to think about whether a news article is true or false before sharing it on social media?” with response options “yes” and “no” (Figure 1B), and then (regardless of their response) shown the message “90% of people say it’s important to consider accuracy before sharing content.” The third treatment

³This research was deemed exempt by the [REDACTED FOR PEER REVIEW]’s Research Ethics Board.

⁴Respondents were randomly assigned to see one of five news headlines (two true headlines, three false headlines). After rating the headline as true or false, half of respondents received feedback about whether they had answered correctly.

Figure 1: Accuracy Nudges and Headline Example



Panel A: Evaluation intervention, Panel B: Important & Norms intervention, Panel C: frame from Video intervention, Panel D: One of the 49 headlines that respondents reported sharing intentions for.

was a novel accuracy prompt intervention developed for this study, consisting of a 30-second animated public service announcement style video emphasizing the importance of paying attention to the accuracy of information shared on social media (Figure 1C)⁵. Links to the interventions are included in the Supplementary Materials (SM) 2.2.

All respondents were then shown 20 recent news headlines and reported how likely they

⁵The PSA video featured an animation of an individual considering whether a series of news articles were real or fake, with the following text displayed throughout the video: “90% of people say it's important to only share accurate content on social media/But the chaos of social media can make it hard to keep your mind on accuracy/So people often share news they would have realized was false—if they'd thought about it/Remember to think before you share.”

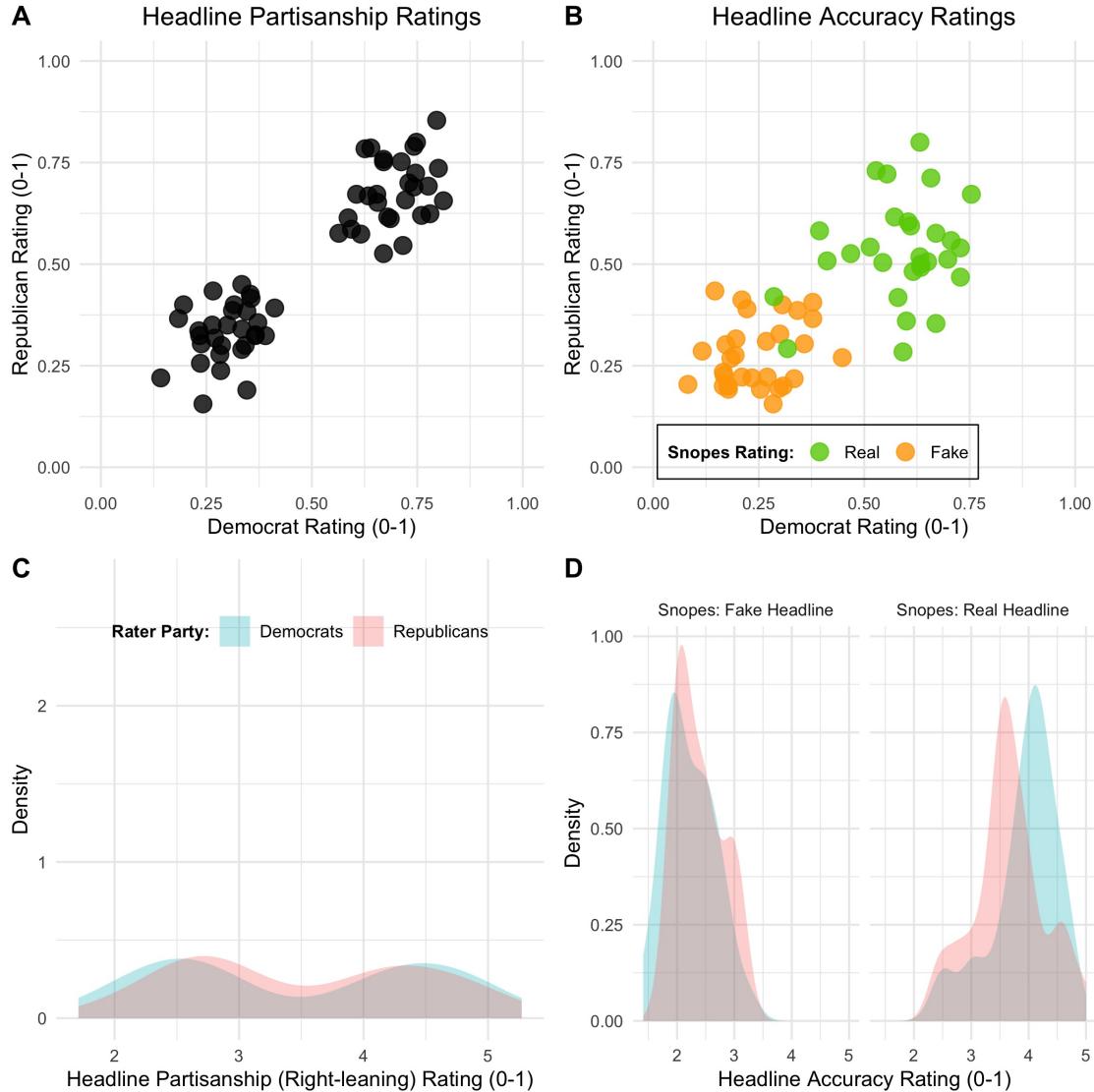
would be to share each. Instructions read “Next you will be presented with a set of news headlines (20 in total). We are interested in whether you would consider sharing these stories on Facebook.” Each subsequent screen featured a news article as it would appear on Facebook, with a headline (“e.g., Trump Science Advisor Denies Apollo Landings Ever Happened”), the source of the headline (e.g., worldwidetodailyreport.com), and the original image accompanying the headline when it was published (Figure 1D). Respondents were asked “If you were to see the above post on Facebook, how likely would you be to share it?” and answered using a 6-point Likert scale ranging from “extremely unlikely” to “extremely likely.” Recent item-level analyses show that self-reported sharing intentions elicited in this way are strongly correlated with actual sharing behavior on Twitter, and, even more importantly, show similar patterns of correlation between sharing and covariates ([Mosleh et al., 2020](#)). Furthermore, the Evaluation accuracy prompt intervention used in this study, which was developed using self-report sharing intentions, was also found to be effective on actual sharing in a field experiment on Twitter ([Pennycook et al., 2021](#)).

The 20 headlines viewed by respondents were balanced by partisanship (left-leaning, right-leaning) and veracity (true or false), such that each respondent saw 5 true left-leaning headlines, 5 false left-leaning headlines, 5 true right-leaning headlines, and 5 false right-leaning headlines.⁶ In order to increase generalizability, the 20 headlines viewed by each respondent were sampled from a larger set of 59 headlines. We followed [Pennycook et al. \(2021\)](#) methodology for selecting headlines, drawing false articles from fact-checking websites (e.g., Snopes.com) and true news articles from a wide variety of mainstream sources.

In a pre-test, an independent quota-matched sample of N=880 survey respondents recruited on Lucid rated an even larger set of 216 headlines on partisanship (“Assuming the headline is entirely accurate, how favorable would it be to Democrats vs. Republicans?”) and veracity (“What is the likelihood that the headline is true?”), among other things. We

⁶We use the term false headlines to underscore the fact that, although not factually true, they are real headlines that appeared on actual websites (as opposed to fake headlines that are made up by researchers, e.g, ([Pereira et al., 2018](#))).

Figure 2: Pre-test Accuracy and Partisanship Ratings of Headlines



Ratings of headlines by an independent sample of Lucid respondents. Democrat and Republican respondents agreed on the partisanship of the headlines (Panel A, $r = .91$) and whether each headline was true or fake (Panel B, $r = .74$).

then used these pre-test ratings to construct a balanced headline set for our experiment. As illustrated by Figure 2, Democratic and Republican raters had high levels of agreement about which headlines were left- and right-leaning (Panels A and C, $r = .91$). Democratic and Republican raters also had high levels of agreement on which headlines were true vs. false (Panels B and D, $r = .74$) indicating that perceptions of veracity are not largely driven by partisanship.

Modeling Discernment

We follow past work in using sharing discernment as our primary outcome of interest, which reflects the difference in sharing true vs. false news. Guay et al. (2023) outline two types of discernment, based on different methods of calculating this difference. *Additive discernment* reflects the additive difference between sharing true and false news—e.g., if respondents share an average of 10 true and 6 false news articles, additive discernment is 4 ($10 - 6 = 4$). *Multiplicative discernment* reflects the multiplicative difference between sharing true and false news—in the same example, respondents are 1.7 times more likely to share true news than false news ($10 / 6 = 1.7$). Since multiplicative discernment is reported in the form of a ratio, 1 indicates no discernment (people are just as likely to share true news as false news), values greater than 1 indicate positive discernment (sharing more true news than false news), and values less than 1 indicate negative discernment (sharing more false news than true news).

Recently, concerns have been raised that additive discernment can be misleading when overall propensity to share news (regardless of whether it is true or false) varies across groups (Sirlin et al., 2021; Guay et al., 2023). Specifically, additive discernment does not account for differences in overall sharing propensity across groups, which can make groups with a greater propensity to share content of any kind appear more discerning. To illustrate, consider a case in which Democrats and Republicans are (i) both twice as likely to share true news compared to fake news, but (ii) the overall propensity to share news (both true and false) generally is 1.5 times higher for Republicans. For example, say Republicans share 15% of false headlines and 30% of true headlines; whereas Democrats share 10% of false headlines and 20% of true headlines. Here there are partisan asymmetries in additive discernment, which is 15 for Republicans ($30-15$) and 10 for Democrats ($20-10$). On the other hand, there are no differences in multiplicative discernment, as both Democrats and Republicans are twice as likely to share true content (multiplicative discernment for each is $2: 30/15 = 2$ and $20/10 = 2$). Importantly, the partisan asymmetry in additive discernment in this

hypothetical scenario is the product of Republicans' greater propensity to share news of any kind, and therefore would not indicate a susceptibility to misinformation *per se*.

In the analysis that follows, we consider both forms of discernment. Given that we observe partisan differences in overall sharing propensity—with Republicans sharing more news of any kind than Democrats—we focus on multiplicative discernment in the primary analysis presented below and additive discernment in the Supplementary Materials (SM 1.2 SM 1.5), though both types of discernment yield similar conclusions.

When assessing partisan asymmetries in discernment, we model sharing intentions (on a 6-point scale, ranging from 0 to 1) among respondents in the control condition with an interaction between dummy variables for headline veracity (1 = headline is true, 0 = headline is false) and respondent party (1 = respondent is Democrat, 0 = respondent is Republican).⁷ When assessing partisan asymmetries in the effect of accuracy prompts on sharing discernment, we model sharing intentions among respondents from all conditions with an interaction between the same dummy variable for veracity and a treatment indicator (1 = treatment, 0 = control), with separate models for Democrats and Republicans.⁸

All models use survey weights and two-way clustered standard errors, as the observations are nested within both respondents (each respondent rates multiple headlines) and headlines (each headline is seen by multiple respondents). We fit the models using Maximum Likelihood Estimation with a Gaussian distribution and identity link function, which results in parameter estimates equivalent to those estimated using Ordinary Least Squares.⁹ In the Supplementary Materials (SM 1.1 and SM 1.4) we present results that control for age, gender, and education by including an interaction between headline veracity and each variable, which does not substantively change the results.

⁷We exclude independents who do not lean toward either party in our primary analysis but include them when assessing a larger set of predictors (including partisanship measured on a 7-point scale) in the analysis presented in Figure 4.

⁸As discussed below, we also modeled a three-way interaction between headline veracity, treatment, and respondent party to assess whether there are partisan asymmetries in the effect of accuracy prompts on sharing discernment.

⁹We use the *glm* function in R, which simplifies the process of calculating two-way clustered standard errors with survey weights).

We use these models to calculate both types of discernment by predicting sharing intentions while holding variables (e.g., partisanship and headline veracity) at set values. For instance, multiplicative discernment is calculated by dividing the mean of predicted sharing intentions for true headlines by that of false headlines. Partisan differences are then calculated by taking the ratio of multiplicative discernment among Democrats to multiplicative discernment among Republicans. We use simulation-based inference to construct confidence intervals and perform hypothesis testing (King et al., 2000), using the *Clarify* package in R (Greifer et al., 2023).¹⁰

Results

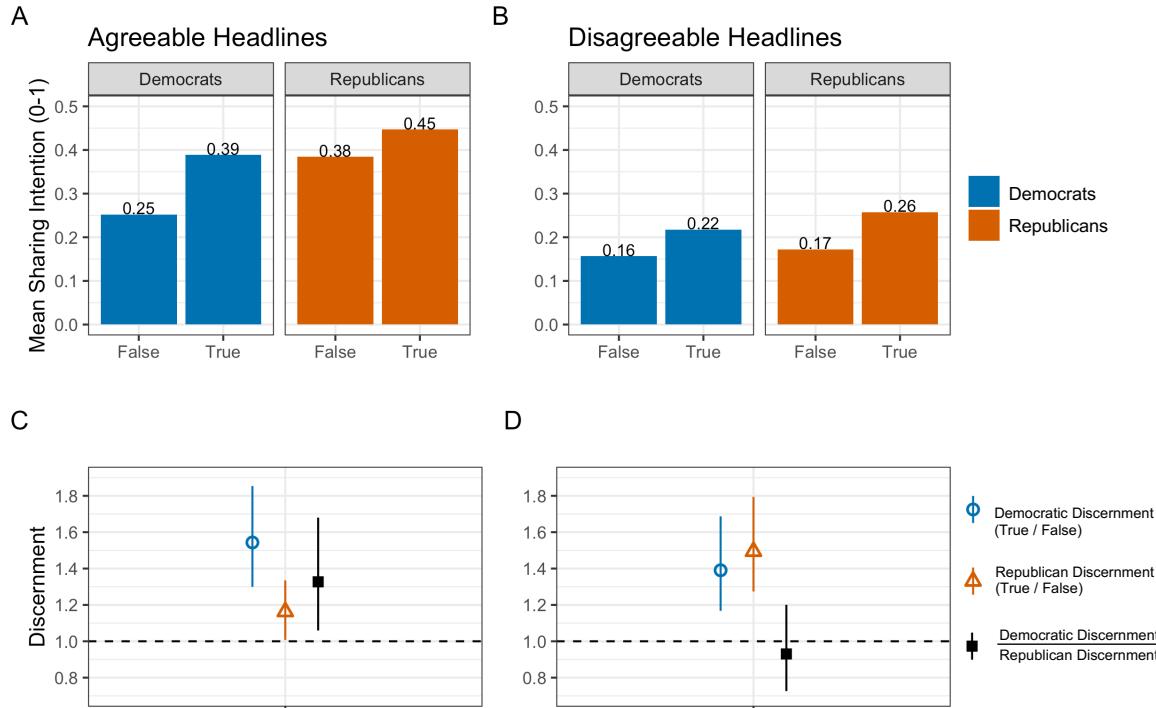
Partisan Asymmetries in Sharing Discernment

We begin by examining the extent to which sharing intentions for true and false news differ among Democrats and Republicans in the control condition. The top row of Figure 3 reports mean sharing intentions separately for Democrats and Republicans. As expected, overall sharing propensity differs by headline agreeableness, with respondents reporting far higher sharing intentions for ideologically agreeable headlines (Panel A) than disagreeable headlines (Panel B). However, overall sharing propensity also differs by political party, with

¹⁰Like bootstrapping, simulation-based inference calculates a quantity of interest n times (typically n > 1,000) and uses the resulting distribution of quantities to construct confidence intervals and perform hypothesis testing. Here, the quantity of interest is (mean of predicted sharing intentions for true headlines) / (mean of predicted sharing intentions for false headlines) for multiplicative discernment, and (mean of predicted sharing intentions for true headlines) - (mean of predicted sharing intentions for false headlines) for additive discernment. In the bootstrapping approach, a model is run on n randomly sampled subsets of the data and quantities are computed using each set of parameter estimates. In simulation-based inference, one model is run on the full dataset, producing a single set of coefficients (parameter estimates and standard errors). Then, n sets of parameter estimates are sampled from a normal distribution with a mean and standard deviation given by the original parameter estimates and standard errors, respectively. Quantities of interest are then calculated using each set of simulated point estimates, and the resulting distribution of quantities is used to calculate point estimates, construct confidence intervals, and perform hypothesis testing (e.g., the mean of the distribution is the point estimate, the standard deviation is the standard error, and the 2.5th and 97.5th quantiles represent the 95% confidence interval). For multiplicative discernment, the quantity of interest is the ratio of predicted sharing intention for true articles to the predicted sharing intention for false articles. For additive discernment, the quantity of interest is the difference in predicted sharing intentions for true articles and false articles.

Republicans sharing more news of any kind (true and false) than Democrats. This is especially the case for agreeable headlines, for which the mean sharing intention collapsing across true and false headlines is .32 for Democrats and .42 for Republicans.

Figure 3: Differences in Sharing Discernment by Respondent Party and Headline Agreeableness



Top row: Mean sharing intentions for agreeable (Panel A) and disagreeable (Panel B) headlines among Democrats and Republicans in the control condition. Bottom row: Sharing discernment (mean sharing intention for true / mean sharing intention for false) among Democrats and Republicans, for agreeable (Panel C) and disagreeable (Panel D) headlines. The ratio of discernment among Democrats to discernment among Republicans is also plotted, where values greater than 1 indicate that Democrats are more discerning than Republicans. Vertical lines represent 95% confidence intervals.

Multiplicative discernment—the ratio of sharing intentions for true headlines to sharing intentions for false headlines—is plotted in Panels C and D, for agreeable and disagreeable headlines, respectively. For agreeable headlines, Democrats are 1.54 times more likely to share true news relative to false news ($0.39 / 0.25 \approx 1.54$, $p < 0.001$, whereas Republicans are only 1.16 times more likely to share true news relative to false news ($0.45 / 0.38 \approx 1.16$, $p = 0.042$).

The ratio of discernment among Democrats to discernment among Republicans is 1.33 ($1.56 / 1.18 \approx 1.33$, $p = 0.16$), indicating that Democrats are 1.32 times (or 32%) more discerning than Republicans for agreeable headlines.

For disagreeable headlines, there is no statistically significant difference in discernment for Democrats and Republicans. Democrats are 1.38 times more likely to share true news relative to false news ($0.22 / 0.16 \approx 1.38$, $p < 0.001$) and Republicans are 1.53 times more likely to share true news relative to false news ($0.26 / 0.17 \approx 1.53$, $p < .001$). The ratio of discernment among Democrats to discernment among Republicans is 0.90 ($1.38 / 1.53 \approx 0.90$), which is not significantly different from 1 ($p = 0.57$).

In summary, while Democrats and Republicans exhibit similar levels of sharing discernment when encountering articles that support the opposing political perspective, Republicans are significantly less discerning when it comes to articles that are ideologically agreeable.

As a robustness check and to further understand the correlates of sharing discernment, we consider differences in sharing discernment by partisanship—measured on a 7-point scale ranging from 0 (strong Republican) to 1 (strong Democrat)—and a wider range of respondent characteristics.¹¹ These characteristics include trust in news found on social media, belief that news is biased, frequency of Facebook usage, political interest, belief that accuracy is important when deciding which articles to share online, and Need for Chaos (Petersen et al., 2020).¹²

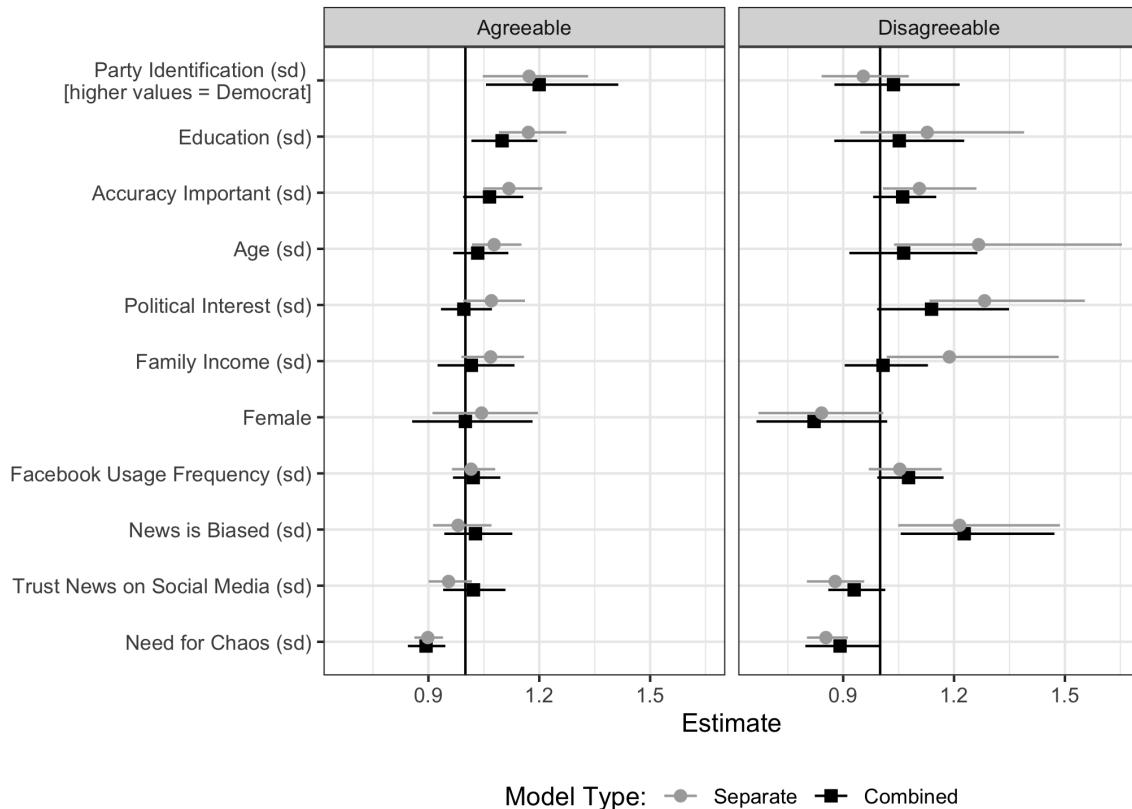
We follow the same modeling approach as above, modeling sharing intentions with an interaction between a dummy variable for true headlines and each characteristic of interest (e.g., political interest). All characteristic variables are standardized (i.e., z-scored), with the exception of a dummy variable for female (1 = female, 0 = male). We then calculate the ratio

¹¹Independents who do not report leaning toward either party are included in this analysis and coded as 0.5 on the partisanship scale). The party ID scale is coded with higher values reflecting stronger identification with the Democratic party to align with the analysis presented in Figure 3, in which partisanship is measured as a dummy variable with values of 1 indicating identification with the Democratic party and 0 indicating identification with the Republican party.

¹²Need for Chaos is “a mindset to gain status by disrupting the established order” and is correlated with sharing hostile political rumors (Petersen et al., 2018).

of discernment among respondents with high values of each characteristic to discernment among respondents with low values of each characteristic, where the difference between high and low values is one standard deviation for standardized variables (and 1 for the dummy variable for female). We also present results from a single model containing two-way interactions between each respondent characteristic and headline veracity simultaneously.

Figure 4: Predictors of Sharing Discenrment



Predictors of sharing discernment for agreeable (left panel) and disagreeable (right panel) headlines, with 95% confidence intervals. Parameter estimates represent the ratio of discernment among respondents with high values of a characteristic (e.g., partisanship) to discernment among respondents with low values of a characteristic. ‘Separate’ models refer to individual models that each contain an interaction between the characteristic of interest (e.g., political interest) and headline veracity. The ‘Combined’ model is a single model containing two-way interactions between each respondent characteristic and headline veracity.

Parameter estimates for both sets of models are reported in Figure 4. Of particular importance is that the 7-point party identification scale is a statistically significant discernment among agreeable headlines, even after controlling for all other respondent characteristics in

the combined model. Respondents who are 1 standard deviation higher in their identification with the Democratic party are 1.17 times and 1.20 more discerning in the separate and combined models, respectively. Figure 4 also illustrates that the association between partisanship and discernment is large relative to most other respondent characteristics.

Among agreeable headlines, Need for Chaos is also negatively associated with sharing discernment, while education, age, and importance placed on sharing accurate information are positively associated with sharing discernment, though these relationships are only statistically significant in the models that enter each predictor separately without any other covariates. Among disagreeable headlines, belief that the news is biased and being female are both associated with greater discernment, while Need for Chaos is associated with less discernment. Additionally, family income, age, and accuracy importance are positively associated with discernment and trust in social media is negatively associated with discernment, but only when not controlling for the full set of covariates (i.e., only in the separate models).

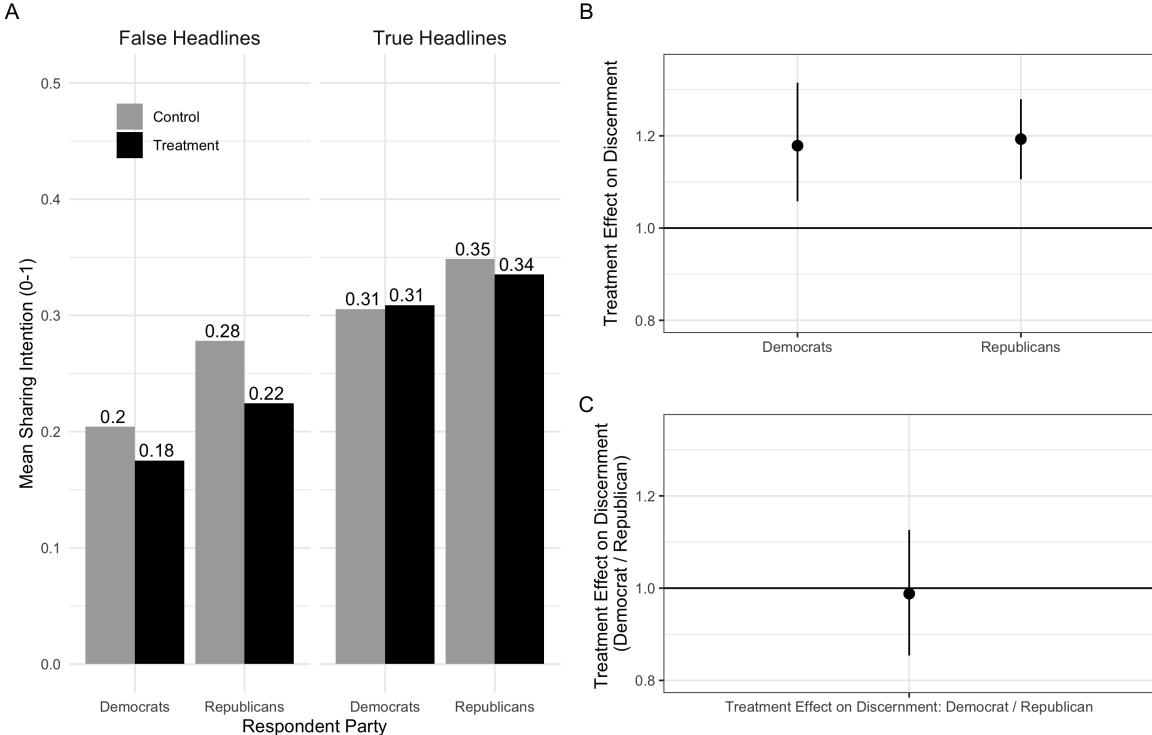
Partisan Asymmetries in Efficacy of Accuracy Prompt Interventions

Lower levels of sharing discernment among Republicans who encounter ideologically agreeable articles raise normative concerns, particularly given that the majority of fake news in the information on social media is right-leaning. Next, we examine whether accuracy prompts designed to increase sharing discernment by shifting attention to accuracy are effective in mitigating this problem. To maximize statistical power, we begin by pooling across the three different accuracy prompt interventions used in our experiment.¹³ Given that the effect of the treatment did not differ across agreeable and disagreeable headlines, we also pool across headline agreeableness, but replicate our analysis by agreeableness in SM 1.3.

Panel A in Figure 5 reports mean sharing intentions for true and false headlines by

¹³There was very low overall attrition on the survey (33 out of 2,015 respondents, or 1.64%) and differences in attrition across experimental conditions were minimal (SM 2.1).

Figure 5: Effect of Accuracy Prompt on Sharing Discernment



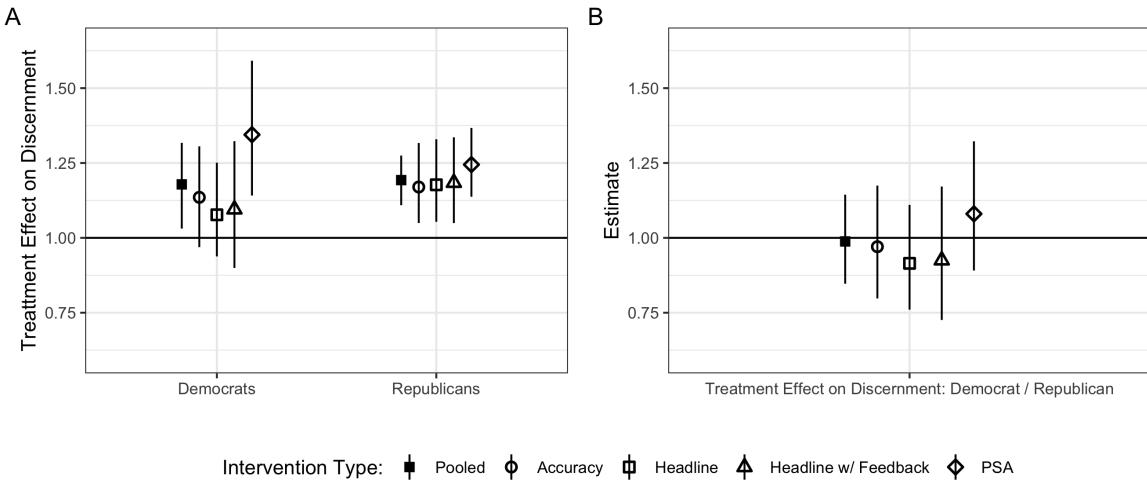
Panel A: Mean sharing intention for headlines that are true and false among Democrats and Republicans in the treatment and control conditions. Panel B: Parameter estimates for Democratic discernment (mean sharing intention for true / mean sharing intention for false), Republican discernment. Panel C: The ratio of Democratic to Republican discernment.

respondent party and experimental condition. As illustrated by Panel B, the effect of seeing an accuracy nudge increased discernment for all respondents. Democrats and Republicans in the treatment condition were 1.19 times ($p < 0.001$) and 1.18 times ($p = .01$) more discerning than those in the control condition, respectively. Panel C reports the ratio of the treatment effect on discernment for Democrats to that for Republicans, which is not statistically significant (Democrats are 0.988 times as discerning as Republicans, $p = 0.88$). This lack of partisan asymmetry is present for both agreeable and disagreeable headlines (see SM 1.3).

Finally, we consider whether this lack of partisan asymmetry holds across different versions of the accuracy prompt, which differ in the level of interaction required by respondents. As illustrated in Panel A of Figure 6, all of the prompt implementations have directionally

positive effects for both Democrats and Republicans. Panel B shows that there are no statistically significant partisan asymmetries for any of the accuracy prompts (i.e., that ratio of the treatment effect among Democrats to the treatment effect among Republicans is not statistically significantly different than 1 for any accuracy prompt).

Figure 6: Effect of Accuracy Prompt on Sharing Discernment, By Prompt Type



Panel A: Parameter estimates for Democratic discernment (mean sharing intention for true / mean sharing intention for false), Republican discernment. Panel B: The ratio of Democratic to Republican discernment.

Discussion

Recent studies showing that Republicans share more fake news than Democrats can reflect either that Republicans have a greater tendency to share fake news or are simply more exposed to it. Using a set of real-world headlines balanced across veracity and partisanship and a high-quality national sample of Facebook users, we show that Republicans are indeed somewhat more prone to sharing ideologically agreeable fake news than Democrats. This difference is substantively meaningful in magnitude (1.24 times larger fraction of shared news that is false for Republicans compared to Democrats), and statistically significant and robust to multiple operationalizations of sharing discernment and left-right orientation (e.g.,

ideology).

How, then, does the magnitude of the partisan difference we observe compare to what has been observed previously using social media data? [Grinberg et al. \(2019\)](#) found that Twitter users on the political right are 2.5 times more likely to share fake news than those on the political left during the 2016 U.S. presidential election, and that those on the extreme right were 4.3 times more likely to share fake news than those on the extreme left. Similarly, [Guess et al. \(2019\)](#) found that Republicans shared 8.5 times more fake headlines on Facebook than Democrats during the same time period. To compare our results to theirs, we focus on the comparable statistic from our study of Republicans sharing 1.52 times more false agreeable headlines than Democrats—a difference that, although substantial, is much smaller than differences that have been observed in social media data. Like this past work, our study also occurs during one of the most divisive elections in U.S. history and therefore sets up a conservative test of the partisan asymmetry hypothesis: if such asymmetries exist, we would expect to observe them during such a polarized period.

This suggests that much of the partisan difference in fake news sharing observed on social media is not easily attributable to partisan differences in the tendency to share falsehoods. What else, then, can explain this asymmetry? Among the most likely explanations for these differences is asymmetric exposure to fake news. Recent claims that Republicans share more fake news than Democrats are drawn from users' behavior on social media, where the majority of fake news is right-leaning ([Benkler et al., 2018](#); [Allcott and Gentzkow, 2017](#); [Garrett and Bond, 2021](#)) and therefore more likely to be seen by Republicans. Our research design holds exposure to fake news constant across parties and finds far smaller partisan asymmetries than past work. Similarly, it may be that content differences drive asymmetries in sharing—for example, right-leaning fake news on social media may be more compelling and shareable than left-leaning fake news. Another possibility is that fake news is primarily shared by a very small number of conservative ‘super spreaders’ [Grinberg et al. \(2019\)](#); [Guess et al. \(2020\)](#); [Nikolov et al. \(2020\)](#), who are unlikely to be contained in a sample of the size

used in our experiment and who may be less likely to opt into online surveys in general. For instance, [Grinberg et al. \(2019\)](#) found that 0.1% of Facebook users accounted for 79.8% of shares from fake news sources during the 2016 election and that these users were far more likely to be conservative than liberal.

Regardless of the mechanism, greater levels of misinformation sharing among Republicans would be particularly concerning if interventions aimed at improving sharing discernment were ineffective for Republicans—as has been suggested for accuracy prompts ([Roozenbeek et al., 2021](#); [Rathje et al., 2022](#)). Reassuringly, we find that accuracy prompts are actually equally effective at improving sharing discernment for members of both parties. Together, our findings suggest that while Republicans are more prone to sharing fake news than Democrats, accuracy prompts are capable of remediating this problem.

Finally, our experimental findings have direct implications for growing efforts to deploy interventions in the field to combat fake news online. Past work has focused on developing interventions that require a high level of interaction, for instance by asking individuals to rate the accuracy of a news story ([Pennycook et al., 2021](#)) or play a 15-minute game ([Roozenbeek and Van der Linden, 2019](#)). While this level of interaction is likely partially responsible for their efficacy, it makes them more difficult to deploy online. We report the first experimental test of a 30-second non-interactive PSA video explaining the importance of sharing accurate information online, and found it to be as effective as previous interactive interventions. This is encouraging for the wider deployment of interventions aimed at increasing discernment. Indeed, based on the results of this experiment, a non-partisan advertising non-profit deployed the video as an advertisement on websites likely to contain disinformation during the 2020 U.S. election. During the 2020 Senate runoff election in Georgia, for example, the video received 18.2 million views in 4 weeks and had a completion rate (78%) much higher than typical political ads, suggesting high levels of engagement.

Concern about the consequences of fake news for democracies is widespread, and recent work documenting partisan asymmetries in sharing fake news online has implications for

how this problem is solved. Together, our findings suggest these partisan asymmetries are driven in part by a greater propensity to share fake content among Republicans, but that this difference alone is not sufficient to explain the large asymmetries documented in recent observational work on Facebook and Twitter. Moreover, the consistent effect of accuracy prompts across members of both parties, as well as the efficacy of a novel video prompt, suggest that the problem of sharing fake news is not as intractable as recent work may lead one to fear.

References

- Allcott, H. and M. Gentzkow (2017). Social media and fake news in the 2016 election. *Journal of Economic Perspectives* 31(2), 211–36.
- Badrinathan, S. (2021). Educative interventions to combat misinformation: Evidence from a field experiment in india. *American Political Science Review* 115(4), 1325–1341.
- Bakshy, E., S. Messing, and L. A. Adamic (2015). Exposure to ideologically diverse news and opinion on facebook. *Science* 348(6239), 1130–1132.
- Barberá, P., J. T. Jost, J. Nagler, J. A. Tucker, and R. Bonneau (2015). Tweeting from left to right: Is online political communication more than an echo chamber? *Psychological Science* 26(10), 1531–1542.
- Baron, J. and J. T. Jost (2019). False equivalence: Are liberals and conservatives in the united states equally biased? *Perspectives on Psychological Science* 14(2), 292–303.
- Basol, M., J. Roozenbeek, and S. van der Linden (2020). Good news about bad news: Gamified inoculation boosts confidence and cognitive immunity against fake news. *Journal of Cognition* 3(1).

Benkler, Y., R. Faris, and H. Roberts (2018). *Network propaganda: Manipulation, Disinformation, and Radicalization in American Politics*. Oxford University Press.

Brashier, N. M., G. Pennycook, A. J. Berinsky, and D. G. Rand (2021). Timing matters when correcting fake news. *Proceedings of the National Academy of Sciences* 118(5).

Byles, O., J. Calianos, S. Francis, C. H. B. Kot, H. N. Seo, and B. Nyhan (2021). The effects of accuracy salience and affective polarization on truth discernment in online news sharing. *Unpubl. Manusc.* <https://cpb-us-e1.wpmucdn.com/sites.dartmouth.edu/dist/5/2293/files/2021/09/online-news-sharing.pdf>.

Clayton, K., J. Davis, K. Hinckley, and Y. Horiuchi (2019). Partisan motivated reasoning and misinformation in the media: Is news from ideologically uncongenial sources more suspicious? *Japanese Journal of Political Science* 20(3), 129–142.

Ditto, P. H., C. J. Clark, B. S. Liu, S. P. Wojcik, E. E. Chen, R. H. Grady, J. B. Celniker, and J. F. Zinger (2019). Partisan bias and its discontents. *Perspectives on Psychological Science* 14(2), 304–316.

Ditto, P. H., B. S. Liu, C. J. Clark, S. P. Wojcik, E. E. Chen, R. H. Grady, J. B. Celniker, and J. F. Zinger (2018). At least bias is bipartisan: A meta-analytic comparison of partisan bias in liberals and conservatives. *Perspectives on Psychological Science* 14(2), 273–291.

Epstein, Z., A. J. Berinsky, R. Cole, A. Gully, G. Pennycook, and D. G. Rand (2021). Developing an accuracy-prompt toolkit to reduce covid-19 misinformation online. *Harvard Kennedy School Misinformation Review*.

Frimer, J. A., L. J. Skitka, and M. Motyl (2017). Liberals and conservatives are similarly motivated to avoid exposure to one another's opinions. *Journal of Experimental Social Psychology* 72, 1–12.

- Garrett, R. K. and R. M. Bond (2021). Conservatives' susceptibility to political misperceptions. *Science Advances* 7(23), eabf1234.
- Greifer, N., S. Worthington, S. Iacus, and G. King (2023). *clarify: Simulation-Based Inference for Regression Models*. R package version 3.5.0.
- Grinberg, N., K. Joseph, L. Friedland, B. Swire-Thompson, and D. Lazer (2019). Fake news on twitter during the 2016 us presidential election. *Science* 363(6425), 374–378.
- Guay, B., A. Berinsky, G. Pennycook, and D. Rand (2023). How to think about whether misinformation interventions work. *Nature Human Behavior*.
- Guay, B. and C. D. Johnston (2021). Ideological asymmetries and the determinants of politically motivated reasoning. *American Journal of Political Science*.
- Guess, A., J. Nagler, and J. Tucker (2019). Less than you think: Prevalence and predictors of fake news dissemination on facebook. *Science Advances* 5(1), eaau4586.
- Guess, A. M., M. Lerner, B. Lyons, J. M. Montgomery, B. Nyhan, J. Reifler, and N. Sircar (2020). A digital media literacy intervention increases discernment between mainstream and false news in the united states and india. *Proceedings of the National Academy of Sciences* 117(27), 15536–15545.
- Jost, J. T. (2017). Ideological asymmetries and the essence of political psychology. *Political Psychology* 38(2), 167–208.
- Jost, J. T., E. P. Hennes, and H. Lavine (2013). ” hot” political cognition: Its self-, group-, and system-serving purposes.
- Jost, J. T. and M. Krochik (2014). Ideological differences in epistemic motivation: Implications for attitude structure, depth of information processing, susceptibility to persuasion, and stereotyping. In *Advances in Motivation Science*, Volume 1, pp. 181–231. Elsevier.

Jost, J. T., J. Sterling, and C. Stern (2017). Getting closure on conservatism, or the politics of epistemic and existential motivation. In *The Motivation-Cognition Interface*, pp. 56–87. Routledge.

Kahan, D. M. (2013). Ideology, motivated reasoning, and cognitive reflection: An experimental study. *Judgment and Decision Making* 8, 407–24.

Kahan, D. M., A. Landrum, K. Carpenter, L. Helft, and K. Hall Jamieson (2017). Science curiosity and political information processing. *Political Psychology* 38, 179–199.

King, G., M. Tomz, and J. Wittenberg (2000). Making the most of statistical analyses: Improving interpretation and presentation. *American journal of political science*, 347–361.

Lazer, D. (2020). Studying human attention on the internet. *Proceedings of the National Academy of Sciences* 117(1), 21–22.

Lazer, D. M., M. A. Baum, Y. Benkler, A. J. Berinsky, K. M. Greenhill, F. Menczer, M. J. Metzger, B. Nyhan, G. Pennycook, D. Rothschild, et al. (2018). The science of fake news. *Science* 359(6380), 1094–1096.

Lewandowsky, S., K. Oberauer, and G. E. Gignac (2013). Nasa faked the moon landing—therefore,(climate) science is a hoax: An anatomy of the motivated rejection of science. *Psychological Science* 24(5), 622–633.

McPhetres, J., B. Bago, and G. Pennycook (2021). Science beliefs, political ideology, and cognitive sophistication. *Working Paper*. <https://osf.io/ad9v7/>.

Miller, J. M., K. L. Saunders, and C. E. Farhart (2016). Conspiracy endorsement as motivated reasoning: The moderating roles of political knowledge and trust. *American Journal of Political Science* 60(4), 824–844.

Mitchell, A., M. Jurkowitz, J. B. Oliphant, and E. Shearer (2020). Americans who mainly get their news on social media are less engaged, less knowledgeable. <https://www.pewresearch.org/journalism/2020/07/30/americans-who-mainly-get-their-news-on-social-media-are-less-engaged-less-knowledgeable/>.

Moore, R., R. Dahlke, and J. Hancock (2022). Exposure to untrustworthy websites in the 2020 u.s. election. <https://osf.io/6bgqh/>.

Mosleh, M., G. Pennycook, and D. G. Rand (2020). Self-reported willingness to share political news articles in online surveys correlates with actual sharing on twitter. *Plos one* 15(2), e0228882.

Nam, H. H., J. T. Jost, and J. J. Van Bavel (2013). “not for all the tea in china!” political ideology and the avoidance of dissonance-arousing situations. *PloS One* 8(4), e59837.

Nikolov, D., A. Flammini, and F. Menczer (2020). Right and left, partisanship predicts (asymmetric) vulnerability to misinformation. *ArXiv Preprint ArXiv:2010.01462*.

Nyhan, B., E. Porter, J. Reifler, and T. J. Wood (2019). Taking fact-checks literally but not seriously? the effects of journalistic fact-checking on factual beliefs and candidate favorability. *Political Behavior* 42(3), 939–960.

Nyhan, B. and J. Reifler (2010). When corrections fail: The persistence of political misperceptions. *Political Behavior* 32(2), 303–330.

Osmundsen, M., A. Bor, P. B. Vahlstrup, A. Bechmann, and M. B. Petersen (2021). Partisan polarization is the primary psychological motivation behind political fake news sharing on twitter. *American Political Science Review* 115(3), 999–1015.

Pasek, J., G. Sood, and J. A. Krosnick (2015). Misinformed about the affordable care act? leveraging certainty to assess the prevalence of misperceptions. *Journal of Communication* 65(4), 660–673.

Pasek, J., T. H. Stark, J. A. Krosnick, and T. Tompson (2015). What motivates a conspiracy theory? birther beliefs, partisanship, liberal-conservative ideology, and anti-black attitudes. *Electoral Studies* 40, 482–489.

Pennycook, G., A. Bear, E. T. Collins, and D. G. Rand (2020). The implied truth effect: Attaching warnings to a subset of fake news headlines increases perceived accuracy of headlines without warnings. *Management Science* 66(11), 4944–4957.

Pennycook, G., Z. Epstein, M. Mosleh, A. A. Arechar, D. Eckles, and D. G. Rand (2021). Shifting attention to accuracy can reduce misinformation online. *Nature* 592(7855), 590–595.

Pennycook, G., J. McPhetres, B. Bago, and D. G. Rand (2021). Beliefs about covid-19 in canada, the united kingdom, and the united states: A novel test of political polarization and motivated reasoning. *Personality and Social Psychology Bulletin*, 01461672211023652.

Pennycook, G., J. McPhetres, Y. Zhang, J. G. Lu, and D. G. Rand (2020). Fighting covid-19 misinformation on social media: Experimental evidence for a scalable accuracy-nudge intervention. *Psychological Science* 31(7), 770–780.

Pennycook, G. and D. Rand (2023). Reducing the spread of fake news by shifting attention to accuracy: Meta-analytic evidence of replicability and generalizability. *Nature Communications*. <https://psyarxiv.com/v8ruj>.

Pennycook, G. and D. G. Rand (2019). Cognitive reflection and the 2016 us presidential election. *Personality and Social Psychology Bulletin* 45(2), 224–239.

Pennycook, G. and D. G. Rand (2022). Nudging social media toward accuracy. *The Annals of the American Academy of Political and Social Science* 700(1), 152–164.

Pereira, A., E. Harris, and J. J. Van Bavel (2018). Identity concerns drive belief: The impact

of partisan identity on the belief and dissemination of true and false news. *Group Processes & Intergroup Relations*, 13684302211030004.

Petersen, M. B., M. Osmundsen, and K. Arceneaux (2018). A “need for chaos” and the sharing of hostile political rumors in advanced democracies. *PsyArXiv Preprints*.

Petersen, M. B., M. Osmundsen, and K. Arceneaux (2020). The “need for chaos” and motivations to share hostile political rumors.

Rathje, S., J. J. Van Bavel, and S. van der Linden (2021). Out-group animosity drives engagement on social media. *Proceedings of the National Academy of Sciences* 118(26).

Rathje, S., J. J. Van Bavel, and S. van der Linden (2022). Accuracy and social motivations shape judgements of (mis) information. <https://psyarxiv.com/hkqyv/>.

Roozenbeek, J., A. L. Freeman, and S. van der Linden (2021). How accurate are accuracy-nudge interventions? a preregistered direct replication of pennycook et al.(2020). *Psychological science* 32(7), 1169–1178.

Roozenbeek, J., C. R. Schneider, S. Dryhurst, J. Kerr, A. L. Freeman, G. Recchia, A. M. Van Der Bles, and S. Van Der Linden (2020). Susceptibility to misinformation about covid-19 around the world. *Royal Society Open Science* 7(10), 201199.

Roozenbeek, J. and S. Van der Linden (2019). Fake news game confers psychological resistance against online misinformation. *Palgrave Communications* 5(1), 1–10.

Ryan, T. J. and A. R. Aziz (2021). Is the political right more credulous? experimental evidence against asymmetric motivations to believe false political information. *The Journal of Politics* 83(3), 1168–1172.

Shearer, E. (2021). More than eight-in-ten americans get news from digital devices. *Pew Research Center* 12.

- Sirlin, N., Z. Epstein, A. A. Arechar, and D. G. Rand (2021). Digital literacy is associated with more discerning accuracy judgments but not sharing intentions. *Harvard Kennedy School Misinformation Review*.
- Stroud, N. J. (2010). Polarization and partisan selective exposure. *Journal of Communication* 60(3), 556–576.
- Tappin, B. M. and R. T. McKay (2019). Moral polarization and out-party hostility in the us political context. *Journal of Social and Political Psychology* 7(1), 213–245.
- Van der Linden, S., C. Panagopoulos, F. Azevedo, and J. T. Jost (2021). The paranoid style in american politics revisited: An ideological asymmetry in conspiratorial thinking. *Political Psychology* 42(1), 23–51.
- Washburn, A. N. and L. J. Skitka (2017). Science denial across the political divide: Liberals and conservatives are similarly motivated to deny attitude-inconsistent science. *Social Psychological and Personality Science* 9(8), 972–980.
- Wittenberg, C. and A. J. Berinsky (2020). Misinformation and its correction. *Social Media and Democracy: The State of the Field, Prospects for Reform* 163.
- Yan, H. Y., K.-C. Yang, F. Menczer, and J. Shanahan (2021). Asymmetrical perceptions of partisan political bots. *New Media & Society* 23(10), 3016–3037.
- Yang, Q., M. Mosleh, T. Zaman, and D. G. Rand (2022). Is twitter biased against conservatives? the challenge of inferring political bias in a hyper-partisan media ecosystem.
- Yaqub, W., O. Kakhidze, M. L. Brockman, N. Memon, and S. Patil (2020). Effects of credibility indicators on social media news sharing intent. In *Proceedings of the 2020 CHI conference on Human Factors in Computing Systems*, pp. 1–14.

Supplementary Materials

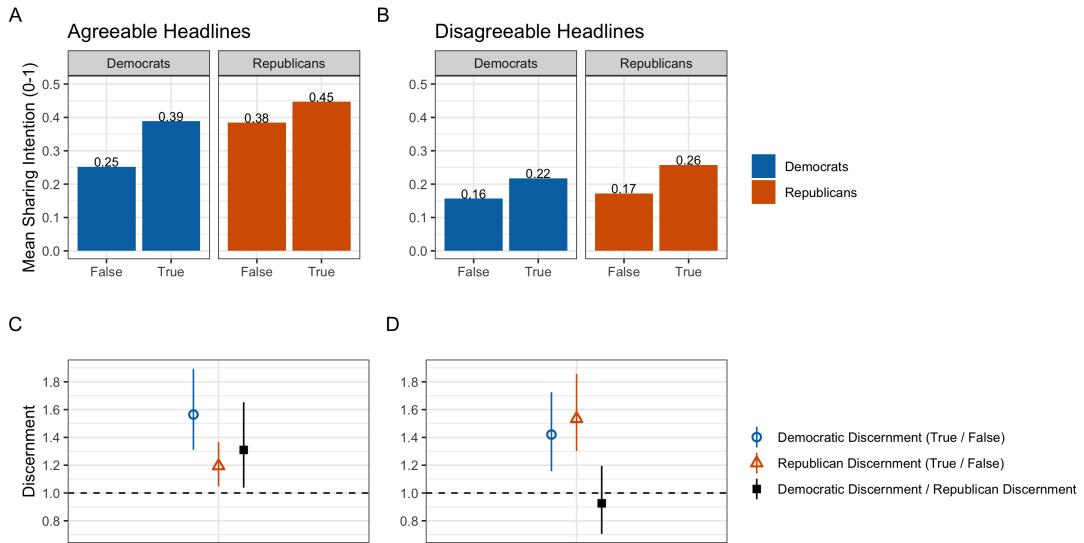
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1 Robustness Checks

1.1 Figure 3 with Controls

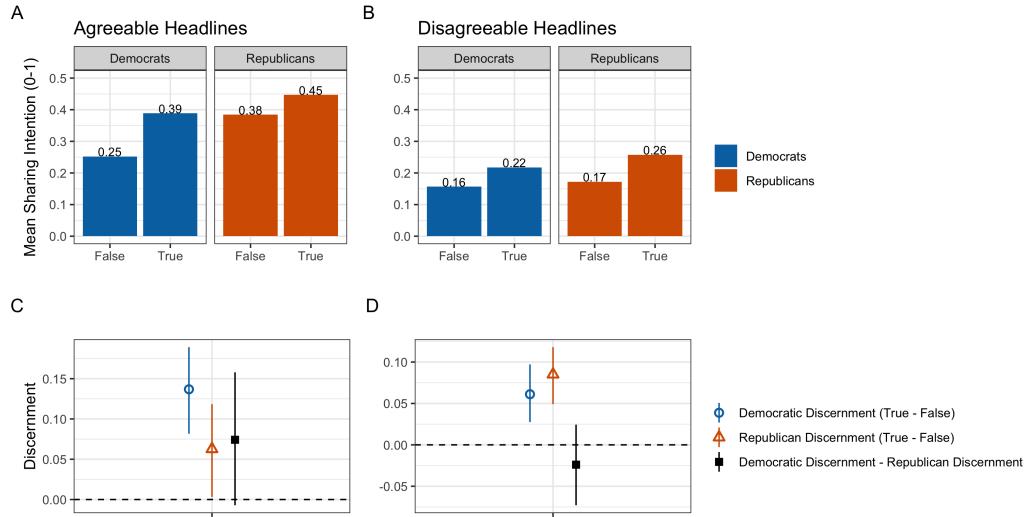
Figure 3 in the manuscript is reproduced here from models that control for age, education, and sex. Like partisanship, each control variable is interacted with a dummy variable for headline veracity.



Top row: Mean sharing intentions for agreeable (Panel A) and disagreeable (Panel B) headlines among Democrats and Republicans in the control condition. Bottom row: Sharing discernment (mean sharing intention for true / mean sharing intention for false) among Democrats and Republicans, for agreeable (Panel C) and disagreeable (Panel D) headlines. The ratio of discernment among Democrats to discernment among Republicans is also plotted, where values greater than 1 indicate that Democrats are more discerning than Republicans. Vertical lines represent 95% confidence intervals. Models include controls for age, education, and sex.

1.2 Figure 3 with Additive Discernment, Without Controls

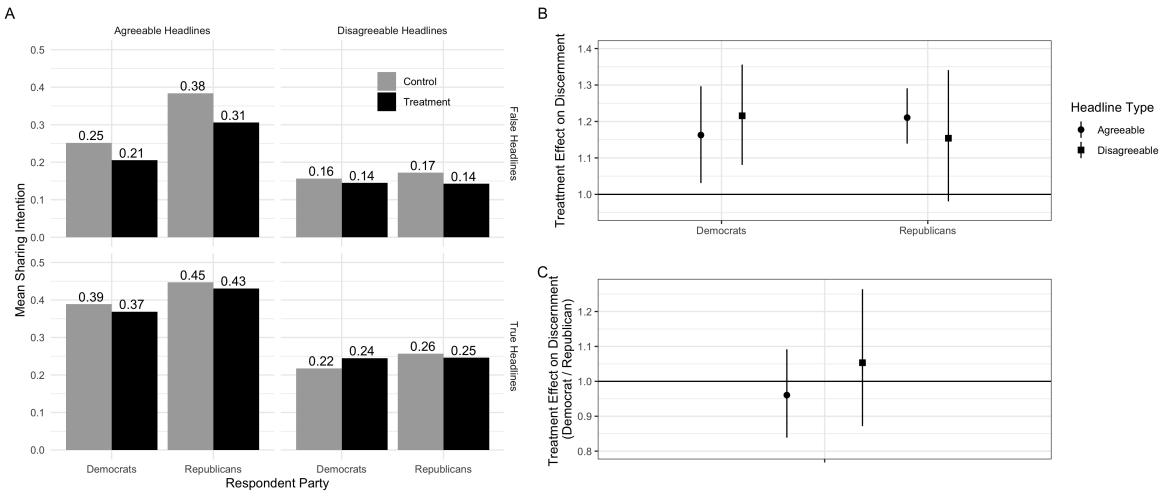
Figure 3 is reproduced below, but with additive discernment instead of multiplicative discernment in panels C and D. See pages 15-17 for a discussion of additive discernment.



Top row: Mean sharing intentions for agreeable (Panel A) and disagreeable (Panel B) headlines among Democrats and Republicans in the control condition. Bottom row: *Additive* sharing discernment (mean sharing intention for true - mean sharing intention for false) among Democrats and Republicans, for agreeable (Panel C) and disagreeable (Panel D) headlines. The difference in discernment among Democrats to discernment among Republicans is also plotted, where values greater than 0 indicate that Democrats are more discerning than Republicans. Vertical lines represent 95% confidence intervals.

1.3 Figure 5 by Headline Agreeableness

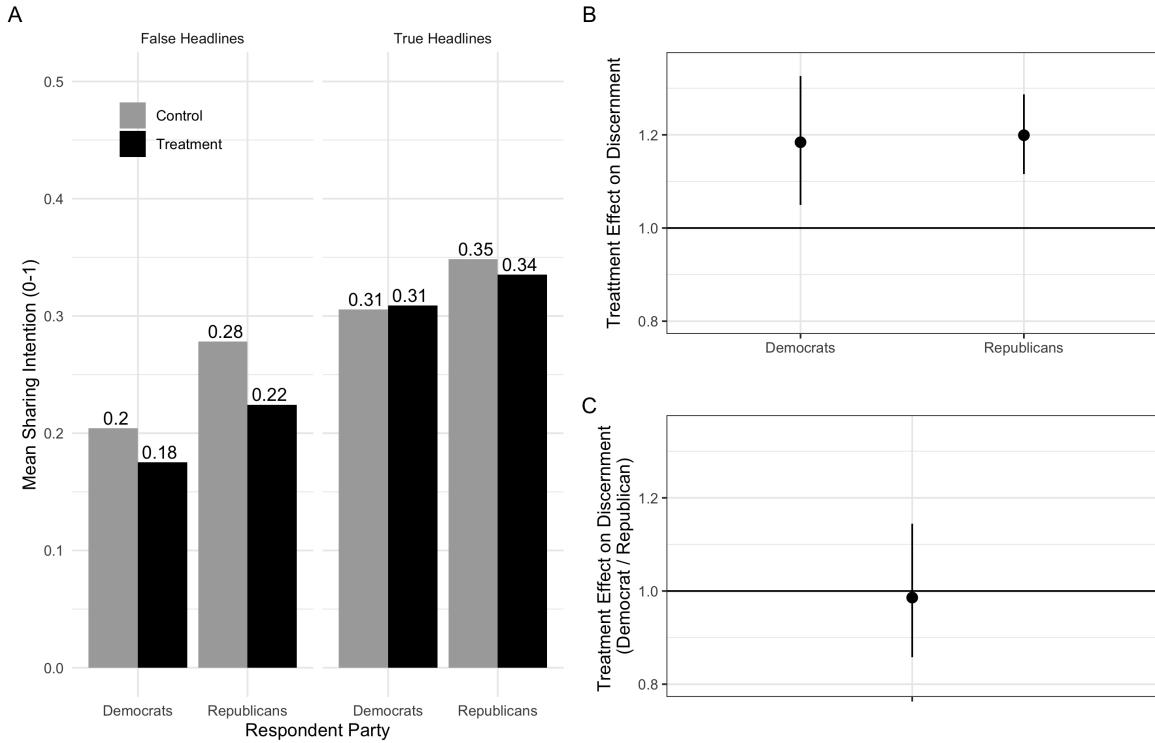
In the main experimental analysis, we pool agreeable and disagreeable headlines. Here we run separate analysis for agreeable and disagreeable headlines. As illustrated in Panel D, there is no partisan difference in the effect of the treatment on sharing discernment for either agreeable nor disagreeable headlines.



Panel A: Mean sharing intention for headlines that are true and false among Democrats and Republicans in the treatment and control conditions. Panel B: Parameter estimates for Democratic discernment (mean sharing intention for true / mean sharing intention for false), Republican discernment. Panel C: The ratio of Democratic to Republican discernment.

1.4 Figure 5 with Controls

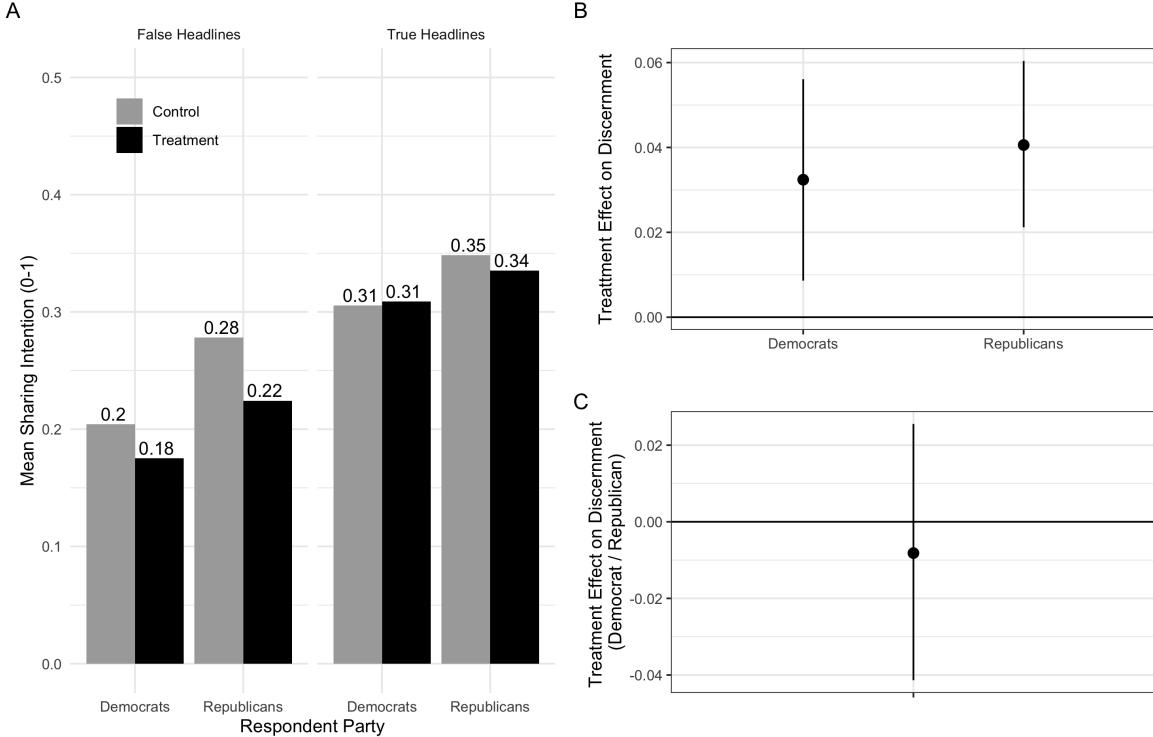
The figure below reproduces Figure 5 in the main text. However, the models used to calculate discernment in Panels C and D control for age, education, and sex.



Panel A: Mean sharing intention for headlines that are true and false among Democrats and Republicans in the treatment and control conditions. Panel B: Parameter estimates for Democratic discernment (mean sharing intention for true / mean sharing intention for false), Republican discernment. Panel C: The ratio of Democratic to Republican discernment.

1.5 Figure 5 with Additive Discernment

Figure 5 is reproduced below, but with additive discernment instead of multiplicative discernment in panels C and D. See pages 15-17 for a discussion of additive discernment.



Panel A: Mean sharing intention for headlines that are true and false among Democrats and Republicans in the treatment and control conditions. Panel B: Parameter estimates for Democratic discernment (mean sharing intention for true - mean sharing intention for false), Republican discernment. Panel C: The difference between Democratic and Republican discernment.

2 Survey Details

2.1 Attrition

Attrition in the YouGov sample was extremely low, with only 33 out of 2,015 respondents (1.64%) starting but not completing the survey. To determine whether differences between

conditions are statistically significant we run pairwise logistic regressions predicting attrition. The only statistically significant ($p < .05$) difference occurs between the accuracy and headline conditions ($p = .019$). Two additional pairs are marginally significant: the control and headline conditions ($p = .061$) and the accuracy and PSA conditions ($p = .089$).

Attrition by Condition

Condition	Total N	Attrited N (%)
Control	509	7 (1.4%)
Accuracy	522	5 (1.0%)
Headline	257	9 (3.5%)
Headline (Feedback)	251	0 (0.0%)
PSA Video	509	12 (2.4%)
All	2,015	33 (1.6%)

News Headlines Used in Survey

All of the headlines used in the survey are available online http://www.osf.io/dbfut/?view_only=865bcacb375c4be8b712bbe1ad781197 and described in the next section. A list of sources for the true headlines is included here:

- ABC News
- New York Times
- Fox News
- NPR
- Washington Times
- NBC News
- Reuters
- CNN

- New York Post

- Politico

- The Guardian

- Yahoo News

- Time

- The Hill

2.2 Description of OSF Repository Content

The following materials are available online (https://osf.io/dbfut/?view_only=865bca [cb375c4be8b712bbe1ad781197](https://osf.io/dbfut/?view_only=cb375c4be8b712bbe1ad781197)) and described below: the codebook for the YouGov survey, images of all headlines viewed by respondents, and the accuracy nudges seen by respondents in the treatment conditions.

2.2.1 YouGov Codebook

The YouGov codebook contains question wording and response options for all survey questions, including the sharing intention outcomes.

2.2.2 Headline Images

The folder entitled ‘headline_images’ contains images for each of the 59 headlines viewed by respondents. The ‘file headline_images_key.txt’ crosswalks the headline image names and variable names in the data.

2.2.3 Accuracy Nudge Videos

The folder entitled ‘accuracy_nudges’ contains the stimuli seen by respondents in the treatment conditions.