

RESEARCH ARTICLE

Cherry-Picking Tolerance About Untruthful News

Xilin Li¹ | Christopher K. Hsee² | Shu Wang³ ¹Department of Marketing, China Europe International Business School (CEIBS), Shanghai, China | ²Department of Marketing, Cheung Kong Graduate School of Business, Beijing, China | ³School of Economics and Management, Tongji University, Shanghai, China**Correspondence:** Xilin Li (xilinli@ceibs.edu)**Received:** 27 May 2024 | **Revised:** 4 November 2024 | **Accepted:** 5 November 2024**Keywords:** cherry-picking | fake news | heuristic | misleading news

ABSTRACT

People are increasingly worried about untruthfulness in news reporting. We distinguish between two types of untruthfulness: apparent untruthfulness (containing false information) and consequential untruthfulness (giving readers a wrong impression of the truth). Consequential untruthfulness can be caused by both the presence of false information and cherry-picking (reporting only parts of the truth). Despite this, we find that people's perception of untruthfulness depends largely on apparent untruthfulness. Consequently, they treat news that cherry-picks information less negatively (e.g., less likely to criticize it and more likely to share it with others) than they treat news that contains false information, when the former is more consequentially untruthful than the latter. We dub this phenomenon as *cherry-picking tolerance*. We also find that prompting people to think about the consequence of the news report (i.e., the impressions people form after they read the news reports) will mitigate the cherry-picking tolerance. This research draws attention to the widespread practice of cherry-picking in news reporting and calls for a new look at what constitutes fake news.

1 | Introduction

News is supposed to be truthful. But it is often not. In the current digital epoch, more and more news is circulated. Meanwhile, people are increasingly concerned about the circulation of untruthful news (Allen et al. 2020; Grinberg et al. 2019; Lazer et al. 2018; Murphy et al. 2019; Pillai, Fazio, and Effron 2023; Vosoughi, Roy, and Aral 2018; Wahlheim, Alexander, and Peske 2020; Watts, Rothschild, and Mobius 2021).

Not all untruthful news is created equal. In this research, we distinguish between two types of untruthfulness: apparent untruthfulness and consequential untruthfulness. By “apparent untruthfulness,” we mean that the news contains false information. By “consequential untruthfulness,” we mean that the news misleads the reader to form an impression of the truth that is different from the actual truth. Unlike apparent untruthfulness, consequential untruthfulness concerns the ultimate effect of the news on the reader.

Apparent untruthfulness and consequential untruthfulness are related but not the same. Apparent untruthfulness can cause consequential untruthfulness, but consequential untruthfulness is not necessarily caused by apparent untruthfulness. This is because apparent untruthfulness arises only from the presence of false information, whereas consequential untruthfulness can result from a variety of factors beyond false information. A notable factor is cherry-picking, namely, reporting only parts of the truth and leaving out the other parts.

Cherry-picking is prevalent in news reporting (Groeling 2013; Zhu and Dukes 2015). A cherry-picking news item can be consequentially untruthful even if it contains no false information. For example, if a news report about a new drug reports only the drug's benefits and not its risks, the report will mislead the reader to form an overly positive impression of the drug, although the report contains no false information. Likewise, if a news report about a foreign leader reports only the bad things the leader has done and not the good things, the

report will mislead readers to form an overly negative impression of the foreign leader.

In the current research, we focus on false information and cherry-picking as two sources of consequential untruthfulness. Specifically, we compare people's attitudes toward a news report that contains false information and an alternative news report that cherry-picks information. In real life, news with cherry-picked information may or may not be more consequentially untruthful than news with false information. But in our studies, we designed the stimuli so that (a) the news with cherry-picked information was always more consequentially untruthful than the news with false information, and (b) participants, upon reflection, could tell this difference. We did so in order to test whether people would still be more tolerant of (i.e., less negatively disposed to) the news with cherry-picked information than the news with false information in such situations. We propose that people would still be.

This research contributes to the literature on fake news acceptance by identifying a key factor: the characteristic of untruthfulness in news items. We introduce a consequence-focused prompt as an effective intervention to combat fake news. Further, this work extends our understanding of heuristic over-application by introducing a novel news-specific heuristic: the untruthfulness = false information heuristic.

2 | Cherry-Picking Tolerance

We propose that people will have a less negative attitude toward a news item if it cherry-picks information than if it contains false information, when the cherry-picking item is knowably more consequentially untruthful than the false-information-containing item. To illustrate, consider the following case:

Xland is an under-developed foreign country. Many people in your country are interested in visiting Xland but are worried about the risk of robbery there.

Today, a tourism newspaper published a brief report about the risk of robbery in Xland. You are a reader, and you know the following information about how the report was written, which other readers do not know.

Before publishing the report, the editor of the newspaper sent her assistant to Xland to find out the risk of robbery there. After doing careful research, the assistant summarized his findings in a draft report and sent it to the editor. The draft report reads: "During the last 12 months, 100 tourists have been robbed in Xland. During the same period, 100,000 tourists have not been robbed there." To the best of your knowledge, the information in the draft report reflects the truth.

The editor was risk-averse, and wanted to highlight the risk of robbery in Xland. So, before publishing the report, she edited it.

Consider two alternative scenarios of how the editor edited the report:

Scenario A: She kept the sentence about how many tourists had been robbed, and deleted the sentence about how many tourists had not been robbed. So, the final report reads: "During the last 12 months, 100 tourists have been robbed in Xland."

Scenario B: She kept both sentences, but she altered the number of tourists who had been robbed in Xland from "100" to "300." So, the final report reads: "During the last 12 months, 300 tourists have been robbed in Xland. During the same period, 100,000 tourists have not been robbed there."

Note that the report in Scenario A cherry-picked information, while the report in Scenario B contained false information. Moreover, the reports are designed so that the one in Scenario A is more consequentially untruthful than the one in Scenario B (verified by a pretest).

Despite this, based on our hypothesis regarding the cherry-picking-tolerance effect, we predict that people will have a less negative tendency toward the report in Scenario A than toward the report in Scenario B. For example, relative to the report in Scenario B, people are less likely to criticize the report in Scenario A, less likely to demand its retraction, less likely to give it a "Dislike," and more likely to share it with others.

There are two caveats to consider. First, by proposing the cherry-picking-tolerance effect, we do not mean that people tolerate cherry-picking in the absolute sense; rather, we mean that people are relatively more tolerant of cherry-picking than tolerant of reporting false information, when the former is more consequentially untruthful. Second, we are agnostic about whether the cherry-picking-tolerance effect is a bias. The cherry-picking-tolerance effect may be considered a bias if we use consequential untruthfulness as the benchmark. However, there could be other benchmarks to judge whether an effect is a bias, for example, the potential negative consequences on the broader media system. Regardless of whether it is a bias, we believe that it is a widespread phenomenon and deserves attention.

To summarize, we propose the following hypothesis for the cherry-picking-tolerance effect:

H1. *People are more tolerant of a news report if it cherry-picks information than if it contains false information, when the former is knowably more consequentially untruthful than the latter.*

3 | Perception of Untruthfulness

Why does the cherry-picking-tolerance effect occur? We propose that it is driven at least in part by people's *perception* of untruthfulness: People will perceive a piece of news as less untruthful if it cherry-picks information than if it contains false information, when the former is knowably more consequentially untruthful than the latter. These differential levels of perception of untruthfulness lead to differential levels of tolerance: A lower level of perceived untruthfulness results in a higher level of tolerance. This proposition is inspired by classic literature showing that behaviors are guided by attitudes (Ajzen 1991; Ajzen et al. 2018; Ajzen and Fishbein 1977; Glasman and Albarracín 2006). Although different levels of perceived untruthfulness between the cherry-picking news and the false-information-containing news may not be the sole cause of the cherry-picking-tolerance effect, we argue that it is a significant and sufficient cause.

The above analysis raises the following question: Why do people perceive cherry-picking news as less untruthful than false-information-containing news when the former is more consequentially untruthful? We propose people's perception of untruthfulness depends largely on apparent untruthfulness (i.e., whether a news report contains false information) rather than on consequential untruthfulness (i.e., whether the news misleads the reader to form an impression of the truth that is different from the actual truth). In the context of the current research, we propose that people use an untruthfulness = false information heuristic to judge whether a news item is untruthful. The proposition builds on extensive prior research showing that people use simple heuristics to make difficult judgments (Gigerenzer and Gaissmaier 2011; Kahneman, Slovic, and Tversky 1982; Kahneman and Frederick 2002; Shah and Oppenheimer 2008).

The untruthfulness = false information heuristic is a generally good heuristic for two related reasons. First, it is often easier to determine whether a news item contains false information than to determine whether it cherry-picks information. To detect whether a news item contains false information, one only needs to know whether the reported information is correct, but in order to know whether the news item cherry-picks information, one needs to know what the whole truth is and whether any parts of the whole truth are left out, which are often difficult to ascertain. Second, cherry-picking is often less misleading than reporting false information. If a news item cherry-picks information, it at least contains some truthful information; if a news item contains false information, it can be completely misleading, causing the perceptions formed by readers to diverge significantly from the truth.

However, we propose that people may overapply this heuristic in the context we study in this research. This proposition aligns with extensive prior research demonstrating that people are not sensitive to situational variations in using heuristics and tend to overapply heuristics in situations where the heuristics are not appropriate (Hsee, Yang, and Li 2019; Tversky and Kahneman 1974; Yang, Hsee, and Li 2021; Yang, Li, and Hsee 2023; Zhou, Li, and Sim 2019). For example, people may overapply the availability heuristic to judge the probability or frequency of an event even in situations where the cognitive availability of the event is not predictive of its probability or

frequency (Tversky and Kahneman 1973), and people may overapply the duration heuristic to judge the quality of a service, even in situations where the quality of the service is not correlated with its duration (Yeung and Soman 2007). Similarly, people may also overapply the untruthfulness = false information heuristic, namely, use it not only in situations where cherry-picking is hard to determine or is less consequentially untruthful than reporting false information but also in situations where cherry-picking is obvious and is knowably more consequentially untruthful than reporting false information.

H2. *The cherry-picking-tolerance effect occurs because people's perception of untruthfulness depends largely on apparent untruthfulness rather than consequential untruthfulness.*

Note that we argue that the overapplication of the untruthfulness = false information heuristic is a significant contributor, but not the sole contributor, to the tolerance for cherry-picking. The factors influencing cherry-picking tolerance may be multifaceted. Please refer to Section 9 for more information on other potential contributors to cherry-picking tolerance.

We further propose that if people are prompted to think in terms of consequential untruthfulness, they will be less likely to exhibit the cherry-picking-tolerance effect. As prior research shows, prompting decision-makers to consider the consequences of their decisions can decrease their tendency to rely on heuristics and improve the quality of their decisions (Frederick et al. 2009; Li and Hsee 2021; Pennycook et al. 2020; Pennycook and Rand 2021, 2022). For example, prompting people to consider the accuracy of a news item improves the quality of the news that people share with others (Pennycook et al. 2021; Pennycook and Rand 2022), and deliberation reduces belief in fake news (Bago, Rand, and Pennycook 2020, 2022; Mosleh et al. 2021).

H3. *Prompting people to think about consequential untruthfulness will mitigate the cherry-picking-tolerance effect.*

4 | Study Overview

We tested our three hypotheses and theory in four studies (see Table 1 for an overview). The data that support the findings of this study are openly available in OSF at https://osf.io/mvcdn/?view_only=c6c33bbe78014908a510954ce8301999. Studies 1 and 4 were preregistered at https://aspredicted.org/R5J_FK1 and https://aspredicted.org/S36_95Z, respectively. We have conducted an a priori power analysis for the statistical tests involved in our analysis, using G*Power to ensure adequate statistical power of 0.80 at a significance level of 0.05. Specifically, we aimed to detect medium effect sizes for each test type: Cohen's $d = 0.50$ for t -tests, $f = 0.25$ for ANOVAs, $f^2 = 0.15$ for regression analyses, and $r = 0.30$ for correlations. We finally set a target sample size of 150 participants per condition for all studies, which is larger than the minimum sample sizes calculated based on these power analyses. Study 1 demonstrated the cherry-picking-tolerance effect by comparing people's tolerance between a cherry-picking report and a false-information-containing report, of which the cherry-picking report was manipulated to be more consequentially untruthful. Study 2 replicated the effect and elucidated its underlying psychology

TABLE 1 | Study overview.

Study	Hypothesis	DV	Highlights
Study 1	H1	Public challenge	-Demonstrated the cherry-picking-tolerance effect using a within-subjects design (participants saw both the cherry-picking news report and the false-information-containing news report)
Study 2	H1 and H2	Demand for retraction	-Replicated the cherry-picking-tolerance effect using a between-subjects design (participants saw either the cherry-picking news report or the false-information-containing news report) -Verified the mediation role of perception of untruthfulness
Study 3	H2	Giving a “Like” or a “Dislike”	-Used actual news in the media as stimuli -Measured participants’ perception of truthfulness and their tolerance toward the news, as well as their judgments about the characteristics of the news (cherry-picking and presence of false information) -Found that tolerance depended on perception of untruthfulness, and perception of untruthfulness depended less on cherry-picking than on containing false information
Study 4	H1 and H3	Sharing with others	-Explored a theory-driven moderator of the cherry-picking-tolerance effect -Found that prompting participants to think about consequential untruthfulness mitigated the cherry-picking-tolerance effect

by measuring both participants’ tolerance and their perception of untruthfulness. Study 3 further replicated the effect and examined its underlying mechanism by using actual news in the media. Finally, Study 4 explored a theory-driven moderator of the cherry-picking-tolerance effect—prompting participants to think about consequential untruthfulness.

5 | Study 1

Study 1 tested our primary hypothesis that people have more tolerance toward a cherry-picking report than toward a false-information-containing report when the former is more consequentially untruthful.

5.1 | Method

We recruited participants from CloudResearch and set a target sample size of 150. We eventually had 150 participants (69 females; $M_{\text{age}} = 41.55$). They read the same case as described in Section 1 regarding the risk of robbery in Xland. Specifically, each participant was presented with both the cherry-picking scenario and the false-information-containing scenario and was asked: “In which scenario are you more likely to publicly challenge the report?”; they answered on a 6-point scale, anchored by “Definitely in Scenario A” (1) and “Definitely in Scenario B” (6). Recall that the report in Scenario A cherry-picked information and the report in Scenario B contained false information.

5.2 | Assumption Test

We assumed that the cherry-picking report was more consequentially untruthful (i.e., misleading readers to form an impression of the truth that is further away from the actual truth) than the false-information-containing report. We tested this assumption by asking the participants themselves to judge the impressions that these

reports would cast on naïve readers. Specifically, after the participants completed the main study (described above), we led them to a new screen and asked them to read three reports about the risk of robbery in Xland. Report A was the cherry-picking report, which read “During the last 12 months, 100 tourists have been robbed in Xland”; report B was the false-information-containing report, which read “During the last 12 months, 300 tourists have been robbed in Xland. During the same period, 100,000 tourists have not been robbed there”; report C was the original report (the truth), which read “During the last 12 months, 100 tourists have been robbed in Xland. During the same period, 100,000 tourists have not been robbed there.” We asked the participants what impressions a naïve reader (who did not know the risk of robbery in Xland) would form about the risk of robbery in Xland if they read only one of the three reports. The participants answered this question for each report on an 8-point scale, anchored by “*The risk is not big*” (1) and “*The risk is very big*” (8).

According to their judgment, the impressions of those who read the cherry-picking report ($M = 5.59$, $SD = 1.97$) were significantly different (i.e., significantly more negative) than both the impressions of those who read the truth ($M = 3.40$, $SD = 2.12$), $t(149) = 10.40$, $p < 0.001$, 95% CI = [1.77, 2.60], $d = 0.85$, and the impressions of those who read the false-information-containing report ($M = 4.72$, $SD = 1.90$), $t(149) = 3.93$, $p < 0.001$, 95% CI = [0.43, 1.30], $d = 0.32$. These results were consistent with our assumption that the cherry-picking report was knowably more consequentially untruthful than the false-information-containing report.

5.3 | Results of the Main Study

Although the cherry-picking report was more consequentially untruthful, participants were less likely to publicly challenge it than to publicly challenge the false-information-containing report, $M = 4.43$, $SD = 1.82$, $t(149) = 6.24$, $p < 0.001$, 95% CI = [0.63, 1.22], $d = 0.51$, compared with the midpoint of the scale. This

study offered initial evidence for the cherry-picking-tolerance effect.

Study 1 utilized numeric information rather than nonnumeric information to construct consequential untruthfulness. But what if the information is nonnumeric? To explore this, we conducted an additional study (Study A1 in Appendix A) that utilized nonnumeric information to construct consequential untruthfulness. The results replicated the cherry-picking-tolerance effect, suggesting that this effect holds regardless of whether the information is numeric or nonnumeric.

6 | Study 2

Study 2 replicated and extended Study 1 in two ways. First, while Study 1 manipulated the characteristic of the news (cherry-picking versus containing false information) within-subjects, Study 2 did it between-subjects. Second, while Study 1 only measured participants' tolerance, Study 2 also measured participants' perception of untruthfulness, which allowed us to explore the underlying mechanism of the cherry-picking-tolerance effect.

6.1 | Method

We recruited participants from Prolific and set a target sample size of 300 (150 per condition). We eventually had 300 participants (155 females; $M_{\text{age}} = 33.36$). They were randomly assigned to one of two news characteristic conditions—cherry-picking and false information—and read the following case, in which the parts that differed between the two conditions are italicized here:

Afland is a third-world country in Africa, and is of vital importance to the US. The US has spent billions of dollars in Afland in order to build pro-American sentiments there. A reporter for a US newspaper recently wrote and published an article about how much the people in Afland like Americans.

You know the following facts about the reporter and the article: While working on the article, the reporter interviewed 100 people in the capital of Afland, asking them whether they liked Americans; 88% said they liked Americans. Then the reporter interviewed another 100 people in a small village, asking them the same question; 10% said they liked Americans.

<Cherry-picking condition>

In the article, the reporter reported the interview in the capital, but not the interview in the small village.

<False-information condition>

In the article, the reporter reported both interviews, but changed the result of the interview in the small village from "10% said they liked Americans" to "20% said they liked Americans."

Participants then answered two questions—one about tolerance and one about the perception of untruthfulness. The tolerance question asked, "Would you openly demand that this article be retracted?"; participants answered on an 8-point scale anchored by "Not really" (1) and "Definitely yes" (8). The perception-of-untruthfulness question asked, "Do you consider this article untruthful?"; participants answered on an 8-point scale anchored by "Not really" (1) and "Very untruthful" (8). The order of the two questions was randomized between-subjects.

6.2 | Assumption Test

We assumed that the report in the cherry-picking condition was more consequentially untruthful than the report in the false-information condition. For robustness, we tested this assumption in a different way than we tested the assumption in Study 1. In Study 1, we asked the participants themselves to judge the impressions that the alternative reports would cast on naïve readers. In this study, we recruited a separate group of participants, showed them one of the articles, and measured their actual impressions after reading the reports. Specifically, we adopted the same standard for sample size in the main study and recruited 457 participants (266 females; $M_{\text{age}} = 40.55$) for the assumption test on the same platform as the one for the main study. We showed them the cherry-picking article, the false-information-containing article, or the truth (i.e., "*I interviewed 100 people in the capital of Afland, asking them whether they liked Americans; 88% said they liked Americans. I interviewed another 100 people in a small village in Afland, asking them the same question; only 10% said they liked Americans.*"), and asked them about their impressions of how much the people in Afland liked Americans; they answered on a 9-point scale where 1 = "not very much" and 9 = "very much." The impressions of the participants who read the cherry-picking article ($M = 7.10$, $SD = 1.46$) were significantly different (significantly more positive) than both the impressions of the participants who read the truth ($M = 5.16$, $SD = 1.51$), $p < 0.001$, 95% CI = [1.61, 2.28] and the impressions of the participants who read the false-information-containing article ($M = 5.37$, $SD = 1.47$), $p < 0.001$, 95% CI = [1.40, 2.07]. These results were consistent with our assumption that the cherry-picking article was more consequentially untruthful.

6.3 | Results of the Main Study

Although the cherry-picking article was more consequentially untruthful, it was treated less negatively than the false-information-containing report by participants in the main study. Participants in the cherry-picking condition of the main study were less likely to demand their article to be retracted than were participants in the false-information condition of the main study, $M_s = 5.23$ and 5.85 , $SD_s = 2.23$ and 2.28 , $t(298) = 2.38$, $p = 0.018$, 95% CI = [-1.13, -0.11], $d = 0.27$. Moreover, participants in the cherry-picking condition perceived their article as less untruthful than did participants in the false-information condition, $M_s = 5.62$ and 6.50 , $SD_s = 2.09$ and 1.92 , $t(298) = 3.80$, $p < 0.001$, 95% CI = [-1.34, -0.43], $d = 0.44$. The order of the two questions did not meaningfully influence the results, $p_s > 0.3$.

Further analyses shed light on the underlying psychology. Demand for retraction significantly correlated with perception of untruthfulness, $r(N=300)=0.40$, $p<0.001$. Moreover, perception of untruthfulness fully mediated the effect of news characteristic (cherry-picking versus containing false information) on demand for retraction, 95% CI = $[-0.62, -0.16]$, suggesting that perception of untruthfulness was a critical underlying factor. In summary, Study 2 replicated the cherry-picking-tolerance effect and elucidated its relationship with the perception of untruthfulness.

In real life, the reader of a news report may not know whether it cherry-picks information or whether it contains false information, and therefore, it would be hard for them to know whether it is untruthful. In Studies 1 and 2, we made it clear to participants which report cherry-picked information and which report contained false information, and the cherry-picking report was knowingly more consequentially untruthful than the false-information-containing report. Even in such situations, participants still treated the cherry-picking report less negatively than they treated the false-information-containing report. It suggests that the cherry-picking-tolerance effect arises, not because people cannot figure out which report is more consequentially untruthful but because their perception of untruthfulness is largely about apparent untruthfulness (presence of false information) rather than consequential untruthfulness.

7 | Study 3

Unlike Studies 1 and 2, which used hypothetical news items and experimentally manipulated their characteristics (cherry-picking versus containing false information), Study 3 used actual news items and asked participants themselves to judge the characteristics of the items (whether they contained false information and whether they cherry-picked information). Dependent variables included perception of untruthfulness and tolerance in terms of whether to give the news a “Like” or a “Dislike.”

7.1 | Method

The stimuli in the study were news headlines from Climate Feedback (www.climatefeedback.org). The website collected news items about climate change from different media outlets, including CNN, New York Times, and Wall Street Journal. We included news headlines from the past approximately 5 years, ranging from January 2018 to October 2022—the month in which the study was conducted—while excluding those presented in video format. This selection process yielded a total of 54 news headlines. Examples include the following: “Greenland’s Melting Ice Is No Cause for Climate-Change Panic,” “Rain Fell at the Normally Snowy Summit of Greenland for the First Time on Record,” and “In the Atlantic Ocean, Subtle Shifts Hint at Dramatic Dangers.” (See Appendix B for the full list.) Note that this study was not concerned with the actual characteristics of the headlines (whether they actually cherry-picked information and/or whether they actually contained false information); rather, it examined how participants would treat headlines that *they themselves* judged as cherry-pick information and/or as containing false information.

We recruited participants from Prolific and set a target sample size of 150. We eventually had 146 participants (67.8% females; $M_{\text{age}}=42.04$). We divided the 54 items into three equally sized subsets and asked each participant to assess the items in one of the subsets. (We did so, because we worried that requiring each participant to assess all 54 items would be too tiring.)

The study consisted of two consecutive phases. Phase 1 measured the main dependent variables. Specifically, participants were presented with the headlines in their subset, one by one in a randomized order. After reading each headline, they answered two questions: one about perception of untruthfulness and one about tolerance. The perception-of-untruthfulness question asked, “Do you consider the headline untruthful? If so, how untruthful is it?”; participants answered on a 6-point scale anchored by “*not untruthful*” (1) and “*very untruthful*” (6). The tolerance question asked, “Would you give the headline a ‘Like’ or a ‘Dislike’?”; participants answered on a 6-point scale anchored by “*definitely a ‘Like’*” (1) and “*definitely a ‘Dislike’*” (6). The order of the two questions was randomized.

Phase 2 asked participants to assess the characteristics of the headlines (presence of false information and cherry-picking). Specifically, participants were presented with the same headlines as they had seen in Phase 1, again one by one, in a randomized order. After reading each headline, they answered two questions, one about the presence of false information and one about cherry-picking. The presence-of-false-information question asked, “Does the headline contain any false information? If so, how much false information does it contain?”; participants answered on a 6-point scale anchored by “*no false information*” (1) and “*a lot of false information*” (6). The cherry-picking question asked, “Is the headline partial? If so, how partial is it?”; participants answered on a 6-point scale anchored by “*not partial*” (1) and “*very partial*” (6). The order of the two questions was randomized. We used “partial” in the survey because, like “cherry-picking,” it means “presenting only part of the truth,” and is more succinct than “cherry-picking information.” At the end of the study, participants reported their age, gender, own worry about climate change (rated on a 6-point scale), and highest educational level.

7.2 | Results

The results from Phase 1 show that tolerance was significantly correlated with perception of untruthfulness, $r(N=2628)=0.61$, $p<0.001$, consistent with our proposition that how people treat a news item depends on how untruthful they perceive it to be. The results from Phase 2 reveal the relationships between the characteristics of the headlines: based on the participants’ own judgment, cherry-picking was a more pronounced characteristic of these headlines than the presence of false information, $M_s=3.74$ vs. 3.41 , $SD_s=1.67$ vs. 1.61 , $t(2627)=11.84$, 95% CI = $[0.28, 0.39]$, $p<0.001$, $d=0.23$. The results might suggest that cherry-picking was more prevalent or that participants found it easier to identify whether a news item is cherry-picking than whether it is fabricated.

Most importantly, a comparison between the results from Phase 1 and the results from Phase 2 revealed the relationship

between the dependent variables (perception of untruthfulness and tolerance) and the characteristics of the news (cherry-picking and presence of false information). A regression, with perception of untruthfulness as the dependent variable, and the characteristics of the news as the predictors, found that perception of untruthfulness depended significantly less on cherry-picking ($\beta = 0.12$, $p < 0.001$) than on the presence of false information ($\beta = 0.53$, $p < 0.001$), $F(1, 2625) = 150.2$, $p < 0.001$. A regression, with tolerance as the dependent variable, and characteristics of the news, found that tolerance also depended significantly less on cherry-picking ($\beta = 0.15$, $p < 0.001$) than on the presence of false information ($\beta = 0.41$, $p < 0.001$), $F(1, 2625) = 49.93$, $p < 0.001$.⁴ These patterns still held when we included the demographic variables (age, gender and education level), worry about climate change, and the order of the questions in the regressions.

To summarize, Study 3 had its weakness and its strength relative to the other studies. The weakness was that the study did not empirically manipulate the characteristics of the news items but let participants themselves judge the characteristics, so it could not establish causality. The strength was that this study used actual news items and had greater external validity. The findings of this study corroborated the findings of the other studies in supporting our theory that both the perception of untruthfulness and tolerance depend less on cherry-picking than on the presence of false information.

8 | Study 4

Study 4 tested a theory-driven moderator of the cherry-picking-tolerance effect. According to our theory, the cherry-picking-tolerance effect arises, not because people cannot figure out which type of news is more consequentially untruthful but because they do not think in terms of consequential untruthfulness. This leads to the hypothesis that if people are prompted to think in terms of consequences, specifically, if they are asked to compare the impressions readers form if they read the cherry-picking news and the impressions readers form if they read the false-information-containing news, they will be less likely to exhibit the cherry-picking-tolerance effect.

To test this hypothesis, we presented participants with a cherry-picking news post and a false-information-containing news post and measured their tolerance in terms of which post they would share with others. We manipulated consequence-focus by asking half of the participants (but not the other half) to think about what impression readers would form about the truth if they read the cherry-picking post versus if they read the false-information-containing post and compare it with the impression of the readers who knew the actual truth. We predicted that, relative to participants who did not receive these consequence-focus instructions, participants who received these instructions were less likely to exhibit the cherry-picking-tolerance effect (i.e., less likely to share the cherry-picking post relative to the false-information-containing post).

8.1 | Method

We recruited participants from Prolific and set a target sample size of 300 (150 per condition). We eventually had 303 participants (170 females; $M_{\text{age}} = 32.22$). They were randomly assigned to one of two conditions: control (not prompting participants to consider consequences) and treatment (prompting participants to consider consequences).

All participants first read the following case:

Recently, a large country invaded a small neighboring country. Today, two independent reporters—Abe and Bob—each posted a news post on the web about the consequences of the invasion.

Abe's post reads: "The invasion killed 50 people."

Bob's post reads: "The invasion killed 100 people, and liberated 10,000 people."

You find from a reliable source that the truth is: The invasion killed 50 people, and liberated 20,000 people, and that both Abe and Bob knew the truth.

Note that in Abe's post, Abe mentioned only the number of killed people, not the number of liberated people. On the other hand, in Bob's post, Bob increased the number of killed people from 50 to 100, and decreased the number of liberated people from 20,000 to 10,000.

All participants then answered a set of comprehension questions (see Appendix C). They were only allowed to move forward after answering all the comprehension questions correctly.

In the treatment condition, we prompted the participants to consider the consequences of the two posts by asking them the following consequence-focus questions:

If someone (who does not know the truth) reads only Abe's post, what will be their impression about the consequences of the invasion?

If someone (who does not know the truth) reads only Bob's post, what will be their impression about the consequences of the invasion?

If someone learns the truth, what will be their impression about the consequences of the invasion?

Relatively speaking, do you think the impression of the person who reads only Abe's post, or the impression of the person who reads only Bob's post is closer to the impression of the person who learns the truth?

* the impression of the person who reads only Abe's post

* the impression of the person who reads only Bob's post

Participants answered each of the first three questions on a 9-point scale, anchored by “*very bad*” (1) and “*not too bad*” (9), and answered the last question by making a binary choice. After answering these consequence-focus questions, the participants then answered the tolerance question: “Will you share Abe's post or Bob's post with others?”; participants answered by making a binary choice. In the control condition, we did not ask participants to answer the consequence-focus questions; instead, we directly asked them the tolerance question.

8.2 | Assumption Test

We assumed that the cherry-picking post was more consequentially untruthful than the false-information-containing post. We tested the assumption in two ways. First, we examined the responses of the participants to the consequence-focus questions in the treatment condition. According to their answers, the impressions of those who read the cherry-picking post ($M = 2.83$, $SD = 2.02$) were significantly more negative than both the impressions of those who read the truth ($M = 5.27$, $SD = 2.67$), $t(150) = 7.96$, $p < 0.001$, 95% CI = $[-3.04, -1.83]$, $d = 0.65$ and the impressions of those who read the false-information-containing post ($M = 4.79$, $SD = 2.28$), $t(150) = 7.28$, $p < 0.001$, 95% CI = $[-2.48, -1.42]$, $d = 0.59$. When asked to compare which was closer to the truth—impressions from reading the cherry-picking post or impressions from reading the false-information-containing post—most (71.5%, $\chi^2 = 27.98$, $p < 0.001$) said the latter. Together, these results suggest that the participants themselves deemed the cherry-picking post as more consequentially untruthful than the false-information-containing post.

We also tested our assumption by showing another group of participants the alternative posts and measuring their actual impressions. We recruited 450 participants (248 females; $M_{\text{age}} = 32.05$) from the same platform as the participants in the main study; we showed them the cherry-picking post, the false-information-containing post, or the truth (i.e., “The invasion killed 50 people, and liberated 20,000 people.”) and asked them about their impressions of the consequences of the invasion; they answered on a 9-point scale anchored by “*very bad*” (1) and “*not very bad*” (9). The impressions of the participants who read the cherry-picking post ($M = 2.34$, $SD = 1.91$) were significantly more negative than both the impressions of the participants who read the truth ($M = 4.66$, $SD = 2.54$), $p < 0.001$, 95% CI = $[-2.85, -1.78]$ and the impressions of the participants who read the false-information-containing post ($M = 4.93$, $SD = 2.57$), $p < 0.001$, 95% CI = $[-3.12, -2.05]$. The impressions of the participants who read the false-information-containing post were not significantly more negative than the impressions of those who read the truth, $p = 0.327$. Again, these results were consistent with our assumption.

8.3 | Results of the Main Study

In the control condition, we replicated the cherry-picking-tolerance effect: more participants (65.1%) chose to share the cherry-picking post, $\chi^2 = 13.92$, $p < 0.001$, significantly higher than 50%. In the treatment condition, the proportion of participants who would share the cherry-picking post dropped to 34.4%, significantly lower than the proportion in the control condition, $\chi^2 = 28.55$, $p < 0.001$, $\phi = 0.31$, and also significantly lower than 50%, $\chi^2 = 14.63$, $p < 0.001$. These findings confirmed our hypothesis that consequence-focus can mitigate the cherry-picking-tolerance effect. Further analyses of the results of the participants in the treatment condition reveal that which post they would share with others was significantly correlated with which post they considered to be closer to the truth, $r(N = 150) = 0.75$, $p < 0.001$.

Together, the findings of this study suggest that the cherry-picking-tolerance effect (in the control condition) occurred, not because the participants were unable to figure out that the cherry-picking post was more consequentially untruthful. Rather, it was because the participants did not spontaneously think about consequential untruthfulness. When participants were prompted to think about consequences (as in the treatment condition), most of them realized that the cherry-picking post was more consequentially untruthful and would then use consequential untruthfulness (rather than apparent untruthfulness) to guide their sharing behavior. This discussion echoes our proposition that the cherry-picking-tolerance effect is heuristic-based rather than consequence-based.

9 | General Discussion

Public concern is growing about the spread of untruthful news. We categorize untruthfulness in news into two distinct types: apparent untruthfulness, where the news contains false information, and consequential untruthfulness, where the news leads readers to develop a misleading perception of the truth that diverges from reality. Consequential untruthfulness arises from factors beyond mere false information, with cherry-picking being a key contributor. Across four studies, we demonstrated the cherry-picking tolerance, which shows that people are more tolerant of news that cherry-picks information than of news that contains false information, when the former is more consequentially untruthful than the latter. Study 1 manipulated the characteristic of the news—cherry-picking versus containing false information—within-subjects and found that participants were less likely to publicly challenge the cherry-picking news than the false-information-containing news, even though the former is more consequentially untruthful. Study 2 manipulated the characteristic of the news—cherry-picking versus containing false information—between-subjects, measured participants' demand for retraction, and their perceptions of untruthfulness. The results replicated the cherry-picking-tolerance effect and verified the perception of untruthfulness as the underlying mechanism. Study 3 used actual news in the media as stimuli and measured participants' perceptions of truthfulness, their tendency to give the news a “Dislike” or a “Like,” as well as their judgments about the characteristics of the news (cherry-picking and presence of false information). Supporting our theory, the

tolerance depended on the perception of untruthfulness, which was influenced less by cherry-picking than by the presence of false information. Finally, Study 4 explored a theory-driven moderator of the cherry-picking-tolerance effect. The results showed that when people are prompted to think in terms of consequential untruthfulness, they are less likely to exhibit the cherry-picking-tolerance effect.

9.1 | Limitations, Open Questions, and Future Directions

The current research focuses on situations where cherry-picking news is more consequentially untruthful than false-information-containing news. How about situations where cherry-picking news is less consequentially untruthful than false-information-containing news? We suspect that people will still find news with false information less acceptable than news with cherry-picked information. This is because people's attitudes toward news depend on both its apparent untruthfulness and its consequential untruthfulness. Given that (1) news with false information is more apparently untruthful than news with cherry-picked information and (2) our research shows that news with false information of lower consequential untruthfulness is less acceptable than news with cherry-picked information of higher consequential untruthfulness, it follows that the former will be less acceptable than the latter, regardless of whether the former is more or less consequentially untruthful than the latter.

The current research focuses on the untruthfulness = false information heuristic as an explanation for the cherry-picking tolerance. However, there might be other factors that contribute to the tolerance for cherry-picking. For example, people might semantically equate "untruthful" with "containing false information," leading them to perceive news containing false information as more untruthful than cherry-picking news. When judging which type of untruthful news is more acceptable, people may consider factors beyond the consequential untruthfulness of each news item, such as its impact on the broader goal of creating a healthy news ecosystem. Future research could explore how these alternative explanations contribute to cherry-picking tolerance.

The current research focuses on situations where consequential untruthfulness arises from cherry-picking and examines people's tolerance toward this behavior. Future studies could investigate situations where consequential untruthfulness stems from other sources, such as logical fallacies, to determine if individuals still rely on apparent untruthfulness and demonstrate corresponding tolerance.

Does the intention of the news reporters matter? People might be less tolerant of a cherry-picking report if they perceive the intention of the reporter to be negative (e.g., to exploit the reader) than if they perceive the intention of the reporter to be positive (e.g., to help the reader). Nevertheless, we doubt that the perceived intention of the reporter will eliminate the cherry-picking-tolerance effect. Note that the cherry-picking-tolerance effect is about the *relative* treatment between cherry-picking reports and false-information-containing reports. If the perceived intention of the reporter is negative (vs. positive), people will likely be less

tolerant of false-information-containing reports, just as they will be less tolerant of cherry-picking reports. Therefore, we suspect that, relatively speaking, people will still be more tolerant of cherry-picking reports than false-information-containing reports, so the cherry-picking-tolerance effect will still hold. Future research could empirically test whether the intention of the news reporters matters.

9.2 | Theoretical Implications

Our findings contribute to several streams of research. First of all, the current research contributes to the growing body of literature on the acceptance of fake news. Past literature has mainly focused on individual factors, such as lack of critical thinking (Pennycook and Rand 2019b) and lack of digital literacy (Sirlin et al. 2021), and contextual factors, such as repetition (Pennycook, Cannon, and Rand 2018) and reliability of sources (Pennycook and Rand 2019a). In this paper, we identify a factor related to the characteristic of the news itself: the type of untruthfulness. We differentiate two types of untruthfulness, apparent untruthfulness and consequential untruthfulness, and find that acceptance of fake news mainly depends on apparent untruthfulness rather than consequential untruthfulness.

Second, the current research extends the extant literature on the overapplication of heuristics. Previous literature across various domains has identified numerous heuristics and demonstrated that people often overapply these heuristics in situations where they are not applicable (see Hsee, Yang, and Li 2019 and Yang, Li, and Hsee 2023, for recent reviews). This research identifies a novel untruthfulness = false information heuristic. This heuristic is specific to news, and we find that people adopt the heuristic when people know upon reflection that the news without apparent untruthfulness (i.e., containing no false information) is more consequentially untruthful (i.e., giving a more misleading perception of the truth).

Third, the paper contributes to the existing body of literature on interventions designed to combat fake news. Previous research has explored various strategies, including issuing warnings (Pennycook and Rand 2021), shifting attention to accuracy (Pennycook et al. 2020, 2021), and leveraging the wisdom of crowds (Allen et al. 2021). This study introduces and validates a novel nudging strategy—consequence-focus prompt—which has proven effective in reducing tolerance for cherry-picking in news. This strategy has potential for scalability for two reasons: it neither provides additional nor directional information or education to readers, nor does it require customization for specific news content.

9.3 | Practical Implications

The findings of this article have practical implications for readers and policymakers who wish to combat fake news. How can readers mitigate the misleading consequences of cherry-picking? Firstly, this paper raises awareness among readers that cherry-picking is an inherent part of news reporting and that media outlets, even those they prefer, might engage in cherry-picking, thereby presenting them with consequentially untruthful news.

Secondly, it encourages readers to develop a habit of considering the potential consequential untruthfulness when they read any news, in addition to reflecting on whether the news contains false information. Thirdly, the paper emphasizes the importance of readers seeking information from diverse sources independently. Cherry-picking will be less misleading if readers can easily access news reported by authors with differing viewpoints.

Policymakers should consider when and how to implement policies to combat cherry-picking in news. First, cherry-picking is most dangerous (i.e., has the greatest misleading effect) in situations where it is difficult for readers to access news reported by authors holding different views. For example, it is harder for American readers to access international news reported by foreign reporters than by American reporters. In such situations, if the author cherry-picks information, the reader will be misled and can hardly find out the actual truth. Second, policymakers should consider how modern technologies, such as online search engines and recommendation algorithms, can be leveraged to mitigate the misleading consequences of cherry-picking. Currently, many websites base their recommendations on the reader's reading history and preferences. This kind of recommendation exacerbates the problem of cherry-picking because it places the reader in an information bubble. Web developers should collaborate with content teams to diversify the news offerings on their platforms. For instance, if a reader typically accesses news from conservative authors or local sources, the website could be programmed to occasionally suggest articles from liberal authors or from international sources, and vice versa. This approach can help expose readers to a broader range of perspectives.

In conclusion, this research reveals the cherry-picking-tolerance effect, wherein people exhibit greater tolerance toward news that cherry-picks information as opposed to news that contains false information, when the former leads to a more distorted perception of the truth. This effect arises because individuals tend to rely superficially on obvious falsehoods to assess the deeper, consequential untruthfulness. However, this tolerance can be reduced if individuals are encouraged to reflect on the consequential untruthfulness of the information presented.

Data Availability Statement

The data that support the findings of this study are openly available in OSF at https://osf.io/mvcdn/?view_only=c6c33bbe78014908a510954ce8301999.

Endnotes

¹We used the linear Hypothesis function from the car package in R to compare the two coefficients.

References

- Ajzen, I. 1991. "The Theory of Planned Behavior." *Organizational Behavior and Human Decision Processes* 50, no. 2: 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T).
- Ajzen, I., and M. Fishbein. 1977. "Attitude-Behavior Relations: A Theoretical Analysis and Review of Empirical Research." *Psychological Bulletin* 84, no. 5: 888–918. <https://doi.org/10.1037/0033-2909.84.5.888>.

- Ajzen, I., M. Fishbein, S. Lohmann, and D. Albarracín. 2018. "The Influence of Attitudes on Behavior." In *The Handbook of Attitudes, Volume 1: Basic Concepts*, edited by D. Albarracín, B. T. Johnson, and M. P. Zanna, 197–255. Mahwah, NJ: Lawrence Erlbaum Associates.
- Allen, J., A. A. Arechar, G. Pennycook, and D. G. Rand. 2021. "Scaling up Fact-Checking Using the Wisdom of Crowds." *Science Advances* 7, no. 36: eabf4393. <https://doi.org/10.1126/sciadv.abf4393>.
- Allen, J., B. Howland, M. Mobius, D. Rothschild, and D. J. Watts. 2020. "Evaluating the Fake News Problem at the Scale of the Information Ecosystem." *Science Advances* 6, no. 14: eaay3539. <https://doi.org/10.1126/sciadv.aay3539>.
- Bago, B., D. G. Rand, and G. Pennycook. 2020. "Fake News, Fast and Slow: Deliberation Reduces Belief in False (But Not True) News Headlines." *Journal of Experimental Psychology: General* 149, no. 8: 1608–1613. <https://doi.org/10.1037/xge0000729>.
- Bago, B., D. G. Rand, and G. Pennycook. 2022. "Does Deliberation Decrease Belief in Conspiracies?." *Journal of Experimental Social Psychology* 103: 104395. <https://doi.org/10.1016/j.jesp.2022.104395>.
- Frederick, S., N. Novemsky, J. Wang, R. Dhar, and S. Nowlis. 2009. "Opportunity Cost Neglect." *Journal of Consumer Research* 36, no. 4: 553–561. <https://doi.org/10.1086/599764>.
- Gigerenzer, G., and W. Gaissmaier. 2011. "Heuristic Decision Making." *Annual Review of Psychology* 62, no. 1: 451–482. <https://doi.org/10.1146/annurev-psych-120709-145346>.
- Glasman, L. R., and D. Albarracín. 2006. "Forming Attitudes That Predict Future Behavior: A Meta-Analysis of the Attitude-Behavior Relation." *Psychological Bulletin* 132, no. 5: 778–822. <https://doi.org/10.1037/0033-2909.132.5.778>.
- Grinberg, N., K. Joseph, L. Friedland, B. Swire-Thompson, and D. Lazer. 2019. "Fake News on Twitter During the 2016 U.S. Presidential Election." *Science* 363, no. 6425: 374–378. <https://doi.org/10.1126/science.aau2706>.
- Groeling, T. 2013. "Media Bias by the Numbers: Challenges and Opportunities in the Empirical Study of Partisan News." *Annual Review of Political Science* 16: 129–151. <https://doi.org/10.1146/annurev-polisci-040811-115123>.
- Hsee, C. K., Y. Yang, and X. Li. 2019. "Relevance Insensitivity: A New Look at Some old Biases." *Organizational Behavior and Human Decision Processes* 153: 13–26. <https://doi.org/10.1016/j.obhdp.2019.05.002>.
- Kahneman, D., and S. Frederick. 2002. "Representativeness Revisited: Attribute Substitution in Intuitive Judgment." In *Heuristics and Biases: The Psychology of Intuitive Judgment*, edited by T. Gilovich, D. Griffin, and D. Kahneman, 1st ed., 49–81. Cambridge, UK: Cambridge University Press. <https://doi.org/10.1017/CBO9780511808098.004>.
- Kahneman, D., P. Slovic, and A. Tversky. 1982. *Judgment Under Uncertainty: Heuristics and Biases*. Cambridge, UK: Cambridge University Press.
- Lazer, D. M. J., M. A. Baum, Y. Benkler, et al. 2018. "The Science of Fake News." *Science* 359, no. 6380: 1094–1096. <https://doi.org/10.1126/science.aao2998>.
- Li, X., and C. K. Hsee. 2021. "The Psychology of Marginal Utility." *Journal of Consumer Research* 48, no. 1: 169–188. <https://doi.org/10.1093/jcr/ucaa064>.
- Mosleh, M., G. Pennycook, A. A. Arechar, and D. G. Rand. 2021. "Cognitive Reflection Correlates With Behavior on Twitter." *Nature Communications* 12, no. 1: 921. <https://doi.org/10.1038/s41467-020-20043-0>.
- Murphy, G., E. F. Loftus, R. H. Grady, L. J. Levine, and C. M. Greene. 2019. "False Memories for Fake News During Ireland's Abortion Referendum." *Psychological Science* 30, no. 10: 1449–1459. <https://doi.org/10.1177/0956797619864887>.

- Pennycook, G., T. D. Cannon, and D. G. Rand. 2018. "Prior Exposure Increases Perceived Accuracy of Fake News." *Journal of Experimental Psychology: General* 147, no. 12: 1865–1880. <https://doi.org/10.1037/xge0000465>.
- Pennycook, G., Z. Epstein, M. Mosleh, A. A. Arechar, D. Eckles, and D. G. Rand. 2021. "Shifting Attention to Accuracy can Reduce Misinformation Online." *Nature* 592, no. 7855: 590–595. <https://doi.org/10.1038/s41586-021-03344-2>.
- Pennycook, G., J. McPhetres, Y. Zhang, J. G. Lu, and D. G. Rand. 2020. "Fighting COVID-19 Misinformation on Social Media: Experimental Evidence for a Scalable Accuracy-Nudge Intervention." *Psychological Science* 31, no. 7: 770–780. <https://doi.org/10.1177/0956797620939054>.
- Pennycook, G., and D. G. Rand. 2019a. "Fighting Misinformation on Social Media Using Crowdsourced Judgments of News Source Quality." *Proceedings of the National Academy of Sciences* 116, no. 7: 2521–2526. <https://doi.org/10.1073/pnas.1806781116>.
- Pennycook, G., and D. G. Rand. 2019b. "Lazy, Not Biased: Susceptibility to Partisan Fake News Is Better Explained by Lack of Reasoning Than by Motivated Reasoning." *Cognition* 188: 39–50. <https://doi.org/10.1016/j.cognition.2018.06.011>.
- Pennycook, G., and D. G. Rand. 2021. "The Psychology of Fake News." *Trends in Cognitive Sciences* 25, no. 5: 388–402. <https://doi.org/10.1016/j.tics.2021.02.007>.
- Pennycook, G., and D. G. Rand. 2022. "Accuracy Prompts Are a Replicable and Generalizable Approach for Reducing the Spread of Misinformation." *Nature Communications* 13, no. 1: 2333. <https://doi.org/10.1038/s41467-022-30073-5>.
- Pillai, R. M., L. K. Fazio, and D. A. Effron. 2023. "Repeatedly Encountered Descriptions of Wrongdoing Seem More True but Less Unethical: Evidence in a Naturalistic Setting." *Psychological Science* 34, no. 8: 863–874. <https://doi.org/10.1177/09567976231180578>.
- Shah, A. K., and D. M. Oppenheimer. 2008. "Heuristics Made Easy: An Effort-Reduction Framework." *Psychological Bulletin* 134, no. 2: 207–222. <https://doi.org/10.1037/0033-2909.134.2.207>.
- Sirlin, N., Z. Epstein, A. A. Arechar, and D. G. Rand. 2021. "Digital Literacy Is Associated With More Discerning Accuracy Judgments but Not Sharing Intentions." *Harvard Kennedy School Misinformation Review* 2, no. 6. <https://dspace.mit.edu/handle/1721.1/144237>.
- Tversky, A., and D. Kahneman. 1973. "Availability: A Heuristic for Judging Frequency and Probability." *Cognitive Psychology* 5, no. 2: 207–232. [https://doi.org/10.1016/0010-0285\(73\)90033-9](https://doi.org/10.1016/0010-0285(73)90033-9).
- Tversky, A., and D. Kahneman. 1974. "Judgment Under Uncertainty: Heuristics and Biases." *Science* 185, no. 4157: 1124–1131. <https://doi.org/10.1126/science.185.4157.1124>.
- Vosoughi, S., D. Roy, and S. Aral. 2018. "The Spread of True and False News Online." *Science* 359, no. 6380: 1146–1151. <https://doi.org/10.1126/science.aap9559>.
- Wahlheim, C., T. Alexander, and C. Peske. 2020. "Reminders of Everyday Misinformation Statements Can Enhance Memory for and Beliefs in Corrections of Those Statements in the Short Term." *Psychological Science* 31: 956797620952797. <https://doi.org/10.1177/0956797620952797>.
- Watts, D. J., D. M. Rothschild, and M. Mobius. 2021. "Measuring the News and Its Impact on Democracy." *Proceedings of the National Academy of Sciences* 118, no. 15: e1912443118. <https://doi.org/10.1073/pnas.1912443118>.
- Yang, Y., C. K. Hsee, and X. Li. 2021. "Prediction Biases: An Integrative Review." *Current Directions in Psychological Science* 30, no. 3: 195–201. <https://doi.org/10.1177/0963721421990341>.
- Yang, Y., X. Li, and C. K. Hsee. 2023. "Relevance Insensitivity: A Framework of Psychological Biases in Consumer Behavior and Beyond." *Consumer Psychology Review* 6, no. 1: 121–132. <https://doi.org/10.1002/arcp.1082>.
- Yeung, C. W. M., and D. Soman. 2007. "The Duration Heuristic." *Journal of Consumer Research* 34, no. 3: 315–326. <https://doi.org/10.1086/519500>.
- Zhou, H., X. Li, and J. Sim. 2019. "Conflating Temporal Advancement and Epistemic Advancement: The Progression Bias in Judgment and Decision Making." *Personality and Social Psychology Bulletin* 45, no. 11: 1563–1579. <https://doi.org/10.1177/0146167219838542>.
- Zhu, Y., and A. Dukes. 2015. "Selective Reporting of Factual Content by Commercial Media." *Journal of Marketing Research* 52, no. 1: 56–76. <https://doi.org/10.1509/jmr.12.0379>.

Appendix A

A.1 | Study A1

Study A1 was a conceptual replication of Study 1. It tested H1 by utilizing nonnumeric information to construct consequential untruthfulness.

Method. We recruited participants from Credamo and set a target sample size of 150. We had 150 participants (103 females; $M_{\text{age}} = 31.21$). They read two versions of a same business dispute below:

Recently, there are some disputes between Company X and Company Y. You read the articles of two WeChat official accounts that report on this incident.

Account A: "XY dispute: Company is suspected of infringing Company X's trademark rights."

Account B: "XY dispute: Company X is suspected of provoking an adverse price war and Company Y is suspected of infringing Company X's trademark right."

According to reliable sources, you find out that the facts are as follows: Company X is suspected of stealing Company Y's key technology, and Company Y is suspect of infringing Company X's trademark rights.

Note that Account A only mentions that Company Y is suspected of infringing on Company X's trademark rights and does not mention that Company X is suspected of stealing Company Y's key technology, while Account B modifies the fact that Company X is suspected of stealing Company Y's key technology to Company X is suspected of provoking an adverse price war. Participants were asked "If you want to share the incident of this dispute on your WeChat Moments, which article do you want to share?" and then made a binary choice.

Assumption test. We assumed that the cherry-picking report was more consequentially untruthful than the false-information-containing report. We recruited a separate group of participants, showed them one of the reports, and measured their actual impressions after reading the reports. Specifically, we recruited 450 participants from the same platform as the participants in the main study; we showed them the cherry-picking report, the false-information-containing report, or the truth (i.e., "company X is suspected of stealing company Y's key technology, and company Y is suspected of infringing company X's trademark rights.") and asked them about their impressions of which company is at fault in this dispute. They answered on a 9-point scale where 1 = "Company X is more at fault" and 9 = "Company Y is more at fault." The impressions of the participants who read the cherry-picking report ($M = 8.14$, $SD = 1.31$) were significantly different (significantly more positive) than both the impressions of those who read the truth ($M = 4.12$, $SD = 1.57$), $p < 0.001$, and the impressions of those who read the false-information-containing report ($M = 6.16$, $SD = 1.70$), $p < 0.001$. These results were consistent with our assumption that the cherry-picking news was more consequentially untruthful.

Results of the main study. Although the cherry-picking report was more consequentially untruthful, more participants (60.0%) choose to share it on WeChat Moments than to share the false-information-containing report, $\chi^2=6.00$, $p=0.014$, significantly higher than 50%.

Appendix B

Stimuli in Study 3.

Greenland's Melting Ice Is No Cause for Climate-Change Panic

Rain Fell at the Normally Snowy Summit of Greenland for the First Time on Record

There Is No Climate Emergency

Unsettled' Review:The 'Consensus' on Climate

First Study of All Amazon Greenhouse Gases Suggests the Damaged Forest Is Now Worsening Climate Change

In the Atlantic Ocean, Subtle Shifts Hint at Dramatic Dangers

Study Disputes That Earth Is in a 'Climate Emergency'

Sleeping Giant' Arctic Methane Deposits Starting to Release, Scientists Find

Wildfires Will Become Worse Thanks to Decades-Old Liberal Policies, Says Fire Expert Who Predicted Uptick in Blazes

Greenland's Ice Sheet Has Melted to a Point of No Return, According to New Study

On Behalf of Environmentalists, I Apologize for the Climate Scare

Climate Worst-Case Scenarios May Not Go Far Enough, Cloud Data Shows

3 Billion People — Up to Half the Current Global Population — Could be Living In Unbearable Heat in 50 Years

Melting Glaciers Reveal LOST Island in Antarctica – And Humans Are Already Visiting It

See How Global Warming Has Changed the World Since Your Childhood

Let's Not Pollute Minds with Carbon Fears

How Scientists Got Climate Change So Wrong

Climate Change:Fake News or Global Threat? This Is the Science

June Was Hottest Ever Recorded on Earth, European Satellite Agency Announces

This Scientist Proved Climate Change Isn't Causing Extreme Weather — So Politicians Attacked

New Report Warns "High Likelihood of Human Civilization Coming to an End" Within 30 Years

The Truth of Climate Change Is Revealed at School

Scientists Prove Man-Made Global Warming Is a Hoax

Media Hysteria:Climate Change 'Heat Records' Are a Huge Data Manipulation

Major Climate Report Describes a Strong Risk of Crisis As Early As 2040

Avoiding Meat and Dairy Is 'Single Biggest Way' to Reduce Your Impact on Earth

Republican Lawmaker:Rocks Tumbling into Ocean Causing Sea Level Rise

Final Call to Save the World From 'Climate Catastrophe'

Planet Has Only Until 2030 to Stem Catastrophic Climate Change, Experts Warn

Earth Just Had Its 400th Straight Warmer-Than-Average Month Thanks to Global Warming

North Pole Surges Above Freezing in the Dead of Winter, Stunning Scientists

NASA Releases Time-Lapse of the Disappearing Arctic Polar Ice Cap

Startling New Research Finds Large Buildup of Heat in the Oceans, Suggesting a Faster Rate of Global Warming

Huge Reduction in Meat-Eating 'Essential' to Avoid Climate Breakdown

Scientists Say Halting Deforestation 'Just As Urgent' As Reducing Emissions

Hurricane Florence Is Not Climate Change or Global Warming. It's Just the Weather

Arctic's Strongest Sea Ice Breaks Up for First Time on Record

Repeat After Me:Carbon Dioxide Is Good For Us

Domino-Effect of Climate Events Could Move Earth into a 'Hothouse' State

Climate Change Is Supercharging a Hot and Dangerous Summer

Spring Is Springing Sooner, Throwing Nature's Rhythms Out of Whack

Global Warming Could Be Far Worse Than Predicted, New Study Suggests

Scorching Earth:Global Warming to Blame for All-Time Heat Records Being Set Worldwide, As Experts Warn Stifling Temperatures Will Continue to Soar

Ross McKittrick:All Those Warming-Climate Predictions Suddenly Have a Big, New Problem

Antarctic Ice Loss Has Tripled in a Decade. If That Continues, We Are in Serious Trouble

Hurricanes Are Moving Slower—And That's a Huge Problem

In a Warming West, the Rio Grande Is Drying Up

The Sea Is Rising, but Not Because of Climate Change

The Amount of Carbon Dioxide in the Atmosphere Just Hit Its Highest Level in 800,000 Years and Scientists Predict Deadly Consequences

Not All Scientists Agree on Cause of Great Barrier Reef Damage

A Startling New Discovery Could Destroy All Those Global Warming Doomsday Forecasts

The Arctic's Carbon Bomb Might Be Even More Potent Than We Thought

Polar Bears Keep Thriving Even As Global Warming Alarmists Keep Pretending They're Dying

Satellite Observations Show Sea Levels Rising, and Climate Change Is Accelerating It

Appendix C

Compression questions in Study 4.

All participants in Study 4 answered the following comprehension questions, with the correct answers underlined here:

What does Abe's post read?

- * The invasion killed 50 people.
- * The invasion killed 100 people, and liberated 10,000 people.
- * The invasion killed 50 people, and liberated 20,000 people.

What does Bob's post read?

- * The invasion killed 50 people.
- * The invasion killed 100 people, and liberated 10,000 people.
- * The invasion killed 50 people, and liberated 20,000 people.

What is the truth?

- * The invasion killed 50 people.
- * The invasion killed 100 people, and liberated 10,000 people.
- * The invasion killed 50 people, and liberated 20,000 people.

What did Abe do in his post?

- * He mentioned only the number of killed people, not the number of liberated people.
- * He increased the number of killed people from 50 to 100, and decreased the number of liberated people from 20,000 to 10,000.

What did Bob do in his post?

- * He mentioned only the number of killed people, not the number of liberated people.
- * He increased the number of killed people from 50 to 100, and decreased the number of liberated people from 20,000 to 10,000.