Replication

Incrimination Through Innuendo

A Replication and Extension

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Abstract: Research by Wegner et al. (1981) suggests that incriminating innuendo in questions can negatively affect attitudes and opinions. Two preregistered studies (N = 506) provide a close replication of Study 1 of Wegner et al., additionally testing whether question-innuendo effects are moderated by partisanship. Replicating the original findings of Wegner et al., questions insinuating something negative about a target person reduced favorable impressions of the target. Counter to the novel hypotheses that effects of incriminating questions would be reduced for political-ingroup targets and enhanced for political-outgroup targets, question-innuendo effects did not differ across target groups. The findings suggest that merely asking a question about a false proposition can influence public opinion in the absence of incorrect assertions that could be deemed misinformation.

Keywords: impression formation, innuendo, misinformation, negation, partisanship

Is it possible to spread misinformation by asking a question? From a logical view, questions do not have truth values and thus cannot be true or false. Hence, someone asking a question cannot be accused of making a false claim. For example, if a person were to ask if more people died from COVID-19 vaccines than from COVID-19 itself, the person could not be accused of making a false claim about COVID-19 vaccines. The person is merely asking whether a proposition about COVID-19 vaccines is true, which is different from asserting the truth of that proposition. Yet, from a psychological view, questions might nevertheless contribute to the spread of misinformation because questions about whether a given proposition is true could make people more likely to believe that the proposition is true. In the above example, the question of whether more people died from COVID-19 vaccines than from COVID-19 itself may contribute to the spread of misinformation if it leads people to falsely believe that COVID-19 vaccines are more harmful than COVID-19.

The possibility of such question-innuendo effects has significant implications for media communication, in that questions may have the potential to influence public opinion in the absence of factually incorrect assertions that could be deemed misinformation. Innuendo generally involves two components: (1) a proposition linking the subject of a statement to a predicate and (2) a linguistic qualifier that reduces the likelihood of the proposed link between the subject and the predicate. Questions about whether a proposition is true can be regarded as a particular instance of innuendo, in that the focal proposition (e.g., *more people died from COVID-19 vaccines than from COVID-19*) is supplemented with a qualifier that renders the truth value of the proposition uncertain (e.g., *is it true that…?*). Other examples of innuendo include denials, where a focal proposition is supplemented with a qualifier that reverses its truth value (e.g., *it is false that…*). In general, innuendo effects occur when a focal proposition influences attitudes and opinions even when the truth of the proposition is questioned by a linguistic qualifier.

Research by Wegner et al. (1981) suggests that innuendo in questions may indeed have the potential to influence attitudes and opinions. In a first study, participants were presented with headlines about fictitious city-council candidates. One headline directly asserted a proposition with negative content (e.g., *Bob Talbert Linked with Mafia*); another headline included a question about a proposition with negative content (e.g., *Is Karen Downing Associated with Fraudulent Charity?*); a third headline denied a proposition with negative content (e.g., *Andrew Winters Not Connected to Bank Embezzlement*); and a fourth headline asserted a proposition with neutral content (e.g., *George Armstrong Arrives in City*). The headlines were counterbalanced such that propositions with negative content appeared once in a given format across different groups of participants (e.g., *Bob Talbert Linked with Mafia; Is Bob Talbert Linked with Mafia?; Bob Talbert Not Linked with Mafia*). After reading the headlines, participants were asked to rate their impression of each candidate. Compared to the neutral control condition, direct assertions with negative content produced significantly more negative impressions. More importantly, questions with negative content showed a similar effect, in that impressions were significantly more negative in the

question condition compared to the control condition. Impressions in the denial condition did not significantly differ from those in the control condition. In a follow-up study, Wegner et al. (1981) replicated these findings and additionally showed that, although source credibility influenced the relative impact of assertions, source credibility did not qualify question-innuendo effects.

The purpose of the current work was two-fold. First, we aimed to gauge the reproducibility of the finding of Wegner et al. (1981) that incriminating innuendo in questions can negatively affect attitudes and opinions. Although citation counts of the article by Wegner et al.(1981) seem underwhelming for an article published more than 40 years ago in one of social psychology's flagship journals,[1] the finding has important implications for the exponentially growing body of research investigating the spread and acceptance of misinformation (for reviews, see Brashier & Marsh, 2020; Ecker et al., 2022; Lewandowsky et al., 2012; Pennycook & Rand, 2021; Van der Linden, 2022). Moreover, despite the potential significance of question-innuendo effects for research in this area, a Google Scholar search did not reveal a single paper that included a close or conceptual replication of the work by Wegner et al. (1981) (as of November 1, 2023). The lack of a single replication seems even more concerning, considering the relatively small samples in the research by Wegner et al. (1981) (*N*s = 48, 48, 86, respectively). Because underpowered studies can lead not only to false negatives (Maxwell et al., 2015) but also to false positives (Button et al., 2013), it seems desirable to have independent evidence from a higher-powered replication study gauging the reliability of Wegner et al.'s (1981) original findings (Open Science Collaboration, 2015). Such a replication would seem especially valuable considering the significance of Wegner et al.'s (1981) findings for extant research on misinformation and their societal implications for media communication. The first goal of the current work was to provide such a replication.

The second goal of the current work was to investigate whether question-innuendo effects are moderated by partisanship. Theories of partisan identity suggest that people readily accept information that is congruent with their ideological beliefs and dismiss information that is incongruent with their ideological beliefs (Van Bavel & Pereira, 2018). Consistent with this hypothesis, partisanship has been identified as a major factor in responses to political (mis)information, in that people accept false information as true when it is congruent with their ideological beliefs and reject true information as false when it is incongruent with their ideological beliefs (e.g., Batailler et al., 2022; Gawronski, 2021; Gawronski et al., 2023). Applied to question-innuendo effects, these findings suggest that incriminating innuendo in questions may have a stronger impact when the target is a political outgroup member (because people readily accept information that is congruent with their ideological beliefs). Conversely, incriminating innuendo in questions may have a weaker impact when the target is a political ingroup member (because people readily dismiss information that is incongruent with their ideological beliefs). Because participants in the original study by Wegner et al. (1981) did not receive any information on the party affiliation of the fictitious city-council candidates, it remains unclear whether and to what extent question-innuendo effects are moderated by partisanship. Considering the impact of partisan identities on the processing of politically relevant information (Finkel et al., 2020; Van Bavel & Pereira, 2018), it seems important to know whether Wegner et al.'s (1981) findings for targets with unknown political identities replicate when a target's party affiliation is known and whether the size of question-innuendo effects depends on the target's political group membership (i.e., political ingroup vs. political outgroup).

The Current Research

In sum, the current research had two goals. First, we aimed to replicate Wegner et al.'s (1981) finding that questions insinuating something negative about a person have a negative impact on overall impressions. Second, we investigated if the size of such question-innuendo effects is moderated by partisanship. To this end, we conducted two close replications of Wegner et al.'s (1981) Study 1 with an additional manipulation of the targets' political affiliation. To investigate effects of partisanship, we recruited balanced samples of participants from the United States who self-identified as either Democrat or Republican and manipulated the political affiliation of the targets in the headlines (Democrat vs. Republican vs. nonpolitical). We expected to replicate Wegner et al.'s (1981) original finding of a question-innuendo effect, which would be reflected in significantly more negative impressions in the question condition compared to the control condition. We further predicted that question-innuendo effects are moderated by partisanship, such that question-innuendo effects are less pronounced when the target's political affiliation is consistent with participants' political affiliation (compared to nonpolitical targets) and more pronounced when the target's political affiliation is inconsistent with participants' political affiliation (compared to nonpolitical targets).

[1] Google Scholar revealed a citation count of 256 as of November 1, 2023, which translates into an average of only 6.1 citations per year.

Experiment 1

Methods

Open Practices

We report how we determined our sample size, all data exclusions, all manipulations, and all measures. The data, analysis codes, and research materials are available at https://osf.io/rwc25/. The design, hypotheses, and analysis plan were preregistered at https://osf.io/k8tzx/.

Participants and Design

We aimed to obtain the largest possible sample with the available funding, which was $N = 150$. For the 4 (Headline Type: neutral vs. question vs. denial vs. assertion, within-subjects) × 3 (Target Group: neutral vs. political ingroup vs. political outgroup, within-subjects) repeated-measures design, a sample of 150 participants provides 95% power for the detection of a small Headline Type main effect of $f = .142$ and a small Target Group main effect of $f = .156$ with an alpha level of .05, assuming a correlation between measures of $r = .30$ and using a nonsphericity correction of $\varepsilon = 1$. For the Headline Type by Target-Group interaction, a sample of 150 participants provides a power of 95% for the detection of a small effect of $f = .153$.[2] For the relevant post hoc comparisons, a sample of 150 provides 95% power for the detection of a small difference of $d = .296$ between two dependent means with an alpha level of .05 (two-tailed).

Participants were recruited using Prolific Academic (Peer et al., 2017). To obtain a politically balanced sample, we used Prolific's prescreening filters to restrict completion of one assignment to 75 participants from the United States who self-identify as Democrat and completion of the other assignment to 75 participants from the United States who self-identify as Republican.[3] For both assignments, additional preregistered filters were used to restrict participation to Prolific workers who (1) are 18 years old or older, (2) have an approval rate of at least 95% on prior assignments on Prolific, and (3) are fluent in English. The study took approximately 5–10 min to complete, and participants were compensated US$1.90 for their time.

Following our preregistered stopping rule, data collection ended once 150 Prolific workers had been approved for compensation. Of the 171 Prolific workers who started the study, 151 completed all measures. Of the 151 participants with complete data, one participant had revoked their consent for Prolific's prescreening data. Data from this participant were excluded from analyses. Of the remaining 150 participants (75 Democrats, 75 Republicans), 100% passed our instructional attention check and 100% reported consistent political affiliations in Prolific's prescreening survey and the measure of political affiliation included in the current study. Of the participants in the final sample, 80 identified as men, 67 identified as women, 2 identified as nonbinary, and 1 preferred not to answer our demographic question about gender; 125 identified as White, 5 identified as Black or African American, 1 identified as American Indian or Alaska Native, 13 identified as Asian, 0 identified as Native Hawaiian or Pacific Islander, 5 identified with more than one race category, and 1 preferred not to answer our demographic question about race. Participants' age ranged from 18 to 77 years (M_{age} = 39.04 years, SD_{age} = 12.88).

Procedure and Materials

After providing informed consent, participants were asked *Generally speaking, do you think of yourself as a Republican or a Democrat?* and provided with the three response options: 1 = *Republican*, 2 = *Democrat*, and 3 = *Independent*. Only Prolific workers who selected Republican or Democrat were allowed to complete the study. Those who selected Independent were told that they are not eligible to complete the study. Those who selected Republican or Democrat were presented with the instructions for the impression-formation task:

> In the following section, you will be shown media headlines regarding public figures. Your task is to read each headline carefully, and form an impression based on what you have read. Once you are ready to begin, please click the arrow below.

Participants then read 12 media headlines that were presented on the screen one at a time. Each headline was about a fictitious target who was described as either a Republican, a Democrat, or a nonpolitical public figure. Orthogonal to the manipulation of target-group membership,

[2] Sensitivity analyses for the main effects of Headline Type and Target Group were conducted using G*Power 3.1.9.2 (Faul et al., 2007) for within-subjects ANOVAs with four and three repeated measurements, respectively. Sensitivity analyses for the two-way interaction between Headline Type and Target Group were conducted using the Generic *F*-test function within G*Power 3.1.9.2 to calculate the noncentrality parameter λ for a power of 95% and the degrees of freedom for the interaction term ($df_{numerator} = 6$, $df_{denominator} = 894$). The resulting score of λ = 21.00 was then used to manually calculate the required effect size *f* via the equation, $\lambda = f^2 \times df_{denominator}$, as used by PASW Statistics 18 in calculations of observed power.

[3] In Prolific's prescreening survey, participants were asked the question "In general, what is your political affiliation?" and provided with the five response options, 1 = *Democrat*, 2 = *Republican*, 3 = *Independent*, 4 = *Other*, and 5 = *None*.

three headlines directly asserted a proposition with negative content (e.g., *Republican Claude Castellano Convicted of Domestic Violence*); three headlines included a question about a proposition with negative content (e.g., *Did Republican Nominee Tobiah Zavala Plagiarize Recent Speech Given?*); three headlines denied a proposition with negative content (e.g., *Known Republican Hanna Alfsson Is Not in a Romantic Relationship with Convicted Murderer*); and three headlines asserted a proposition with neutral content (e.g., *Republican Candidate Molle Rider Flies into Seattle Today*). The contents of the headlines were counterbalanced across Headline Type and Target Group conditions using a Latin square design, such that each focal proposition with negative content appeared as an assertion, as a question, and as a denial (e.g., *Republican Nominee Tobiah Zavala Plagiarized Recent Speech Given; Did Republican Nominee Tobiah Zavala Plagiarize Recent Speech Given?; Republican Nominee Tobiah Zavala Did Not Plagiarize Recent Speech Given*) for each of the three types of targets (i.e., Democrat, Republican, nonpolitical) for different groups of participants. Each focal proposition with negative content was linked to a matched proposition with neutral content (e.g., *Republican Candidate Molle Rider Flies into Seattle Today*). The order of the statements was randomized individually for each participant.

After reading the headlines, participants were asked to rate their impressions of each target on three 11-point rating scales ranging from 0 to 10. The three questions were as follows: (1) *How would you describe [Name]?* (0 = *bad*, 10 = *good*); (2) *Do you think s/he is honest or dishonest?* (0 = *dishonest*, 10 = *honest*); (3) *Do you think s/he is pleasant or unpleasant?* (0 = *unpleasant*, 10 = *pleasant*). Finally, participants completed several demographic questions about their gender, age, race, and ethnicity. The demographic questions were followed by an attention check in which participants were asked to select a specific response. Participants who did not select the specified response were considered to have failed the attention check.

Preregistered Analysis Plan

For data exclusions, we preregistered that we would exclude participants from analyses who (1) do not complete the entire study, (2) fail the attention check, or (3) show inconsistent self-reports of their political affiliations in Prolific's prescreening survey and the measure of political affiliation in the current study. For data aggregation, we preregistered that adjective ratings for each of the 12 target individuals will be averaged to reflect the overall positivity versus negativity of participants' impressions. For data analysis, we preregistered that impression scores will be submitted to a 4 (Headline Type: neutral vs. question vs. denial vs. assertion) × 3 (Target Group: neutral vs. political ingroup vs. political outgroup) ANOVA for repeated measures and that follow-up *t*-tests will be conducted to specify the nature of significant main or interaction effects.

Results

All 12 impression indices showed sufficiently high variability and little skew in their distributions (see Table 1). Internal consistency was high for all indices (all Cronbach's αs > .89). Using participants' self-reported political affiliation (i.e., Democrat vs. Republican), impression indices for Democratic and Republican targets were recoded to reflect impressions of targets with the same political affiliation (i.e., political ingroup) and targets with a different political affiliation (i.e., political outgroup). Impression scores were submitted to a 4 (Headline Type: neutral vs. question vs. denial vs. assertion, within-subjects) × 3 (Target Group: nonpolitical vs. political ingroup vs. political outgroup, within-subjects) ANOVA with repeated measures on both factors (see Figure 1). The analysis revealed a significant main effect of Statement Type, $F(3, 447) = 47.47$, $p < .001$, $\eta_p^2 = .242$, and a significant main effect of Target Group, $F(2, 298) = 12.05$, $p < .001$, $\eta_p^2 = .075$, but no significant interaction between the two factors, $F(6, 894) = 1.06$, $p = .384$, $\eta_p^2 = .007$.

For the main effect of Statement Type, pairwise comparisons revealed that positivity scores in the question condition were significantly lower compared to the control condition, $t(149) = 5.12$, $p < .001$, $d = 0.418$. Positivity

Table 1. Descriptive statistics for overall impression scores, Experiment 1 (N = 150)

Variable	*M*	*SD*	Min	Max	Skewness	α
Nonpolitical target						
Neutral	5.133	1.519	0.000	9.333	.079	.929
Question	4.798	1.688	0.000	8.667	−.320	.945
Assertion	4.202	1.639	0.000	8.000	−.388	.927
Negation	4.960	1.590	0.000	8.667	−.585	.936
Democratic target						
Neutral	4.991	1.430	0.000	9.667	−.413	.952
Question	4.513	1.648	0.000	9.000	−.468	.951
Assertion	4.111	1.725	0.000	8.000	−.381	.905
Negation	4.818	1.405	0.000	9.333	−.756	.894
Republican target						
Neutral	4.922	1.483	0.000	9.333	−.299	.907
Question	4.389	1.594	0.000	8.000	−.671	.933
Assertion	3.664	1.683	0.000	9.000	−.372	.928
Negation	4.940	1.492	0.000	9.333	−.104	.945

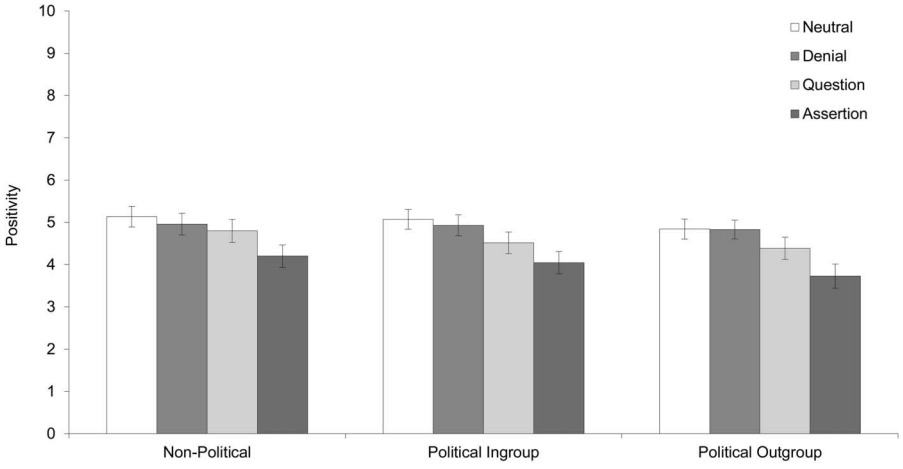

Figure 1. Positivity of target impressions as a function of statement type (neutral vs. denial vs. question vs. assertion) and target group membership (nonpolitical vs. political ingroup vs. political outgroup), Experiment 1 (N = 150). Higher scores indicate more positive impressions. Error bars depict 95% confidence intervals.

scores in the assertion condition were significantly lower compared to the control condition, $t(149) = 8.77$, $p < .001$, $d = 0.716$, and the question condition, $t(149) = 6.11$, $p < .001$, $d = 0.499$. Positivity scores in the denial condition were significantly higher compared to the question condition, $t(149) = 4.31$, $p < .001$, $d = 0.351$, and the assertion condition, $t(149) = 8.58$, $p < .001$, $d = 0.701$, but did not significantly differ from positivity scores in the control condition, $t(149) = 1.44$, $p = .153$, $d = 0.117$.

For the main effect of Target Group, pairwise comparisons revealed that positivity scores for political-outgroup targets were significantly lower compared to political-ingroup targets, $t(149) = 3.01$, $p = .003$, $d = 0.241$, and nonpolitical targets, $t(149) = 4.84$, $p < .001$, $d = 0.395$. Positivity scores for political-ingroup targets did not significantly differ from positivity scores for nonpolitical targets, $t(149) = 1.93$, $p = .055$, $d = 0.158$.

Further analyses revealed that positivity scores in the question condition were significantly lower than positivity scores in the control condition for nonpolitical targets, $t(149) = 2.90$, $p = .004$, $d = 0.236$, political-ingroup targets, $t(149) = 4.01$, $p < .001$, $d = 0.327$, and political-outgroup targets, $t(149) = 3.52$, $p = .001$, $d = 0.288$. The same was true for the comparison of positivity scores in the assertion condition, which were significantly lower than positivity scores in the control condition for nonpolitical targets, $t(149) = 6.88$, $p < .001$, $d = 0.562$, political-ingroup targets, $t(149) = 6.12$, $p < .001$, $d = 0.500$, and political-outgroup targets, $t(149) = 7.46$, $p < .001$, $d = 0.609$. Positivity scores in the denial condition did not significantly differ from positivity scores in the control condition for nonpolitical targets, $t(149) = 1.53$, $p = .129$, $d = 0.125$, political-ingroup targets, $t(149) = 1.18$, $p = .241$, $d = 0.096$, and political-outgroup targets, $t(149) = 0.14$, $p = .892$, $d = 0.011$.[4]

Discussion

The results of Experiment 1 replicate Wegner et al.'s (1981) finding that questions insinuating something negative about a person led to less favorable impressions compared to control conditions. Yet, counter to our novel hypotheses that question-innuendo effects would be less pronounced for political-ingroup targets and more pronounced for political-outgroup targets, question-innuendo effects did not significantly differ across target groups. Moreover, although partisanship failed to moderate question-innuendo effects in the hypothesized manner, partisanship did influence overall impressions, in that participants showed more favorable impressions of targets belonging to their political ingroup compared to targets belonging to their political outgroup.

Although the sample size in Experiment 1 (N = 150) was substantially larger compared to the sample sizes in Wegner et al.'s (1981) original studies (Ns = 48, 48, 86, respectively), it is possible that the hypothesized effect of partisanship on the relative size of question-innuendo effects is relatively small compared to the effect of incriminating innuendo in questions. Thus, while the sample might have been sufficient to detect a significant question-innuendo effect, it might have been insufficient to detect a significant moderation by partisanship. To address this concern, we conducted a follow-up study with a sample that was more than twice as large as the sample in Experiment 1.

[4] Effect sizes of differences between two dependent means were calculated with Ian Neath's online effect-size calculator at https://camel.psyc.vt.edu/models/stats/effect_size.shtml.

Experiment 2

Methods

Open Practices

We report how we determined our sample size, all data exclusions, all manipulations, and all measures. The data, analysis codes, and research materials are available at https://osf.io/rwc25/. The design, hypotheses, and analysis plan were preregistered at https://osf.io/6ebv8/.

Participants and Design

We aimed to obtain the largest possible sample with the available funding, which was $N = 360$. For the 4 (Headline Type: neutral vs. question vs. denial vs. assertion, within-subjects) × 3 (Target Group: neutral vs. political ingroup vs. political outgroup, within-subjects) repeated-measures design, a sample of 360 participants provides 95% power for the detection of a small Headline Type main effect of $f = .092$ and a small Target Group main effect of $f = .100$ with an alpha level of .05, assuming a correlation between measures of $r = .30$ and using a nonsphericity correction of $\varepsilon = 1$. For the Headline Type by Target-Group interaction, a sample of 360 participants provides a power of 95% for the detection of a small effect of $f = .098$.[5] For the relevant post hoc comparisons, a sample of 360 provides 95% power for the detection of a small difference of $d = .190$ between two dependent means with an alpha level of .05 (two-tailed).

Following the recruitment procedure in Experiment 1, we used Prolific's prescreening filters to recruit 180 participants from the United States who self-identify as Democrat and 180 participants from the United States who self-identify as Republican. The additional prescreening filters for participation were identical to Experiment 1, the only difference being that Prolific workers who had already participated in Experiment 1 were not eligible to participate in Experiment 2. The study took approximately 5–10 min to complete, and participants were compensated £1.65 for their time.

Following our preregistered stopping rule, data collection ended once 360 Prolific workers had been approved for compensation. Of the 391 Prolific workers who started the study, 362 completed all measures. Of the 362 participants with complete data, six participants reported inconsistent political affiliations in Prolific's prescreening survey and the measure of political affiliation included in the current study. Following our preregistered exclusion criteria, data from these participants were excluded from analyses. Of the 356 participants in the remaining sample (179 Democrats, 177 Republicans), 100% passed our instructional check. Of these participants, 176 identified as men, 178 identified as women, 1 identified as nonbinary, and 1 preferred not to answer our demographic question about gender; 304 identified as White, 26 identified as Black or African American, 0 identified as American Indian or Alaska Native, 17 identified as Asian, 0 identified as Native Hawaiian or Pacific Islander, 7 identified with more than one race category, and 2 preferred not to answer our demographic question about race. Participants' age ranged from 19 to 79 years (M_{age} = 44.49 years, SD_{age} = 13.01).

Procedure

The measures and materials were identical to Experiment 1. The preregistered analysis plan was also identical to Experiment 1.

Results

All 12 impression indices showed sufficiently high variability and little skew in their distributions (see Table 2).

Table 2. Descriptive statistics for overall impression scores, Experiment 2 ($N = 356$)

Variable	*M*	*SD*	Min	Max	Skewness	α
Nonpolitical target						
Neutral	5.346	1.622	0.000	10.000	.039	.941
Question	4.835	1.711	0.000	10.000	−.260	.948
Assertion	4.258	1.759	0.000	10.000	−.608	.951
Negation	5.206	1.683	0.000	10.000	.102	.942
Democratic target						
Neutral	5.282	1.577	0.000	10.000	.033	.939
Question	4.675	1.560	0.000	10.000	−.165	.953
Assertion	4.007	1.893	0.000	10.000	−.194	.938
Negation	5.053	1.654	0.000	10.000	−.153	.953
Republican target						
Neutral	5.185	1.530	0.000	10.000	−.098	.958
Question	4.725	1.671	0.000	10.000	−.036	.942
Assertion	4.015	1.863	0.000	9.667	−.256	.931
Negation	5.078	1.641	0.000	10.000	−.139	.945

[5] Sensitivity analyses for the main effects of Headline Type and Target Group were conducted using G*Power 3.1.9.2 (Faul et al., 2007) for within-subjects ANOVAs with four and three repeated measurements, respectively. Sensitivity analyses for the two-way interaction between Headline Type and Target Group were conducted using the Generic *F*-test function within G*Power 3.1.9.2 to calculate the noncentrality parameter λ for a power of 95% and the degrees of freedom for the interaction term ($df_{numerator} = 6$, $df_{denominator} = 2{,}164$). The resulting score of λ = 20.92 was then used to manually calculate the required effect size *f* via the equation, $\lambda = f^2 \times df_{denominator}$, as used by PASW Statistics 18 in calculations of observed power.

Internal consistency was high for all indices (all Cronbach's αs > .93). Using participants' self-reported political affiliation (i.e., Democrat vs. Republican), impression indices for Democratic and Republican targets were recoded to reflect impressions of targets with the same political affiliation (i.e., political ingroup) and targets with a different political affiliation (i.e., political outgroup). Impression scores were submitted to a 4 (Headline Type: neutral vs. question vs. denial vs. assertion, within-subjects) × 3 (Target Group: nonpolitical vs. political ingroup vs. political outgroup, within-subjects) ANOVA with repeated measures on both factors (see Figure 2). Replicating the results of Experiment 1, the analysis revealed a significant main effect of Statement Type, $F(3, 1{,}065) = 92.79$, $p < .001$, $\eta_p^2 = .207$, and a significant main effect of Target Group, $F(2, 710) = 11.53$, $p < .001$, $\eta_p^2 = .031$, and no significant interaction between the two factors, $F(6, 2{,}130) = 0.89$, $p = .499$, $\eta_p^2 = .003$.

Replicating the results of Experiment 1, pairwise comparisons for the main effect of Statement Type revealed that positivity scores in the question condition were significantly lower compared to the control condition, $t(355) = 7.80$, $p < .001$, $d = 0.413$. Positivity scores in the assertion condition were significantly lower compared to the control condition, $t(355) = 12.43$, $p < .001$, $d = 0.659$, and the question condition, $t(355) = 8.17$, $p < .001$, $d = 0.433$. Positivity scores in the denial condition were significantly higher compared to the question condition, $t(355) = 5.50$, $p < .001$, $d = 0.291$, and the assertion condition, $t(355) = 11.14$, $p < .001$, $d = 0.590$. Yet, different from the null effect in Experiment 1, positivity scores were also significantly lower in the denial condition compared to the control condition, $t(355) = 3.05$, $p = .002$, $d = 0.162$.

Also replicating the results of Experiment 1, pairwise comparisons for the main effect of Target Group revealed that positivity scores for political-outgroup targets were significantly lower compared to political-ingroup targets, $t(355) = 2.32$, $p = .021$, $d = 0.123$, and nonpolitical targets, $t(355) = 4.91$, $p < .001$, $d = 0.260$. Yet, different from the null effect in Experiment 1, positivity scores for political-ingroup targets were also significantly lower than positivity scores for nonpolitical targets, $t(355) = 2.43$, $p = .016$, $d = 0.129$.

Further analyses revealed that positivity scores in the question condition were significantly lower than positivity scores in the control condition for nonpolitical targets, $t(355) = 5.25$, $p < .001$, $d = 0.278$, political-ingroup targets, $t(355) = 5.48$, $p < .001$, $d = 0.343$, and political-outgroup targets, $t(355) = 5.10$, $p < .001$, $d = 0.271$. The same was true for the comparison of positivity scores in the assertion condition, which were significantly lower than positivity scores in the control condition for nonpolitical targets, $t(355) = 9.71$, $p < .001$, $d = 0.515$, political-ingroup targets, $t(355) = 9.70$, $p < .001$, $d = 0.514$, and political-outgroup targets, $t(355) = 10.72$, $p < .001$, $d = 0.568$. Positivity scores in the denial condition did not significantly differ from positivity scores in the control condition for nonpolitical targets, $t(355) = 1.68$, $p = .093$, $d = 0.089$, and political-outgroup targets, $t(355) = 1.86$, $p = .063$, $d = 0.099$. Yet, for political-ingroup targets, positivity scores were significant lower in the denial condition compared to the in the control condition, $t(355) = 2.28$, $p = .023$, $d = 0.121$.[6]

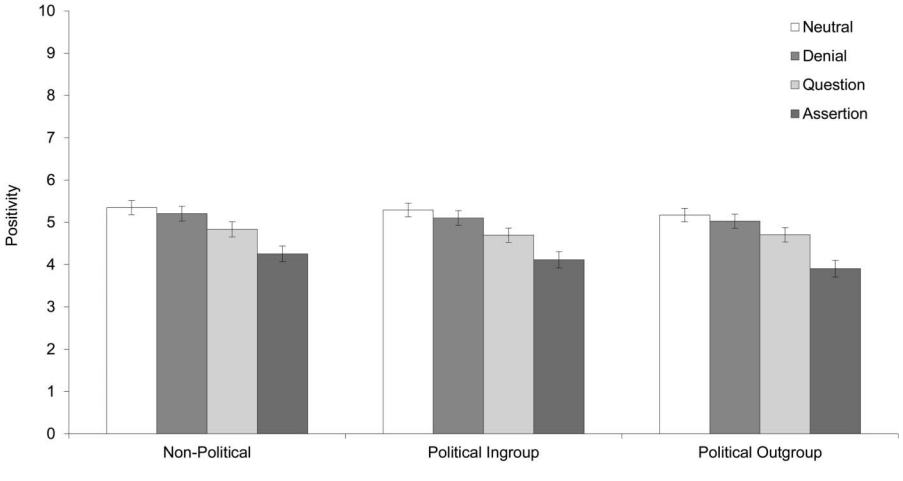

Figure 2. Positivity of overall target impressions as a function of statement type (neutral vs. denial vs. question vs. assertion) and target group membership (nonpolitical vs. political ingroup vs. political outgroup), Experiment 2 ($N = 356$). Higher scores indicate more positive impressions. Error bars depict 95% confidence intervals.

[6] As in Experiment 1, effect sizes of differences between two dependent means were calculated with Ian Neath's online effect-size calculator at https://camel.psyc.vt.edu/models/stats/effect_size.shtml.

Discussion

The results of Experiment 2 address potential concerns that the lack of a significant effect of partisanship on the relative size of question-innuendo effects in Experiment 1 might have been due to insufficient statistical power. Although Experiment 2 used a sample that was (1) more than twice as large as the sample in Experiment 1 and (2) provided 95% power for detecting a small interaction effect of $f = .098$, we still did not find any evidence for our hypotheses that question-innuendo effects are less pronounced for political-ingroup targets and more pronounced for political outgroup targets. Nevertheless, we did replicate the original finding of Wegner et al. (1981) that finding that questions insinuating something negative about a person led to less favorable impressions compared to control conditions. Moreover, although partisanship failed to moderate question-innuendo effects in the hypothesized manner, partisanship did influence overall impressions, in that participants showed more favorable impressions of targets belonging to their political ingroup compared to targets belonging to their political outgroup. Together with the findings of Experiment 1, these results suggest that question-innuendo effects are highly reliable and robust against potential effects of partisanship.

Integrative Data Analysis

To obtain a stronger basis for our conclusion that question-innuendo effects are unaffected by partisanship, we also conducted an integrative data analysis (IDA; Curran & Hussong, 2009) with the pooled data from the two studies ($N = 506$), using Bayesian paired-samples t-tests in JASP 0.18.1.0 with R 4.3.2 in addition to traditional null hypothesis significance tests in PASW Statistics 18. The IDA revealed extreme evidence supporting a question-innuendo effect for nonpolitical targets, $t(505) = 5.99$, $p < .001$, $BF_{10} = 3.05 \times 10^6$, political-ingroup targets, $t(505) = 7.62$, $p < .001$, $BF_{10} = 7.51 \times 10^{10}$, and political-outgroup targets, $t(505) = 6.19$, $p < .001$, $BF_{10} = 9.53 \times 10^6$, as reflected in lower positivity scores in the question condition compared to the control condition for each of the three targets. Regarding our hypotheses that the size of question-innuendo effects would be (1) smaller for political-ingroup targets compared to nonpolitical targets and (2) greater for political-outgroup targets compared to nonpolitical targets, the IDA revealed very strong evidence in favor of a null effect regarding the first hypothesis, $t(505) = -1.37$, $p = .172$, $BF_{01} = 45.63$, and strong evidence in favor of a null effect regarding the second hypothesis, $t(505) = 0.09$, $p = .932$, $BF_{01} = 18.67$. There was also very strong evidence in favor of a null effect regarding the logically implied hypothesis that question-innuendo effects should be greater for political-outgroup targets compared to political-ingroup targets, $t(505) = -1.25$, $p = .212$, $BF_{01} = 43.19$.

For comparison, we also conducted the same analyses for innuendo effects of denials, as reflected in lower positivity scores in the denial condition compared to the control condition. The IDA revealed anecdotal evidence for an innuendo effect of denials for nonpolitical targets, $t(505) = 2.22$, $p = .027$, $BF_{10} = 1.133$, and political-ingroup targets, $t(505) = 2.56$, $p = .011$, $BF_{10} = 2.53$. For political-outgroup targets, there was anecdotal evidence for a null effect of denials, $t(505) = 1.71$, $p = .087$, $BF_{10} = 0.409$. Regarding the impact of partisanship on the size of denial-innuendo effects, the IDA revealed strong evidence in favor of null effects for the difference between nonpolitical and political-ingroup targets, $t(505) = -0.30$, $p = .763$, $BF_{01} = 25.04$, and the difference between nonpolitical and political-outgroup targets, $t(505) = 0.50$, $p = .618$, $BF_{01} = 28.57$, and very strong evidence in favor of a null effect for the difference between political-ingroup targets and political-outgroup targets, $t(505) = -0.78$, $p = .435$, $BF_{01} = 33.88$.

General Discussion

The two goals of the current studies were to (1) replicate Wegner et al.'s (1981) finding that questions insinuating something negative about a person have a negative impact on overall impressions and (2) investigate if question-innuendo effects are reduced for political ingroup members and enhanced for political outgroup members. Regarding the first goal, our findings fully replicate the pattern of results in Study 1 of Wegner et al. (1981). Statements asserting something negative as well as questions insinuating something negative both led to more negative impressions compared to assertions with neutral content. Evidence for innuendo effects of denials was rather weak, in that denials of propositions with negative content did not reliably reduce favorable impressions compared to assertions with neutral content. Together, these results fully replicate the findings of Study 1 of Wegner et al. (1981), corroborating the conclusion that incriminating questions can sway attitudes and opinions in a negative direction.

Counter to our preregistered novel hypotheses that effects of incriminating questions would be reduced for political ingroup members and enhanced for political outgroup members, the size of question-innuendo effects did not differ for political ingroup targets, political

outgroup targets, and nonpolitical targets. Instead, we found a similarly sized question-innuendo effect for each of the three target groups. Moreover, target group membership did not moderate question-innuendo effects, although overall impressions did significantly differ across the three target groups in a manner that is consistent with the intended manipulation (i.e., impressions of political outgroup members were significantly less favorable than impressions of political ingroup members and nonpolitical targets). Thus, counter to the strong effect of partisanship in the acceptance of misinformation (e.g., Batailler et al., 2022; Gawronski, 2021; Gawronski et al., 2023), partisanship seems to play a less significant role for question-innuendo effects. In other words, although acceptance of misinformation is much more common for ideology-congruent than ideology-incongruent information, incriminating innuendo in questions seems to shape attitudes and opinions irrespective of whether the innuendo is consistent or inconsistent with the audience's ideological beliefs. Thus, while the current findings did not support our preregistered hypothesis about a moderating effect of partisanship, they do support the robustness of Wegner et al.'s (1981) original findings, in that question-innuendo effects for targets with unknown political identities replicate even when a target's party affiliation is known.

Potential Mechanisms

An important question pertains to the mechanisms underlying question-innuendo effects. A potential cognitive mechanism is related to basic processes of comprehension, in that understanding a question about a proposition presupposes prior comprehension of the proposition the question is about. In other words, to understand the meaning of a question about a proposition, one first needs to understand the meaning of the proposition. Similar to the processing of negations, this two-step process may lead to innuendo effects of questions because the initial step of comprehending a proposition tends to be less effortful than the subsequent step of mentally qualifying the truth status of the proposition (see Gilbert, 1991). The impact of a focal proposition could be further enhanced when the spatiotemporal co-occurrence of the subject and the predicate creates a mental association between the two, and this association influences judgments despite the mental qualification of their link (see Deutsch et al., 2006; Gawronski et al., 2008). For example, encountering the question, *Is Bob Talbert Linked with Mafia?*, may create a mental association between *Bob Talbert* and *Mafia*, and this association may lead to negative reactions to Bob Talbert even though the truth status of the proposition *Bob Talbert is Linked with Mafia* remains unclear in the question (see Gawronski & Bodenhausen, 2006). However, without additional assumptions, a purely cognitive account referring to processes of comprehension and association formation is unable to explain why incriminating questions produced much stronger innuendo effects than incriminating denials. After all, both questions and denials require prior comprehension of the focal proposition before its truth status can be mentally qualified, and both questions and denials involve a spatiotemporal co-occurrence of subject and predicate that may create a mental association between the two.

A potential factor that could lead to an asymmetry between questions and denials is rooted in conversational norms (see Grice, 1975; Schwarz, 1994). The idea underlying this account is that basic norms of conversation would be violated if someone asked a question about a proposition without having any reason to believe that the proposition might be true. For example, if someone asked the question, *Is Bob Talbert Linked with Mafia?*, conversational norms would dictate that there are reasons to believe that Bob Talbert might be linked with the Mafia. If there was no basis for such an assumption, the questioner would violate conversational norms by asking the question. Thus, given that recipients of questions tend to assume conformity with conversational norms, inferences based on the assumption of conformity may increase the perceived likelihood that the focal proposition of the question might be true. Such inferences would explain why innuendo effects of questions are stronger than innuendo effects of denials because denials explicitly negate the truth of focal propositions and explicit negations imply that there are no reasons to believe that the focal proposition is true. Expanding on the current finding that question-innuendo effects are relatively strong and highly reliable whereas denial-innuendo effects are rather weak and highly unreliable, future research may help to provide deeper insights into the mechanisms underlying question-innuendo effects.

Implications

In addition to raising interesting questions about the processing of social information, the current findings have important implications for the spread of misinformation. By replicating the original findings of Wegner et al. (1981), the current results suggest that merely asking a question can contribute to the spread of misinformation because questions about whether a given proposition is true can make people more likely to believe that the proposition is true. The latter may happen even though questions do not have truth values, which means that they cannot be true or false. Thus, although people asking a question cannot be accused

of making a false claim, they may nevertheless contribute to the spread of misinformation when they ask questions about propositions that are false. For example, a skeptic of COVID-19 vaccines may state that they are merely asking a question about COVID-19 vaccines when they inquire if more people died from COVID-19 vaccines than from COVID-19. Yet, when raising this question to a large audience (e.g., on television shows or social media), they may influence public opinion by leading people to falsely believe that COVID-19 vaccines are more harmful than COVID-19 – and they may do so without making any false assertions. These issues raise important questions for interventions that aim to reduce the spread of misinformation.

Limitations

The current studies aimed to replicate and extend prior findings by Wegner et al. (1981). Thus, they include some limitations that were already present in the original work of Wegner et al. (1981). First, although tight experimental control and the use of standardized materials ensure high internal validity, the extent to which question-innuendo effects influence attitudes and opinions in natural contexts for nonfictitious actors and scenarios remains unknown. Second, like Wegner et al.'s (1981) original study, the current studies used a within-subjects design, which might encourage participants to compare the different statements and potentially reduce participants' engagement with the materials. Future research using naturalistic materials and between-subjects designs would help to alleviate these concerns.

In addition to these limitations, concerns could be raised about some aspects of the current studies that may have worked against the hypothesized effect of partisanship. First, consistent with the measure in Prolific's prescreening survey, political affiliation was measured in a categorical manner, which does not provide any information on the relative strength of participants' party identification. Thus, it is possible that the hypothesized effect of partisanship was undermined by weak levels of party identification in our samples. Second, the valence of the described actions was very clear and unambiguous, and participants were explicitly instructed to form impressions of the targets. These aspects might have worked against the hypothesized effect of partisanship by leaving little room for biased interpretations of the described actions and by suggesting to participants that they should avoid being biased.

While these concerns call for further research on the impact of partisanship on question-innuendo effects, several aspects of the current studies and prior research on related questions may help to address potential concerns about counteractive method-related factors. First, using the same categorical approach to recruit Prolific workers who identify as either Democrat or Republican, prior work has found extremely large effects of partisanship in truth judgments of political misinformation (e.g., Gawronski et al., 2023). Because this work also relied on evaluatively unambiguous statements and explicit instructions to judge the truth of the presented statements, lack of ambiguity and presence of explicit instructions fail to explain the nonexistent effect of partisanship on the size of question-innuendo effects in the current studies. Second, although partisanship did not show the hypothesized effect on the relative size of question-innuendo effects, partisanship did influence impressions in a general manner, in that participants showed more favorable impressions of political-ingroup targets compared to political-outgroup targets (similar to Wegner et al.'s, 1981, findings for source reliability). Based on these considerations, we deem it unlikely that the identified method-related factors were responsible for the lack of a partisan effect on the relative size of question-innuendo effects.

Conclusion

In sum, the current findings provide strong support for the reproducibility and robustness of Wegner et al.'s (1981) finding that incriminating innuendo in questions can negatively impact attitudes and opinions. Counter to our novel hypotheses that question-innuendo effects would be reduced for political ingroup targets and enhanced for political outgroup targets, question-innuendo effects were similar in size for political ingroup targets, political outgroup targets, and nonpolitical targets. The obtained independence of target group membership provides further evidence for the robustness of findings of Wegner et al. (1981). Important questions to be addressed in future research are: What are the mechanisms underlying question-innuendo effects? What are boundary conditions of question-innuendo effects? How durable are question-innuendo effects? How prevalent are question-innuendo effects in natural settings? Given the potential significance of question-innuendo effects for the spread of misinformation, we hope our findings inspire further research to tackle these important questions.

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Open Data
We report how we determined our sample size, all data exclusions, all manipulations, and all measures. The data, analysis codes, and research materials are available at https://osf.io/rwc25/ (Letourneau & Gawronski, 2023). The preregistration for Experiment 1 is available at https://osf.io/k8tzx/. The preregistration for Experiment 2 is available at https://osf.io/6ebv8/.

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