Online Supplement

Effects of message sidedness on perceived source bias: When presenting two sides alleviates versus promotes concerns about bias

Contents

Study S1

Study S1 was a conceptual replication of Study 4 presented in the manuscript. That is, we test the hypothesis that one-sided messages should increase perceived bias, but only for relatively mixed topics. We employ a sidedness frame manipulation as in Study 4. We use the bicycle as the mixed topic and equality and incest as the univalent topics.

Method

Participants

One hundred sixty-eight Ohio State University undergraduate students enrolled in an Introduction to Psychology course participated in this study for course credit. Data from three participants who reported that they did not take the study seriously were excluded from analyses.

Design and Procedure

This study included the same DaVinci bicycle condition as in Studies 3 and 4 to create a condition in which participants might view the issue as reasonably having two-sides. Additionally, we included conditions in which participants encountered a source who endorsed the value of equality or who opposed incest to instantiate conditions in which participants would be likely to view the target issue as one-sided. The instructions for this study were the same as in Studies 3 and 4 except that we told participants that they would be reading about two topics, instead of just one. Participants were randomly assigned to read about two of the three topics. As a manipulation check, we also included a measure of subjective ambivalence (Priester & Petty, 1996) to assess whether participants felt more mixed toward bikes than equality or incest. For each topic, they were randomly assigned to read the one- or two-sided frame version. Each topic was presented in the same format and participants reported the extent to which they viewed the source as biased and trustworthy. This study was originally run for a different purpose and perceived expertise was not measured. We later realized that this study would allow us to test the

hypotheses of interest and included it here to provide the complete set of data available to test our hypotheses of interest.

Independent Variables

Topic Mixedness. We experimentally manipulated whether participants would think of the topic as having two sides by choosing target topics that would be normatively viewed as two-sided (DaVinci bicycles) or one-sided (anti-incest or pro-equality). The DaVinci bicycle information was the same as in Studies 3 and 4. When participants read about equality, they read six arguments in favor of equality and one argument opposed. The pro-equality arguments included "Being treated equally leads citizens to be more compelled to contribute to society" and "Equality can lead to social/political stability with its elimination of class differences." The anti-equality argument was "Equality would mean that people who already feel financially comfortable would lose some of their wealth."

When participants read about incest, the arguments were the same as in Study 4.

Sidedness Frame. As in Studies 3 and 4, participants viewed the same information about each topic across conditions, but it was framed to be one- versus two-sided.

Dependent Variables

Perceived Bias. Participants were asked a single item about the extent to which they agreed that the author of the editorial seemed biased (1 = *strongly disagree*, 7 = *strongly agree*).

Perceived Trustworthiness. Participants were asked a single item about the extent to which they agreed that the author of the editorial seemed trustworthy (1 = *strongly disagree*, 7 = *strongly agree*).

Subjective Ambivalence. Participants reported the extent to which they considered their attitudes to be "conflicted", "mixed", and "undecided" about each attitude object on a seven-point scale with higher numbers indicating more conflict (α = .83, Priester & Petty, 1996).

Results and Discussion

As noted above, participants encountered two different topics and responded to items for each of them. However, we considered the first topic that participants encountered to be the purest test of our hypotheses because the second topic could have been influenced by participants' interaction with the first topic (and analyzing reactions to the first topic paralleled the other studies in which only a single target was encountered). As such, we first present analyses with only the first topic that participants encountered, and analyses with the second topic are available below the first set of analyses.

Topic Mixedness Manipulation Check

First, we examined whether participants reported more conflict about the DaVinci Bicycle than either Incest or Equality. The omnibus test was significant in an ANOVA with the topic manipulation predicting subjective ambivalence, $F(2, 162) = 23.22$, $p < .001$. Participants reported more mixed feelings toward the bike ($M = 3.84$, $SD = 1.19$) than equality ($M = 3.25$, $SD = 1.32$) or incest ($M = 2.19$, $SD = 1.30$). Post-hoc comparisons using the Bonferroni test indicated that participants had more conflict about the bike compared to both the equality, $p = .047$, and incest, $p < .001$, topics.

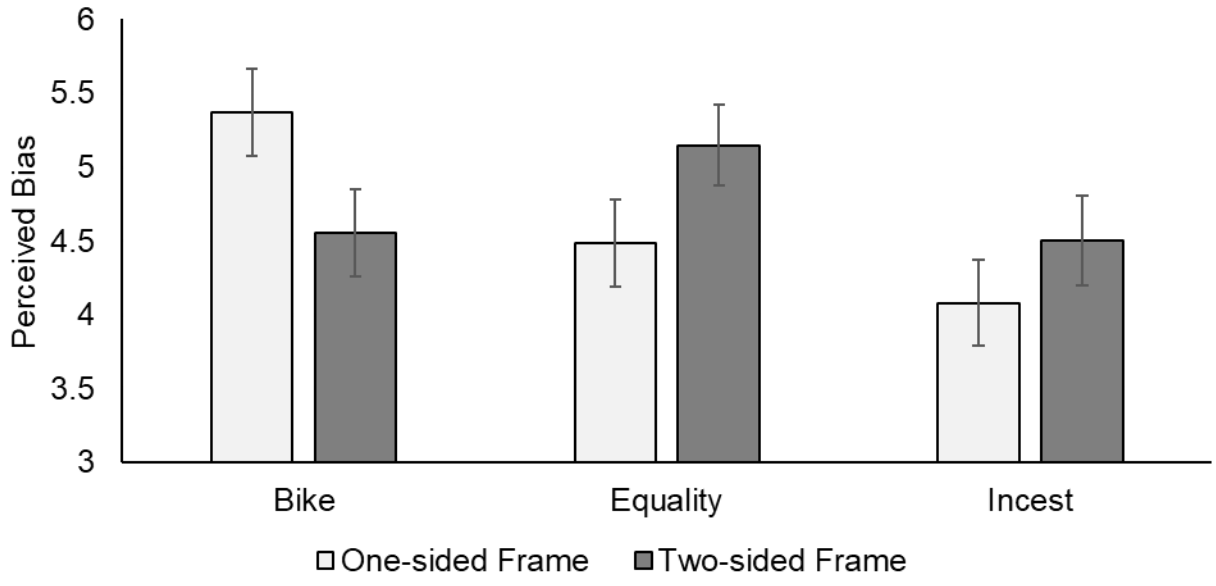
Effects of Sidedness and Topic on Perceived Bias

To test our hypothesis that sidedness would interact with the perceived mixed-ness of the topic, we tested an ANOVA in which the topic factor, the sidedness factor, and their interaction predicted perceived bias. There was no main effect of sidedness frame, $F(1, 159) = .14$, $p = .71$,

and only a marginal main effect of topic, $F(2, 159) = 2.89$, $p = .06$. However, there was a significant interaction, $F(2, 159) = 3.72$, $p = .03$ (Figure S1). We deconstructed this interaction by examining the effect of sidedness frame within each topic condition. Replicating the in text studies, there was a significant effect of the sidedness frame within the bike condition, $t(52) = 2.13$, $p = .04$, 95% CI of the mean difference [.05, 1.58], $d = .59$, with the one-sided source being viewed as more biased. However, in the equality condition, there was a marginal effect in the opposite direction, $t(56) = -1.90$, $p = .06$, 95% CI of the mean difference [-1.37, .04], $d = -.51$. The incest condition was in the same direction as the equality condition, but not significant, $t(51) = -.84$, $p = .40$, 95% CI of the mean difference [-1.42, .58], $d = -.24$.

Figure S1

Perceived bias as a function of topic and message frame in Study S1



Note. Error bars are standard errors.

This same interaction did not significantly occur on perceived trustworthiness, $F(2, 158) = 1.81$, $p = .17$. However, to ensure that the effects on bias would hold controlling for perceived

trustworthiness, we included trustworthiness as a covariate in the model described above. Even when controlling for perceived trustworthiness, there was a significant Sidedness Frame x Topic interaction, $F(2, 157) = 3.34$, $p = .04$, suggesting that these effects occurred independently on perceived bias.

Analyses of the second topic participants saw in Study S1

Manipulation Check

When testing the effect of the topic manipulation on subjective ambivalence for the second set of topics, the omnibus test was significant, $F(2, 159) = 23.05$, $p < .001$. The Bonferroni post-hoc test demonstrated that participants reported significantly more conflict toward the bike ($M = 3.46$, $SD = 1.44$) compared to incest ($M = 1.82$, $SD = 1.15$), $p < .001$. However, they did not significantly differ in their subjective ambivalence toward the bike and equality ($M = 3.13$, $SD = 1.46$), $p = .65$.

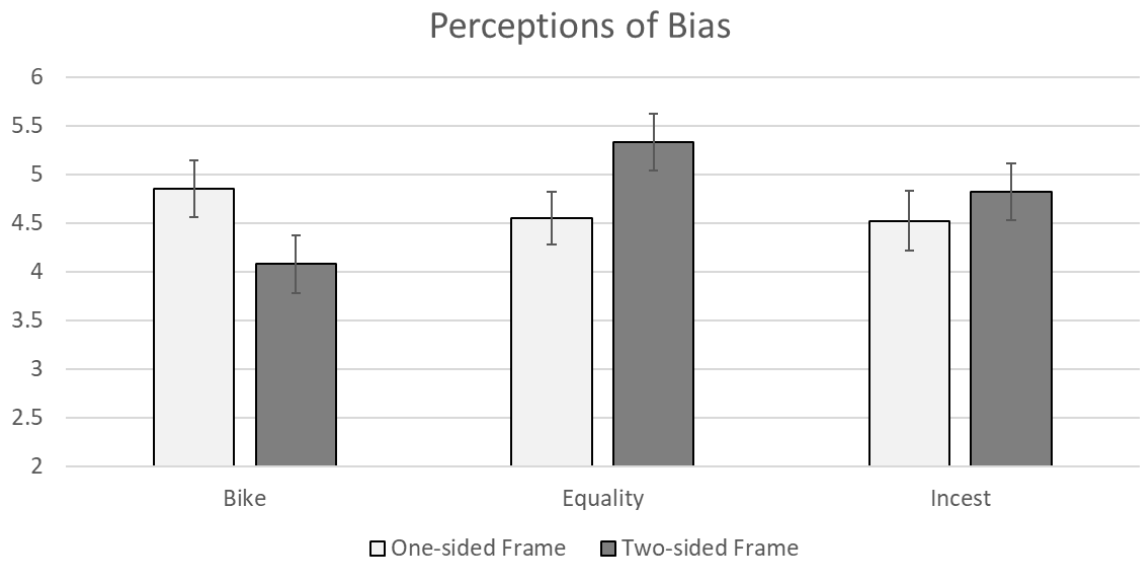
Effects of Sidedness and Topic on Perceptions of Bias

Interestingly, there was no interaction between the second topic and the sidedness frame of the second message on perceived bias after the second message, $F(2, 158) = .71$, $p = .50$. In an exploratory analysis, we examined a repeated measures ANOVA with the first message topic, the second message topic, the first sidedness frame, and the second sidedness frame as between-subjects factors. Additionally, we included the first and second bias measures as a within subjects factor, as well as the interactions between all of these factors. The only significant effect in this model was a two-way interaction between the first topic and the first sidedness frame, $F(140) = 6.31$, $p = .002$. That this was not moderated by the within subjects bias factor ($p = .71$) suggests that the second bias rating might have been influenced by the first bias rating that participants made. Indeed, in a follow up analysis with the first message topic, the second

message topic, the first sidedness frame, and the second sidedness frame as between-subjects factors predicting the second bias measure, the only significant effect was an interaction between the first topic and the first sidedness frame manipulation, $F(2, 140) = 4.08$, $p = .02$. This interaction mirrored the first topic by first sidedness frame interaction on the first measure of bias (Figure S2), suggesting that participants may have carried their perceived bias over from the first topic to the second, as previous work has suggested can happen (Wallace et al., 2021).

Figure S2

Effects of the first topic by first sidedness frame interaction on perceived bias in reaction to the second message



Note. Error bars represent standard errors.

Study S2

We ran an additional study on Cloud Research that was nearly identical to Study 5. As described below, the results are weak and did not significantly replicate Study 5. We suspect that there were data quality issues with this study that we did not detect with the checks we had included. Nevertheless, we report it here and include it in the in-text meta-analysis for the sake of transparency and inclusion of all data collected in this line or work.

Design, Procedure, and Materials

The design, procedure, and materials were nearly identical to Study 5 in the text. However, we had fewer attention checks: we did not have a measure of whether participants thought they saw a one- or two-sided message or the Winograd questions in Study 5. We also did not have a measure of subjective ambivalence.

Results and Discussion

We conducted the same analyses on perceived bias as in Study 5. That is, we first created contrast codes to compare the different sidedness conditions. The first contrast compared the weak and strong two-sided conditions (0 = one-sided, .5 = two-sided strong, -.5 = two-sided weak) and the other contrast compared the one-sided condition to both two-sided conditions (.666 = one, -.333 = two-sided strong, -.333 = two-sided weak). To test our hypothesis that sidedness would interact with the topic, we regressed perceived bias on the topic factor, the sidedness contrast variables, and their two-way interactions with the topic factor (complete model in Table S1, Figure S3). In this model, no effects were significant except that people viewed the politician as more biased (a main effect of topic). The key interaction between the one- versus two-sided conditions and the topic was not significant but was in the same direction as Study 5. Additionally, the pattern of means was similar to that observed in Study 5.

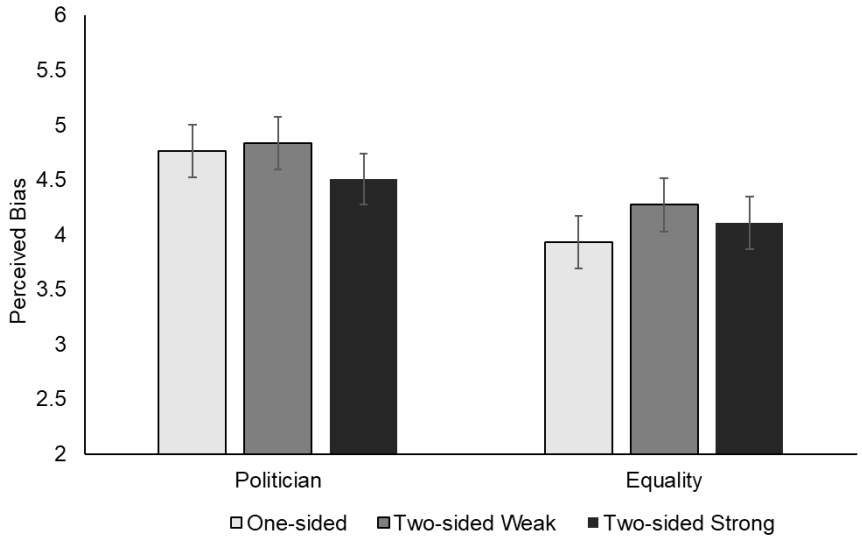
Table S1

Effects of sidedness contrasts, the topic, and their interactions on perceived bias

	b	*95% CI*	*t*	*p*
One vs Two-sided	-.08	[-.52, .35]	-.38	.705
Two-sided Strong vs Weak	-.25	[-.76, .26]	-.96	.340
Topic	-.30	[-.50, -.09]	-2.82	.005
One vs Two-sided x Topic	-.18	[-.61, .26]	-.79	.431
Two-sided Strong vs Weak x Topic	.08	[-.43, .59]	.32	.750

Figure S3

Perceived bias as a function of topic and message sidedness condition in Study S2

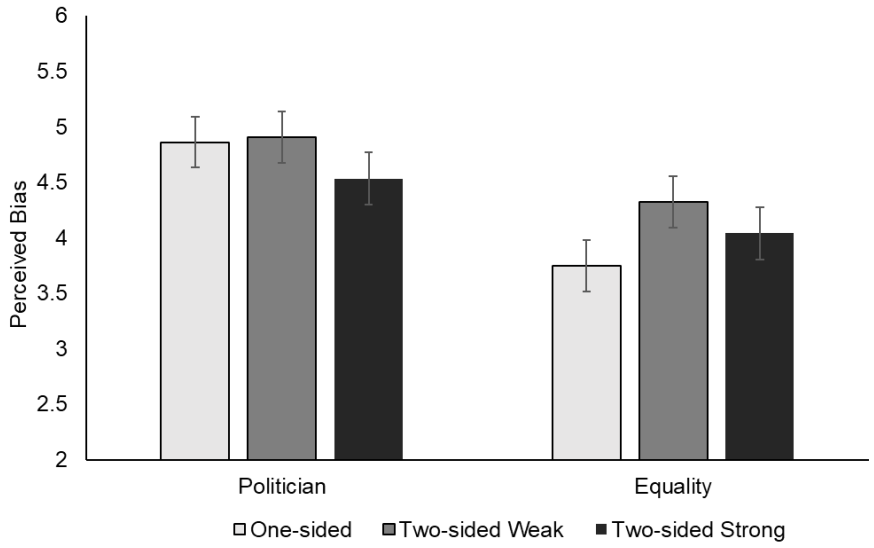


Note. Error bars refer to standard errors.

When controlling for the other perceptions, the key interaction remained non-significant, but the interaction was closer to significant (and looked closer to that obtained in the other studies), b = -.29, 95% CI [-.68, .11], $t(440)$ = -1.44, p = .151 (Figure S4). That there was more of a shift based on reports of trustworthiness led us to examine the trustworthiness reports, and some qualities of the trustworthiness reports led to additional questions about participant attention and data quality.

Figure S4

Perceived bias as a function of topic and message sidedness condition controlling for perceived trustworthiness and expertise in Study S2



Note. Error bars refer to standard errors.

Additional reasons to suspect data quality issues

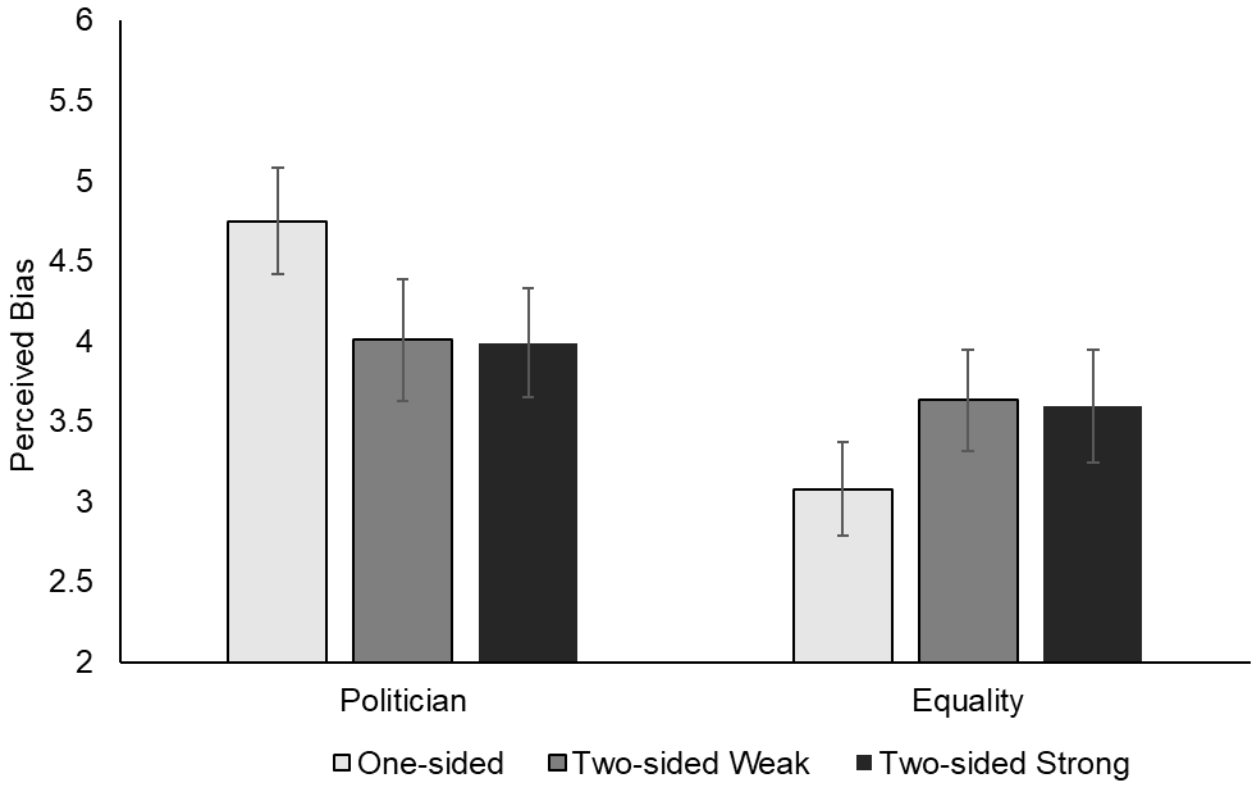
This study produced much larger standard deviations than in the previous studies: whereas the studies in the manuscript regularly had within condition standard deviations of the bias measure below 1.50, the current study had within condition standard deviations mostly above 2.00, ranging from 1.70 - 2.60. Furthermore, whereas the analyses predicting perceived bias in the other studies were largely unaffected by controlling for perceived trustworthiness, in the current study, controlling for perceived trustworthiness shifted the perceived bias analyses quite a bit, resulting in a pattern much closer to that hypothesized and almost to significance.

After making these observations, we revisited the scales for each of the perceptions and noticed something odd in the responses to the trustworthiness items. Whereas the four items for

each of the perceived bias and expertise scales were pretty similar, the perceived trustworthiness scale employed two distinct types of items. The first two asked “To what extent does it seem like Joe is trustworthy?” and “To what extent does it seem like Joe is honest?”. The second two asked, “To what extent do you think that Joe truly believes what he is saying?” and “How much is Joe sharing an opinion he actually believes?”. If participants perceived Joe as “honest,” they should also agree that he was “sharing an opinion he actually believes”. Yet, we noticed a larger than usual number of participants who reported strong agreement with the first two items, but strong disagreement with the second two items or vice versa. To examine whether we might have observed the predicted pattern among those with greater coherence across the two types of items, we calculated the average raw difference in response to the first two versus the second two trustworthiness items to try to capture a within-subject response coherence index separate from the dependent variable of interest. Consistent with there being overall issues with data quality in the sample, this index of conceptually consistent responding on source trustworthiness significantly moderated the key interaction between one- versus two-message sidedness and topic on ratings of source bias, b = .40, 95% CI [.05, .75], $t(436) = 2.27$, p = .024. For participants who provided the most conceptually coherent ratings of source trustworthiness (-1SD on this index), there was an interaction between one- versus two-sided message and topic paralleling those in the text, b = -.64, 95% CI [-1.19, -.09], $t(436) = -2.29$, p = .023 (Figure S5). Thus, although we can’t know for sure, we found evidence consistent with the possibility that the weak support for our hypothesis in this study was likely due to data-quality issues.

Figure S5

Perceived bias as a function of topic and message sidedness conditions among those with the most conceptually coherent source trustworthiness ratings in Study S2



Note. Error bars refer to standard errors.

Analyses with Counter-attitudinal Topic in Study 4

In the counter-attitudinal topic condition, participants read about senior comprehensive exams. Participants read six arguments for implementing senior comprehensive exams and one opposed. The arguments for senior comprehensive exams included "increase students' GPAs throughout their college careers" and "improve the quality of undergraduate teaching" The argument opposing the exams was "resources would have to be used to develop the exams."

Results and Discussion

Agreement manipulation checks

We examined whether participants reported disagreeing more with the source about senior comprehensive exams than the bike or incest. The omnibus test was significant, $F(2, 177) = 12.32$, $p < .001$. Bonferroni post-hoc tests revealed that participants agreed less with the source about senior comprehensive exams ($M = 4.85$, $SD = 1.32$) than incest ($M = 5.48$, $SD = .84$), $p = .003$, or the bike ($M = 5.77$, $SD = .87$), $p < .001$.

Effects of Sidedness and Topic on Perceptions of Bias

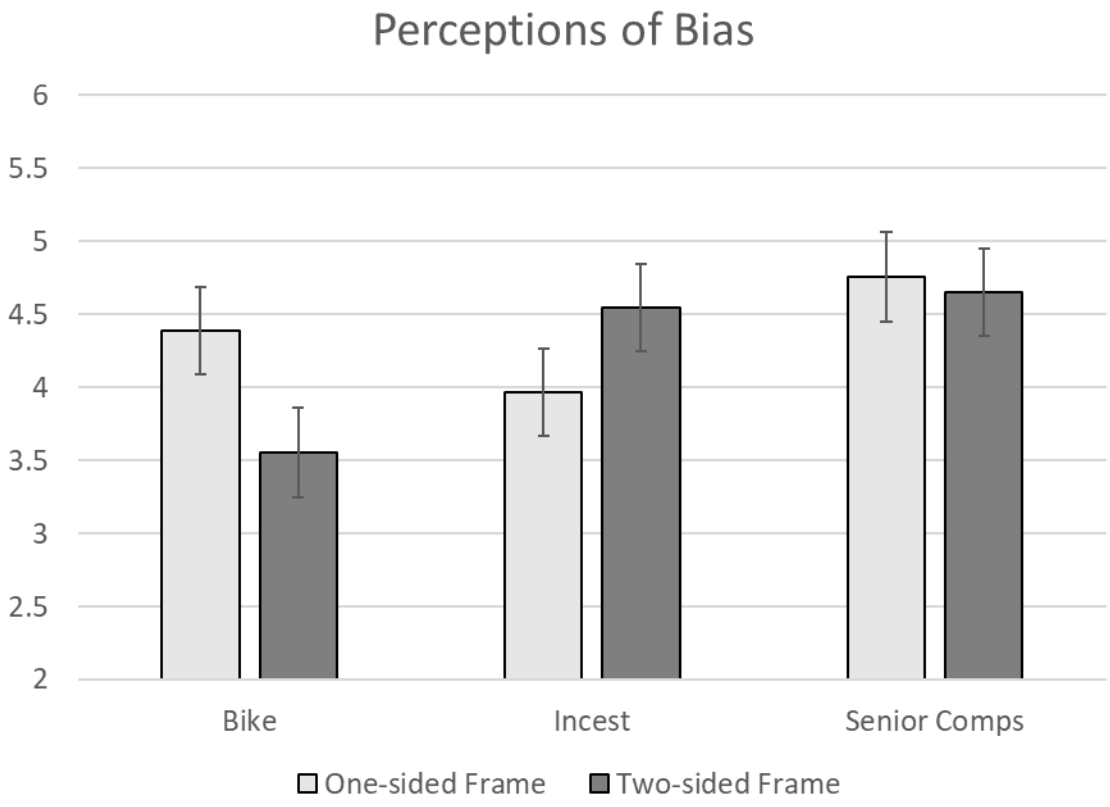
To test our hypothesis that sidedness would interact with the topic, we tested an ANOVA in which the topic factor, the sidedness factor, and their interaction predicted perceived bias. There was no effect of sidedness frame, $F(1, 174) = .24$, $p = .63$, but a significant effect of topic, $F(2, 174) = 2.98$, $p = .05$. Of most interest, there was a marginal interaction, $F(2, 174) = 2.78$, $p = .07$ (Figure S6).

Next, we examined the effect of the sidedness frame within each of the topic conditions. There was a marginal effect of the sidedness frame in the bike condition, $t(58) = 1.83$, $p = .07$, 95% CI of the mean difference [-.08, 1.75], $d = .48$, with the source who provided a one-sided message being viewed as more biased. Although not significant, the effect in the incest condition

went in the opposite direction, $t(59) = -1.32$, $p = .19$, 95% CI of the mean difference [-1.46, .30], $d = -.34$. The sidedness frame manipulation did not have an effect in the senior comprehensive exams condition, $t(57) = .29$, $p = .77$, 95% CI of the mean difference [-.65, .86], $d = .07$. This might have occurred because when participants disagree with the source, it does not matter whether they take a one- or two- sided stance: they are viewed as biased either way.

Figure S6

Perceived bias as a function of topic and message frame in Study 4.



Simple Slopes of Topic within Sidedness Conditions

Study 4

Within the one-sided frame condition, the source was viewed as more biased on the bike topic than the incest topic, b = -.29, 95% CI [-.56, -.03], t(334) = -2.16, p = .032.

Within the two-sided frame condition, the source was viewed as directionally more biased on the incest topic than the bike topic, b = .22, 95% CI [-.05, .49], t(334) = 1.62, p = .107.

Study 5

In all message-sidedness conditions, the source was viewed as more biased in the politician condition than the equality condition:

- One-sided message: b = -1.05, 95% CI [-1.38, -.72], t(396) = -6.19, p < .001
- Two-sided message, weak second side: b = -.39, 95% CI [-.72, -.05], t(396) = -2.27, p = .024
- Two-sided message, strong second side: b = -.34, 95% CI [-.67, -.02], t(396) = -2.06, p = .040

Comparisons of the "Matched" and "Mis-matched" Conditions across Topics

To some extent, one could think of the mixed topic, two-sided condition, and univalent topic, one-sided condition as "matched" because the nature of the message matches the nature of the topic. On the other hand, the mixed topic, one-sided condition and univalent topic, two-sided condition might represent "mismatches". Our key hypothesis in the text could be framed as matching conditions reducing perceived bias. One might wonder if the "matched" and "mismatched" conditions would differ in perceived bias across topics. To test this, we created a matching variable (1 = match (two-sided + mixed or one-sided + univalent), -1 = mismatch (one-sided + mixed or two-sided + univalent)). In Study 5, we collapsed across sidedness conditions. We then regressed perceived bias on the matching factor, the topic factor, and their interaction. The "matching" factor is statistically the same as the interaction in the text, but readers may want to know whether this is moderated by topic.

Study 4 Results

There was only a main effect of matching, b = -.26, 95% CI [-.44, -.07], t(334) = -2.67, p = .008, with matches being perceived as less biased than mis-matches, consistent with the interaction in the text. There was no interaction with topic, b = .11, 95% CI [-.08, .30], t(334) = 1.17, p = .243. The effect of topic was not significant in either the matching, b = .08, 95% CI [-.19, .34], t(334) = .57, p = .572, or mis-matching conditions, b = -.15, 95% CI [-.42, .12], t(334) = -1.09, p = .278.

Study 5 Results

There were main effects of matching, b = -.34, 95% CI [-.55, -.14], $t(398)$ = -3.30, p = .001, consistent with the interaction in the text, and of topic, b = -.71, 95% CI [-.91, -.50], $t(398)$ = -6.81, $p < .001$, with matches being perceived as less biased than mis-matches and the politician topic resulting in more source bias than equality. There was not a significant interaction with topic, b = .19, 95% CI [-.02, .39], $t(398)$ = 1.82, p = .069. For the politician topic, the source was viewed as more biased in both the matching, b = -.52, 95% CI [-.81, -.23], $t(398)$ = -3.55, $p < .001$, and mis-matching conditions, b = -.90, 95% CI [-1.19, -.61], $t(398)$ = -6.06, $p < .001$, consistent with the overall effect of the politician topic leading to more bias in this study.

Pre-testing of arguments for Study 5

Because in Study 5, we wanted to manipulate the strength of the "second side" argument, we conducted pre-testing of arguments. We had two goals in pre-testing these arguments. First, we wanted to ensure that within each topic, the weak arguments would be perceived as weaker than the strong arguments. Second, because the primary concern was that the second side argument was particularly weak for the equality topic, we wanted to ensure that the weak argument for the equality topic was not weaker than for the politician topic.

To conduct this pre-testing, we employed a 6 cell experimental design parallel to that in Study 5 [2 (Topic: politician vs equality x 3 (Sidedness: One-sided, Two-sided strong, Two-sided weak)]. 180 participants from CloudResearch participated in each round of pre-testing. In all cells, participants saw the first set of arguments that captured the base 5 supportive arguments. They rated these arguments on two items: "How strong are Joe's reasons in support of [topic]?" and "How compelling are Joe's reasons in support of topic?", both anchored with 1 = *not at all*, 9 = *very much*. These items were averaged to create an index of argument quality.

Next, participants saw the "additional" argument; which argument they saw depended on their random assignment to condition. They separately rated this additional argument according to its strength using the same items as above, but phrased as "against" the topic in the two-sided conditions. The arguments we tested are available in Table S2 and Table S3, along with the means and standard deviations of argument quality for each. The arguments used in Study 5 are highlighted in yellow.

Of most importance, the weak arguments were rated as weaker than the strong arguments within each topic condition. Additionally, the weak arguments for equality were not viewed as weaker than those for the politician.

Table S2

Means and Standard Deviations of Argument Quality for each set of arguments in the first round of pre-testing

Argument Condition	Topic	Text	*M*, *SD*
Doesn't Change across Conditions	Equality	I value equality. Equality is a founding principle of the United States, and being treated equally leads citizens to be more compelled to contribute to society. Equality leads to a more productive and emotionally healthy population. Nobody is responsible for the circumstances into which they were born, and equality can lead to social/political stability with its elimination of class differences.	7.53, 1.66
	Politician	I support this candidate. He has held public office since 2001, attended Boston College for undergraduate studies and Notre Dame for graduate school. He holds charity functions to raise funds for local schools and volunteers at a local hospital for 15 hours a month. During his time in office, he's proposed and passed significant legislation that has improved the lives of his constituents.	6.91, 1.77
One Sided Bonus Argument	Equality	"Even if we don't realize it, treating others equally feels better than reinforcing social hierarchies."	6.63, 2.11
	Politician	"He's lived in the area his whole life."	5.29, 2.52
Weak Against	Equality	"However, equality can mean that people who already feel financially comfortable would lose some of their wealth."	3.82, 2.60
	Politician	"However, he only moved to the area 20 years ago."	2.00, 1.53
Strong Against	Equality	"However, equality can mean that people who work harder or who are more talented than others would be treated as if they are the same."	5.63, 2.22
	Politician	"However, he only moved to the area 2 months ago."	5.00, 2.13

Table S3

Means and Standard Deviations of Argument Quality for each set of arguments in the second round of pre-testing

Argument Condition	Topic	Text	*M, SD*
Doesn't Change across Conditions	Equality	I value equality. Equality is a founding principle of the United States, and being treated equally leads citizens to be more compelled to contribute to society. Equality leads to a more productive and emotionally healthy population. Nobody is responsible for the circumstances into which they were born, and equality can lead to social/political stability with its elimination of class differences.	7.51, 1.80
	Politician	I support this candidate. He has held public office since 2001, attended Boston College for undergraduate studies and Notre Dame for graduate school. People from his political party and across the aisle say he is good to work with, and he holds charity functions to raise funds for local schools and volunteers at a local hospital for 15 hours a month. During his time in office, he's proposed and passed significant legislation that has improved the lives of his constituents.	6.98, 1.80
One Sided Bonus Argument	Equality	"Treating others equally can make you feel better about yourself."	6.35, 2.31
	Politician	"He's lived in the area his whole life."	5.29, 2.02
Weak Against	Equality	"However, equality can mean that billionaires would lose some of their wealth and have to live more like the rest of us."	3.30 2.31
	Politician	"However, he only moved to the area 20 years ago."	2.43 2.00
Strong Against	Equality	"However, equality can mean that people who work harder or who are more talented than others would be treated equally."	6.47, 2.08
	Politician	"However he only moved to the area 1 month ago."	4.88, 2.23

Moderation by sample in Study 5

We wanted to know whether the participants from the Ohio State University Psychology Subject Pool demonstrated the same effect as the Prolific participants. When we regressed perceived bias on the sidedness contrasts, the topic factor, the participant source, and their two and three-way interactions, we unexpectedly observed a marginal interaction between the one-versus-two-sided contrast, the topic factor, and the participant source, b = .40, 95% CI [.00, -.80], $t(390) = 1.94$, p = .053, r =.10.

This interaction reflected that the key interaction between the one-versus-two-sided contrast and the topic was in the same direction across both samples, but stronger and significant among the Prolific participants, b = -1.07, 95% CI [-1.64, -.50] $t(390) = -3.70$, $p < .001$, r = -.18, compared to the subject pool participants, b = -.27, 95% CI [-.85, .30] $t(390) = -.93$, p = .352, r = -.05.

Both the Prolific participants, b = 1.35, 95% CI [.52, 2.18] $t(390) = 3.20$, p = .002, r = .16, and the subject pool participants, b = .80, 95% CI [.02, 1.59] $t(390) = 2.01$, p = .045, r = .10. demonstrated that one-sided messages increased perceived bias for the politician.

However, for the equality topic, the Prolific participants found the source who provided a one-sided message to be significantly less biased, b = -.80, 95% CI [-1.58, -.01] $t(390) = -2.00$, p = .046, r = .05, whereas the subject pool participants demonstrated a null effect, b = .26, 95% CI [-.58, 1.10], $t(390) = .61$, p = .543, r = .03.

We note that participants from the university subject pool did demonstrate this interaction pattern significantly in Studies 4 and S1, and the pattern they demonstrate is still consistent with attenuation of the sidedness effect in the equality condition.

We ran this study at the very end of the semester, so one possibility is that the subject pool participants were particularly distracted and focused on just getting through the study, leading to a weaker pattern.

Can inferences about the source's attitude account for the interaction between sidedness and topic on perceived bias in Study 5?

In the text, we raised the possibility that presenting a two-sided message for a univalent topic may seem particularly diagnostic of the source's character. For example, just acknowledging that there is a benefit to incest might lead to inferences that the source is an incestophile. Along the same lines, people may infer that a source actually holds the opposite position to the one claimed if they present a two-sided message for a univalent topic. That is acknowledging a single negative of equality may lead people to infer that that source actually holds an anti-equality view.

To test this possibility, we measured participants' perception of the source's attitude. Participants responded to a single item assessing their perception of the source's attitude, "Which scale point do you think best captures Joes opinion of [topic]? (-3 = strongly oppose, -2 = oppose, -1 = slightly oppose, 0 – neutral, 1 = slightly supportive, 2 = supportive, 3 = strongly supportive). This was re-coded as a 1 to 7 scale for analyses.

We regressed perceptions of the source's attitude on the topic factor, the sidedness contrast codes, and their two-way interactions with the topic factor. There was an overall effect of the one-versus-two-sided contrast, reflecting that people inferred source had a more favorable attitude in the one-sided message condition across topics, $b = .39$, 95% CI [.19, .60], $t(396) = 3.72$, $p < .001$, $r = .18$. Importantly, there was not an interaction between the one-versus-two-sided contrast and the topic, $b = .13$, 95% CI [-.08, .33], $t(396) = 1.20$, $p = .231$, $r = .06$, suggesting that these inferences about the source's attitude weren't constrained to the equality topic. Furthermore, participants inferred that the source was positive toward equality in both

two-sided message conditions (strong argument condition: $M = 5.93$, $SD = .96$; weak argument condition: $M = 5.78$, $SD = 1.18$). Thus, it does not seem like participants inferred that the source was actually anti-equality, despite providing a counter-normative argument against equality.

Can agreement account for the effects of sidedness on perceived bias in Study 5?

Given that prior work has suggested that disagreement can increase perceived bias, we wanted to ensure that sidedness was having an effect on perceived bias above and beyond any effects that might come from acknowledging an argument that would be more counter-attitudinal to participants. We thus computed an index of perceived disagreement by taking the absolute value of the participant's attitude toward the topic minus their perception of the source's attitude. Lower numbers on this index correspond to increased similarity between participant's attitude and their perception of their source's attitude, whereas higher numbers indicate deviations in either direction. We then regressed perceived bias on the topic factor, the sidedness contrast codes, centered perceived agreement, and the two-way interactions between perceived agreement and topic, and the sidedness contrast codes and topic. If message-sidedness was having its effects on perceived bias through agreement, we would expect to no longer observe a significant interaction between the one-versus-two-sided contrast and the topic factor when controlling for perceived agreement, along with the interaction between perceived agreement and topic. However, we continued to observe the key interaction on perceived bias, even when controlling for perceived agreement, b = -.53, 95% CI [-.91, -.14], $t(396) = -2.69$, $p = .008$, $r = .13$. This suggests that perceived agreement is not accounting for the effects of message-sidedness on perceived bias. As a side note, perceived agreement does have an independent main effect on perceived bias in this model, $b = .61$, 95% CI [.44, .78], $t(394) = 6.93$, $p < .001$, $r = .33$, replicating prior work (Cheek et al., 2021; Kennedy & Pronin, 2008; Wallace et al., 2021).