

# Belief in Partisan News Depends on Favorable Content More than on Source Trust

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## **Abstract**

Surveys show that people trust news sources that support their political ideology, creating a feedback loop that sustains partisan disagreement about fact as well as opinion. However, most news sources do not publish sufficiently balanced content to disentangle the underlying dynamics: Do people believe partisan news because they trust the source or because the content favors their worldview? We experimentally isolated the effects of content and source on the credibility of partisan news. The results show that the credibility of partisan news depends on favorable content more than a trusted source. Unfavorable headlines were unlikely to be believed, but favorable headlines were readily believed even if attributed to mistrusted sources. When offered monetary incentives for correct evaluations, people were more likely to acknowledge the accuracy of unfavorable news. The findings suggest that interventions emphasizing accuracy may be more effective at mitigating alternative realities than efforts that promote source trust.

## **Introduction**

Liberals and conservatives increasingly disagree not only about opinions but also on matters of fact (Flynn, Nyhan, and Reifler 2017), including climate change (Rutjens, Sutton, and van der Lee 2018), the rise and fall of unemployment rates (Bartels 2002), and even the winner of the 2020 U.S. presidential election (Ognyanova et al. 2020; Bright Line Watch 2020). The emergence of widely believed alternative realities has been attributed to partisan selective exposure: In a post-cable media environment where news consumers may choose sources that publish news they appreciate (Stroud 2008; Knobloch-Westerwick, Johnson, and Westerwick 2015; Garrett 2009; Morris 2007; Charness, Oprea, and Yuksel 2021) publishers are incentivized to cater to their audience's political preferences (Bennett and Iyengar 2008).

The evidence for partisan polarization in news consumption is compelling: A 2019 survey found that 93% of *Fox News*' readers identify as Republican, while 91% of those who read *The New York Times* identify as Democrats (Pew Research Center 2020b). Gaps in perceived source credibility are similarly dramatic. Two-thirds of liberal Democrats (66%) say they trust *The New York Times* compared to 10% of conservative Republicans (Pew Research Center 2020a). In contrast, *Fox News* is the most trusted source among conservative Republicans, but the least trusted mainstream news source among liberal Democrats (Pew Research Center 2020a).

However, the close correspondence between source trust and ideological views makes it difficult to tell whether people disagree about news sources or content. The idea that partisans may perceive biased but like-minded sources as more trustworthy was first suggested by Fischer et al. (Fischer et al. 2005). A possible explanation is offered by experiments on motivated reasoning (Kunda 1990; Slothuus and De Vreese 2010; Taber and Lodge 2006; Westerwick, Kleinman, and Knobloch-Westerwick 2013) that converge in revealing a tendency to find arguments in favor of conclusions we want to believe (Kunda 1990). Relatedly, the literature on identity-protective cultural cognition (Kahan 2017; Kahan et al. 2010; Nyhan and Reifler 2010) suggests that partisans select, interpret and recall information in ways that support their prior beliefs and are consistent with the views of groups with whom they identify (Kahan 2017). Rather than actually disagreeing about the credibility of news sources, partisans may distrust certain news sources to support the conclusions they prefer to draw (Fischer et al. 2005).

In this study, we investigate the extent to which partisan news credibility depends on source trust after controlling for the effects of partisan content. Most news sources do not produce sufficiently balanced content to observe reactions to unfavorable news from a trusted source or favorable news from a source regarded as "fake news" (Iyengar and Hahn 2009; Stroud 2008). Previous related research highlights both the importance of source trust and content alignment. An experiment by Westerwick et al. (2013) showed that participants respond to content cues regardless of source credibility. However, the authors only tested

the credibility of non-partisan content in a non-polarized setting. Another experiment by Clayton et al. (2019) found that news source attributions have little effect on the credibility of bi-partisan news content. In contrast, Hanel et al. (2018) found that agreement with non-divisive positions was higher when attributed to a politician from the participant's party than when presented without source attribution. Metzger et al. (2020) also show that people experience more cognitive dissonance when reading news from out-group sources than unfavorable news. None of these experiments compared the effects of source trust with partisan content effects.

Testing the effect of source trust while controlling for partisan content is difficult, even in experimental settings. Neither participants' ideological views nor trust in sources can be manipulated reliably, and surrogate variables introduce confounders. Most importantly, one cannot equate differences in news credibility among liberal and conservative participants with content effects. We propose an analytical strategy that uses symmetries to rule out potential confounders. In two experiments with 800 participants, we tested all four combinations of "favorable" and "unfavorable" partisan headline content attributed to "trusted" and "mistrusted" sources in a fully crossed design. We used accuracy incentives to test to what extent emphasizing the accuracy of news evaluations can override partisan content or source preferences. To preview the results, we found that the belief in partisan news depends on content more than source. Unfavorable headlines were unlikely to be believed, but favorable headlines were readily believed even if attributed to mistrusted sources. When offered monetary incentives for accurate evaluations, participants were more likely to report belief in factual but unfavorable news. We conclude the paper by discussing the implications for theory and policy.

## **Methods**

In two experiments, we disentangled the effects of source and content on participants' belief in partisan news. Eight hundred participants were recruited on Amazon Mechanical Turk (Horton, Rand, and Zeckhauser 2011) and asked to evaluate 16 news headlines. Four of these headlines contained partisan

claims attributed to a news source that we manipulated experimentally (see Supplementary Information sections 1.1 and 1.2).

We conducted two versions of the experiment with different political headlines and sources to ensure robustness. Study 1 ( $N=400$ ) used six partisan headlines from Pennycook and Rand (2019) that had been tested to be favorable to either liberal or conservative and fact-checked for accuracy. Because these headlines were more polarizing than headlines that typically appear in mainstream news sources, we conducted a second study ( $N=400$ ) with 20 partisan headlines sampled from news outlets widely read at the time of the study. (Further details regarding headline selection are provided in the Supplementary Information section 1.4.).

Each participant evaluated two liberal and two conservative headlines randomly selected from the six partisan headlines in Study 1 and the 20 in Study 2. In Study 1, we attributed each headline to either a well-known right-identified source (*Fox News*) or a left-identified source (*The New York Times*). Study 2 attributed partisan headlines to four additional sources (*CNN*, *Huffington Post*, *Drudge Report*, and *Breitbart News*). In both studies, each participant evaluated a liberal headline attributed to a liberal source, a liberal headline attributed to a conservative source, a conservative headline from a conservative source, and a conservative headline from a liberal source.

Participants in both studies also rated 12 non-political decoy headlines to disguise the experiments' purpose. The decoy headlines were attributed to a broad set of news organizations that included less partisan sources. The decoys made the experiment resemble a typical news feed and made the source and content manipulations less noticeable. In addition, two decoy headlines contained blatantly false claims; all other headlines were factually correct. The decoy headlines were not included in the analysis.

Partisan perceptions of source and content are not the only determinants of news credibility. Previous research has found that people intentionally and knowingly affirm inaccurate beliefs that contradict private knowledge if those beliefs conform to partisan positions (Hamlin and Jennings 2011; Schaffner and Luks 2018; Hillman 2010). We used monetary incentives to reduce expressive behaviors and to motivate participants to answer to the best of their knowledge. Half the participants were randomly assigned to the incentivized condition where they received an accuracy bonus of \$1.50 in addition to their base compensation of \$1.00 if they evaluated at least 12 out of the 16 headlines correctly. Participants in Study 2 were instructed that conservative and liberal judges would evaluate their answers to reduce experimenter demand effects.

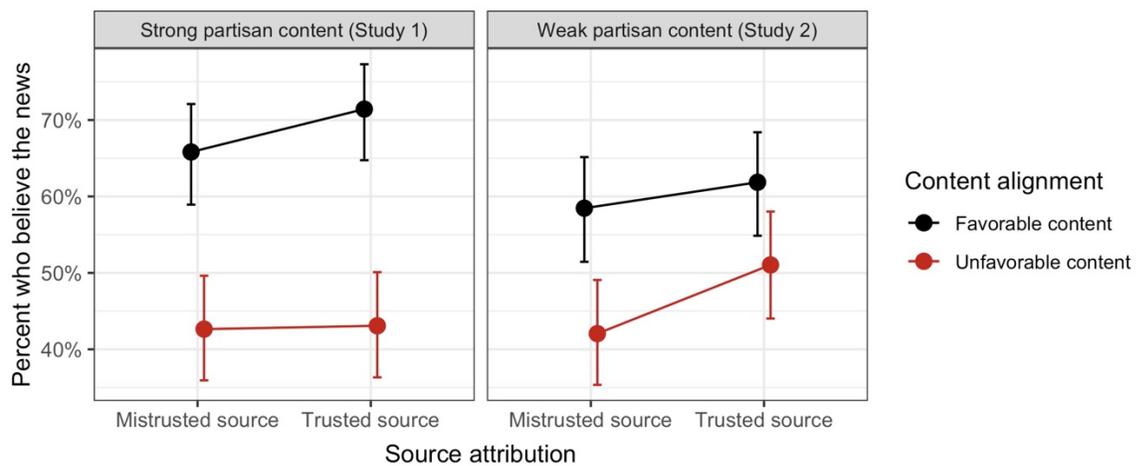
Following the headline assessments, we asked participants about their level of trust in each of the study's news sources on a five-point scale ranging from "not at all" to "entirely." We used their responses as a manipulation check to confirm our classification of sources as more likely to be trusted by liberals or conservatives based on population surveys (see Supplemental Information section 2.5 for details).

Participants also indicated their age (mean 39.4 years), gender (47 percent female), and the party with which they identify (33% Democrat, 35% Republican, and 30% Independent). Finally, participants were asked, "which side of the political aisle would you pick if you had to choose" (49% left or center-left, 51% right or center-right). Responses to the ideology and party affiliation measures were highly correlated ( $r=0.75, p<0.01$ ). We report results based on the ideology measure in the main text.

A range of potential confounders prohibits comparisons between liberal and conservative news assessments to estimate source and content effects. Liberals and conservatives may differ in their propensity to believe news in general, and the study's liberal and conservative headlines may not be equally credible, independent of political biases. Our analytical strategy accounts for confounders by relativizing and symmetrizing the problem. Rather than comparing evaluations of liberal and conservative headlines and sources, we compare evaluations of favorable or unfavorable headlines attributed to trusted

or mistrusted sources. As we recruited equal numbers of liberal and conservative participants, whether participants evaluated favorable headlines from a trusted source or whether participants evaluated unfavorable headlines from a mistrusted source, the underlying set of headlines and sources remained the same. As we only measure interactions between source, headline, and participant ideology, differences in the baseline credibility of headlines and sources do not affect the results.

## Results

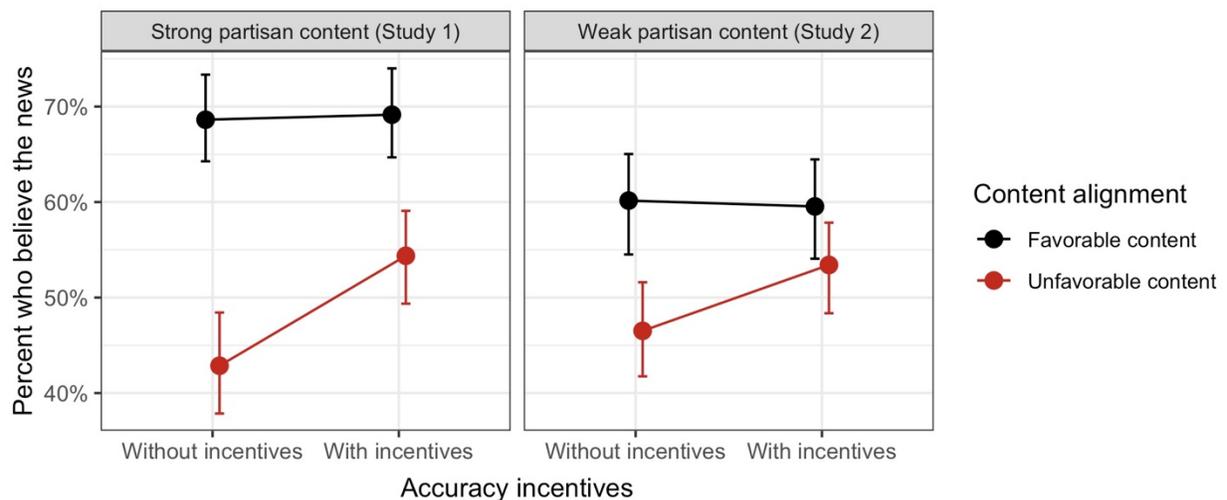


**Fig 1. Belief in partisan news depends on favorable content more than on source trust.**  $N=400$ , error bars represent 95% CIs. The Y-axis measures the percentage of participants who evaluated the favorable or unfavorable headlines as “true” when attributed to a trusted or mistrusted source. Headlines in Study 1 were more strongly aligned with ideology and less current at the time of the study than the headlines in Study 2.

Figure 1 reports the percentage of participants who evaluated a headline as “true” without monetary incentives for accuracy. Comparing the red and black lines reveals a significant decrease in reported credibility when headline content was unfavorable. Among the more polarizing headlines used in Study 1, we observed a 25.8-point decrease ( $p < 0.001$ ) in the percentage of participants who believed unfavorable headlines (in red) compared to favorable headlines (in black) across sources. As expected, the content

effect was smaller for the less partisan headlines in Study 2, with 16.4-point ( $p < 0.001$ ) and 10.8-point ( $p < 0.05$ ) decreases for mistrusted and trusted sources, respectively.

In contrast, the effect of source attribution was not statistically significant at the .05 level in either study, even though Study 2 used a broader set of sources that spanned the full range of popular American news organizations. Averaging across the two studies, participants rated 64.4% of favorable headlines as “true” but only 44.7% of unfavorable headlines, a difference of 19.7 percentage points ( $p < 0.001$ ). In contrast, partisan headlines from trusted sources were only 4.6 percentage points more credible than headlines from mistrusted sources ( $p = 0.065$ ). Participants were significantly more likely to believe partisan headlines with favorable content published by mistrusted sources (62.1%) than unfavorable headlines attributed to trusted sources (47.0%), a 15.1-point increase ( $p < 0.001$ ).



**Fig. 2. Accuracy incentives increase participants' reported belief in unfavorable content.**

*N=800, error bars represent 95% CIs. The Y-axis measures the percentage of participants who reported the headline as “true,” with and without accuracy incentives (X-axis), broken down by the favorability of content indicated by color. Responses are aggregated across trusted and mistrusted sources.*

Figure 2 compares participants' partisan evaluations of headline credibility with and without monetary incentives for accurate answers. The results show that incentives did not change the credibility of headlines with favorable content (black line). However, accuracy incentives increased the percentage of participants who judged unfavorable news as true. As expected, the effect of accuracy incentives was larger for unfavorable headlines with stronger partisan content. Study 1 found an 11.5-point increase in the percentage of participants who rated unfavorable headlines as true compared to the condition without incentives ( $p=0.001$ ). For the less polarizing headlines in Study 2, the effect of incentives on the credibility of unfavorable headlines was 6.9 points, a marginally significant difference ( $p=0.053$ ).

Comparing the red and black lines across the two studies in Figure 2 shows that the difference in reported credibility of favorable and unfavorable content was reduced by about half in both studies when participants were rewarded for factual accuracy. The effects of source attribution were not changed by the accuracy incentives and remained statistically insignificant even when participants received payments for correct answers. (See section 2.1 and Table S1 in the Supplementary Information for additional details.)

## **Conclusion**

Our findings show that belief in partisan news depends on favorable content more than on source trust. After accounting for the effect of partisan content, liberal and conservative participants equally believed headlines attributed to *The New York Times* and *Fox News*. This result helps establish that partisan disagreements about the trustworthiness of news sources are secondary to content preferences. In particular, participants readily believed news from “fake news” sources if it supported their views.

The results suggest that surveys that report declining trust in the news (Pew Research Center 2020a; Gallup/Knight Foundation 2017; Pew Research Center 2020c) may primarily be diagnosing diverging partisan content preferences. This interpretation is reinforced by the finding that payments for accurate answers significantly increased belief in unfavorable content. Aligned with previous studies where

accuracy payments reduced apparent differences in factual beliefs between members of different parties, it appears that partisan judgments of source credibility are expressive behaviors in which personal preferences and motivated conclusions shape expressions of trust.

Taken together, the findings imply that content-focused interventions may be more effective than source-focused interventions at mitigating alternative realities. If belief in partisan news depends on favorable content more than on source trust, fact-checking and raising awareness of the standards of professional journalism (Dias, Pennycook, and Rand 2020) may not change minds. Balanced reporting may help, but even when attributed to a trusted source, unfavorable news were less likely to be believed in our studies. Relatedly, many conservatives abandoned *Fox News* in favor of relatively obscure right-wing media after *Fox News* published reports that discredited voter fraud claims following the 2020 U.S. presidential elections (Morning Consult 2020). However, the large effects of a small accuracy incentive suggest that even non-pecuniary interventions, such as accuracy appeals (Prior, Sood, and Khanna 2015; Pennycook et al. 2021), may encourage a more factual debate about the news.

*Limitations.* Our study has an important limitation. The differences in content and source effects in Study 1 and 2 show that the effect sizes are sensitive to the choice of sources and headlines. A design with less polarizing headlines or more polarizing sources could produce different results. However, we selected the sources in Study 2 to cover the entire political spectrum from CNN to Breitbart News, so other choices would most likely not have produced stronger source effects. We also carefully sampled the Study 2 headlines from mainstream news sources (see Supplementary Information sections 1.4) such that the estimated content effects correspond to the degree of polarization found in ordinary readers' news diet. We are therefore convinced that our conclusions are robust and ecologically valid.

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## **Supplementary materials for**

# **Belief in partisan news depends on favorable content more than on a trusted source**

### **1. Extended Methods**

#### **1.1 Participant recruitment**

Eight hundred participants ( $N_1=400$ ,  $N_2=400$ ) were recruited through Amazon Mechanical Turk (AMT) (Buhrmester, Kwang, and Gosling 2011). While not nationally representative, samples from AMT have been shown to reliably reproduce treatment effects in behavioral research (Coppock 2019; Clifford, Jewell, and Waggoner 2015). Because liberals are over-represented on AMT, we ran a parallel task visible to conservatives to recruit roughly equal numbers of liberal and conservative participants. Recruitment was limited to U.S. participants aged 18+ with an AMT approval rating greater than or equal to 98%. Participants were 39 years old on average, and 47% identified as female. 51% identified as politically to the right of center, and 49% identified as politically to the left.

Upon study completion, participants were debriefed that the study's sources may not have published the headlines attributed to that source and were given the option to withdraw. Two participants chose to withdraw participation after the debrief. Participants received compensation of \$1 based on an estimated participation time of 4-5 minutes. Participants in the incentive group received an additional \$1.50 bonus payment regardless of their answers. The study protocols were approved by the Institutional Review Board at the authors' institution.

#### **1.2 Study Procedure**

Participants received the following instructions: “You will read 16 news headlines. Some of the headlines you will see are true, while others are false. We ask you to tell us whether you think each headline is true or false. You have 15 seconds to evaluate each headline. Please do not search for the headlines online.”

Participants in the incentive condition were also told that if they rated 12 out of 16 headlines correctly, they would receive a \$1.5 bonus payment. To avoid experimenter demand effects, the incentive prompt in Study 2 noted that participants’ answers would be evaluated by a balanced panel of liberals and conservatives.

Participants were shown a randomized sequence of 16 news headlines. For each headline, participants indicated whether they thought the headline was true or false. The reply button appeared with a three-second delay, and if no answer was received after 15 seconds, the survey proceeded automatically. In addition to the timer, a web script prevented participants from copying headlines, making online searches difficult. As shown in Figure S1, publisher labels were displayed prominently to ensure that participants would be aware of the news source. For each headline, participants answered whether “*The claim in the headline is true*” or “*false*.”

Following the headline evaluation task, participants indicated whether they recognized each study source and how much they trusted the source (not at all, barely, somewhat, a lot, or entirely). Finally, participants were asked about their political views and demographics:

- a) “Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or something else?”
- b) “Where would you place yourself on a scale from extremely liberal to extremely conservative?”
- c) “If you had to position yourself on the political map, would you be on the left or center-left / right or center-right?”
- d) “To which gender identity do you most identify?”
- e) “What is the highest level of school you have completed?”

f) “Which year were you born?”

### 1.3 Preregistration and open science repository

A time-stamped preregistration of Study 2 is available at <https://aspredicted.org/blind.php?x=49jn6k>. All data, code, and materials used in the analyses are available through an Open Science Repository ([https://osf.io/zwkfr/?view\\_only=885b88be80d64b31acbf464fc4224929](https://osf.io/zwkfr/?view_only=885b88be80d64b31acbf464fc4224929)).

### 1.4 Source and headline selection

The headlines evaluated in Study 1 were derived from an earlier study by Pennycook and Rand (Pennycook and Rand 2019). Pennycook and Rand collected partisan headlines from fact-checking sites and labeled them pro-Democrat and pro-Republican based on pre-tests. The headlines were originally published between July 22nd and December 15th, 2016. We conducted two additional rounds of pre-testing ( $N_1 = 50$ ,  $N_2 = 100$ ) to validate the original headline classifications at the time of our study. We selected the three headlines that pre-test participants had identified as most favorable to conservative views and the three labeled as most favorable to liberal views. Each participant in Study 1 was shown four of the six political headlines, randomly chosen and in randomized order. Of these four, two were liberal, and two were conservative. One liberal headline was attributed to a liberal source (*New York Times*) and the other to a conservative source (*Fox News*), and likewise for the two conservative headlines. Participants were also shown twelve decoy headlines, including two false headlines taken from Pennycook and Rand (Pennycook and Rand 2019) to assure participants that some of the headlines they were reviewing were false.

The headlines participants evaluated in Study 1 were more partisan than the headlines that typically appeared in news outlets at the time of the study. Also, Study 1 was limited to only two sources (*New York Times* and *Fox News*). We, therefore, designed a replication study with additional sources and a more extensive set of current headlines collected from prominent news publications.

For Study 2, we selected headlines from the top four liberal and top four conservative online news websites based on Alexa traffic rank<sup>1</sup> and trust ratings in population surveys (Gallup/Knight Foundation 2017; Pew Research Center 2020b; 2020a): *Breitbart News*, *Drudge Report*, *Fox News*, *Huffington Post*, *The New York Times*, and *CNN*. We collected 100 headlines published by each source on each day between February 1<sup>st</sup> and 15<sup>th</sup>, 2019. From this initial pool of 10,660 headlines, we retained 899 headlines classified as factual claims by ClaimBuster (Hassan et al. 2017). We randomly drew 240 headlines from this set, stratified by publishers and manually excluding headlines that did not contain a claim or were not related to U.S. politics. These headlines were evaluated in a preliminary survey ( $N=85$ ) on AMT. Respondents indicated which headlines they believed were true. Headlines that were labeled as “true” by more than 75% of respondents were removed. A second set of 85 respondents evaluated whether the headlines were consistent with U.S. Democrat or Republican views. The ten most pro-Democrat and ten most pro-Republican headlines were chosen for Study 2. The headlines were also pre-tested by a different sample ( $N=100$ ) provided by Lucid to determine if they agreed with respective ideological preferences. Respondents labeled each headline on a five-point Likert scale ranging from “more favorable to liberals” to “more favorable to conservatives.” The ideology labels were positively correlated with the headline partisanship labels ( $r=0.75, p<0.01$ ).

In addition to the 20 political headlines, 12 politically neutral decoy headlines were collected for Study 2 from these same sources. Two more headlines containing neutral but false statements were adopted from Pennycook and Rand (Pennycook and Rand 2019). As in Study 1, Study 2 participants evaluated two liberal and two conservative headlines drawn from the set of political headlines. One liberal headline was randomly attributed to a liberal source and the other to a conservative, and likewise for the two conservative headlines. Participants also evaluated twelve politically neutral decoy headlines.

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<sup>1</sup> <https://www.alexa.com/topsites/countries/US>

Finally, we conducted an auxiliary study with neutral headlines to confirm the robustness of our results. The politically neutral headlines were derived from an earlier study by Pennycook and Rand (Pennycook and Rand 2019). Study 1 was conducted on December 9<sup>th</sup>, 2018, two years after the headlines had been published, making it unlikely that participants would recall them. Study 2 was run on March 18, 2019, one month after the publication of the study headlines. The complete set of headlines is listed below:

*Study 1 – Headlines favorable to liberal Democrats*

- 1) “The small businesses near Trump Tower are experiencing a miniature recession”
- 2) “North Carolina Republicans push legislation to hobble incoming Democratic governor”
- 3) “Trump lashes out at Vanity Fair, one day after it lambastes his restaurant”

*Study 1 – Headlines favorable to conservative Republicans*

- 1) “Companies are already canceling plans to move U.S. jobs abroad”
- 2) “Dems scramble to prevent their own from defecting to Trump”
- 3) “At GOP convention finale, Donald Trump vows to protect the LGBTQ community”

*Study 2 – Headlines favorable to liberal Democrats*

- 1) “Justice Dept. Officials Had Discussions About Pushing Trump Out”
- 2) “Undeniable Warming: The Planet’s Hottest Five Years on Record”
- 3) “Trump Says South Korea is Paying \$500 Million More for U.S. Troops. The Deal Says Otherwise.”
- 4) “Since Parkland There’s Been a School Shooting, on Average, Every 12 Days”
- 5) “Demand for IUDs and Birth Control Implants Rose After Trump’s Election Amid Insurance Concerns”
- 6) “Justice Department to Award \$8.3 Million to California Victims of Las Vegas Shooting”

- 7) “Nearly 400 Trump Aides Had Access to Leaked Schedules”
- 8) “US Budget Deficit Running 41.8 Percent above Last Year”
- 9) “Susan Collins Raised More Money from Brett Kavanaugh Supporters than Mainers”
- 10) “Trump’s First 4 Mar-a-Lago Trips Cost Taxpayers \$13.6 Million”

*Study 2 – Headlines favorable to conservative Republicans*

- 1) “Ocasio-Cortez Retracts Erroneous Information About Green New Deal Backed by 2020 Democratic Candidates”
- 2) “Investors Pulled Record \$25 Billion from US Stock ETFs in January”
- 3) “Migrant Jobs Project Spends 15 Million to Employ Only 120”
- 4) “Guest Kicked Out of Disneyland for Unfurling ‘Trump 2020’ Banner”
- 5) “Northam Got Nearly \$2 Million in Donations from Planned Parenthood”
- 6) “Illegal Immigration Expected to Hit Highest Level Since George W. Bush”
- 7) “America Created 304,000 Jobs in January, Smashing Estimates”
- 8) “76 Percent of Viewers Approve President Trump’s State of the Union Speech”
- 9) “Trump’s Approval Rating among Likely Voters Soars to His Best in 23 Months at 52%”
- 10) “Islamic State is 100 Percent Defeated” (Accurate summary of Donald Trump’s acceptance speech at the Republican National Convention in August 2019, but not factual and missing attribution)

*Study 1 – Non-political decoy headlines*

- 1) “Labor union satisfaction steady at 15-year high”
- 2) “One in five Americans feel U.S. children are not respected”
- 3) “Sprint and T-Mobile merger just got hit with a delay”
- 4) “eBay’s HeadGaze brings hands-free input to the iPhone X using ARKit”
- 5) “‘Make Pluto a planet again’ say scientists after controversial downgrade”

- 6) “Blackpool monkeypox case confirmed as second in the UK”
- 7) “Elizabeth Smart kidnapper Wanda Barzee granted early prison release”
- 8) “Because of the lack of men, Iceland gives \$5,000 per month to immigrants who marry Icelandic women” (False)
- 9) “Billionaire founder of Corona beer brewery ‘makes everyone in his village a millionaire in his will’” (False)

*Study 2 – Non-political decoy headlines*

- 1) “Average Bra Sizes Rise from 34B to 36DD but Experts Split over Whether Cause Is Obesity or Fashion”
- 2) “Bird Strikes by Airplanes Tied Record in 2018, FAA Data Shows”
- 3) “For Millennials, Cancers Fueled by Obesity Are on Rise, Study Says”
- 4) “Long-haul Carrier Emirates Announces \$21.4 Billion-valued Deal with Airbus”
- 5) “It’s Official: 2018 Was the Fourth-warmest Year on Record”
- 6) “Queensland Floods: 500,000 Cattle Survived Years-long Drought Only to Die in the Rain”
- 7) “Turkey Orders Detention of over 1,100 People Linked to Failed Coup”
- 8) “Woody Allen Sues Amazon Studios for \$68 Million over Movie Deal”
- 9) “Google to Invest \$13 Billion in Us Data Centers and Offices”
- 10) “Puerto Rico Wins Approval of \$18 Billion Bond Restructuring”
- 11) “Billionaire Founder of Corona Beer Brewery Makes Everyone in His Village a Millionaire in His Will” (False)
- 12) “Because of the Lack of Men, Iceland Give \$5,000 Per Month to Immigrants Who Marry Icelandic Women” (False)

*Auxiliary study – Non-political headlines*

- 1) “Paralysed man walks again after cell transplant”

- 2) “Depression symptoms are common among active airline pilots, international survey reveals”
- 3) “Apple just lost a \$145 million infringement verdict to a Canadian patent troll”
- 4) “Frequent fires make droughts harder for young trees, even in wet eastern forests”
- 5) “Woman sues Canada Dry over lack of ginger in ginger ale”
- 6) “McGruff the crime dog actor sentenced to 16 years in prison”
- 7) “Lava bomb hits tourist boat in Hawaii, injuring 23”
- 8) “People would rather be electrically shocked than left alone with their thoughts”
- 9) “Gnarly! 6-story wave is revealed as biggest ever recorded”
- 10) “Woman who had ovary frozen in childhood gives birth”
- 11) “HP will pay researchers \$10,000 if they can hack its printers”
- 12) “Zombie gene protects against cancer - in elephants”
- 13) “Hitler's Austrian birthplace will be home for disability charity”
- 14) “Drought and drone reveal ‘once-in-a-lifetime’ signs of ancient henge in Ireland”
- 15) “Cheesecake factory’s breakfast burrito officially declared ‘worst way to start the day’”
- 16) “Mars could have supported life: ten years on Mars leads to livable mud”

## **2. Extended Results**

### **2.1 Incentive effect by source attribution**

Figure S2 reports differences between the incentive conditions broken down by source in addition to content. The effect of accuracy incentives on headline credibility was strongest when participants evaluated unfavorable content from a mistrusted source. Accuracy incentives did not alter the effect of source attribution on headline evaluations, which remained insignificant with and without accuracy incentives.

### **2.2 Responses analyzed by participant party identification instead of ideology**

Figures S3 and S4 repeat the analyses in Figures 1 and 2 based on participant party identification instead of ideology. Party identification was classified based on responses to the question “Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or something else?”. Source attributions and headline content were not changed; the only change was to the classification of the participant. The analysis includes only Democrat (32%) and Republican (34.8%) participants and excludes Independents (30%) and Others (2.3%) for whom the partisan alignment of headlines and sources cannot be determined. Responses to the ideology and partisanship items were positively correlated ( $r=0.75$ ,  $p<0.01$ ), and the results were similar to those in Figure 1 in the main text.

### **2.3 Differences between liberals and conservatives**

Figure S5 breaks down participants’ headline evaluations by participant ideology as liberal or conservative, in the absence of incentives. The results show that liberals reported favorable headlines 31.5 percentage points more credible than unfavorable headlines (69.7% and 38.2%, respectively), compared to a difference of only 8.6 percentage points among conservatives (59.5% vs. 50.9%). Figure S5 also shows that conservatives gave equal credence to liberal and conservative sources, while liberals were more likely to discard news from mistrusted sources.

This difference contradicts previous studies showing that liberals and conservatives are similarly prone to political biases (Ditto et al. 2019). The discrepancy likely reflects a potential confound caused by variations in the intrinsic credibility of liberal and conservative headlines and sources. For example, suppose left-leaning headlines were intrinsically more credible than right-leaning headlines (independent of the participant’s ideology). This intrinsic difference in credibility would increase the probability that liberals believe a favorable (i.e., liberal) headline and conservatives believe an unfavorable (liberal) headline, creating the impression that liberals have a stronger preference for favorable news than do conservatives. By similar reasoning, the potential confound extends to the effects of source attribution.

Figure S6 shows the effect of accuracy incentives for liberal and conservative participants. When incentivized to provide accurate answers, conservatives (left panel) were more likely to evaluate politically unfavorable headlines as ‘true’ ( $r=0.13, p<0.001$ ). In contrast, incentives had no significant effect on evaluations by liberal participants (right panel). Again, this difference may be confounded by the intrinsic credibility of headlines, which is why we do not compare liberal and conservative responses in the main text.

## **2.4 Ideological distribution**

Figures 1 and 2 in the manuscript report evaluations aggregated across roughly equal numbers of conservative and liberal participants. Due to the aggregation, each of the four data points in the analysis (favorable or unfavorable content attributed to trusted or mistrusted sources) represents an evaluation of the same set of headlines and sources by the same set of respondents. Each participant in the study contributed one evaluation to each data point, so differences in average evaluation cannot be due to differences in the numbers of conservative and liberal participants. For example, half of the evaluations of favorable content from trusted sources are responses by liberal participants who evaluate liberal news from liberal sources, and half are responses by conservative participants who evaluate conservative news from conservative sources. Similarly, half the evaluations of unfavorable content from mistrusted sources are evaluations of liberal participants who evaluate conservative news from conservative sources, and half are from conservative participants who evaluate liberal news from liberal sources. Thus, differences between liberal and conservative participants in skepticism about all headlines would not lead to differences in the aggregate evaluations reported in Figures 1 and 2. This applies as well to differences in the intrinsic credibility of liberal and conservative headlines and sources.

## **2.5 Source attribution manipulation check**

The trust classifications in Figure 1 in the main text are based on population surveys (Gallup/Knight Foundation 2017; Pew Research Center 2020b; 2020a) that asked a representative sample if they trusted

these sources. We could not use participants' own post-treatment trust ratings in an experimental design based on randomized trials. For example, a less skeptical (i.e., generally “trusting”) participant would only contribute to the evaluation of “trusted sources,” and this would artificially inflate the observed effect of source attribution. Instead, we used the post-treatment trust ratings as a manipulation check. Figure S7 reports the distribution of responses to the post-treatment survey, where participants indicated their level of trust in each of the sources used in the experiment. Trust is indicated by color, ranging from red (“not at all”) to black (“entirely”). Trust responses are broken by whether the respective source was categorized as “trusted” or “mistrusted” based on previously published survey responses (Pew Research Center 2020a; Gallup/Knight Foundation 2017). The results show that the two trust measures are highly correlated ( $r=0.38$ ,  $p<0.001$ ), but the level of agreement is less than perfect ( $\kappa=0.37$ ). Not all liberals trusted the *New York Times*, and not all conservatives trusted *Fox News*. The imperfect match may reduce the observed source attribution effect, but this does not explain the smaller effect size relative to the effect of partisan content since the latter is also susceptible to heterogeneity in labeling headlines as favorable or unfavorable (see Supplementary Information section 2.7). Indeed, manipulation checks for both measures show that there was greater heterogeneity in the labeling of content compared to the labeling of sources. In short, in the absence of heterogeneity in the labeling of both measures, we would expect an even larger effect of content relative to the source effects.

## **2.6 Source attribution robustness analysis**

Figure S8 addresses the concern that the minimal source attribution effect in Figure 1 may be due to heterogeneity in participants' classifications of trusted sources. Figure S8 artificially removes the heterogeneity by including only those participants whose post-treatment source ratings matched the source classifications we used in the experimental design. Removing heterogeneity provides an upper bound on the size of the expected source attribution effect. The analysis shows that the credibility of partisan news depends on favorable content more than a trusted source, even if heterogeneity in the

labeling of favorable content remains, while heterogeneity in the labeling of trusted sources is artificially removed.

## **2.7 Headline content manipulation check**

We tested the content manipulation by asking a new set of raters ( $N=82$ ) provided by Lucid to label whether the study's headlines were politically neutral, more favorable to liberals, or more favorable to conservatives. The results are shown in Figure S9. The independent labels are correlated with the labels used in the study design ( $r=0.22$ ,  $p<0.001$ ), but the agreement is far from perfect ( $\kappa=0.16$ ) and below the level of agreement in the manipulation check for source attribution ( $\kappa=0.37$ ). For example, the headline "Companies are already canceling plans to move U.S. jobs abroad" was classified by some participants as favorable to conservatives and others as favorable to liberals. The heterogeneity in labeling headlines implies that the content effect in Figures 1 and 2 in the main text is conservative. Moreover, the greater heterogeneity in headline labeling compared to source labeling suggests that the size of the content effect relative to the source effect may be understated in Figures 1 and 2.

## **2.8 Regression models**

Statistical tests reported in the manuscript are based on regression models predicting whether participants will evaluate partisan headlines as 'true' based on content and source attribution, with an interaction term for the accuracy incentive treatment. Confidence intervals in Figures 1 and 2 in the main text are based on bias-corrected and accelerated bootstrap intervals of 1,000 empirical sampling iterations. The resampling was stratified by participant political ideology, study, and treatment.

Separate logistic regression models were estimated for Study 1 and Study 2. Table S1 provides parameter estimates for a multivariate logistic regression model. In Studies 1 and 2, the model predicts a significant drop in the credibility of headlines with unfavorable content in the non-incentivized groups ( $B=-1.071$ ,  $p<0.001$  in Study 1 and  $B=-0.553$ ,  $p<0.001$  in Study 2). The main effect of source attribution is not

statistically significant in either study ( $B=-0.132, p=0.377$  and  $B=-0.254, p=0.081$ ). The model also shows no significant main effect of accuracy incentives on overall headline credibility. The interaction term shows a significant increase in the credibility of unfavorable content in the incentivized conditions in Study 1 ( $B=0.437, p<0.05$ ) but not Study 2 ( $B=0.303, p=0.138$ ). The accuracy incentives did not significantly change how the source attribution affected participants' evaluations of partisan news ( $B=0.330, p<0.121$  and  $B=0.294, p=0.151$ ).

## **2.9 Robustness tests for context-dependence**

Previous studies raise the possibility that the effects of source and content on headline credibility may depend on contextual factors, including political sophistication and the strength of the participant's ideological identification (e.g. "strongly liberal" compared to "liberal")(Bullock et al. 2015; Taber and Lodge 2006; Miller, Saunders, and Farhart 2016). However, the multivariate analysis in Table S2 shows that the effect of partisan content was not moderated by the participant's level of education ( $B=0.095, p=0.556$ ), age ( $B=-0.016, p=0.061$ ), gender ( $B=-0.019, p<0.927$ ), or the strength of ideological identification ( $B=-0.149, p=0.686$ ).

We also tested for robustness of the effect of incentives (Table S3). The increased belief in unfavorable headlines due to accuracy incentives did not significantly depend on the participant's level of education ( $B=0.1432, p=0.529$ ), age ( $B=0.0189, p=0.127$ ), or the strength of ideology ( $B=-0.206, p=0.694$ ). While participants in the incentivized group took an additional 0.68 seconds to rate each headline ( $B=0.68, p<0.001$ ), the incentive effect did not depend on the rating time ( $B=0.0074, p=0.88$ ).

## **3. Study Limitations**

The level of polarization can vary across issues and across time(Macy et al. 2019; Ditto et al. 2019).

Therefore, we were concerned that the treatment effects might depend on the selection of headlines and sources. Accordingly, we replicated Study 1 using different stimuli. The headlines used in Study 2 were

selected to reflect contemporary political headlines. The sources investigated (*Breitbart News*, *Drudge Report*, *Fox News*, *Huffington Post*, *New York Times*, *CNN*) cover the ideological range of well-known American publishers. Recent surveys (Gallup/Knight Foundation 2017) found that *Breitbart* and *Fox News* are the most polarizing mainstream news sources on the right, while *CNN* and the *New York Times* are among the most polarizing liberal publishers (Gallup/Knight Foundation 2017). Our post-treatment survey also confirmed that liberals and conservatives disagree sharply about the trustworthiness of these sources ( $B=0.245, p<0.001$ ). Therefore, we are confident that the weak effect of source attribution on news credibility was not due to the choice of sources with insufficient polarization.

We did not investigate the psychological processes underlying the differences in reported credibility of favorable and unfavorable content, such as expressive behaviors (Hamlin and Jennings 2011), motivated reasoning (Slothuus and De Vreese 2010), identity-protective cognition (Kahan 2017), or differing prior beliefs (Tappin, Pennycook, and Rand 2020). Each of these cognitive mechanisms would require specialized experimental designs that we leave for future research.

We adopted a content-centered framing in the study task – evaluating headline credibility – which may have amplified the effects of content. The content-centric framing dates back to the classic study by Solomon Asch in which participants evaluated statements attributed to Thomas Jefferson or Vladimir Lenin (Tarantino and Jednak 1972; Asch 1948). To our knowledge, all studies of the effects of source and content have adopted a similar design in which the effect of the source is measured indirectly by asking participants to assess information attributed to a source<sup>4, 20, 21</sup>. Unlike previous studies, we also tested for a possible framing effect by manipulating the strength of content partisanship, using headlines with varied ideological relevance. Results showed that the effect of content increases with ideological relevance. This difference cannot be attributed to content-centric priming since the assessment task is identical across treatments.

As an additional robustness check, we removed content cues entirely by showing participants ideologically neutral headlines (e.g., “Lava bomb hits tourist boat in Hawaii, injuring 23”). The results showed no significant difference in the size of the source attribution effect, even when source cues were available but content cues were not. This analysis supports the conclusion that the weak source attribution in Figure 1 in the main text is unlikely to be due to content framing that caused participants to rely on content instead of source.

The incentive treatment increased the credibility of unfavorable content. This increased credibility could be an experimenter demand effect caused by conservative participants’ assumption that the experimenters were liberals and therefore biased to believe that liberal headlines were true. However, there are two reasons to doubt this explanation. First, the increase was replicated in Study 2, in which participants were instructed that their answers would be evaluated by a balanced panel of liberals and conservatives (and not by the experimenters). Second, experimenter demand should have led to a decrease in the credibility of favorable news in the incentivized condition due to conservative participants reporting conservative headlines as false in order to earn the bonus. However, the results show that the accuracy incentive did not alter conservatives’ evaluations of favorable news.

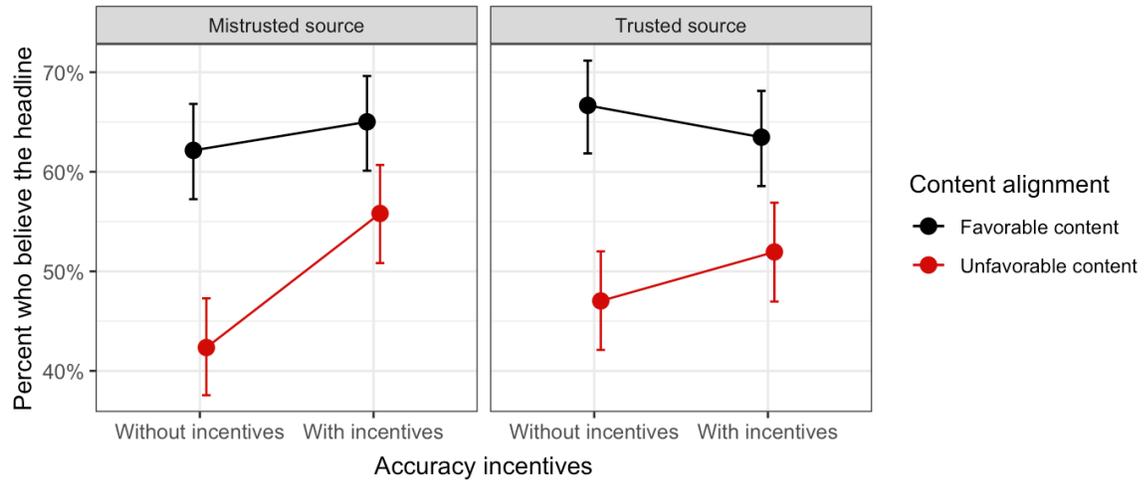
**CNN**  
US Budget Deficit Running 41.8 Percent above Last Year

*The claim in the headline is:*

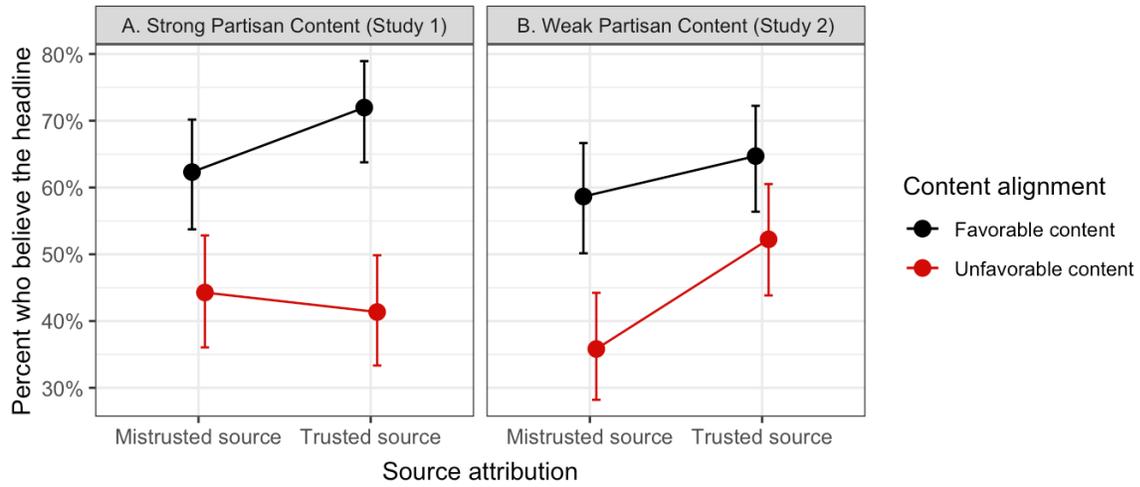
True False

*If your answer 12 or more questions correctly, you will receive a \$1.5 bonus payment.*

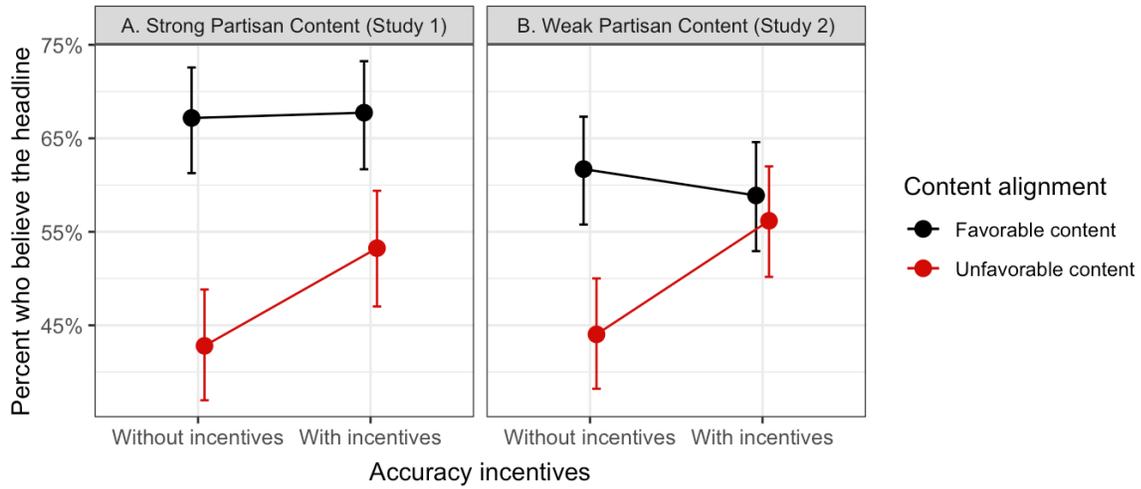
**Fig. S1. Sample screenshot taken in the experiment's incentive condition**



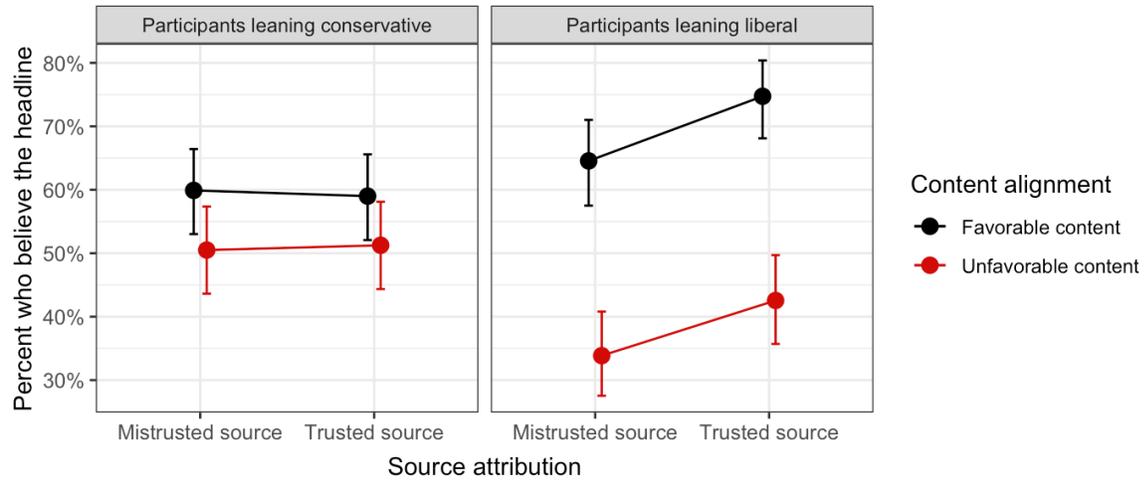
**Fig. S2. The effect of accuracy incentives, broken down by content and source attribution.**  $N=800$ , error bars represent 95% CIs. The effect of accuracy incentives on partisan headline credibility was strongest when participants evaluated unfavorable content from a mistrusted source. Accuracy incentives had no significant effect in any of the other three conditions.



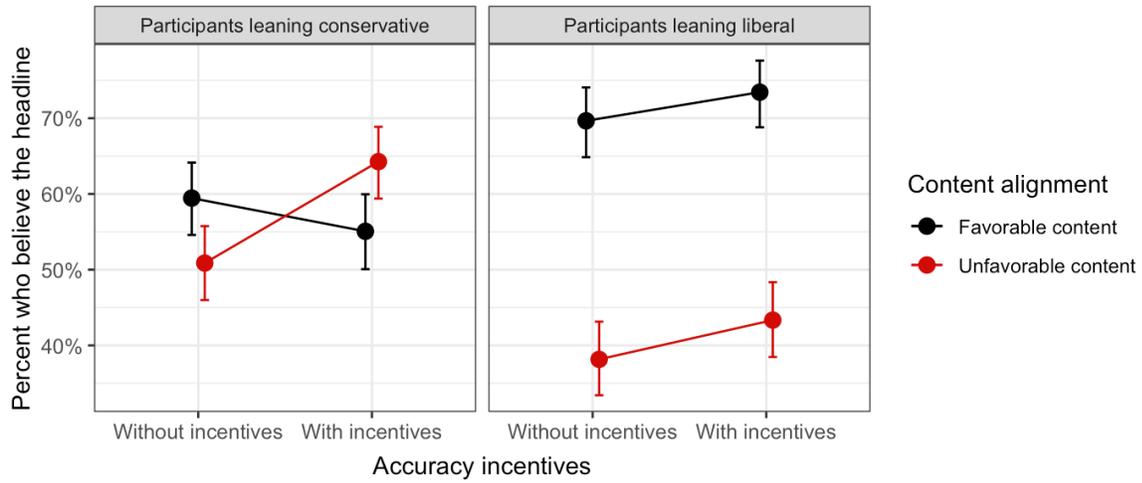
**Fig. S3. Belief in partisan news depends on favorable content more than on source attribution (classified by participant party identification instead of ideology).**  $N=271$ ; error bars represent 95% CIs. Participants identifying as independents are excluded as their alignment cannot be determined. The results are similar to those shown in Figure 1.



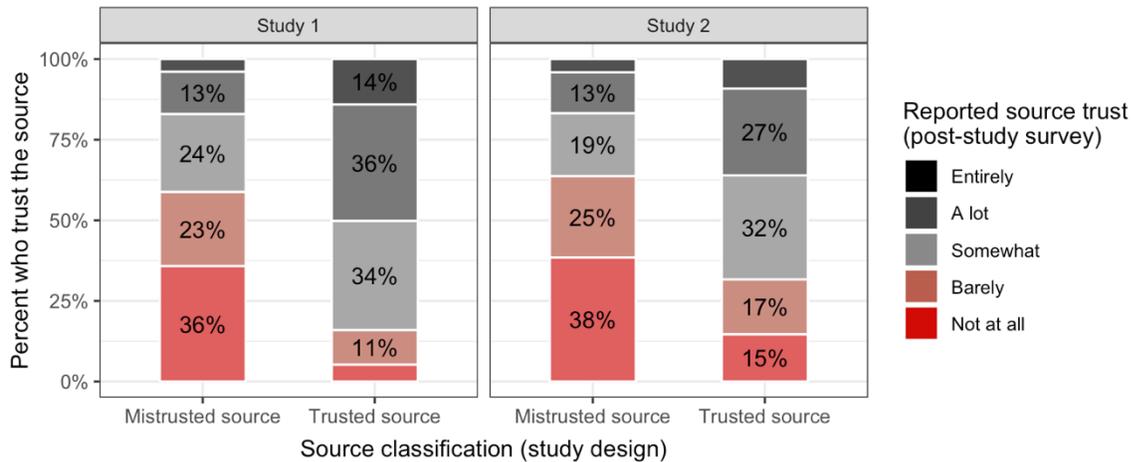
**Fig. S4. Accuracy incentives increase participants' belief in unfavorable content (classified by participant party identification instead of ideology).**  $N=544$ , error bars represent 95% CIs. Participants identifying as independents are excluded as their alignment cannot be determined. The results are similar to those shown in Figure 2.



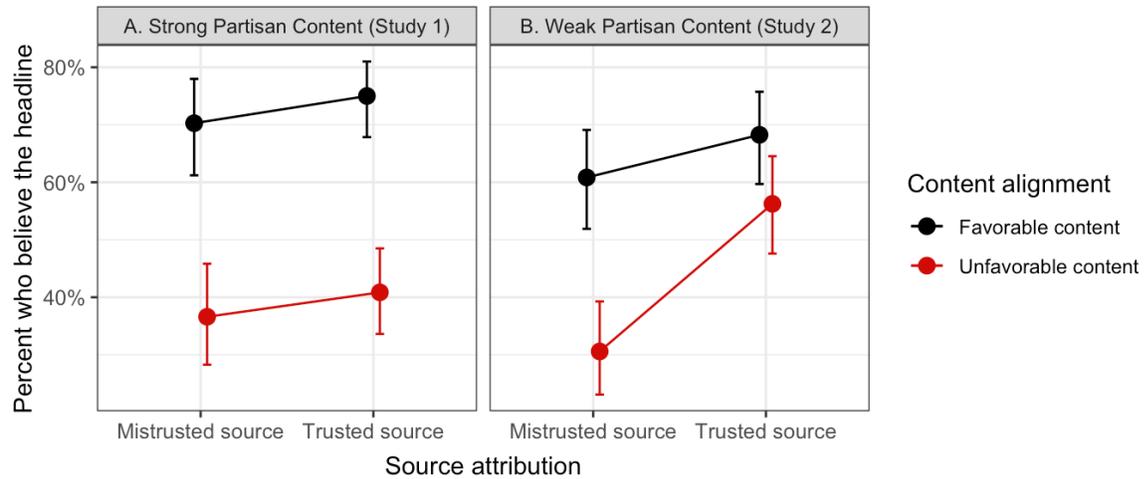
**Fig. S5. Differences between liberals and conservatives in the effects of content and source.**  $N=400$ ; error bars represent 95% CIs. Note that the differences between liberals and conservatives in headline evaluation may be confounded by associated differences in intrinsic credibility of liberal vs. conservative sources and headlines.



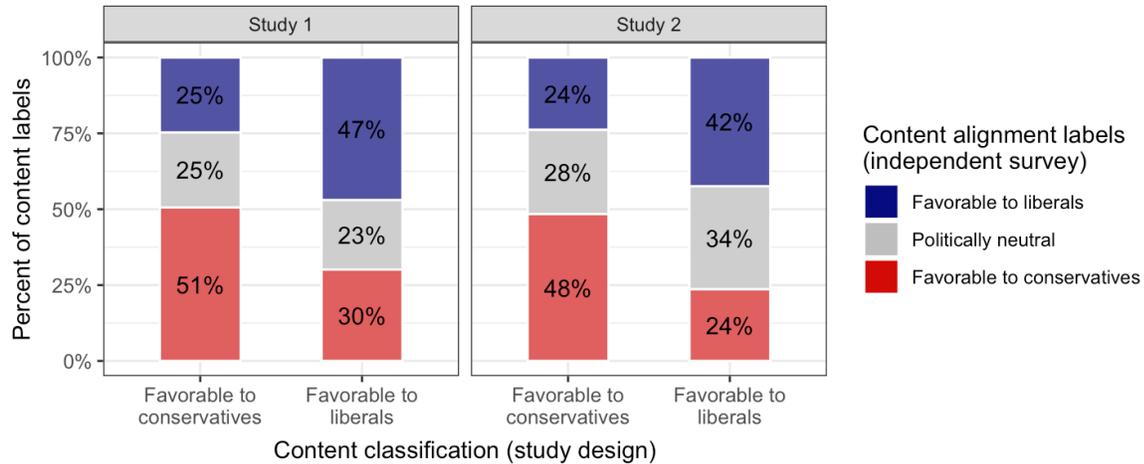
**Fig. S6. Differences between liberals and conservatives in the effect of accuracy incentives.**  $N=800$ , error bars represent 95% CIs. Note that the differences between liberals and conservatives in headline evaluation may be confounded by associated differences in intrinsic credibility of liberal vs. conservative sources and headlines.



**Figure S7. Participants’ media trust ratings correlate with source attributions based on population surveys.**  $N=1,560$ . The Y-axis indicates the percentage of participants who expressed trust in the study’s sources, broken down by whether the sources were categorized as “trusted” or “mistrusted” in the study design (based on population surveys). Study 1 used source attributions only to the *New York Times* and *Fox News*, whereas Study 2 used a wider spectrum of sources, including *Breitbart News*. The distribution of responses is shown using stacked bars, ranging from “entirely” (black) to “not at all” (red). The two measures of trusted sources were highly correlated ( $r=0.25, p<0.001$ ), but the residual heterogeneity may account in part for the weak effects of source attribution in Figure 1 in the main text.



**Fig. S8. Headline credibility by content and source attribution, excluding participants whose post-treatment source trust ratings did not match trust classifications in population surveys.  $N=377$ ;** error bars represent 95% CIs. The credibility of partisan news depended on favorable content more than a trusted source, even when heterogeneity in the labeling of trusted sources was artificially removed.



**Figure S9. Content labels for headlines that favored liberals or conservatives in an independent survey correlate with content labels in the study design.**  $N=720$ . The Y-axis indicates the percentage of survey participants who labeled a headline as favorable to liberals, conservatives, or politically neutral. The correlation between labels in the independent survey and the classification in the study's design is substantial but imperfect ( $r=0.23$ ,  $p<0.001$  for conservative headlines and  $r=0.19$ ,  $p<0.001$  for liberal headlines). The labels used in the study design were derived from a pre-test, while the labels used in the validation check were derived from a survey administered to a different set of respondents after the study was completed.

**Table S1.** Logistic regression predicting news credibility based on content, source attribution, and accuracy incentive treatment (logit regression coefficients and standard errors of the estimates)

	<i>Dependent variable:</i>		
	Headline evaluated as 'true'		
	(Study 1)	(Study 2)	(Combined)
Unfavorable content	-1.071*** (0.149)	-0.553*** (0.146)	-0.808*** (0.104)
Mistrusted source	-0.132 (0.149)	-0.254 (0.146)	-0.193 (0.104)
Accuracy incentives	-0.138 (0.188)	-0.174 (0.179)	-0.161 (0.129)
Accuracy incentives*Unfavorable content	0.437* (0.213)	0.304 (0.205)	0.378* (0.147)
Accuracy incentives*Mistrusted source	0.330 (0.213)	0.294 (0.205)	0.306* (0.147)
Constant	0.849*** (0.133)	0.541*** (0.128)	0.691*** (0.092)
Observations	1,537	1,564	3,101
Log Likelihood	-1,002.517	-1,065.378	-2,075.868
Akaike Inf. Crit.	2,017.034	2,142.757	4,163.737
Bayesian Inf. Crit.	2,055.119	2,175.995	4,195.008

*Note:*

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

**Table S2.** Logistic regression predicting news credibility based on content, source attribution, and moderators for context dependence (logit regression coefficients and standard errors of the estimates)

	<i>Dependent variable:</i>			
	Headline evaluated as 'true'			
	(1)	(2)	(3)	(4)
Unfavorable content	-0.990** (0.324)	-0.170 (0.356)	-0.799*** (0.154)	-0.706* (0.275)
Mistrusted source	-0.691* (0.323)	-0.340 (0.356)	-0.147 (0.153)	-0.115 (0.274)
Level of education	-0.192 (0.144)			
Level of education*Unfavorable content	0.096 (0.163)			
Level of education*Mistrusted source	0.265 0.096			
Participant age		0.002 (0.008)		
Participant age*Unfavorable content		-0.016 (0.009)		
Participant age*Mistrusted source		0.004 (0.009)		
Participant gender			-0.078 (0.185)	
Participant gender*Unfavorable content			-0.019 (0.209)	
Participant gender *Mistrusted source			-0.086 (0.209)	
Participant ideology strength				0.152 (0.329)
Participant ideology strength *Unfavorable content				-0.150 (0.372)
Participant ideology strength*Mistrusted source				-0.114 (0.371)
Constant	1.053*** (0.288)	0.595 (0.314)	0.734*** (0.136)	0.587* (0.243)

Observations	1,560	1,560	1,560	1,560
Log Likelihood	-1,040.781	-1,039.964	-1,041.385	-1,042.142
Akaike Inf. Crit.	2,093.562	2,091.927	2,094.771	2,096.284
<i>Note:</i>		* $p < 0.05$ ,	** $p < 0.01$ ,	*** $p < 0.001$

**Table S3.** Logistic regression predicting news credibility based on content, accuracy incentives, and moderators for context-dependence (logit regression coefficients and standard errors of the estimates)

	<i>Dependent variable:</i>			
	Headline evaluated as 'true'			
	(1)	(2)	(3)	(4)
Unfavorable content	-0.978** (0.322)	-0.169 (0.355)	-0.959** (0.293)	-0.706* (0.274)
Accuracy incentives	0.172 (0.326)	0.370 (0.366)	0.182 (0.300)	-0.228 (0.289)
Accuracy incentives* Unfavorable content	0.114 (0.451)	-0.362 (0.509)	0.302 (0.415)	0.537 (0.402)
Level of education	-0.056 (0.117)			
Level of education*Unfavorable content	0.091 (0.162)			
Level of education*Accuracy incentives	-0.097 (0.164)			
Level of education*Accuracy incentives*Unfavorable content	0.143 (0.228)			
Participant age		0.004 (0.006)		
Participant age*Unfavorable content		-0.016 (0.009)		
Participant age*Accuracy incentives		-0.010 (0.009)		
Participant age*Accuracy incentives*Unfavorable content		0.019 (0.012)		
Rating time			-0.007 (0.026)	
Rating time*Unfavorable content			0.020 (0.036)	
Rating time*Accuracy incentives*			-0.022 (0.035)	
Rating time* Incentives*Unfavorable content			0.007 (0.049)	

Participant ideology strength				0.092 (0.267)
Participant ideology strength *Unfavorable content				-0.147 (0.371)
Participant ideology strength*Accuracy incentives				0.293 (0.378)
Ideology strength* Incentives*Unfavorable content				-0.207 (0.526)
Constant	0.698** (0.233)	0.422 (0.255)	0.646** (0.209)	0.530** (0.197)
Observations	3,101	3,101	3,101	3,101
Log Likelihood	2,076.882	2,075.56 3	2,077.29 5	2,077.073
Akaike Inf. Crit.	4,169.764	4,167.12 6	4,170.58 9	4,170.145
<i>Note:</i>	* $p < 0.05$ , ** $p < 0.01$ , *** $p < 0.001$			

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