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*Research Article*

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## Increasing accuracy motivations using moral reframing does not reduce Republicans' belief in false news

*In a pre-registered survey experiment with 2,009 conservative Republicans, we evaluated an intervention that framed accurate perceptions of information as consistent with a conservative political identity and conservative values (e.g., patriotism, respect for tradition, and religious purity). The intervention caused participants to report placing greater value on accuracy, and placing greater value on accuracy was correlated with successfully rating true headlines as more accurate than false headlines. Yet, the intervention had no significant direct effect on the accuracy of headline ratings. These results suggest that moral reframing, and perhaps interventions based on connecting accuracy motivation with political identity more generally, may not be promising for combatting belief in misinformation.*

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### Research questions

- Among conservative Republicans, are those who value accuracy better at telling true news headlines from false news headlines?
- Does a persuasive message connecting conservative identity to the importance of accuracy increase the value that conservative Republicans place on accuracy?
- Does such an identity-based messaging intervention reduce belief in false headlines and/or increase belief in true headlines among conservative Republicans?

### Essay summary

- Using a sample of 2,009 U.S. conservative Republicans, recruited from Amazon Mechanical Turk and CloudResearch, we randomized participants to read one of two essays. The treatment essay framed the acceptance of true but politically challenging information (as well as the rejection of politically attractive but false information) as consistent with conservative political ideology and conservative values, such as patriotism, respect for tradition, and religious sanctity. The control essay was about a neutral, non-political topic (neckties). Participants then rated the accuracy of a

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number of news headlines that varied on veracity and political lean (i.e., headlines were true or false and favorable to either Republicans versus Democrats).

- The treatment message, which framed accuracy as consistent with conservative identity and values, significantly increased the value participants reported placing on having accurate beliefs, compared to the control message.
- Correlationally, participants who reported placing a higher value on accuracy did indeed rate false headlines as less accurate.
- However, we did not find a *causal* effect of increasing the value of accuracy on accuracy judgments: The treatment message did not significantly reduce the perceived accuracy of false headlines or increase the perceived accuracy of true headlines.
- These findings suggest that attempts to harness political identity through values-based framing may not be an effective strategy for reducing susceptibility to misinformation among conservative Republicans.

## Implications

Academics, policymakers, and the general public are highly concerned about the spread of misinformation, and a great deal of research has sought interventions to combat misinformation (Lazer et al., 2018). These interventions have mostly been cognitive in nature. For example, past work has found that providing fact-checker warning labels (Pennycook et al., 2020) or corrective information before (Cook et al., 2017) or after (Lewandowsky et al., 2020; Persily & Tucker, 2020; Wittenberg & Berinsky, 2020) exposure reduces belief in falsehoods, as does providing simple digital literacy tips (Guess et al., 2020), engaging in reasoning (Bago et al., 2020), or activating an accuracy mindset (Salovich et al., 2022; Thakral et al., 2021). Similarly, prompting participants to consider accuracy increases the quality of news they share (Epstein et al., 2021; Pennycook et al., 2021).

Here, we consider an alternative approach to combatting misinformation that is rooted in *motivation*. A large literature on politically motivated reasoning, starting from Kunda (1990), argues that accuracy motives are in tension with “directional” (e.g., identity-based) motives that drive people to believe identity-congruent information and disbelieve identity-incongruent information. Thus, it could be that people believe false ideologically-congruent claims because they are *motivated* to believe these claims. If so, then increasing the strength of their accuracy motives should help to counteract these directional motives and thus reduce belief in ideologically congruent falsehoods (and increase belief in ideologically incongruent truths).

In this paper, we attempt to increase the strength of accuracy motives among conservative Republicans in the United States, as prior research finds this group is more distrusting of mainstream news sources (Brenan, 2022; Gottfried, 2021; Pennycook & Rand, 2019), and thus have a higher possibility of turning to and internalizing (Garrett & Bond, 2021), as well as sharing (Grinberg et al., 2019; Guay et al., 2022; Guess et al., 2019) political misinformation, as compared to Democrats. To do so, we developed an intervention that frames accuracy as consistent with conservative ideology. In the United States, conservatives tend to place a higher value on group loyalty, respect for authority, and purity than liberals (Graham et al., 2009; Haidt & Graham, 2007). Persuasive appeals that frame political issue positions as consistent with these values have been shown to lead conservatives to report higher levels of support for a number of political positions, such as environmental protection/climate change (Bayes et al., 2020; Feinberg & Willer, 2013; Wolsko et al., 2016), same-sex marriage (Feinberg & Willer, 2015), immigration (Voelkel et al., 2022), making English the official language of the United States (Feinberg & Willer, 2015), countering vaccine hesitancy (Amin, et al., 2017), and economically progressive political candidates (Voelkel et al., 2022). Beyond moral values, messaging that invokes a common identity has been shown

to be more persuasive (Chu et al., 2021; Jiang et al., 2010). Therefore, messages that frame having accurate political beliefs as being consistent with conservative political identity could be a fruitful means for reducing belief in fake news among conservative Republicans.

Specifically, we tested whether framing accurate engagement with political information as consistent with conservative ideology and values affects conservative Republicans' ability to tell truth from falsehood when evaluating political news headlines. We followed most work on online misinformation in focusing on headlines rather than full articles because on social media, people mostly just read the headlines that appear in the newsfeed and only rarely click out to read full articles. As the headline typically contains the key claim, prior work has shown that participants can typically do fairly well at determining the accuracy of true versus false headlines, especially when they stop to think carefully (for a review, see Pennycook & Rand, 2021).

As expected, we found that (i) the conservative identity-framed intervention increased the self-reported value of accuracy, and (ii) participants who reported a higher value on accuracy were less likely to believe false headlines. Unexpectedly, however, there was no significant effect of the treatment on participants' accuracy judgments of either true or false headlines. This ineffectiveness stands in contrast to other interventions—such as fact checks (Cook et al., 2017; Lewandowsky et al., 2020; Pennycook et al., 2020; Persily & Tucker, 2020; Wittenberg & Berinsky, 2020), digital literacy tips (Guess et al., 2020), deliberation manipulations (Bago et al., 2020), or financial incentives (Rathje et al., 2023)—which *have* been shown to significantly affect accuracy judgments.

What might explain why the intervention we tested was ineffective? One interpretation is that accuracy motivation is only correlated with—but does not have a causal effect on—accuracy judgments, perhaps driven by some omitted third variable such as an increased ability to focus, identify patterns, or exert cognitive effort. In this account, those who exert greater cognitive effort, both indicate placing more value on accuracy and are less likely to believe false headlines, but the link is not causal. Another interpretation is that the link between valuing accuracy and disbelieving false news *is* causal, but the effect of our intervention on accuracy valuation, or the association between accuracy valuation and accuracy judgments, or both, are too weak to show an effect of our intervention.

It could also be the case that the small increase in accuracy value we produced was a demand effect. That is, our manipulation, which was very explicit on the value of being accurate, increased participants' perception that it would be reputationally advantageous to signal they valued accuracy but did nothing to affect their actual valuation of accuracy. According to this explanation, the intervention only increased the desire to signal value, but that motivation was insufficient to also impact participants' actual accuracy judgments in the study. Still, another possibility is that the intervention was sufficient to increase participants' actual valuation of accuracy but that more is required for participants to translate that valuation into actual changes in accuracy judgments. For example, individuals may also require knowledge of common features of fake versus true headlines in order to capitalize on their valuation of accuracy and more reliably discern truth from falsehood.

Whatever the reason, our results suggest that identity-consistent accuracy messaging may not be a promising tool for meaningfully reducing susceptibility to misinformation among conservative Republicans in the United States, at least as implemented here. This lack of efficacy is somewhat surprising, given the large body of evidence reviewed above for the effectiveness of this approach in persuading people on political issues. In a related vein, a recent study found that two different descriptive social norms interventions did not reduce sharing intentions for fake news (Epstein et al., 2021) despite the well-established power of descriptive social norms to affect a wide range of other behaviors (Cialdini et al., 2006). Together, these results raise questions about the role of motivation in driving belief in misinformation, as well as how well interventions based on social identity can be applied to the challenge of misinformation.

This study has several limitations. First, we only conducted our research among conservative

Republicans in the United States. It is possible that an identity-based approach could be more effective with other groups. Second, while the intervention tested here combined several identity-based methods (e.g., invoking political values, religious and political identity cues, etc.), it is possible that a different approach to increasing accuracy motivation that more effectively harnessed conservative identity, or which harnessed different identities, could move participants more effectively. Further work should test if this is the case.

## Findings

*Finding 1: Conservative Republicans who reported valuing accuracy more were less likely to believe false headlines.*

As a manipulation check, we measured how much value participants placed on accuracy using our “importance of accuracy” scale consisting of an aggregate of 12 items, each using a 100-point scale (see Appendix Table 1). This importance of accuracy scale included questions about the importance of rejecting false information even when that information is ideologically consistent, and of accepting true information even when that information is ideologically inconsistent. Participants’ self-reported value of accuracy was significantly positively correlated with discerning true headlines from false headlines (interaction between value of accuracy and headline veracity ( $b = 0.227$ , 95% CI = [.186, .269]),  $p < .001$ );<sup>2</sup> this was also the case when constraining to only those in the control condition ( $b = 0.203$ , 95% CI = [.152, .254],  $p < .001$ ). Particularly, participants who placed more value on accuracy were less likely to believe false headlines ( $b = -0.252$ , 95% CI = [-.288, -.215],  $p < .001$ ); and there was no relationship between valuing accuracy and believing true headlines ( $b = -0.024$ , 95% CI = [-.057, .009],  $p = .150$ ). Further, the relationship between valuing accuracy and truth discernment (the difference in accuracy ratings for true relative to false headlines) showed no moderation by whether the headline was concordant or discordant with participants’ political identity (interaction between value of accuracy, headline veracity, and headline concordance ( $b = 0.008$ , 95% CI = [-.058, .074],  $p = .819$ ). The association between valuing accuracy and truth discernment was significant—and the effect was of similar magnitude—both for headlines that were politically concordant (interaction between valuing accuracy X real,  $b = -0.224$ , 95% CI = [-.274, -.176],  $p < .001$ ) and discordant (interaction between valuing accuracy X real,  $b = -0.231$ , 95% CI = [-.285, -.177],  $p < .001$ ). These associations conceptually replicate prior work (Arechar et al., 2023) and confirm our intervention’s motivating assumption that those who are more concerned with accuracy are, in fact, better at discerning true versus false headlines.

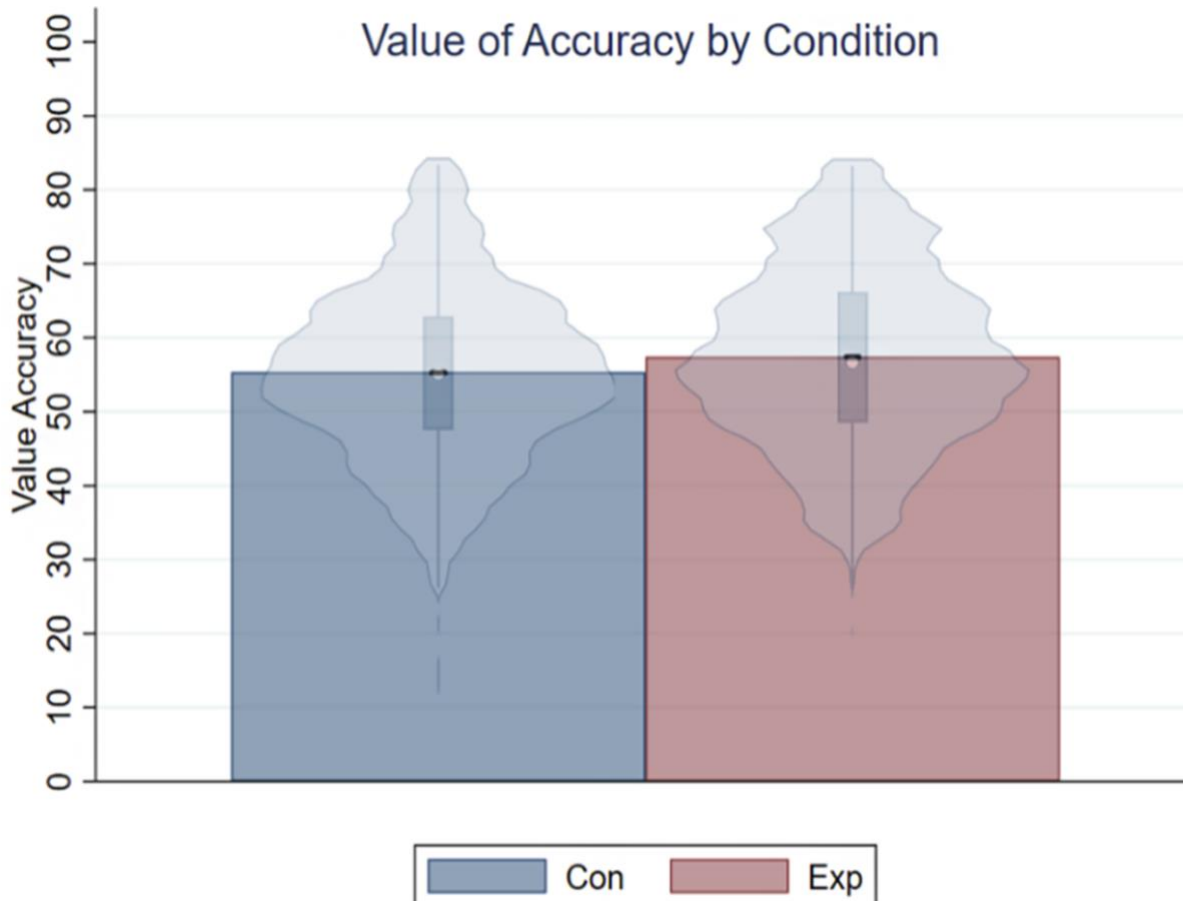
*Finding 2: An intervention that frames having accurate beliefs as consistent with conservative identity and values increased the value that conservative Republicans reported placing on accuracy.*

By design, the components of the importance of accuracy scale are closely related to the contents of the intervention. This allows the scale to operate as a manipulation check, ensuring that the intervention successfully induces participants to place greater importance on accuracy. Indeed, when comparing responses to the importance of accuracy scale in the conservative-identity intervention treatment condition relative to the control, we found a small but significant positive effect of the treatment ( $b = 2.08$

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<sup>2</sup> Disaggregating the “importance of accuracy” aggregate into subscales, we see the following: valuing the rejection of false information has no relationship with discernment for true discordant headlines ( $b = -0.015$ ,  $p = .460$ ), but does for concordant fake headlines ( $b = -0.145$ ,  $p < .001$ ). In contrast, valuing the acceptance of inconvenient truths had both a relationship with discernment for true discordant headlines ( $b = 0.05$ ,  $p = .004$ ) as well as concordant fake headlines ( $b = -0.056$ ,  $p = .002$ ).

95% CI = [1.03, 3.133],  $p < .001$ , Cohen's  $d = -0.173$ ), with results nearly identical when adding demographic controls ( $b = 2.08$ , 95% CI = [1.05, 3.1],  $p < .001$ ). As portrayed in Figure 1, this shows that our intervention was successful at increasing the value that our conservative Republican participants placed on accuracy, as we would expect, given this scale was designed to be closely related to the contents of the intervention.



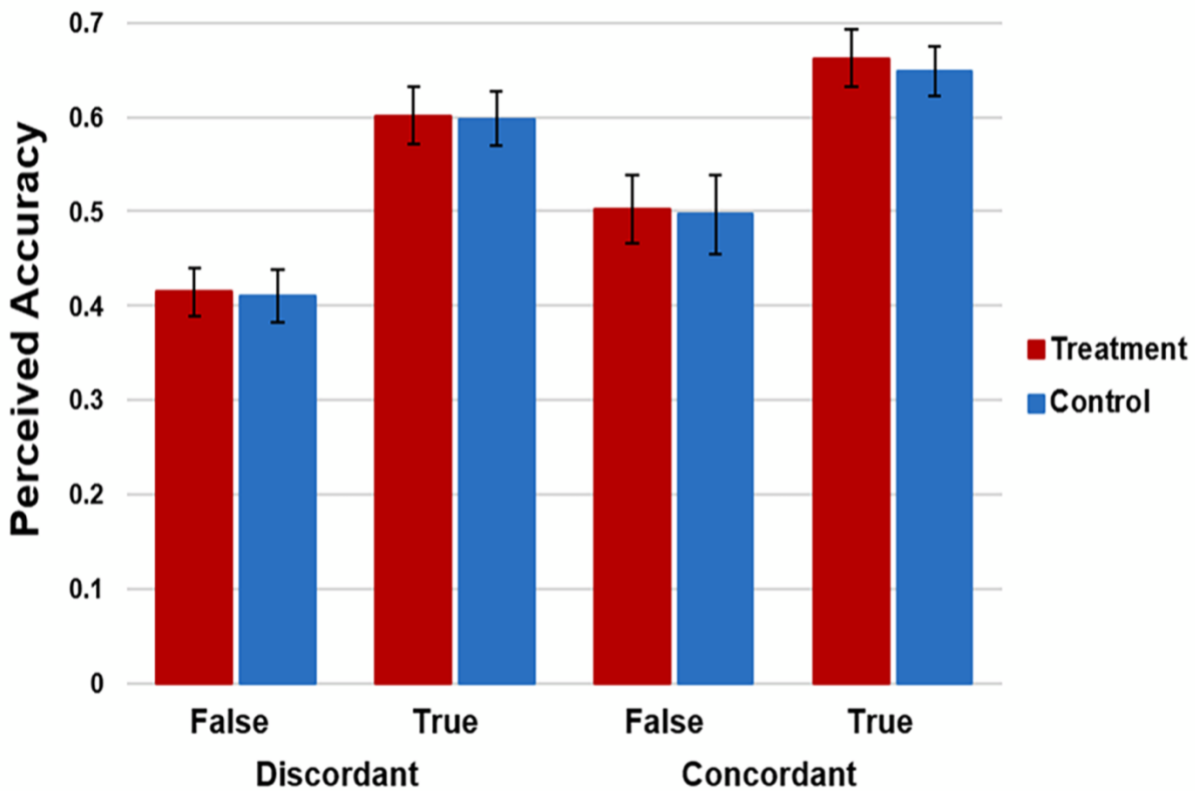
**Figure 1.** Value placed on accuracy across conditions. Con = control, Exp = treatment. Bars indicate means with 95% confidence intervals; violin plots indicate the full distribution of responses.

**Finding 3:** The conservative identity-framed intervention did not make conservative Republicans better at identifying false versus true headlines.

When predicting participants' accuracy ratings for the headlines, there was no significant two-way interaction between treatment and headline veracity ( $b = 0.01$ , 95% CI = [-.043, .063],  $p = .704$ ). Thus, the intervention did not make participants more sensitive to the actual objective veracity of the headlines when judging their accuracy—or, put differently, the intervention did not improve participants' overall truth discernment. There was also no significant three-way interaction between treatment, headline veracity, and whether the headlines were right-leaning or left-leaning ( $b = 0.03$ , 95% CI = [-.03, .09],  $p = .342$ ), such that the treatment's effects (or, in this case, non-effects) did not significantly vary by concordant versus discordant with the participants' politics. More specifically, there was no significant treatment effect on accuracy ratings of left-leaning true headlines ( $b = -0.008$ , 95% CI = [-.06, .042],  $p = .730$ ), which we expected the treatment would increase belief in, or right-leaning false headlines ( $b = -0.015$ , 95% CI = [-.081, .051],  $p = .653$ ), which we expected the treatment would decrease belief in. All

results are qualitatively equivalent when including demographic controls or when restricting to participants who spent more than median time reading the treatment or control essays (see Appendix Tables 2–6). As noted above, these results are surprising given previous work, as well as the above correlational relationship between trait accuracy value and discernment. As discussed above, this may be due to an unobserved third variable driving the correlational relationship, or it may be that our treatment was not strong enough to move performance despite moving reported value. Still, given the length and consistent messaging of the treatment, this null result is surprising.

For completeness, we also note that participants rated true headlines as more accurate than false headlines on average ( $b = 0.515$ , 95% CI = [.611, .418],  $p < .001$ ), and rated concordant headlines as more accurate than discordant headlines ( $b = 0.214$ , 95% CI = [.081, .347],  $p = .002$ ). These patterns replicate results found in previous studies (for a review, see Pennycook & Rand, 2021), suggesting that the null effect of the intervention was not due to idiosyncrasies of the headline set nor the experimental paradigm we used.



*Figure 2. Perceived accuracy of headlines, based on headline veracity, political concordance, and experimental condition. Error bars indicate 95% confidence intervals.*

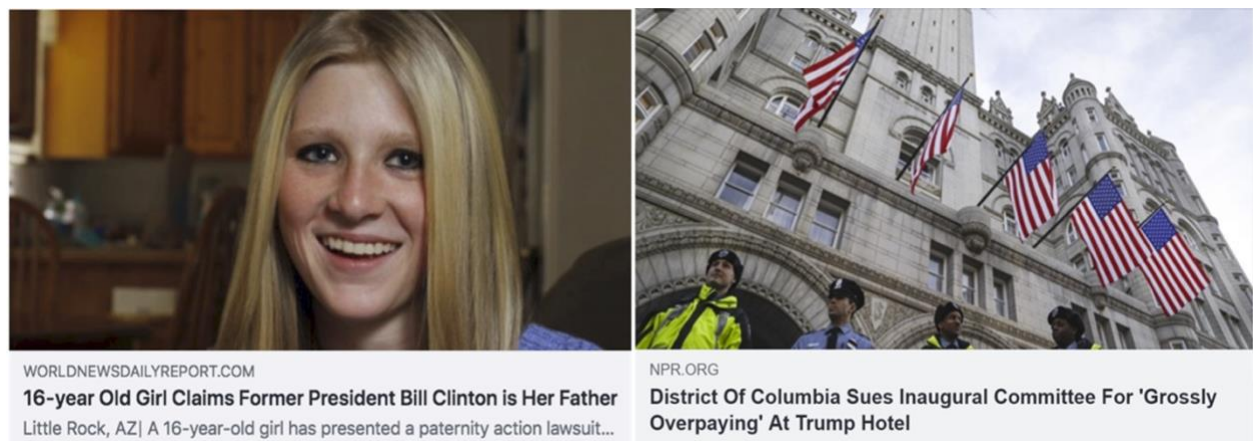
## Methods

We collected data from online survey participants recruited through a large panel of previously surveyed Amazon Mechanical Turk workers who were vetted for attentiveness and Cloud Research participants (information on the panel this study was run on can be found in Appendix Table. 7). We only included participants who self-identified as Republican and conservative (indicating 5–7 on a scale from 1 = Extremely liberal to 7 = Extremely conservative) and passed three attention checks (18% were dropped pretreatment for inattention). The final dataset included 2,009 participants (mean age = 41, 51% female,

82% White). We conducted this study in September and October of 2021. The study was pre-registered ([https://osf.io/9suw7/?view\\_only=d56f0e59b9c34df5824ebd3dacace34d](https://osf.io/9suw7/?view_only=d56f0e59b9c34df5824ebd3dacace34d)).

Participants were randomly assigned to the treatment or control condition. Participants in the treatment condition read an essay that connected accuracy to conservative identity and values, titled “Truth, an American Value.” Based on previous work (Feinberg & Willer, 2015), the essay tied accuracy to moral values found to be held more strongly by conservatives than by liberals, such as group loyalty (“Patriotic Americans put honesty and truth over their political party”), authority (e.g., “A patriot believes what is true, not what she or he would like to believe”), and purity (e.g., “We must protect the sanctity of the truth”). The essay also included references common to many American conservatives’ identity, such as quotes from the Bible (e.g., “Therefore each of you must put off falsehood and speak truthfully to your neighbor, for we are all members of one body,” Ephesians 4:25). The essay emphasized the need to accept true information even when inconvenient (“If the truth supports an opposing view, loyal, responsible Americans don’t dismiss this information”), and to reject false information even if one might be inclined to believe it (“When we accept information without question, just because it favors our position, it corrupts the virtue of our side”). (The full example of the essay can be found in Appendix Figure 2). Participants in the control group read an article of a similar length but about an unrelated, non-political topic (i.e., the history of neckties).

Participants then proceeded to the main task: rating the accuracy of a series of actual news headlines. Based on a previous experimental paradigm (Pennycook & Rand, 2019), all participants rated a total of 20 headlines about political news (see Figure 3 for an example), randomly selected from a large pool of 100 headlines. The headlines were sampled such that half were true and half were rated false by the professional fact-checking website [Snopes.com](https://snopes.com). Additionally, half were right-leaning and half were left-leaning (based on a pre-test in which a separate sample of participants indicated how good for the Democrats versus Republicans the headline would be if it was true).<sup>3</sup> Participants rated the accuracy of each headline on a 4-point scale from 1 (Not at all accurate) to 4 (Very accurate). Headlines were displayed in a random order.



**Figure 3. Examples of false/concordant headlines (left) and true/discordant (right).**

Finally, for our importance of accuracy scale, participants answered 12 items, each using a 100-point scale, measuring their self-reported value of accuracy, including the importance of rejecting false information (e.g., “People should reject false political information, even if the information makes them feel

<sup>3</sup> Exact wording: Assuming the above headline is entirely accurate, how favorable would it be to Democrats versus Republicans? Taken from: Chen, Pennycook & Rand, 2021.

comfortable”) and accepting true information (e.g., “It is important to accept true political information, even if it feels wrong”). We piloted this paradigm several times, and the results of the piloting are reported in the supplementary materials (all items and subscales can be found in the Appendix).

The main analysis tested the effect of condition on truth discernment. To do so, we predicted accuracy rating using an OLS regression with two-way clustered standard errors clustered on participant and headline. We included a dummy variable for treatment, a center-coded dummy variable for headline veracity, a center-coded dummy variable for headline political lean (concordant versus discordant), and all interactions. A significant positive two-way interaction between treatment and headline veracity would indicate that the treatment increases sensitivity to the veracity when rating accuracy (i.e., increases truth discernment). A significant negative two-way interaction between treatment and concordance would indicate that the treatment decreases preferential belief in concordant headlines. A significant three-way interaction would indicate that the effect on the treatment on truth discernment varies based on concordance.

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**Competing interests**

There is no competing interest for this work for any of the authors.

**Ethics**

Our research protocol has been approved by the institutional review board at MIT, and all participants provided informed consent before beginning our study. The ethnicity/gender categories were defined by the experimenters, however, an option to indicate a different term for race/ethnicity was also provided for those who were interested in doing so. There is no ethnicity/gender focus to this study.

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**Data availability**

All materials needed to replicate this study are available via the Harvard Dataverse:

<https://doi.org/10.7910/DVN/GP6JIR>

## Appendix A: Importance of accuracy scale

**Table 1.** Importance of accuracy scale. All items and subscales.

<i>Importance of accuracy scale</i>		
All items use the response scale: (Strongly disagree 0) - (Neither agree nor disagree 50) - (Strongly agree 100)		
Importance of rejecting false info	$\alpha = .671$	1 It is important to be skeptical of political information that feels good.
		2 Just because some political information seems true at first, doesn't mean it is.
		3 People should reject false political information, even if the information makes them feel comfortable.
Importance of Accepting	$\alpha = .772$	4 It is important to accept true political information, even if it feels wrong.
		5 Just because some political information seems wrong at first, doesn't mean it actually is.
		6 People should accept true political information, even when it makes them feel uncomfortable.
Careful thinking is good patriotic American	$\alpha = .792$	7 True Americans are willing to accept information that's real, even when it makes them feel uncomfortable.
		8 Being a good American means being willing to accept difficult truths.
		9 A loyal American rejects false information, even if it seems true at first.
Obligation to support party position	$\alpha = .735$	10 I feel a moral obligation to support my party.
		11 Information that contradicts my party's position on key political topics is dangerous and harmful.
		12 I feel a moral obligation to question my first reaction to political information.
Overall alpha for 12 items = .801		

## Appendix B: Supplementary models

**Table 2.** Linear regressions examining relationship between value placed on accuracy and headlines' perceived accuracy, with (2, 4) and without (1, 3) controls and split by concordance (concordant headlines, models 1 and 2; discordant headlines, models 3 and 4).

VARIABLES	(1) Rating	(2) Rating	(3) Rating	(4) Rating
AccVale	0.0142 (0.0246)	0.0462* (0.0230)	-0.0237 (0.0233)	0.0304 (0.0222)
False	-0.497*** (0.0704)	-0.499*** (0.0719)	-0.578*** (0.0568)	-0.583*** (0.0567)
False X AccValue	-0.201*** (0.0320)	-0.207*** (0.0320)	-0.204*** (0.0307)	-0.211*** (0.0297)
Year of birth		-0.00524** (0.00162)		-0.00981*** (0.00167)
Gender		-0.0798* (0.0344)		-0.125** (0.0391)
Income		-0.0159** (0.00556)		-0.0205** (0.00653)
Edu dummies		Yes		Yes
Race dummies		Yes		Yes
Constant	1.988*** (0.0470)	2.111*** (0.196)	1.802*** (0.0469)	2.107*** (0.216)
Observations	10,072	9,944	10,076	9,946
R-squared	0.075	0.106	0.095	0.178

Notes: Standard errors in parentheses. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$ .

**Table 3.** Linear regressions examining treatment effect on value placed on accuracy, with (2) and without (1) controls.

VARIABLES	(1) Mod	(2) Mod
Treatment	2.080*** (0.537)	2.075*** (0.521)
Year of birth		0.163*** (0.0201)
Gender		1.199* (0.534)
Income		0.261** (0.0869)
Edu dummies		Yes
Race dummies		Yes
Constant	55.35*** (0.370)	49.76*** (2.414)
Observations	202,909	200,586
R-squared	0.007	0.078

Notes: Standard errors in parentheses. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$ .

**Table 4.** Linear regressions examining treatment effect on headlines' perceived accuracy, with (2) and without (1) controls.

<b>VARIABLES</b>	<b>(1) Rating</b>	<b>(2) Rating</b>
Treatment	-0.00892 (0.0257)	-0.00392 (0.0253)
Concordant	0.182** (0.0619)	0.182** (0.0630)
False	-0.560*** (0.0544)	-0.566*** (0.0548)
Concordant X False	0.0801 (0.0845)	0.0833 (0.0859)
Concordant X Treatment	-0.0313 (0.0254)	-0.0284 (0.0266)
False X Treatment	-0.00456 (0.0307)	-0.00317 (0.0325)
Concordant X Treatment X False	0.0298 (0.0313)	0.0253 (0.0336)
Year of birth		-0.00770*** (0.00113)
Gender		-0.159*** (0.0250)
Income		-0.0170*** (0.00392)
Edu dummies		Yes
Race dummies		Yes
Constant	1.804*** (0.0457)	1.921*** (0.185)
Observations	40,160	39,702
R-squared	0.075	0.137

Notes: Standard errors in parentheses. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$ .

**Table 5.** Linear regressions examining treatment effect on headlines' perceived accuracy, with (2, 4, 6) and without (1, 3, 5) controls, broken down by each level of conservatism (on a 7-point scale, with 4 being the midpoint, 5–7 represents three levels of conservatism: low, moderate, and high).

VARIABLES	Level 5		Level 6		Level 7	
	(1) Rating	(2) Rating	(3) Rating	(4) Rating	(5) Rating	(6) Rating
Treatment	-0.000206 (0.0455)	-0.00759 (0.0437)	0.0309 (0.0448)	0.0465 (0.0433)	-0.0686 (0.0501)	-0.0720 (0.0457)
Concordant	0.129+ (0.0696)	0.128+ (0.0703)	0.239*** (0.0675)	0.238*** (0.0687)	0.165** (0.0625)	0.166** (0.0630)
False	-0.697*** (0.0640)	-0.705*** (0.0641)	-0.532*** (0.0639)	-0.537*** (0.0651)	-0.460*** (0.0631)	-0.463*** (0.0629)
Concordant X False	0.0913 (0.0960)	0.0944 (0.0980)	0.0566 (0.0883)	0.0612 (0.0897)	0.0973 (0.0892)	0.0994 (0.0893)
Concordant X Treatment	-0.0413 (0.0483)	-0.0393 (0.0470)	-0.0626 (0.0410)	-0.0584 (0.0418)	0.0160 (0.0455)	0.0189 (0.0458)
False X Treatment	-0.00898 (0.0571)	-0.00422 (0.0563)	-0.0193 (0.0480)	-0.0175 (0.0508)	0.0141 (0.0619)	0.0125 (0.0613)
Concordant X Treatment X False	0.0101 (0.0571)	0.00652 (0.0569)	0.0705 (0.0493)	0.0623 (0.0518)	0.000328 (0.0622)	-0.000747 (0.0614)
Year of birth		-0.00404** (0.00156)		-0.00713*** (0.00152)		- 0.0104*** (0.00173)
Gender		-0.126*** (0.0374)		-0.219*** (0.0382)		-0.127** (0.0418)
Income		-0.0160** (0.00590)		-0.0119* (0.00604)		-0.0217** (0.00718)
Edu dummies		Yes		Yes		Yes
Race dummies		Yes		Yes		Yes
Constant	1.747*** (0.0517)	1.704*** (0.270)	1.743*** (0.0551)	1.810*** (0.149)	1.936*** (0.0509)	1.590*** (0.262)
Observations	12,278	12,198	15,228	15,028	12,654	12,476
R-squared	0.116	0.161	0.078	0.141	0.049	0.134

Notes: Standard errors in parentheses. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$ .



**Table 6.** Linear regressions examining treatment effect on headlines' perceived accuracy for those who took below (1), or above (2), the median time to reading the treatment or control essays.

<b>VARIABLES</b>	<b>(1) Rating</b>	<b>(2) Rating</b>
Treatment	-0.0121 (0.0366)	0.0148 (0.0312)
Concordant	0.0766** (0.0281)	0.265** (0.0979)
False	-0.189*** (0.0335)	-0.851*** (0.0784)
Concordant X False	0.0319 (0.0414)	0.117 (0.130)
Concordant X Treatment	-0.0303 (0.0284)	-0.0414 (0.0370)
False X Treatment	-0.0550 (0.0385)	0.0628+ (0.0353)
Concordant X Treatment X False	0.0129 (0.0373)	0.0379 (0.0457)
Constant	2.051*** (0.0283)	1.611*** (0.0679)
Observations	17,068	23,092
R-squared	0.015	0.157

Notes: Standard errors in parentheses. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$ .

## **Appendix C: Platform maintenance**

This study was run on a privately maintained panel of Mturk workers, that vets for quality using the following steps.

1. All participants complete an initial short demographics survey with a few attention check questions.
  - (a) Exclude participants who have missed more than 1 choice attention check in prescreen or prior study
  - (b) Exclude all participants who miss open-ended attention check from prescreen
  - (c) If miss more than 1 choice attention check within study, exclude (revoke all qualifications)
2. We monitor participant's IP addresses, and those who's IP address appears on an online blacklist are excluded.
3. Participants whose IP address appears more than once in a prescreen survey are excluded (if any IP address appears for participants already in the uploaded database, revoke all qualifications, mark as bad responder in database).
4. Participants whose MTurk ID appears more than once: keep first appearance, do not upload any subsequent.
5. Revoke all qualifications for any participants prior to 6/10/2016.
6. Remove all "Finished" "False" responses.
7. Participants who switch YOB or gender are excluded (revoke all qualifications, mark as bad responder in database).
8. Only participants with 95% or higher HIT approval rate.

## Appendix D: Treatment effect separately by headline over veracity and concordance

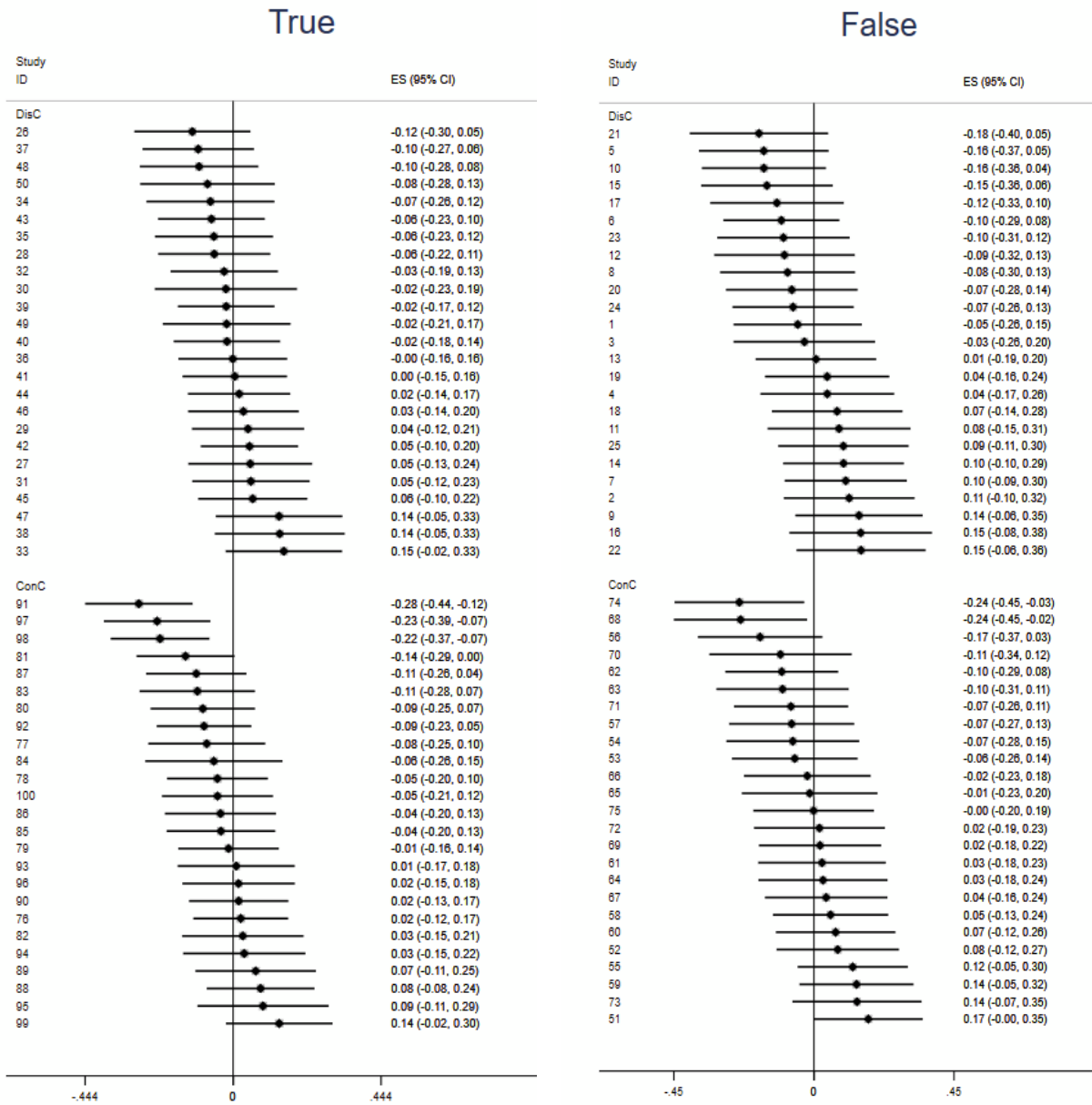


Figure 1. Treatment effect on perceived accuracy separately for each headline, by headline veracity and concordance.

## Appendix E: Experimental stimulus



Americans have always stood up for what is right and what is true. Our country has been strongest when it fought for freedom, justice, and truth. In the American Revolution, we stood up for our liberty, rejecting the lies of a tyrant. In World War II, we stood up to fascist leaders who misled their people and spread propaganda. Falsehoods and deceit can divide and corrupt us. But maintaining a commitment to the truth will bind us together as one great nation.

Along with our faith in this country, many of us also hold deep religious beliefs; beliefs which point to truth as sacred. As a wise man once said, "the truth shall set you free." (John 8:31-32). And to share only the truth with others is a divine path: "Therefore each of you must put off falsehood and speak truthfully to your neighbor, for we are all members of one body." (Ephesians 4:25).

Yet, we also know that finding the truth is not always easy.

In recent years, foreign and domestic actors have emerged to spread lies on social media. Other media outlets -- online, on TV, on the radio -- exaggerate and distort the facts, offering a one-sided view of the world.

We must protect the sanctity of the truth by carefully evaluating information, particularly information that confirms our assumptions. If we accept information unquestioningly just because it favors our political positions, it degrades the integrity of our side. In order to be loyal Americans, we all must question information that is false, even if it supports our existing beliefs

## Truth, An American Value

Our country has always struggled with the corrupting influence of propaganda. Even in the time of our forefathers, political groups used their own newspapers to print biased information to further their political aims. Thus, we have always had to fight to maintain our nation's commitment to honesty. And it is a fight that happens, most of all, in our own minds, in the information we choose to accept and reject.

Now we fight similar battles, with foreign and domestic actors spreading lies and manipulating facts on social media.



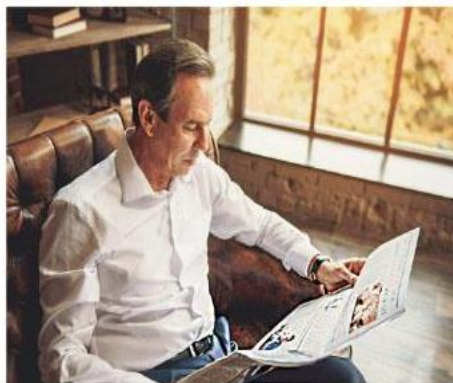
It is a challenge that tests us all. It tests us as a country, and as individuals. Will we be able to remain loyal and respectful to our fellow Americans and to the country we love? Will we show the self-respect, courage, and dignity to see beyond the things we want to be true, to consider the views of others, and to find the truth we sometimes struggle to see?

## Truth, An American Value

We can all agree that truth is a sacred American value. However, we also understand that it's hard to know what to believe, especially with so much questionable information circulating online, in newspapers, on television, and on the radio. How can we be careful and responsible judges of the information we consume and the conclusions we come to? How can we fulfill our duty as American citizens to prevent bias that can infect and corrupt our thinking? Here are two weapons we may use in this fight:

### *1) Stop to reconsider information that feels right.*

When we hear something that makes us feel right, we often accept it without carefully thinking about it. Of course, sometimes the information that we want to be true is true, but often things are not so simple. When we read or hear something that we would like to be true, it is good to slow down and think more carefully. Is the evidence really that convincing? Is the source credible? Am I being as careful and as responsible with this information as I would be if I heard the exact opposite information? When we accept information without question, just because it favors our position, it corrupts the virtue of our side. As patriotic Americans, we should make the courageous decision to reject false information, even when it supports our own beliefs.



### *2) Reconsider information that feels wrong.*

We also often hear things that seem to fit a different political side from our own. These things usually feel wrong to us and can even make us mad. We are tempted to dismiss this sort of information out of hand. Sometimes our gut instincts about this kind of information is right, but sometimes our instincts are wrong. Often, we need to give uncomfortable information a second look, to carefully consider if it has merit. Is the source credible? What would I think of the same information if it favored my own side on the issue? A patriot believes what is true, not what she or he would like to believe. As careful, responsible Americans, we should never deny the truth, even when it makes us mad or uncomfortable. If the truth supports an opposing view, loyal, responsible Americans don't dismiss this information. Instead, they confront their own beliefs and -- when the facts demand it -- even change those beliefs.



## Truth, An American Value

**P**atriotic Americans put honesty and truth over their political party. It's essential to reject false information, even when it supports our political views. It's also essential to accept true information, even when it opposes our views. Americans stand up for the truth.


Here are examples of some truths many people find uncomfortable.

*1) The US unemployment rate reached 3.5% during Donald Trump's presidency, the lowest it's been since 1969.*

Some Americans may resist this fact, yet most economists studying unemployment and the economy agree this is true. Despite some conversations highlighting contexts where unemployment is high, in the beginning of 2020 it reached its lowest level since 1969. Acceptance of this fact does not prove that the economy was working for everyone. All Americans are free to have their own principled opinion on former President Trump, and of the fairness of our economy. But our principled views should not determine which facts about the economy we believe.

*2)The crime rate among illegal immigrants is lower than among American citizens.*

Some Americans may hesitate to accept this fact as well yet it is also true. Many studies, conducted even by conservative groups, have found that the arrest rate is approximately 40% lower among illegal immigrants than native-born Americans. Acceptance of this does not prove that illegal immigration is morally acceptable. It also does not imply that we should reduce our broader security. All Americans are free to have their own principled opinion on immigration law and border enforcement. But our principled views should not determine which facts about immigration we believe.



## Truth, An American Value

*3) Banning assault weapons from 1994 to 2004 did not lead to a decrease in gun deaths.*

Some Americans may be resistant to this fact, but research conducted by the FBI shows this is true. Though much conversation around assault rifles in the media is concerning, the vast majority of gun deaths are due to handguns. This does not mean it's unreasonable to discuss the best ways to reduce gun violence, or whether military-style rifles should be available to law-abiding citizens. All Americans are free to have their own principled opinion on gun control and firearm ownership. But our views should not determine which facts about guns we believe.

*4) The divorce rate among same-sex couples is equivalent to or less than the divorce rate among opposite-sex couples.*

Some Americans may hesitate to accept this fact, yet recent demographic research shows it is true. Some stereotypes of gay Americans include traits that make committed relationships seem rare, but evidence suggests gay and lesbian couples who make the choice to marry stay together at equal or higher rates than opposite-sex couples. Accepting this fact does not prove homosexuality is morally acceptable. All Americans are free to have their own principled opinion on sex and sexual desire. But our principled views should not determine which facts about divorce rates we believe.



## Truth, An American Value

**P**atriotic Americans put honesty and truth over party. We show loyalty to our country always, and loyalty to our parties when it is deserved.

Sometimes, this means accepting difficult facts when they feel wrong. Other times, it means rejecting lies and misinformation that feel right. We are capable of great things, and we are strong enough to handle these discomforts. A patriot believes what is true, not what is easy.



6/6

*Figure 7. Experimental stimuli, part 6.*