How Does Topical Diversity Affect Source Credibility?
Fact-Checking Coverage of Politics, Science, and Popular Culture

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Abstract

Evidence-based sources, such as fact-checking sites, seek to foster an informed citizenry and promote democratic accountability. Yet, public trust in these outlets remains limited. Is their politics-focused coverage one factor behind the limited trust? Politics-focused coverage highlights partisan competition, which can harm credibility by activating identity-protective biases or resistance to persuasive intent. Prior research suggests depoliticized contexts can help mitigate defensive psychological tendencies in news source assessments. Thus, a potential strategy to build broad-based trust could be to broaden the scope of coverage to non-political topics. I employ a preregistered experiment to test how the topical scope of coverage affects source credibility perceptions. Compared to politics-focused coverage, specializing in scientific issues improves credibility assessments. Surprisingly, focusing entirely or partially on popular culture topics such as entertainment, sports, and lifestyle undermines source credibility. The results suggest the public shares the notion that serious public affairs coverage is central to reputable journalism. Overall, coverage of politics and science fares relatively well in building source credibility, whereas coverage of popular culture undermines credibility assessments. People find evidence-based sources more credible when they cover a range of serious topics, but less credible when they cover lighter topics.

Keywords: Fact-checking, Investigative journalism, News coverage decision, Source credibility, Political psychology

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To help citizens make informed decisions, a growing number of organizations have joined the efforts to correct misperceptions. For these endeavors to have intended effects, it is crucial that the public sees evidence-based sources as credible. One prominent example is fact-checking organizations, which have rapidly expanded across the globe since the early 2000s (Amazeen, 2020; Graves, 2016) and now have an international presence (e.g., International Fact-Checking Network; Poynter, n.d.).

Fact-checking organizations emphasize their democratic mission in the "watchdog" role of journalism (Amazeen, 2020; Ferracioli et al., 2022). The enterprise of fact-checking stemmed from the growing awareness that conventional media failed to provide information that enables citizens to hold public figures accountable (Dobbs, 2012). To reform conventional media and to monitor politicians, many fact-checking sites around the world focus on politics. Their mission statements state: "we monitor […] major U.S. political players" (FactCheck.org, n.d.); "fact check claims made by politicians, public institutions" (Full Fact, n.d.); "investigate the statements made by politicians, public officials" (JTBC Fact Check, n.d.); "politicians must be asked to account for their positions with transparency and clarity" (Pagella Politica, n.d.); "focused on […] statements made by politicians" (PolitiFact; Holan, 2018); "aimed at checking the statements of Ukrainian politicians" (VoxUkraine, n.d.); and "the purpose is to 'truth squad' the statements of political figures" (Washington Post Fact Checker; Kessler, 2017).[1]

Despite the growth of fact-checking in professional journalism (Graves, 2016), only a small fraction of people visits fact-checking sites (Guess et al., 2020). Some people, especially

[1] All fact-checking sites referenced in this paper are verified signatories of the International Fact-checking Network as of 2023 (Poynter, n.d.).

conservatives, express concern that fact-checkers are biased (Brandtzaeg et al., 2018; Walker & Gottfried, 2019). Despite the democratic mission of fact-checking, why do many people still distrust and rarely use fact-checking sites?

There are theoretical reasons to suspect that a heavy focus on partisan politics may inhibit public trust in fact-checking sites. When partisan conflict is made salient, people more likely distrust the given information to protect their identities and more readily counterargue (Kahan, 2015; Groenendyk & Krupnikov, 2021). Politicized contexts also intensify the tendency to see balanced coverage as biased (hostile media bias; Feldman, 2017) and the tendency to overestimate political bias in others' views (naïve realism; Robinson et al., 1995). People often react with skepticism when they perceive a message on political topics as a persuasion attempt (Dillard & Shen, 2005; Friestad & Wright, 1994). These defensive psychological tendencies might be mitigated by broadening the topical scope to depoliticized contexts. For instance, partisan defense or selective exposure is weaker when a message covers non-political topics or when party cues are removed (Druckman et al., 2013; Mummolo, 2016; Pingree et al., 2014).

Despite the insights from existing theories, it remains unknown whether politics-focused coverage helps or hinders credibility. It is important to empirically test this question for two reasons. First, no study has yet compared how people assess fact-checking sites with different topical scopes. While some major fact-checking sites (e.g., FactCheck.org, PolitiFact, Washington Post Fact Checker (U.S.), JTBC Fact Check (South Korea), Pagella Politica (Italy), VoxUkraine (Ukraine)) tend to focus on partisan politics, not all do. Fact-checking sites such as Snopes (U.S.) and 20 Minutes (France) heavily cover non-political popular culture topics such as entertainment, sports, and lifestyle. Other fact-checking sites such as Science Feedback (U.S.) and Agence Science-

Presse (Canada) focus on scientific topics. Some fact-checking sites cover a mix of topics, both politics and non-political topics, as illustrated by LeadStories (U.S.), GhanaFact (Ghana), Lupa (Brazil), or YouTurn (India). Second, comparing different topical scopes can clarify which approach more effectively builds credibility in evidence-based sources. Using a preregistered experiment, I examine how people assess a source whose coverage focuses on (1) partisan politics, relative to when it covers (2) non-political scientific topics,[2] (3) non-political popular culture topics,[3] (4) a mix of partisan and scientific topics, or (5) a mix of partisan and popular culture topics.

This study examines how topical scope of fact-checking coverage influences perceptions of source credibility. Understanding the determinants of source credibility is important for the following reasons. When source credibility is properly established, it may overwhelm partisan defenses against corrective messages (Druckman & McGrath, 2019) and generate continued visits to news sources (Taneja & Yaeger, 2019). When people find a source credible, they find its messages more persuasive and more willingly accept corrective information (Liu et al., 2023; von Hohenberg & Guess, 2022).

[2] Because scientific topics can be politicized (Kahan, 2015), I focus on scientific topics unrelated to partisan controversies.

[3] This category includes 'softer' varieties of topics, as opposed to 'harder' news. Compared to 'harder' news, 'softer' news is less politically relevant, more individually relevant (less societal relevance), more episodic (less thematic), and more personal and emotional (less impersonal) (Reinemann et al., 2012). Hard news concerns topics such as politics, economics, international relations, and scientific developments, whereas soft news involves human-interest stories, gossip, and celebrity (Tuchman, 1973). Because soft news conceptually includes political news that reorients policies to personalities (Baum, 2007), I focus on non-political popular culture topics.

As to whether focusing on politics helps or hinders building credibility, this study provides two key answers. First, compared to politics-only coverage, coverage that specializes in science increases credibility. Second, surprisingly, covering only non-political popular culture topics or covering both politics and popular culture hinders credibility. The results indicate that people expect serious public affairs reporting, rather than entertainment reporting, from credible fact-checking sites.

Politics-focused Fact-checking Coverage

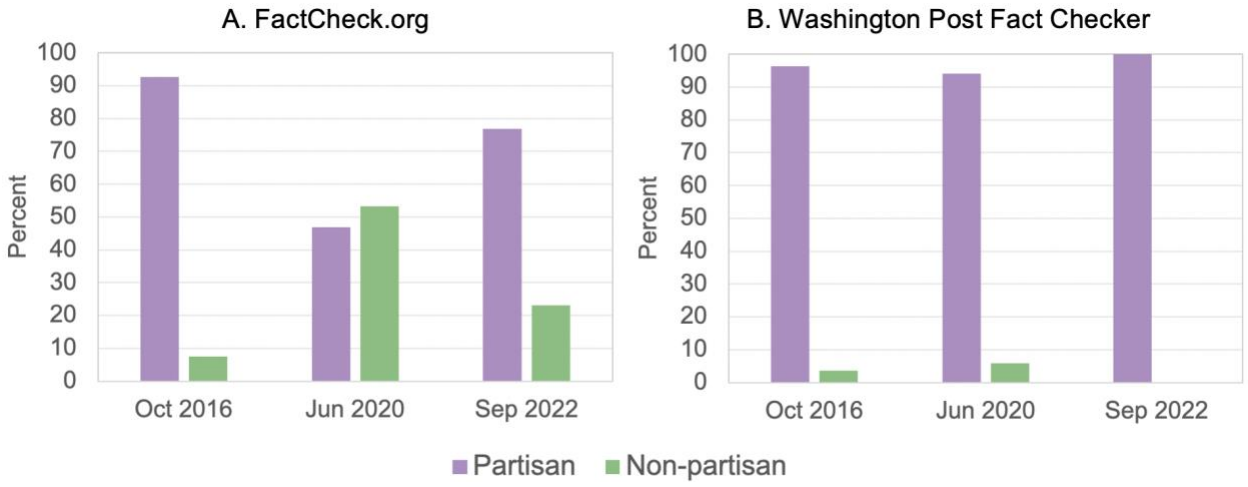
To enhance democratic accountability, the coverage of major fact-checking sites is focused on high-profile politicians and partisan controversies. Between 2017 and 2019, 88% of fact-checks produced by FactCheck.org targeted federal-level politicians and government officials (Ferracioli et al., 2022). Another study of the same time frame finds that fact-checking operations affiliated with conventional media (Associated Press, CNN, New York Times, Washington Post) heavily focused on high-profile political figures (81% of coverage targeted the president) and salient partisan controversies such as national security, healthcare, and economy (Yousuf, 2023).

My data collection also shows that people likely have encountered politics-focused coverage on major fact-checking sites. For fact-checking articles published by FactCheck.org and Washington Post Fact Checker in October 2016, June 2020, and September 2022,[4] I

[4] Google Trends data (Figure S2) indicate that public interest in fact-checking peaked in October 2016, prior to the presidential election. June 2020 reflects fact-checking coverage at the beginning of the COVID-19 pandemic. I originally selected October 2022 for a third period, the month preceding the 2022 midterm election. It was adjusted to September 2022, because

collected data on whether fact-checked targets had partisan affiliations or not (details in Tables S5-S12 in supplementary materials). Figure 1 illustrates that fact-checking coverage tends to focus heavily on partisan targets. For FactCheck.org, partisan-target fact-checks constituted 93% of coverage in October 2016 and 77% in September 2022. In an extraordinary time, the early stages of a novel pandemic (COVID-19) in June 2020, the coverage of FactCheck.org tilted toward less partisan coverage (47%). As for Washington Post Fact Checker, almost all coverage (94 to 100%) was dedicated to partisan targets during all three months. The heavy focus on partisan targets in fact-checking sites is distinct from the broader news environment that has a moderate dose of politics amid many other topics (e.g., only 14% of articles published by major U.S. news outlets pertained to politics in 2013; Budak et al., 2016).

Figure 1. Proportion of Partisan Targets in Fact-checking Coverage: U.S. Fact-checkers



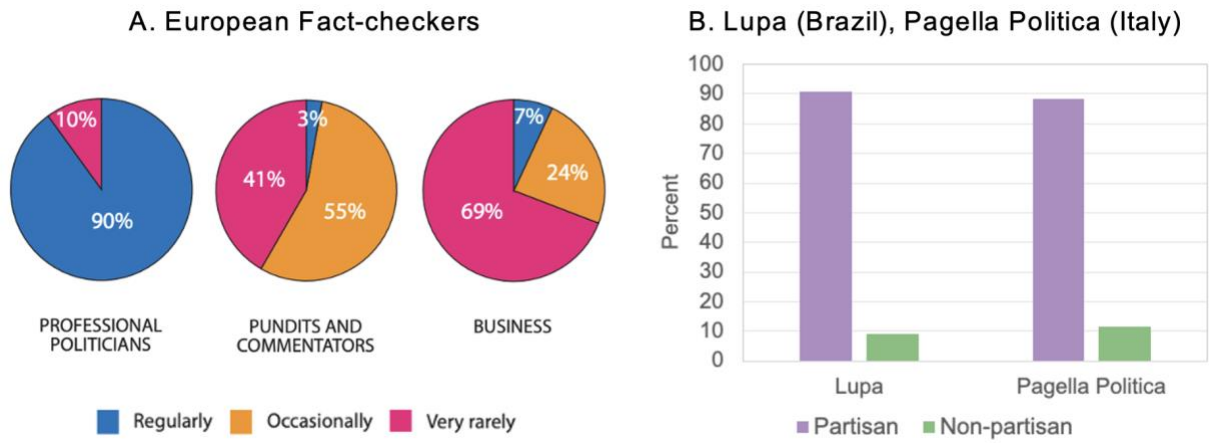
Note: "Partisan" indicates fact-checked targets had partisan affiliations. "Non-partisan" indicates fact-checked targets were not affiliated with a political party. Table S5 presents this result in tabular form.

Washington Post Fact Checker published only three fact-checks in October 2022, which was too few to examine distributions.

A similar pattern is found among non-U.S. fact-checking sites. Figure 2 shows that fact-checking coverage is also concentrated on political actors in non-U.S. fact-checking sites. When European fact-checkers were asked "How often do your fact checks take aim at the following figures," 90% indicated that they regularly target politicians, while only 3-7% regularly check non-political targets such as pundits or business (Figure 2A, adapted from Graves & Cherubini, 2016, p. 20).[5] Between 2017 and 2019, approximately 90% of fact-checks produced by Lupa (Brazil) and Pagella Politica (Italy) targeted partisan figures affiliated with either incumbent or opposition parties (Figure 2B, derived from Ferracioli et al. (2022), Appendix E). These findings indicate politics-focused coverage is an approach widely adopted by professional fact-checkers across the globe.

Figure 2. Proportion of Partisan Targets in Fact-checking Coverage: Non-U.S. Fact-checkers

[5] Graves and Cherubini (2016) conducted interviews among 43 practitioners at the European fact-checking sites (p. 36): Demagog.cz (Czech Republic), Demagog Association (Poland), Demagog.SK (Slovakia), Libération (France), Doğruluk Payı (Turkey), FactCheck Ukraine (Ukraine), Factual.ro (Romania), Factograf (Croatia), Full Fact (U.K.), FactCheck Georgia (Georgia), Istinomer (Serbia), Kallxo (Kosovo), La Chistera (Spain), Les Décodeurs (France), Pagella Politica (Italy), StopFake (Ukraine), The Conversation (Australia), The Journal FactCheck (Ireland), and VoxUkraine (Ukraine).



Source: Figure 2A was adapted from Graves & Cherubini (2016), Figure 4 (p. 20). Figure 2B was derived from Ferracioli et al. (2022), Appendix E.

Professional fact-checkers take pride in their emphasis on salient political figures and topics. For instance, Glenn Kessler of the Washington Post Fact Checker said in an interview that "all [fact-checking organizations] have a passion for holding politicians accountable for their statements" (Kessler, 2014). Bill Adair of PolitiFact expressed his belief that the work of fact-checkers can help people be "better armed with the truth so they make smarter judgments about the candidates" (Adair, 2012). Brooks Jackson of FactCheck.org indicated his vision of fact-checking as "a resource for citizens who are bewildered and confused and looking for help" in the complex political world (Graves, 2016, p. 89). A question remains: Does politics-focused coverage help or hinder fact-checking sites in building credibility?

Does Politics-Focused Coverage Reduce Source Credibility?

Prior research has identified a number of psychological tendencies that may reduce the credibility of politics-focused coverage. Theories of identity-protective reasoning (Kahan, 2015) and resistance to persuasive intent (Dillard & Shen, 2005) suggest news coverage focused on partisan politics likely diminishes perceived source credibility. These obstacles may be mitigated

by broader topical scope, leveraging depoliticized contexts (Pingree et al., 2014; Mummolo, 2016).

Obstacle 1: Identity-protective Reasoning

When an information source focuses on political content, people tend to be more defensive against potential threats to their own group and values. When competition with the opposing group is salient, individuals are more likely to perceive threats to their identity (Bobo & Hutchings, 1996) and react with identity-protective reasoning (e.g., partisan motivated reasoning, cultural-protective cognition; Druckman & McGrath, 2019; Kahan, 2015). Because individuals associate politics with conflict, rather than deliberation, people process information labeled as "political" with greater partisan bias (e.g., readiness to counterargue) compared to information without such a label (Groenendyk & Krupnikov, 2021).

Illustrating the role of political contexts in how people assess news sources, prior studies have shown that polarized contexts tend to reduce trust in the news media (Ladd, 2012; Marietta & Barker, 2019) and lead individuals to prioritize partisan opinions over the quality of evidence (Druckman et al., 2013). The salience of group competition likely intensifies the hostile media effect, the tendency to perceive a balanced source of information as biased (Vallone et al., 1985). For instance, when news sources cover political topics, partisans tend to perceive balanced news coverage as biased in favor of the other side, especially on topics they deeply care about (Feldman, 2017; Gunther & Schmitt, 2004) and when news coverage is opinionated (Feldman, 2011). These tendencies can be exacerbated by "naïve realism," individuals' tendency to believe that their own views are objective and well-informed, while attributing and overestimating political bias in others' views (Robinson et al., 1995).

In the context of fact-checking, messages that cue partisan controversies are often less effective at reducing misperceptions (Garrett et al., 2013; Nyhan & Reifler, 2010). Because the salience of partisan conflict matters, identity-protective biases are apt to be triggered when people visit fact-checking sites that focus heavily on partisan leaders, groups, and issues.

Obstacle 2: Resistance to Persuasive Intent

Individual tendencies to resist persuasive intent can pose another obstacle to fostering trust in politics-centered news coverage. Prior studies suggest two forms of such resistance: "psychological reactance" and "persuasion knowledge." Psychological reactance refers to a response to a persuasive message that is characterized by perceived threat to the ability to freely form an opinion, often resulting in anger and defensive counterarguing (Dillard & Shen, 2005). Persuasion knowledge refers to the knowledge that individuals deploy to cope with a persuasion attempt (e.g., knowledge about source or topic that can aid their decision), where a common coping response to political messages (e.g., political advertising) is skepticism toward the source of information (Nelson et al., 2021). The salience of partisan conflict in news coverage likely strengthens these oppositional reactions, because these tendencies are prominent under politicized contexts, such as climate change and election campaigns, particularly among those whose partisan views are challenged (Binder et al. 2022; Chinn & Hart, 2023).

While fact-checkers claim that their reporting seeks to inform, not persuade (Graves 2016), for the enterprise of fact-checking to be of value (e.g., correct misperceptions), it might be appropriate to understand fact-checking messages as "a form of persuasive or strategic communication" (Garrett & We deks, 2013, p. 1049). This understanding of fact-checking suggests that, despite fact-checkers' intention not to persuade, the audience may still perceive

fact-checking messages as having a persuasive intent, and therefore react with anger, counterargument, or suspicion, as implied by prior research on motivated reasoning, hostile media bias, psychological reactance, and persuasion knowledge.

Mitigation Strategy: Leveraging Depoliticized Contexts

Defenses against identity threats or persuasive intent should not be as strong in contexts where individuals are not expecting political contention. Illustrating this point, partisan defenses against corrections or expert messages on less politicized topics (e.g., skin cream, nuclear waste) are weaker compared to messages involving partisan controversies (e.g., gun control, climate change) (Bolsen & Druckman, 2018; Kahan et al., 2011; Kahan et al., 2017). A backfire effect, where corrective messages rather intensify misperceptions, was found on politicized topics (e.g., weapons of mass destruction in Iraq) but not on less politicized topics (e.g., stem cell research) (Nyhan & Reifler, 2010). Individuals pay greater attention to the quality of evidence than to partisan endorsements when partisan competition cues are removed (Druckman et al., 2013).

In the context of fact-checking, fact-check ratings—brief accuracy evaluations (e.g., "mostly true," "false")—are more effective in correcting misp derceptions when the topic is non-political (e.g., nutritional benefits of cereal) than political (e.g., political advertisement) (Amazeen et al., 2018). Despite concerns that readers may mistake fact-checkers' accuracy judgments for bias, factual adjudication that avoids strong partisan cues (i.e., deemphasizes competing partisan interests) updated people's factual beliefs in the direction of adjudication and improved news quality assessments, compared to a news story without adjudication (Pingree et al., 2014).

One way to depoliticize the context, or to reduce the salience of group competition or persuasive intent, is to cover topics not associated with partisan conflict. While partisans tend to avoid politically unfriendly news sources, this tendency is often eclipsed by their interest in personally relevant topics, whether political (e.g., Social Security cuts) or non-political (e.g., weight loss tips) (Mummolo, 2016). Relatedly, individuals select and assess news content based on not only partisan congruence, but also "informational utility"—the relevance to "individuals' immediate and prospective encounter of threats or opportunities"—that can overpower the tendency to discredit or avoid dissonant news content (Knobloch et al., 2003, p. 95). Thus, broadening the scope of coverage to non-political topics not only reduces the salience of party competition, but may also open up the possibility that individuals find the news content more relatable and useful.

Given prior work, I expect people to be less defensive against partisan threats or persuasive intent, when a source covers non-political topics or when partisan topics are embedded in topics that are less controversial or conflict-oriented. Thus, I hypothesized that news coverage that includes non-political topics—either popular culture or science—would increase partisans' perceptions of source credibility, compared to politics-focused coverage.

Mixed Coverage Hypothesis: Compared to when a source covers only partisan issues, perceived source credibility will increase when the source additionally covers non-political (popular culture or science) topics.

Specialized Coverage Hypothesis: Compared to when a source covers only partisan issues, perceived source credibility will increase when the source covers only non-political (popular culture or science) topics.[6]

In assessing the effects of topical scope, I examine potential partisan differences. Because Democrats have higher baseline trust in news media and fact-checking (Pennycook & Rand, 2019; Walker & Gottfried, 2019), it is possible that treatment effects of non-political popular culture coverage could be more muted among Democrats than Republicans. On the other hand, because Republicans tend to be more distrustful of science than Democrats (Krause et al., 2019; Gauchat, 2012), coverage of non-political scientific topics may improve credibility assessments to a greater extent among Democrats than Republicans.

Partisan Difference Question: Compared to when a source covers only partisan issues, does coverage of non-political topics improve credibility perceptions to a greater extent among Democrats or Republicans?

Study Design

To understand how the topical scope of a source affects source credibility assessments, I conducted a survey experiment on February 27, 2021. Participants were recruited via Prolific, an online crowdsourcing platform whose participants performed better on attention checks, honest behavior, and reproducibility of existing results compared to counterparts (Palan & Schitter, 2018; Peer et al., 2017). Using Prolific's prescreening data, I recruited an equal number of

[6] The preregistration contained a hypothesis that, compared to mixed coverage, specialized non-political coverage will increase perceived source credibility. This hypothesis, coupled with the Mixed Coverage Hypothesis, was simplified to the Specialized Coverage Hypothesis.

Democrats and Republicans,[7] 1000 respondents in total.[8] The proposed hypotheses, exploratory research question, and analysis plan were preregistered at AsPredicted.org prior to data collection.[9]

Experimental Conditions

Participants were told that they were given a list of headlines from an online news outlet, where the composition of topics differed across experimental conditions. A total of six headlines were randomly pulled from a set of 18 headlines, six each in three topic areas: partisan politics, non-political popular culture, and non-political science.

In this study, partisan topics refer to the issues where "facts have positive or negative implications for political parties" (defined as "partisan relevance" in Jerit & Barabas, 2012). A set of issues where Democrats and Republicans substantially diverge in factual beliefs, such as gun violence and abortion, falls into this category (Wood & Porter, 2019). Non-political popular culture topics pertain to non-political realms of everyday life, where facts have neither positive nor negative implications for political parties, such as weather, sports, entertainment, and food (Mutz, 2007; LaMarre et al., 2014; Yu, 2016). Non-political scientific topics refer to the issues where facts are based on scientific research and do not have partisan implications, such as astronomy, biology, and electronics (Kahan, 2015; Pew Research Center, 2015). In devising the

[7] Partisan leaners were considered as partisans (Petrocik, 2009). There was no pure independent in the sample.

[8] The sample size was determined based on power analysis (.80 power at the .05 significance level) using a prior experimental study (Table S20).

[9] The preregistration is available at: https://aspredicted.org/MLL_499

headlines, I avoided politicized scientific topics (e.g., climate change; Kahan et al., 2011). Participants were randomly assigned to one of the five experimental conditions:

- Baseline: Partisan politics only (e.g., abortion, gun violence)
- Treatment 1: Popular culture only (e.g., entertainment, sports)
- Treatment 2: Science only (e.g., astronomy, biology)
- Treatment 3: Partisan politics & popular culture
- Treatment 4: Partisan politics & science

These experimental conditions represent different approaches that fact-checking sites may adopt. The baseline condition (partisan politics only) resembles the approach adopted by FactCheck.org, PolitiFact, Washington Post Fact Checker, Full Fact, JTBC Fact Check, Pagella Politica, and VoxUkraine (mission statements provided in the introduction). This condition serves as the baseline because it represents the fact-checking ideal of holding politicians accountable through evidence-based corrections (Graves, 2016; Kessler, 2014). Treatment 1 (popular culture only) resembles the approach taken by Snopes (U.S.) or 20 Minutes (France), which focuses on urban legends, hoaxes and rumors.[10] Treatment 2 (science only) resembles FactCheck.org's SciCheck section, Science Feedback (U.S.), and Agence Science-Presse (Canda), whose fact-checking coverage focuses on scientific issues. Treatments 3 and 4 represent the mixed coverage of partisan politics plus one other topic area, which resembles the approach of LeadStories (U.S.), GhanaFact (Ghana), Lupa (Brazil), or YouTurn (India).[11] Mixed

[10] Snope's mission statement states that their coverage focuses on "urban legends, hoaxes, and folklore" (Snopes, n.d.); 20 Minutes' charter says that it "highlights […] daily lives, deals with urban lifestyles" (20 Minutes, 2006).

[11] LeadStories and GhanaFact signal their focus—politics and health/environment—on the website headers (LeadStories, n.d.; GhanaFact, n.d.); Lupa states that its coverage follows

coverage can also take place when time-sensitive issues drive fact-checking sites to cover topics beyond their usual focus (e.g., June 2020 during a novel pandemic, Figure 1).

Table 1 presents the headlines that were used in the experiment. In the baseline condition, six headlines on partisan issues were presented. For four headlines in the form of correction, I employed topics where political elites of both parties had made misstatements (Wood & Porter, 2019), so that the misstatement could be associated with either party. Two other headlines were presented as interrogative statements without party references. Topic-party associations were randomized, so that the results do not hinge on specific topic-party associations. To ensure partisan balance in coverage, party references were randomly assigned in a way that two of the four corrective headlines challenged Republicans and two challenged Democrats.

Table 1. Headlines for Experimental Stimuli

Coverage	Topic	Headline
Partisan Politics	Black teenager pregnancy	What [Republicans/Democrats] get incorrect about the pregnancy rate among black teenagers
	Gun violence	[Republican/Democratic] Party offers misleading statistics on gun violence
	Solar power labor market	Are there more jobs in solar than oil in the US?
	Abortion	What [Republicans/Democrats] get wrong about the number of abortions over time
	Immigration	[Republican/Democratic] National Committee misrepresents the deportation rate of illegal immigrants
	Defense spending	Has US defense spending decreased in recent years?
(Non-political)	Cultural figure	Atlanta's celebrity groundhog, General Beauregard Lee, claims he predicts weather better than Punxsutawney Phil in Philadelphia – it's mostly true according to meteorologists

"politics, economics, cities, culture, education, health and international relations" (Lupa, n.d.); YouTurn introduces "Political fact-checking" and "Health and medicine" as their focus areas (YouTurn, n.d.).

Popular Culture	Sports	What really causes home field advantage in sports – and why it's on the decline
	Cartoon	Claim that Disney's Goofy character actually is a cow lacks evidence
	Food	Map of America's favorite restaurants goes viral – but it's mostly inaccurate
	Movie	Which movies and shows is Netflix losing versus gaining this year?
	Sports	What we know about Tokyo Olympics – it will happen, but when?
(Non-political) Science	Nanotechnology	Scientists debunk misunderstandings about nanotechnology
	Artificial sweeteners	Does drinking one diet soda a day really increase the risk of dementia and strokes?
	Radiation and mobile phone	Scientific reasons why mobile phone towers don't pose a radiation risk
	Physics/astronomy	Study says universe is expanding faster and is younger than previously thought
	Genetics/biology	Are dogs really 99.9% wolf, according to genetic analysis?
	Bioengineered artificial organs	Study on the prospect of artificial kidneys soon replacing dialysis

Note. More information about original fact-checking articles that informed the headline content is available in Section 1.1 of supplementary materials (Tables S1, S3, and S4).

In Treatment 1 (pop culture only), six popular culture topics were adopted from the news stories that other studies used as non-political contexts: cultural figure (Graves, 2016, p. 90), home field advantage in sports (Mutz, 2007), Olympics (Settle & Carlson, 2019), cartoon characters (LaMarre et al., 2014), food and movies (Yu, 2016). Headline wordings were adapted from actual fact-checking articles published by Snopes and AP News (details in Section 1.1 of supplementary materials).

For Treatment 2 (science only), the headlines addressed scientific issues that lacked partisan relevance. I avoided scientific issues where facts have positive or negative implications for political parties, such as climate change and fracking (Kahan, 2015). Based on Kahan (2015) and Pew Research Center (2015), I chose issues that were generally unrelated to partisan controversies, such as radio waves from cell phones, artificial sweeteners, nanotechnology, astronomy, and biology. Headline wordings were designed to resemble fact-checking articles

published by the SciCheck section of FactCheck.org, adapting examples from Snopes, Full Fact, and AP News (details in Section 1.1 of supplementary materials).

Treatment 3 (partisan politics & pop culture) displayed six headlines, consisting of three headlines randomly chosen from the six partisan topics and three randomly chosen from the six popular culture topics. Treatment 4 (partisan politics & science) also displayed six headlines, where three were randomly selected from the six partisan topics plus three randomly chosen from the six scientific topics. To keep the balance of partisan headlines, three partisan issues were selected in a way that one challenged Republicans, one challenged Democrats, and one had no party reference. In all experimental conditions, the order of headlines was randomized.

Measures

Source credibility perceptions were measured as the perceived credibility of the source as a news source (news credibility; Meyer, 1988) and two underlying dimensions of source credibility, perceptions of shared interest and expertise (Lupia & McCubbins, 1998).[12]

[12] These measures capture different aspects of source credibility assessments. News credibility reflects the traits expected for credible news outlets (Meyer, 1988), whereas shared interest and expertise are perceptions expected for a credible source to be persuasive (Lupia & McCubbins, 1998).

Perceived News Credibility. After reading the headlines, respondents indicated the degree to which they thought the website could be described as follows: "is fair," "is accurate," "is unbiased," "tells the whole story," and "can be trusted," on a five-point scale ranging from "not at all" to "a great deal" (Tsfati, 2010; Pingree et al., 2013). News credibility perception was measured as the composite score, constructed as the average, of the five items.

Perceptions of Shared Interest and Expertise. Because different experimental conditions involved a broad range of topics beyond politics, instead of adopting question wordings in Lupia and McCubbins (1998) that were specific to political topics, I adopted a set of items applicable to sources that report on broader topics. I adopted items that ask participants to indicate the degree to which they perceive the website's reporters "are concerned about public interest," "watch out for your interest" (Meyer, 1988), "are well trained," and "are experienced" (Jensen, 2008), on a five-point scale ranging from "not at all" to "a great deal." The composite score of the first two items constituted the measure of perceived shared interest,[13] and the latter two were used to measure perceived expertise.

Results

To analyze how topical scope of news coverage affects perceived source credibility, I used ordinary least squares (OLS) with robust standard errors using the preregistered model specification (Table S15). Factor analysis on the five news credibility items, two perceived shared interest items, and two perceived expertise items suggested a three-factor solution, where

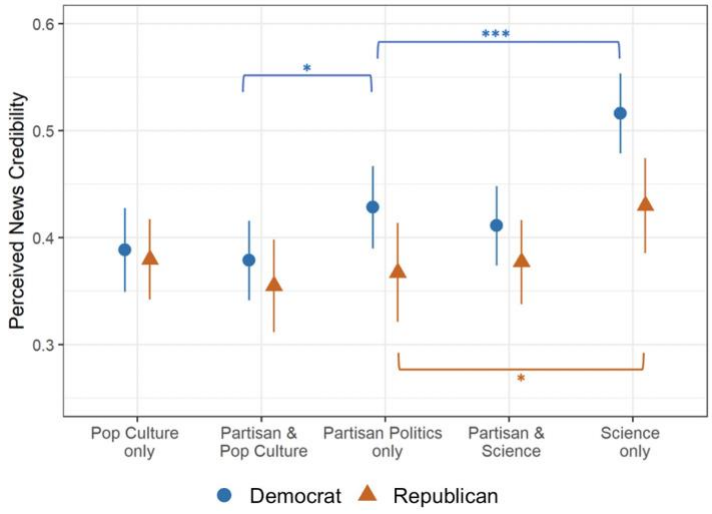
[13] In the source credibility literature, "shared interest" and "trustworthiness" are conceptually similar. This study adopts shared interest, defined as the extent to which the listener and speaker want similar outcomes (Lupia 2016, p. 87). For reference, trustworthiness is defined as the communicator's intent to communicate most valid assertions (Hovland et al. 1953, p. 21; 'honesty' in Wallace et al., 2020).

the related items loaded together on each factor as expected (Tables S17-S18). Each measure had acceptable internal reliability (Cronbach's α): .91 (news credibility), .90 (shared interest), and .85 (expertise).

Topical Scope Effects of Mixed and Specialized Coverage

Figure 3 illustrates the treatment effect of popular culture or science coverage, compared to partisan-only coverage (baseline condition) presented at the center. To the left of baseline condition, mixed and specialized coverage conditions of popular culture topics (Treatments 1, 3) are shown. To its right, mixed and specialized coverage conditions of scientific topics (Treatments 2, 4) are presented. For each treatment condition, the existence of a horizontal bar with asterisks indicates a statistically significant difference compared to the baseline (Democrats: blue bars on the top, Republicans: red bars on the bottom).[14]

Figure 3. Topical Scope Effects on Perceived News Credibility



[14] From Table S15, the treatment effect of Treatment 1 (scientific only) compared to baseline (political only) is the coefficient estimates [Science] for Democrats and [Science + Sci×Rep] for Republicans. The subgroup analysis provides the same estimates of conditional treatment effects (Table S16).

Note: Means and 95% confidence intervals by experimental conditions. Perceived News Credibility was coded to range from 0 to 1. Asterisks indicate statistically significant differences from the baseline ("Partisan Politics only"); *$p < .10$; **$p < .05$; ***$p < .01$. The estimates are derived from Table S15.

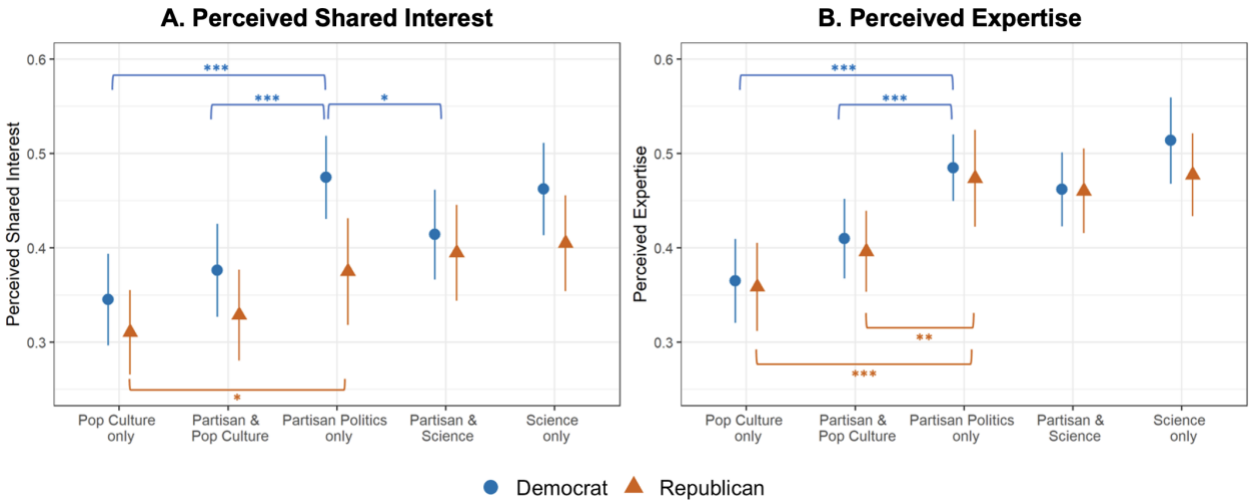
The Mixed Coverage Hypothesis predicted that, compared to politics-only coverage, covering both partisan and popular culture topics would increase source credibility perceptions. However, expanding the scope of coverage to include popular culture in addition to partisan issues had minimal impact on perceived news credibility among Republicans (–0.01, $p = .69$) and decreased news credibility among Democrats (–0.05, $p < .10$). Although the Specialized Coverage Hypothesis predicted that popular culture-only coverage would increase perceived credibility compared to politics-focused coverage, there was no significant treatment effect among Republicans (0.01, $p = .69$) and Democrats (–0.04, $p = .16$).

The Mixed Coverage Hypothesis also predicted that broadening coverage to include both scientific and partisan issues would increase source credibility, compared to politics-only coverage. This expectation was not met; the inclusion of scientific issues did not significantly affect perceived news credibility compared to the baseline among Republicans (0.01, $p = .75$) and Democrats (–0.02, $p = .53$). However, the results were consistent with the Specialized Coverage Hypothesis, which predicted science-only coverage would increase credibility perceptions compared to partisan-only coverage. Compared to partisan-only coverage, perceived news credibility significantly increased when the source covered only scientific issues, among both Democrats (0.09, $p < .01$) and Republicans (0.06, $p < .10$).

Topical Scope Effects on Perceived Shared Interest and Expertise

I further examined how topic coverage scope affected the perceptions of shared interest and expertise, two underlying factors of source credibility assessments (Lupia & McCubbins, 1998). As shown in Figure 4, inclusion of popular culture topics lowered perceived shared interest and expertise. Compared to partisan-only coverage, when the source covered both partisan and popular culture topics, perceived shared interest significantly decreased among Democrats (–0.10, $p < .01$) but not Republicans (–0.05, $p = .22$). Popular culture-only coverage significantly decreased perceived shared interest among both partisan groups (Republicans: –0.06, $p < .10$, Democrats: –0.13, $p < .01$) compared to partisan-only coverage. The negative effects of popular culture coverage were even stronger on perceived expertise. Compared to partisan-only coverage, perceived expertise significantly decreased among both partisan groups when the source covered partisan and popular culture topics (Republicans: –0.08, $p < .05$, Democrats: –0.08, $p < .01$) or only popular culture topics (Republicans: –0.12, $p < .01$, Democrats: –0.12, $p < .01$). On the other hand, coverage of scientific topics did not meaningfully affect perceived shared interest and expertise compared to partisan-only coverage, except for mixed coverage of partisan and scientific issues, which lowered perceived shared interest among Democrats (–0.06, $p < .10$).

Figure 4. Topical Scope Effects on Perceived Shared Interest and Expertise



Note: Means and 95% confidence intervals by experimental conditions. All variables were coded to range from 0 to 1. Asterisks indicate statistically significant differences from the baseline ("Partisan Politics only"); *$p < .10$; **$p < .05$; ***$p < .01$. The estimates are derived from Table S15.

Overall, people tended to perceive lower levels of shared interest and expertise when a source covered popular culture, compared to when it covered partisan or scientific issues. This finding implies that people tend to attribute greater professional value to serious public affairs coverage—such as politics and science—than popular culture coverage, consistent with the news hierarchy in the journalistic field (Graves & Konieczna, 2015). Similar to the finding on perceived news credibility, the results on perceived shared interest and expertise suggest that fact-checking coverage of partisan or scientific issues is seen as more credible across partisan groups, compared to coverage of popular culture.

Topical Scope Effects of Popular Culture vs. Scientific Coverage

While I hypothesized that broadening the coverage to non-political topics, either scientific or popular culture, would increase perceived source credibility, different types of non-political coverage unexpectedly diverged in how each type affected credibility assessments. The results

suggest that science coverage is more conducive to increasing credibility than popular culture coverage.

When all five conditions are compared, science-only coverage was perceived as most credible in terms of news credibility among both Democrats and Republicans (Figure 3). In contrast, popular culture-only coverage significantly lowered perceived source expertise and shared interest (Figure 4). Compared to partisan-only coverage, mixed coverage of partisan and scientific issues did not meaningfully affect perceived news credibility, whereas mixed coverage of partisan and popular culture topics lowered perceived news credibility, shared interest, and expertise (Figures 3-4).

Partisan Differences in Topical Scope Effects

Across all treatment conditions and source credibility measures, there were no noticeable partisan differences in the relative magnitude of treatment effects. As shown in Table 2, there was no statistically significant difference in the treatment effects between Republicans and Democrats.

Table 2. Partisan Difference in Topical Scope Effects

Treatment	Perceived News Credibility		Perceived Shared Interest		Perceived Expertise	
	Difference	t-statistic	Difference	t-statistic	Difference	t-statistic
Pop Culture	0.05	1.26	0.07	1.31	0.005	0.10
Science	–0.03	–0.59	0.04	0.82	–0.03	–0.56
Partisan + Pop Culture	0.04	0.88	0.05	1.03	–0.002	–0.05
Partisan + Science	0.03	0.65	0.08	1.58	0.01	0.21

Note: Difference refers to the difference in treatment effects (treatment effect among Republicans – treatment effect among Democrats), and corresponding t-statistics from t-test of difference are presented in t-statistic columns. Partisan differences in treatment effect are captured by the coefficient estimates [Condition × Rep] in Table S15.

Discussion

To examine whether politics-focused coverage helps or hinders the public reputation of evidence-based sources such as fact-checking sites, this study examines how the topical scope of a source affects source credibility perceptions. While I hypothesized that coverage of non-political topics, either science or popular culture, would improve credibility, surprisingly, each topical scope had different reputational consequences. First, compared to politics-only coverage, exclusive coverage of non-political scientific topics improved perceived news credibility among both partisan groups. However, mixed coverage of partisan and scientific topics rather decreased perceived shared interest among Democrats. Second, coverage of non-political popular culture topics—either exclusively or mixed with partisan topics—worsened perceived news credibility among Democrats, and decreased perceived shared interest and expertise among both partisan groups. Third, there were minimal partisan differences in treatment effects, implying that Democrats and Republicans similarly reacted to different topical scopes compared to politics-only coverage.

This study speaks to how news coverage choices may affect the perceived credibility of evidence-based news sources. The results suggest that people expect serious reporting rather than entertainment reporting from credible fact-checking sites, and find the sites less credible overall when they focus on less serious topics. This finding further implies that the public likely shares the notion of the hierarchy of news (i.e., serious public affairs coverage is central to reputable journalism).[15] Coverage of partisan politics, a typical area of public affairs coverage,

[15] The field of journalism "has a clear center in the journalistic imagination: the serious public affairs reporting that builds professional status, wins prestigious awards, and is seen to fulfill the press's Fourth Estate role" (Graves & Konieczna, 2015, p. 55).

fares quite well for source credibility perceptions, compared to other topical scopes. Scientific news, particularly the topics not associated with politics, is conceptually closer to serious public affairs coverage, and improves credibility assessments. In contrast, coverage of non-political popular culture, such as sports, entertainment, and lifestyle, worsens credibility assessments.

The results further highlight the value of considering multiple underlying dimensions of source credibility when conceptualizing and operationalizing it (e.g., Lupia 2016; Wallace et al. 2020). Despite minimal partisan differences in treatment effects, Republicans still leaned toward lower levels of perceived news credibility (Figure 3) and shared interest (Figure 4A) compared to Democrats. Interestingly, the levels of perceived expertise were similar across partisan groups (Figure 4B); Even Republicans rated a source moderately expert (near .50) when it covered politics and/or science. The results suggest that people might assess different aspects of source credibility differently. News credibility assessment (e.g., fair, accurate) could be more susceptible to partisan politics and elite rhetoric (e.g., conservative politicians' critique of the media and fact-checking; Meeks, 2020; Shepherd, 2021), whereas expertise assessment (i.e., well-trained, experienced reporters) might be more relevant to how much the covered topics are seen as easy or accessible. Further research is needed to clarify the mechanisms.

Several design choices limit the external validity of this study, but the findings still have real-world implications. First, at least a subset of the population gets exposed to fact-checking by directly visiting these sites (e.g., web traffic data during election cycles; Graves et al., 2016; Hassan et al. 2017). This study provides insights into how individuals would assess a source based on a set of headlines they encounter on a fact-checking site or a news site. Second, it is highly likely that individuals accurately perceive the topical diversity of a source based on a set of headlines, as indicated by the manipulation check results (Table S13). In real-world settings,

the topical scope could be even more salient as a cue for source assessments, because most fact-checking and news sites indicate their core areas of reporting on the top of their website or in their drop-down menus. Yet, because social media has grown as an important route for consuming fact-checks (Brandtzaeg et al. 2018; Shin & Thorson, 2017), direct visits to a site might no longer be the modal way of fact-checking exposure. Future research may examine topical scopes in the context of social media.

This study points to important avenues for future research. First, how do different contexts of politics-centered coverage or corrective information influence credibility perceptions? Future research can consider political news in non-partisan contexts (e.g., a city council's hearing about a public park) or different reputational consequences of the coverage that corrects misstatements about data (e.g., statistics) versus other types of claims (e.g., policy outcomes). Second, a valuable extension of this study could be to use web tracing data to examine whether people's interest in fact-checking varies by topics covered (e.g., visits to fact-checking sites, sharing fact-checking posts on social media). Third, intraparty divisions may matter (e.g., MAGA vs. old-school Republicans; Cooper et al. 2023), but the current study lacked statistical power to examine within-party differences (Table S19). Future research can use an adequately powered sample to investigate heterogeneity within parties. Lastly, because the current study was conducted among the U.S. public, cross-country research is needed, for instance in countries with a multi-party system or a state-controlled media system.

This study generates suggestions for fact-checkers and a wide range of communicators—journalists, government officials, scientists, and civil society organizations—who want to build credibility in evidence-based sources. In these endeavors, a focus on politics could be an effective strategy compared to mixed coverage of partisan politics and other topics. It is

important to be cautious in diversifying the scope of coverage. In particular, broadening coverage to popular culture likely harms the reputation of evidence-based sources.[16] Covering both politics and science is less risky, although it may harm shared interest perceptions. Overall, specialized coverage of partisan politics or science likely promotes greater credibility than covering popular culture.[17] For the enterprise of fact-checking, the motivating case of this study, the breadth of topics relatively more favorable to fostering credibility is to focus on more serious topics such as politics or science, while avoiding lighter types of topics such as entertainment, sports, and lifestyle.

Declaration of interest statement: This work involves no conflicts of interests and was approved by the university Institutional Review Board.

Data availability statement: The study materials, data, and code will be openly available on the Open Science Framework (OSF) upon the journal's decision.

[16] Snopes, a fact-checking site focused on popular culture topics, is widely used and liked. Mechanisms other than topical scope may explain how Snopes has expanded its readership.

[17] In a slightly different, but related, context, public trust in scientists deteriorated upon the journal's endorsement of a presidential candidate (Lupia, 2023). Because fact-checking involves (factual) endorsement or disapproval, mixed coverage of politics and science may have implications for the perceived credibility of not only fact-checking sites but also science.

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Supplementary Materials for

How Does Topical Diversity Affect Source Credibility? Fact-Checking Coverage of Politics, Science, and Popular Culture

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Contents

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1 Experimental Design

1.1 Experimental Stimuli

Participants were randomly assigned to one of the following five conditions:

- Baseline: Only partisan politics
- Treatment 1: Only popular culture
- Treatment 2: Only science
- Treatment 3: Partisan politics & popular culture
- Treatment 4: Partisan politics & science

Baseline: Partisan Politics Only

The headline items 1, 2, 4, and 5 are adopted from the issues on which political elites of both political parties made misstatements (Wood and Porter 2019). Thus, it is plausible to attribute either party as the source of misstatements on each topic. Headline items 3 and 6 also employ issues adopted from Wood and Porter (2019), on which there existed partisan gaps in factual beliefs (solar power, defense spending). To avoid the list of headlines priming negativity besides partisan content, headlines 3 and 6 are presented as interrogative sentences without a reference to a political party. Following fact-checking practices, the headlines are either in the form of corrections to the misstatements or raising questions about factual controversies or confusions. The phrase and tone of the headlines are designed to be similar between [Items 1,2,3] and [Items 4,5,6].

Table S1: List of Headlines on Partisan Topics

Item	Topic	Headline
1	Black teenager pregnancy	What [Republicans/Democrats] get incorrect about the pregnancy rate among black teenagers
2	Gun homicide	[Republican/Democratic] Party offers misleading statistics on gun violence
3	Solar power employment	Are there more jobs in solar than oil in the US?
4	Abortion	What [Republicans/Democrats] get wrong about the number of abortions over time
5	Immigration	[Republican/Democratic] National Committee misrepresents the deportation rate of illegal immigrants
6	Defense spending	Has US defense spending decreased in recent years?

To ensure that the results do not hinge on the specific associations between topic and political party and the order of headlines, one of the two variations (Version 1 or Version 2) will be randomly displayed, and the order of headlines will be randomized. Although randomizing party reference at the item level is another possibility, I choose this approach to keep the reference to political parties balanced in all conditions.

Table S2: Two Randomized Variations of the Baseline Condition

Version 1		Version 2	
1-R	What [Republicans] get incorrect about the pregnancy rate among black teenagers	1-D	What [Democrats] get incorrect about the pregnancy rate among black teenagers
2-D	[Democratic] Party offers misleading statistics on gun violence	2-R	[Republican] Party misleads offers misleading statistics gun violence
3	Are there more jobs in solar than oil in the US?	6	Has US defense spending decreased in recent years?
4-D	What [Democrats] get wrong about the number of abortions over time	4-R	What [Republicans] get wrong about the number of abortions over time
5-R	[Republican] National Committee misrepresents the deportation rate of illegal immigrants	5-D	[Democratic] National Committee misrepresents the deportation rate of illegal immigrants
6	Has US defense spending decreased in recent years?	3	Are there more jobs in solar than oil in the US?

Treatment 1: Popular Culture Only

Six headlines on popular culture issues will be presented. Item (a) was adopted from an example of non-political coverage by fact-checking sources introduced in (Graves 2016, p. 90) and published by PolitiFact (Mariano 2011). Item (b) is adopted from Mutz (2007), which uses sports as the topic for the experimental condition of non-political news exposure, and a fact-check published by Snopes on home field advantage (Snopes 2019). Item (d) is based on LaMarre et al. (2014), where the story of cartoon characters Tom and Jerry were used for the experimental condition of non-political message, and a fact-check published by Snopes on the Disney character Goofy (Evon 2019). Item (d) and (e) are based on Yu (2016), where entertainment issues such as food and movies were chosen as non-political news items, and a fact-check on food published by Snopes (Evon 2020) and an article on Netflix published by Snopes and AP News (AP News 2019).[1] Item (f) is based on Settle and Carlson (2019), where they selected Olympics as one of non-political topics in their treatments,[2] and an

[1]Snopes previously posted a fact-check "Netflix to Lose the Office Gain Seinfeld Starting in 2021" (https://www.snopes.com/ap/2019/09/16/netflix-to-lose-the-office-gain-seinfeld-starting-in-2021/, accessed on February 12, 2020), but as of 2023, the link automatically redirects to an article published by AP News.

[2]Settle and Carlson (2019)'s choice of non-political topics included the 2016 Emmy nominations, celebrities and body-image issues, the 2016 Olympics, Pokémon Go, and app-enabled transportation services like Uber and Lyft.

article on Tokyo Olympics published by Snopes and AP News (AP News 2020).[3] The order of headlines was randomized.

Table S3: List of Headlines on Popular Culture Topics

Item	Topic	Headline
a	Cultural figure	Atlanta's celebrity groundhog, General Beauregard Lee, claims he predicts weather better than Punxsutawney Phil in Philadelphia – it's mostly true according to meteorologists
b	Sports	What really causes home field advantage in sports – and why it's on the decline
c	Cartoon	Claim that Disney's Goofy character actually is a cow lacks evidence
d	Food	Map of America's favorite restaurants goes viral – but it's mostly inaccurate
e	Movie	Which movies and shows is Netflix losing versus gaining this year?
f	Sports	What we know about Tokyo Olympics – it will happen, but when?

Treatment 2: Science Only

In choosing the topics, I avoided scientific issues where there exist strong partisan disagreement, such as climate change and fracking (Kahan 2015).[4] Instead, the list covers less partisan issues (Kahan 2015; Funk 2015), and headline wordings were adapted from articles published from sources such as SciCheck at FactCheck.org and Science category at Snopes.[5] The topics included nanotechnology (a fact-check by Slate, Brogan 2016), use of artificial sweeteners in diet soft drink (a fact-check by Snopes, Kasprak 2018*a*), radio waves from cell phone (adopted from a fact-check published by Full Fact (Rahman 2019), physics/astronomy (a fact-check by AP News, Borenstein 2019), biology/genetics (a fact-check on the the genefics of dogs by Snopes, Kasprak 2016) and bioengineered artificial organs (a fact-check by Snopes, Kasprak 2018*b*). The order of headlines was randomized.

[3]Snopes previously posted a fact-check on "Tokyo Olympics Will Happen but Most Likely in 2021 Not 2020" (https://www.snopes.com/ap/2020/03/23/tokyo-olympics-will-happen-but-most-likely-in-2021-not-2020/, accessed on April 5, 2020), but as of 2023, the link automatically redirects to an article published by AP News.

[4]Scheufele and Krause (2019) comment that, compared to political contexts, partisan motivated reasoning can be less pronounced even for scientific issues that have been surrounded by significant political disagreements, including evolution, vaccine mandates, or stem cell research.

[5]A source with scientific fact-checks may resemble outlets such as Climate Central, Death Penalty Information Center, or SciCheck at FactCheck.org.

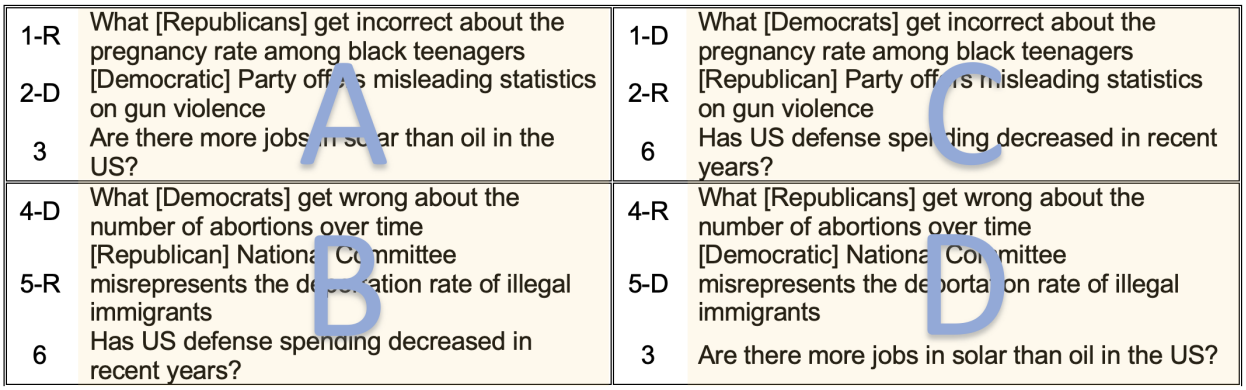
Table S4: List of Headlines on Scientific Topics

Item	Topic	Headline
a	Nanotechnology	Scientists debunk misunderstandings about nanotechnology
b	Artificial sweeteners	Does drinking one diet soda a day really increase the risk of dementia and strokes?
c	Radiation and mobile phone	Scientific reasons why mobile phone towers don't pose a radiation risk
d	Physics/astronomy	Study says universe is expanding faster and is younger than previously thought
e	Genetics/biology	Are dogs really 99.9% wolf, according to genetic analysis?
f	Bioengineered artificial organs	Study on the prospect of artificial kidneys soon replacing dialysis

Treatment 3: Partisan Politics & Popular Culture

Three headlines on partisan issues (from Baseline) plus three headlines on popular culture (Treatment 1) were presented. To ensure that the results do not hinge the specific composition of topics, three out of six popular culture headlines were randomly selected, in addition to one of the three partisan headlines—randomly selected among four sets (A D in Figure S1). The purpose of randomization across A D was to ensure partisan balance in coverage of partisan topics (i.e., one challenges Democrats, one challenges Republicans, one interrogation without party reference). The order of headlines was randomized.

Figure S1: Randomized Sets of Headlines on Partisan Topics



Treatment 4: Partisan Politics & Science

Three headlines on partisan issues (from Baseline) plus three headlines on scientific issues (Treatment 3) were presented. Similar to Treatment 3, to ensure that the results do not hinge the specific composition of topics, three out of six scientific headlines were randomly selected, in addition to three partisan headlines—randomly selected among four sets (A D in Figure S1). The order of headlines was randomized.

1.2 Topical Scope of Fact-checking Sites

Baseline condition (partisan only) reflects the typical coverage tendency of major U.S. fact-checking sites, such as FactCheck.org, PolitiFact, and Washington Post Fact Checker. To understand their topical scope, I collected data from the entire fact-checking articles published by FactCheck.org and Washington Post during the months of October 2016, June 2020, and September 2022 (Tables S6 - S12). This data collection focused on fact-checking articles ("fact-checks") that provide assessments about specific claims made by specific entities (e.g., individual, group). Articles that were not typical fact-checks were excluded from the data collection (e.g., articles that contained explanations of a topic absent target figure/statement, a summary of fact-checks that were previously published, video that summarizes a previously published fact-check, or quizzes about past fact-checks).

The following article-level information was collected:

- date: a variable that indicates the date of publication in the format of dd/mm/yy.
- source: the name of the fact-checking site where the article was published.
- title: the title of the article.
- summary: a variable that contains the summary of main conclusions (deck summaries below headlines or rating scales)
- topic: a variable that records the topic that is mainly addressed in the article. It can take entries such as: "immigration," "debate," "economy," etc.
- partisan: a binary variable that takes 1 if the fact-checked target is explicitly a partisan figure or organization, 0 if otherwise.

In Tables S6-S12, each headline was considered as 'partisan' if there was an entry (e.g., "Democrat," "Republican," or "both") in either "Challenge" or "Validate" column. Each headline was considered as 'non-partisan' if there was no entry for both "Challenge" and "Validate" columns, in addition to Table S9 where all headlines were non-partisan. Table S5 presents the percentage of fact-checks with partisan targets out of all fact-checks per month.

Table S5: Count and Proportion of Fact-Checks with and without Partisan Targets

Source	Month/Year	Partisan	Non-partisan	Total	% (Partisan/Total)
FactCheck.org	Oct-16	26	2	28	92.6
	Jun-20	22	25	47	46.8
	Sep-22	20	6	26	76.9
Washington Post Fact Checker	Oct-16	26	1	27	96.3
	Jun-20	16	1	17	94.1
	Sep-22	9	0	9	100

Table S6: The Full List of Fact-checking Articles by FactCheck.org: October 2016

Date	Headline	Deck Summary	Topic	Challenge	Validate
10/03/16	Spinning Trump's Taxes	Trump's surrogates put the best spin on Trump's loss from income tax	tax	Republican	
10/03/16	Clinton on the Stump	Clinton's false claims in speeches	multiple issues	Democrat	
10/04/16	To Be or Not to Be a Wolf	Science is not clear about whether red wolves are hybrids between coyotes and gray wolves	science		
10/05/16	Fact-Checking the VP Debate	VP debate (Pence 5 wrong, Kaine 4 wrong)	debate	both	
10/06/16	Fired Over VA Wait Times	Obama's wrong claim about firing people at the Department of Veterans Affairs	veterans	Democrat	
10/07/16	Trump Muddies Immigrant Voting Issue	Trump mangled the facts about immigrant voting	immigration	Republican	
10/10/16	Fact-Checking the Second Presidential Debate	The second debate (Trump 9 wrong, Clinton 7 wrong)	debate	both	
10/12/16	Trump Twists Facts on WikiLeaks	Trump twisted exeprts from Clinton's past speeches	multiple issues	Republican	
10/13/16	Trump's Misguided Debate Bias Claim	Trump wrongly labeled the debates "rigged"	debate	Republican	
10/14/16	Jolly, Trump Photos Are Fake	Democratic TV ad about David Jolly and Trump uses fake images	abortion	Democrat	
10/14/16	Trump Twists Facts on Murder Case	Trump falsely claimed a convicted killer set free by Clinton's watch	crime	Republican	
10/14/16	Clinton's Auto Bailout Falsehood	Clinton wrongly quote Trump out of context	economy	Democrat	
10/18/16	Pence's Unsupported Haiti Claim	Pence's repeated, wrong claim about ABC News and Clinton	disaster relief	Republican	
10/19/16	Trump's Bogus Voter Fraud Claims	Trump's false narrative about rampant voter fraud	voter fraud	Republican	
10/19/16	A Deal That Never Happened	Trump false and grossly inflated claim about FBI and Clinton emails	Clinton emails	Republican	
10/20/16	Clinton's Misleading Debt Claims	Contrary to Clinton's claim, her plan will add $200 billion to the debt over 10 years	economy	Democrat	
10/20/16	Fact-Checking the Final Presidential Debate	The final debate (Trump 9 wrong, Clinton 2 wrong)	debate	Republican	
10/21/16	More Bogus Trumponomics	Donald Trump mangled his economic facts - again	economy	Republican	
10/24/16	Did the Pope Endorse Trump?	No, the pope did not	endorsement		
10/24/16	More Bogus Voter Fraud from Trump	Trump falsely claimed Podesta was quoted	voter fraud	Republican	
10/25/16	Clinton's Connection to FBI Official	Trump lacked evidence	Clinton emails	Republican	
10/25/16	A False 'Corruption' Claim	Trump's ad falsely claim Clinton's corrupt behavior	corruption	Republican	
10/26/16	Clinton and Nuclear Launch Times	Clinton did not disclose classified info - it's common knowledge	defense		Democrat
10/27/16	A False Attack on Toomey	A Democratic ad falsely accused Republican Sen. Pat Toomey	banking	Democrat	
10/28/16	Democratic Deceptions	TV ads falsely ties Trump to GOP candidates	endorsement	Democrat	
10/28/16	Trump Wrong on Murder Rate	Trump's claim is wildly inaccurate	crime	Republican	
10/28/16	Still Cherry-Picking Premiums	Trump cherry-picked increases about premiums	health care	Republican	
10/31/16	Spinning the FBI Letter	Comey's vague announcement sparks partisan distortions	Clinton emails		both

Table S7: The Full List of Fact-checking Articles by Washington Post Fact Checker: October 2016

Date	Headline	Deck Summary	Topic	Challenge	Validate
10/03/16	Trump's claim that his hotel in D.C. is 'under budget, ahead of schedule'	It's hard to tell for now	economy	Republican	
10/04/16	Clinton, Kaine go too far in touting a nuclear deal with Russia	The Clinton campaign says a treaty with Russia cut nuclear arms, but there's less than meets the eye	defense	Democrat	
10/05/16	Fact-checking the vice-presidential debate between Kaine and Pence	Kaine 7 wrong, Kaine 6 correct, Pence 10 wrong , Pence 2 correct	debate	Republican	
10/06/16	Clinton, Kaine airbrush out inconvenient details about U.S. troop departure from Iraq	The reasons are more complex	defense	Democrat	
10/07/16	Neither Kaine nor Pence was 'absolutely' correct about Clinton emails and court-martial	Both Kaine and Pence spoke in absolute terms, but the reality is much less clear	debate	both	
10/09/16	Fact-checking the second Clinton-Trump presidential debate	25 suspect claims from the second debate (most by Trump)	debate	Republican	
10/11/16	Trump's claim about Canadians traveling to the United States for medical care	Trump exaggerates one data point to extrapolate, but that's misleading	health care	Republican	
10/11/16	The facts about Hillary Clinton and the Kathy Shelton rape case	victim is angry at Clinton for requesting a psychiatric exam, but the request was denied	crime		Democrat
10/12/16	Trump's ridiculous claim that he won 'every poll' on the second presidential debate	Actually, Trump lost every single poll using a credible, scientific method	debate	Republican	
10/12/16	'Whole bunch' of facts don't support Obama's claim that many VA bosses were fired over scandal	Obama mischaracterized the firings of senior VA officials	veterans	Democrat	
10/13/16	Trump's false claim that Clinton 'lost' $6 billion at the State Department	Trump ventures into fantasyland with a strange claim	budget	Republican	
10/14/16	Trump flip-flops on whether women's sexual allegations should be believed	Trump has a double standard	sexual assault	Republican	
10/17/16	Trump's claim that a Clinton-backed Haiti factory 'amounted to a massive sweatshop'	Four Pinocchios for Trump distorting a Clinton-backed earthquake recovery in Haiti	disaster relief	Republican	
10/18/16	Clinton's bogus claim that Trump didn't want to save the auto industry	Four Pinocchios for Clinton's claim about auto industry	economy	Democrat	
10/19/16	Fact-checking two false claims by Trump alleging widespread voter fraud	Four Pinocchios for two of Trump's claims	voter fraud	Republican	
10/19/16	Trump's claim of 'collusion' by the FBI and State to make Hillary Clinton 'look less guilty'	Trump alleges collusion but FBI documents show much less than meets the eye	clinton emails	Republican	
10/20/16	Fact-checking the third Clinton-Trump presidential debate	Trump 17 wrong, Clinton 3 wrong, Clinton 4 correct	debate	Republican	
10/21/16	Trump's claim that the Islamic State 'is in 32 countries'	Trump's number lacks context	foreign relations	Republican	
10/21/16	Trump's claim tying violence at his rallies to the Clinton campaign	Trump stretches the available facts too far	violence	Republican	
10/24/16	No, Eric Trump, 14 percent of noncitizens are not registered to vote	Eric Trump repeats a debunked claim about unfair voting practices	immigration	Republican	
10/24/16	Trump's claim that Clinton 'allowed thousands of criminal aliens to be released'	Trump has gone off the rails to directly blame Clinton	crime	Republican	
10/25/16	Abortion-rights advocates' claim that 'one in three women has had an abortion'	Abortion-rights advocates inaccurately cite data	abortion		
10/25/16	Trump's mixed-up version of the latest Hillary Clinton email controversy	Trump got the story of a Wall Street Journal article wrong	Clinton emails	Republican	
10/26/16	The facts behind Trump's repeated claim about Hillary Clinton's role in the Russian uranium deal	Trump naming Clinton as an agent, but that was not the case	foreign relations	Republican	
10/27/16	Clinton campaign's claim that Trump 'says he'd deport 16 million people'	Clinton campaign spun Trump's words	immigration	Democrat	
10/28/16	Trump's claim that he predicted that Obamacare 'can't work'	Little evidence that Trump predicted Obamacare would fail	health care	Republican	
10/30/16	Trump's bizarre claim that the Clinton email controversy is 'bigger than Watergate'	Four Pinocchios for this absurd comparison	clinton emails	Republican	

Table S8: The Full List of Fact-checking Articles by FactCheck.org: June 2020 (Partisan Targets)

Date	Headline	Deck Summary	Topic	Challenge	Validate
06/04/20	The Semantics of 'Tear Gas' Versus 'Pepper Spray'	Trump leaves false impression that White House didn't use chemical agents	protest	Republican	
06/09/20	Trump Tweets Baseless Claims About Injured Buffalo Protester	Trump promoted a conspiracy theory	protest	Republican	
06/09/20	Statue in Lincoln Memorial Was Not Defaced by Protesters	A meme spreads a doctored image of the Lincoln Memorial, from a conservative website	protest	Republican	
06/09/20	China Didn't Stop Virus 'Cold' Outside Wuhan	Trump wrongly said China didn't stop COVID from spreading to the world	COVID	Republican	
06/10/20	Misleading Ad Targets Biden on Fossil Fuels, Fracking	A TV ad from a Republican super PAC inaccurately describe Biden's plan	climate change	Republican	
06/10/20	Trump's False Claim on Tijuana Coronavirus Cases	Trump falsely claimed Tijuana is the most heavily infected	COVID	Republican	
06/11/20	Trump Wrong on Crime Record	Trump wrongly claimed that crime statistics are record setting	crime	Republican	
06/12/20	Trump's Deceptive Ad on Biden and Defunding the Police	Trump deceptively suggests Biden will defund the police	police	Republican	
06/12/20	Colorado Vaccine Bill Includes Nonmedical Exemptions for Children	A Facebook meme false claim about Colorado bill	public health	Republican	
06/16/20	Ahead of Trump Rally, Republicans Spin COVID-19 Metrics	Trump and his supporters misleading claims about COVID	COVID	Republican	
06/17/20	Biden on Economic Growth and Trump's Tax Cuts	Biden wrongly says conservative think tanks agree Trump's tax cuts no growth at all	tax	Democrat	
06/17/20	Trump Wrong on Obama-Biden Actions on Policing	Trump falsely claimed Obama never tried to fix police violence	violence	Republican	
06/17/20	Pence's False Claims About Trump's Handling of Coronavirus	Pence's false claims about Trump's handling COVID	COVID	Republican	
06/18/20	Azar, Trump Mislead on FDA's Hydroxychloroquine Decision	White House left misleading impression about FDA decision	COVID	Republican	
06/19/20	Trump's Absentee vs. Mail-In Ballot Spin	Trump's false distinctions between mail-in and absentee ballots	election	Republican	
06/22/20	Trump Inherited More Ventilators Than Have Been Distributed	Contrary to Trump's claim, federal government had more ventilators in stock	public health	Republican	
06/23/20	Viral Photo Misidentified as Trump Tulsa Crowd	False social media post supportive of Trump	politician	Republican	
06/24/20	Trump's Unsupported Claim About Opportunity Zone Investments	Trump asserted without evidence that $100 billion was invested	economy	Republican	
06/25/20	Trump Falsely Says COVID-19 Surge 'Only' Due to Testing, Misleads on Deaths	Trump falsely asserts cases are up due to testing	COVID	Republican	
06/25/20	Trump's Shaky Warning About Counterfeit Mail-In Ballots	Trump's unfounded claim that mail-in ballots will be printed by foreign countries	election	Republican	
06/26/20	Biden Floats Baseless Election Conspiracy	Biden's claim about Trump and mail-in ballots lacks evidence	election	Democrat	
06/26/20	Trump Falsely Claims Obama 'Destroyed' Maine Lobster Industry	There has been absolutely no impact	economy	Republican	

Table S9: The Full List of Fact-checking Articles by FactCheck.org: June 2020 (Non-partisan Targets)

Date	Headline	Deck Summary	Topic
06/03/20	Post on Floyd Protests Uses Old Vandalism Photos	A Facebook post images are old and irrelevant	protest
06/04/20	Viral Posts Share Old, Edited White House Photo in Dark	the image is actually from 2014 and was edited	protest
06/05/20	Trump Touts Strong Jobs Report, Flubs Some Facts	Trump false, misleading claims about performance	economy
06/05/20	Bricks Were Placed for Construction, Not to Incite Protesters	misleadingly suggest that bricks were staged to incite protest	protest
06/05/20	LEGO Temporarily Halts Marketing, Not Sales, of Police Toy Sets	LEGO isn't discontinuing the sale	business
06/05/20	Meme Misrepresents Fauci's Position on Vaccine Trials	falsely suggests Fauci supports administering vaccine before clinical trials	COVID
06/08/20	The Continuing 'Tear Gas' Debate	National semantics exercise over "pepper balls" and "tear gas" has continued	science
06/08/20	Video of Trump's 'Choke' Quote Refers to Political Rivals	Video clips misleadingly suggest Trump was mocking George Floyd	violence
06/08/20	Nuremberg Code Addresses Experimentation, Not Vaccines	A bogus claim that "[v]accines are in direct violation of The Nuremberg Code"	COVID
06/08/20	Does Vitamin D Protect Against COVID-19?	no direct evidence	COVID
06/09/20	Posts Distort Facts on Floyd Pathologist's Role in Past Cases	Instagram posts erroneously claim about the doctor for Floyd case	violence
06/12/20	Donations to Black Lives Matter Group Don't Go to DNC	Social media posts falsely claim donations for BLM went to DNC	protest
06/12/20	Unpacking WHO's Asymptomatic COVID-19 Transmission Comments	WHO scientist confusingly suggestion about asymptomatic COVID transmission	COVID
06/12/20	Bogus Claims of 'Crisis Actors' in Death of George Floyd	False claims that those involved in Floyd case are crisis actors	violence
06/16/20	Sarah Huckabee Sanders Did Not Post Conspiratorial Tweet	A tweet was falsely attributed to Sanders, misspelled her name	conspiracy
06/17/20	Facebook Post Repeats Flawed Claim on Wuhan Lab Funding	A Facebook post false claim that Obama gave fund to a lab in Wuhan	COVID
06/17/20	Meme Spreads Wrong Photo, Details in Floyd Criminal Case	A meme distorts Floyd's case	violence
06/17/20	Conspiracy Theory on Floyd's Death Disproved by Footage	A Facebook post falsely claiming Floyd case was filmed before COVID	violence
06/19/20	Trump Campaign Didn't Advertise for 'MINORITY Actors' in Tulsa	False Craigslist about Trump campaign	eleciton
06/19/20	Gifting a Folded Flag Isn't 'Only For Fallen Veterans'	Misleading social media post saying Nancy Pelosi violated a military tradition	politician
06/23/20	Posts Falsely Claim Wallace Mistook 'Automotive Belt for a Noose'	A Facebook post with false claim	hate crime
06/24/20	Fake AOC Tweet Politicizes COVID-19 Business Restrictions	No evidence that AOC sent the bogus tweet	COVID
06/29/20	Wearing Face Mask During Pandemic Doesn't Affect Concealed Carry Permit	A meme has bogus claim that wearing a mask removes concel carry ability	COVID
06/30/20	Painting of Children in Masks Isn't a 1994 Airport Mural	Viral posts wrongly claim a painting was a mural for Denver airport	COVID
06/30/20	Meme Misrepresents Florida Surgeon General's Position on Face Masks	A meme falsely claims a FL surgeon general recommended stop wearing masks	COVID

Table S10: The Full List of Fact-checking Articles by Washington Post Fact Checker: June 2020

Date	Headline	Deck Summary	Topic	Challenge	Validate
06/02/20	Mitch McConnell got 'rich' the old-fashioned way	An attack ad misleadingly suggests how McConnell got rich	politician	Democrat	
06/03/20	White House targets protesters with misleading video	White House tweeted misleading clips	protest	Republican	
06/03/20	Donald Trump, friend of 'all' peaceful protesters?	Trump supports peaceful protesters only when their interests are aligned with his	protest	Republican	
06/04/20	How specific were Biden's recommendations on the coronavirus?	Biden's suggestions were misleading	COVID	Democrat	
06/05/20	Trump's claim that he's done more for black Americans than any president since Lincoln	Four Pinocchios - Historians scorn Trump's statement	race	Republican	
06/08/20	William Barr's Four-Pinocchio claim that pepper balls are 'not chemical'	Bogus claim obscures the event	protest	Republican	
06/09/20	Trump tweets outrageous conspiracy theory about injured Buffalo man	Trump makes us regret we can award no more than Four Pinocchios	violence	Republican	
06/12/20	Joe Biden's shifting recollection on his civil rights activities	Two Pinocchios - Biden says he was involved, but records say not	civil rights	Democrat	
06/15/20	Democratic ad misleadingly attacks Susan Collins on the Paycheck Protection Program	Three Pinocchios - a narrative crated out of facts left a false impression	economy	Democrat	
06/16/20	Trump's zombie claim that he has invested $2 trillion in the military	Three Pinocchios - Trump falls short of his claim	military	Republican	
06/17/20	Trump's false claim that Obama 'never even tried to fix' police brutality	Four Pinocchios - Trump cannot say his predecessor didn't even try	violence	Republican	
06/18/20	Video evidence of anti-black discrimination in China over coronavirus fears	Black residents in Guangzhou are facing discriminations over COVID fears	foreign country		
06/22/20	Who caused the violence at protests? It wasn't antifa.	Four Pinocchios - little evidence supports Trump administration's claim	protest	Republican	
06/24/20	Fact-checking the GOP's 'satirical' vote-by-mail video	Four Pinocchios - RNC tweeted a video filled with false and misleading claims	election	Republican	
06/25/20	Trump keeps saying Obama left him 'no ventilators.' The number is 16,660.	Four Pinocchios - Trump's claim is false	public health	Republican	
06/26/20	Michael Flynn, Barack Obama and Trump's claims of 'treason'	unsubstantiated claims by Trump allies	national security	Republican	
06/29/20	Bottomless Pinocchio: Trump's claim that he will 'always' protect those with preexisting conditions	Four Pinocchios - Trump has repeated this falsehood nearly 100 times.	health care	Republican	

Table S11: The Full List of Fact-checking Articles by FactCheck.org: September 2022

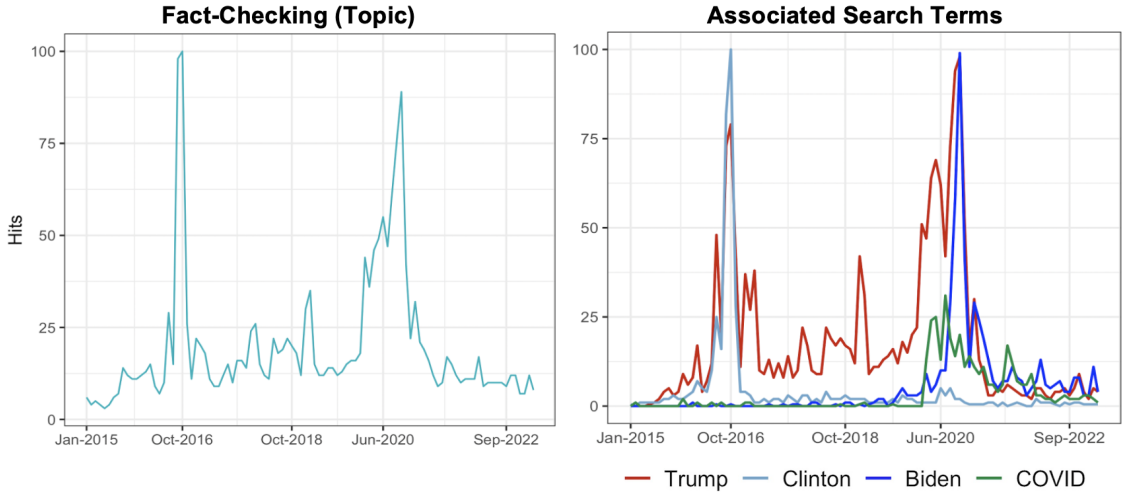
Date	Headline	Deck Summary	Topic	Challenge	Validate
09/02/22	Biden's Campaign-Style Distortions	Biden misstated statistics and misled on COVID, police, ACA, police	COVID, health care, violence	Democrat	
09/07/22	Trump Distorts Facts in Pennsylvania Rally	Trump's false, exaggerated, misleading sattements in a rally	election	Republican	
09/07/22	Biden Hasn't Officially Filed for Reelection, Contrary to Social Media Claims	conservative social media's false claims that Biden filed for reelection	election	Republican	
09/09/22	Crist Ads Misrepresent DeSantis Statements on Abortion and Background Checks on Guns	Crist's ad misleads on DeSantis's positions	abortion, gun control	Democrat	
09/09/22	Florida GOP Attacks Crist with Misleading Claims About the IRS and Police	Florida GOP ad distort Democrats' positions	crime	Republican	
09/14/22	Herschel Walker Cites Outdated Crime Figures in False Attack on Raphael Warnock	Walker's falsely claim crimes increased under Warnock	crime	Republican	
09/14/22	Misleading Attack on Murkowski's Gun Vote	Tshibaka misleads on Murkowski's vote	gun control	Republican	
09/15/22	Clinical Trials Show Ivermectin Does Not Benefit COVID-19 Patients, Contrary to Social Media Claims	misinfo from Ivermectin enthusiasts	COVID		
09/16/22	Viral Posts Spin Falsehood Out of Denmark's COVID-19 Booster Drive	misinfo that vaccines are unsafe for those under 50	foreign country		
09/19/22	Republican Talking Point Omits Key Details About Stimulus Payments to Inmates	Reps, not just Dems, voted for stimulus checks to inmates	economy	Republican	
09/19/22	GOP Ad Mischaracterizes Michigan Candidate's Response to 2020 Protests	Rep PAC's ad falsely claims Scholten dismissed the destruction	protest	Republican	
09/20/22	Is the Pandemic 'Over'? Biden Says So, But Scientists Say That's Up for Debate	Biden's claim isn't supported by some scientists	COVID	Democrat	
09/22/22	Johnson's False Claim about Barnes' Tax Plan	Johnson's ad has false claim about Barnes' view	tax	Republican	
09/22/22	NRSC's Misleading Attack on Warnock	NRSC make misleading claims about Warnock's votes	election	Republican	
09/23/22	Q & A on Omicron-Updated COVID-19 Boosters	booster vaccines targeting omicron	COVID		
09/23/22	Biden's Misleading Claims About the Economic Recovery and Unemployment	Biden wrongly credited the Democratic COVID-19 relief bill	economy	Democrat	
09/23/22	GOP Ads Use Outdated Federal Report to Attack Democrats on 'Higher Taxes'	Republican super PAC's false claim about Democratic votes	tax	Republican	
09/26/22	Illinois Law Doesn't 'Eliminate All Restrictions on Abortions,' Contrary to Ad from Advocacy Group	an advocacy group's ad makes a fase claim about Democrats' votes	abortion	Republican	
09/26/22	GM, Ford Vehicles Were Donated to Ukraine by Carmakers	instagram post baseless claim about GM, Ford's donations to Ukraine	economy		
09/27/22	Video Makes Baseless Claim About Insurance Coverage of Vaccinated Frenchman	baselessly claim about life insurer refused to pay after getting vaccine	COVID		
09/28/22	Posts Take Biden's Vaccination and Hurricane Prep Comments Out of Context, Again	misleading claim that Biden thinks vaccines protect against storm	COVID	Republican	
09/28/22	Everytown's Misleading Ad on Johnson's Votes 'Against Funding for the Police'	gun control advocacy group's ad misleads Johnson's votes	gun control	Democrat	
09/29/22	COVID-19 Vaccine Opponents Misrepresent CDC Webcast on Causes of Blood Clots	some vaccine opponents misrepresented CDC webinar	COVID		
09/29/22	Biden's Misleading Boast on Medicare Premium Drop	Biden boasted of a decrease in premiums for Medicare	health care	Democrat	
09/30/22	Fetterman Ad Pushes Back on Crime	Ad that support Fetterman (D) may mislead viewers	election	Democrat	
09/30/22	Pro-Dixon Ad Uses 'Joke' About Drag Queens in a Misleading Attack on Whitmer	Republican super PAC use Nessel's quote out of context	election	Republican	

Table S12: The Full List of Fact-checking Articles by Washington Post Fact Checker: September 2022

Date	Headline	Deck Summary	Topic	Challenge	Validate
09/02/22	Biden's bungled talking point on the muzzle velocity of AR-15s	Biden made a wrong statement about AR-15s	gun control	Democrat	
09/07/22	These Republicans cheered abortion policy going to states. They are also sponsoring a federal ban.	republican lawmakers made contradictory statements	abortion	Republican	
09/08/22	Hillary Clinton's claim that 'zero emails' were marked classified	investigations support Clinton's case	election		Democrat
09/10/22	The Lincoln Project falsely claims Trump has pocketed 'every dollar' he raised	4 pinocchios on anti-Trump ad for not providing evidence	election	Democrat	
09/13/22	Biden's flimsy claim he has the 'strongest' manufacturing jobs record	2 pinocchios on Biden, who used a strange metric	economy	Democrat	
09/22/22	The GOP claim that Democrats support abortion 'up to moment of birth'	GOP claim about late-term abortion is inconsistent with reality	abortion	Republican	
09/23/22	Biden's unwarranted bragging about reducing the budget deficit	3 pinocchios on Biden's claim about budget deficit	economy	Democrat	
09/27/22	The false claim that Senate Republicans 'plan to end Social Security and Medicare'	4 pinocchios on Murray, who conjured up non-existent GOP plan	social security	Democrat	
09/29/22	Stacey Abrams's rhetorical twist on being an election denier	Abrams is playing down past claims about elections	election	Democrat	

Figure S2 shows the relative search interest in fact-checking among the U.S. public between January 2015 and March 2023. The Google Trends data were retrieved using the R package 'gtrendsR.' The first plot shows the relative search interest in the topic "fact-checking" (encompassing search terms such as 'fact-check,' 'fact checking,' etc.). The second plot illustrates the relative search interest in the topic of fact-checking by associated search terms: Trump, Clinton, Biden, and COVID. The peaks of search interest in fact-checking associated with the presidential candidates overlap with the respective election seasons (Clinton and Trump in fall 2016; Biden and Trump in fall 2020). Public search interest in fact-checking associated with COVID peaked in 2020, yet the relative degree of fact-checking interest in COVID was lower compared to fact-checking interest in presidential candidates. These trends imply that the public strongly associates fact-checking with partisan figures and topics.

Figure S2: Search Interest in Fact-checking as a Topic and by Associated Search Terms



1.3 Manipulation Check

To assess how well participants perceived the key differences across conditions, at the end of the survey, they answered the following question:

"Thinking back to the headlines you were shown, which of the following topics did the headlines cover? (Choose all that apply)"

- Political topics (e.g., immigration, gun control) (1)
- Sports, entertainment, and lifestyle topics (2)
- Science and health topics (3)
- The order of answer choices was randomized.

Following Hauser, Ellsworth and Gonzalez (2018), manipulation check was not placed between the treatment and outcome variables (to prevent unintended influence on observed

outcomes). Instead, it was presented at the end of the survey. In analysis, I did not drop respondents who failed manipulation check, because excluding them can bias the results, as Aronow, Baron and Pinson (2019) suggested.

Table S13: Responses to Manipulation Check by Experimental Conditions

	Treatment Conditions					
	Partisan only (baseline)	Popular culture only	Science only	Partisan & Popular culture	Partisan & Science	Total
Par	**68.3**	1	1	9.5	6	17.1
Pop	0.5	**76**	0.5	5	0	16.4
Sci	1	0.5	**90**	1	11.5	20.8
Par, Pop	1	1	0	**45.8**	0	9.6
Par, Sci	26.1	1	1.5	6	**74.5**	21.8
Pop, Sci	0	18.5	5.5	3	0.5	5.5
Par, Pop, Sci	3	1.5	1.5	**29.9**	**7.5**	8.7
N/A	0	0.5	0	0	0	0.1
N	199	200	200	201	200	1,000

Note: Entries are the percentage of each response per experimental condition. *Par* = partisan (political topics); *Pop* = popular culture (sports, entertainment, and lifestyle); *Sci* = scientific (science and health); multiple responses were allowed.

As shown in Table S13, responses across conditions indicate that the key experimental manipulation in this study—topical scope of coverage—was effective. In all conditions, a majority of responses were consistent with the purpose of study design. In the baseline condition (only partisan topics), 68.3% of the respondents said they were given headlines on political topics. In Treatment 1 (only popular culture topics), 76.0% of respondents recalled they were given headlines on topics such as sports, entertainment, and lifestyle. Among those assigned to Treatment 2 (only scientific topics), 90.0% recalled that they were given headlines on topics such as science and health. In Treatment 3 (mixed coverage of partisan and popular culture topics), 75.7% chose a set of responses that included 'partisan' and 'popular culture' topics. In Treatment 4 (mixed coverage of partisan and scientific topics), 82% chose a set of responses that included 'partisan' and 'scientific topics.

2 Distribution of Demographics across Experimental Conditions

Table S14: Distribution of Demographics by Experimental Conditions

	Experimental Conditions					
	Partisan only (baseline)	Pop culture only	Science only	Partisan & Pop culture	Partisan & Science	Total (%)
Age						
18-24	26.1	25.5	23	21.4	18	22.8
25-34	32.2	35.5	31.5	29.9	36	33
35-44	17.6	14	17.5	17.4	19	17.1
45-54	7.5	13	11	15.4	13	12
55-64	10.6	7.5	11.5	11.4	9	10
65-	6	4.5	5.5	4.5	5	5.1
Gender						
Female	53.8	54.8	52	53.7	50.5	53
Male	44.2	44.2	47.5	45.3	49	46
Self-identify	2	1	0.5	1	0.5	1
Education						
No college	42.2	40.5	38.5	40.8	34.5	39.3
College	57.8	59.5	61.5	59.2	65.5	60.7
Partisanship						
Democrat	49.7	50.5	50	50.2	49.5	50
Republican	50.3	49.5	50	49.8	50.5	50
N	199	200	200	201	200	1,000

Note: The entries are in percentage (%), except for the final row ("N") that indicates the number of respondents.

3 Key Results in Tabular Form

Table S15: Treatment Effects of Topical Scope (Pooled Model)

Treatment (Base: Partisan only)	Perceived news credibility	Perceived shared interest	Perceived expertise
Rep	–0.06**	–0.10***	–0.01
	(-0.03)	(-0.04)	(-0.03)
Pop Culture	–0.04	–0.13***	–0.12***
	(-0.03)	(-0.03)	(-0.03)
Science	0.09***	–0.01	0.03
	(-0.03)	(-0.03)	(-0.03)
Partisan/Pop	–0.05*	–0.10***	–0.08***
	(-0.03)	(-0.03)	(-0.03)
Partisan/Sci	–0.02	–0.06*	–0.02
	(-0.03)	(-0.03)	(-0.03)
Pop x Rep	0.05	0.07	0.005
	(-0.04)	(-0.05)	(-0.05)
Sci x Rep	–0.03	0.04	–0.03
	(-0.04)	(-0.05)	(-0.05)
Par/Pop x Rep	0.04	0.05	–0.002
	(-0.04)	(-0.05)	(-0.04)
Par/Sci x Rep	0.03	0.08	0.01
	(-0.04)	(-0.05)	(-0.04)
Constant	0.43***	0.48***	0.48***
	(-0.02)	(-0.02)	(-0.02)
N	500	500	500
Adjusted R2	0.04	0.03	0.04

Note: Entries are the ordinary least squares (OLS) regression coefficients with robust standard errors are in parentheses. *Rep* = 1 if Republican, 0 if Democrat. *Pop* = 1 if Treatment 1 (popular culture only), 0 otherwise. *Sci* = 1 if Treatment 2 (science only), 0 otherwise. *Par/Pop* = 1 if Treatment 3 (partisan + popular culture), 0 otherwise. *Par/Sci* = 1 if Treatment 4 (partisan + science), 0 otherwise. All variables were coded to range from 0 to 1. *$p < .10$; **$p < .05$; ***$p < .01$.

Table S16: Conditional Treatment Effects of Topical Scope by Partisan Identity

Treatment	Perceived news credibility		Perceived shared interest		Perceived expertise	
(Base: Partisan only)	Democrat	Republican	Democrat	Republican	Democrat	Republican
Pop Culture	–0.04	0.01	–0.13***	–0.06*	–0.12***	–0.12***
	(-0.03)	(-0.03)	(-0.03)	(-0.04)	(-0.03)	(-0.04)
Science	0.09***	0.06*	–0.01	0.03	0.03	0.004
	(-0.03)	(-0.03)	(-0.03)	(-0.04)	(-0.03)	(-0.03)
Par/Pop	–0.05*	–0.01	–0.10***	–0.05	–0.08***	–0.08**
	(-0.03)	(-0.03)	(-0.03)	(-0.04)	(-0.03)	(-0.03)
Par/Sci	–0.02	0.01	–0.06*	0.02	–0.02	–0.01
	(-0.03)	(-0.03)	(-0.03)	(-0.04)	(-0.03)	(-0.03)
Constant	0.43***	0.37***	0.47***	0.38***	0.48***	0.47***
	(-0.02)	(-0.02)	(-0.02)	(-0.03)	(-0.02)	(-0.03)
N	500	500	500	500	500	500
Adjusted R2	0.05	0.01	0.03	0.01	0.05	0.03

Note: Entries are the ordinary least squares (OLS) regression coefficients with robust standard errors are in parentheses. *Pop* = 1 if Treatment 1 (popular culture only), 0 otherwise. *Sci* = 1 if Treatment 2 (science only), 0 otherwise. *Par/Pop* = 1 if Treatment 3 (partisan + popular culture), 0 otherwise. *Par/Sci* = 1 if Treatment 4 (partisan + science), 0 otherwise. All variables were coded to range from 0 to 1. *$p < .10$; **$p < .05$; ***$p < .01$.

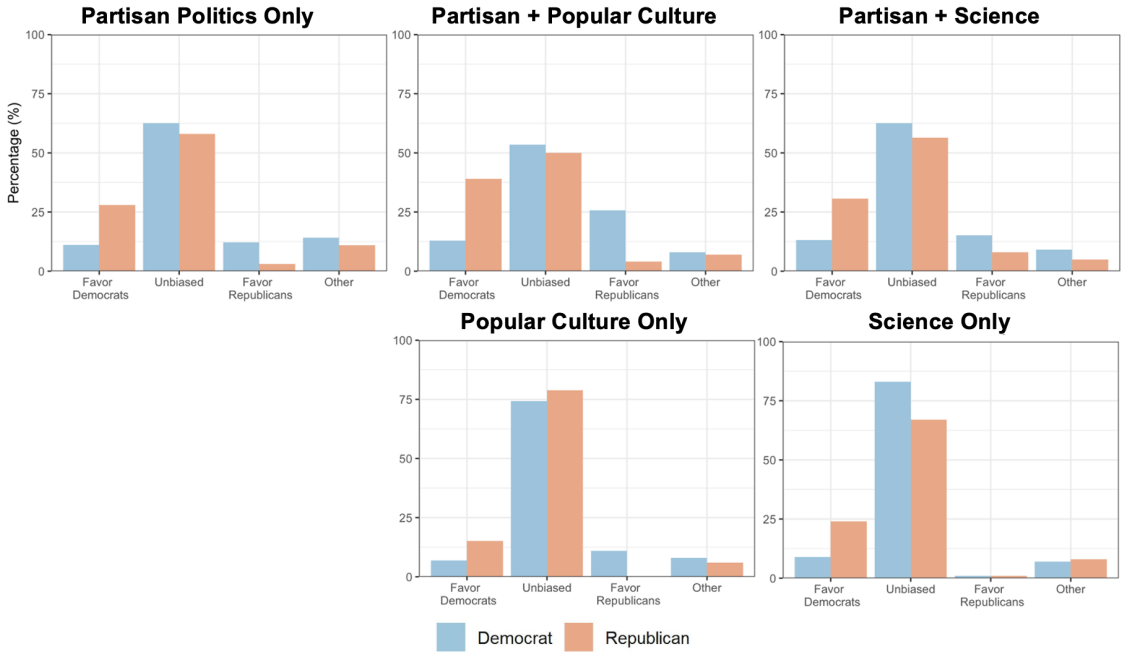
4 Additional Analyses

4.1 Perception of Source Bias

Because source bias perception has been suggested as a potential third dimension of source credibility (Wallace, Wegener and Petty 2020), I additionally measured perceived source bias. Participants were asked to indicate whether they thought the website tended to be unbiased or biased when presenting information, using the following set of responses: "it is not biased," "it is biased in favor of Republicans," "it is biased in favor of Democrats," and "other" (open-ended response).

There were two interesting patterns in Figure S3. One interesting finding is that more people find a source unbiased when it specializes in either popular culture or scientific topics (row 2), compared to when the coverage includes partisan topics (row 1). When a source covers only popular culture topics, 74% of Democrats and 79% of Republicans assess it to be unbiased. When a source covers only scientific topics, 83% of Democrats and 67% of Republicans find it to be unbiased. In contrast, when the coverage included partisan topics, 53-63% Democrats and 50-58% of Republicans found the source to be unbiased. Among three topical scopes with partisan topics, the mixed coverage of partisan and popular culture topics was least likely to be considered as unbiased.

Figure S3: Perceptions of Source Bias by Experimental Conditions



A second pattern is that the hostile media effect, perceiving a source with balanced coverage to be biased in favor of the opposite group (Vallone, Ross and Lepper 1985), is likely to be stronger among Republicans than Democrats. were more likely to assess the source bias to be in favor of Democrats. In all conditions with partisan topics (row 1), the coverage was balanced with the same number of headlines challenging each party. Still, greater proportions of Republicans (28-39%) perceived the source to be biased in favor of Democrats, compared to Democrats (12-26%) who perceived the source to be biased in favor of Republicans. Among three conditions with partisan topics, hostile media tendency was strongest given mixed coverage of partisan and popular culture topics.

4.2 Internal Reliability of Source Credibility Measures

As suggested in the preregistration, the items used to measure source credibility perceptions were analyzed for internal reliability. The scree plot analysis suggested three factors (Figure S4; Cattell 1966). The results of EFA indicated three factors explaining 37%, 19% and 14% of the variance, respectively. Each item loaded on theoretically relevant factors with strong loadings (> .4; Worthington and Whittaker 2006).

Figure S4: Scree Plot for Source Credibility Items

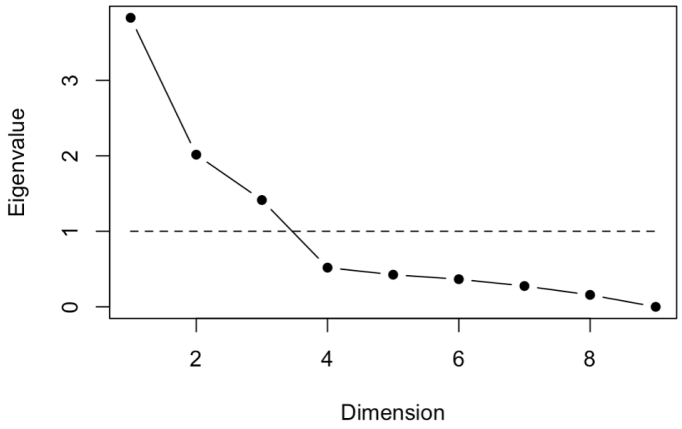


Table S17: Exploratory Factor Analysis of Source Credibility Items

	Factors		
Items	News credibility	Expertise	Shared interest
is accurate	0.87		
is fair	0.84		
is unbiased	0.72		
tells the whole story	0.84		
can be trusted	0.78		
are concerned about the public interest			1.04
watch out for your interests			0.41
are well trained		0.90	
are experienced		0.89	
Prop variance explained	0.37	0.19	0.14
Cronbach's α	0.91	0.90	0.85

Note: Entries are non-standardized factor loadings. Factor loadings smaller than .4 are not displayed.

In confirmatory factor analysis, the three-dimensional solution had acceptable model fit: RMSEA = .066, SRMR = .021, CFI = .985, TLI = .977 (the recommended criteria for adequate fit are RMSEA and SRMR $\leq$ .08, and CFI and TLI $\geq$ .90; Bentler 1990; Brown

2015). All individual items meaningfully loaded on the latent factor as well, with factor loadings ranging between .69 and .91.

Table S18: Confirmatory Factor Analysis of Source Credibility Items

	Factor loadings
News credibility	
is accurate	0.85
is fair	0.88
is unbiased	0.69
tells the whole story	0.85
can be trusted	0.88
Shared interest	
are concerned about the public interest	0.85
watch out for your interests	0.87
Expertise	
are well trained	0.91
are experienced	0.90
CFA fit statistics	
CFI	0.985
TLI	0.977
SRMR	0.021
RMSEA	0.066
$\chi^2(df)$	129.95 (24)
N	1,000

Note: Factor loading entries are standardized loadings.

4.3 Within-Party Heterogeneous Treatment Effects

Studies suggest that parties are becoming internally divided (Groenendyk, Sances and Zhirkov 2020) and that the Make America Great Again (MAGA) Republicans hold distinct political opinions from old-school Republicans (Cooper et al. 2024). Considering that conservative politicians have criticized the integrity of the news media and fact-checking (e.g., Meeks 2020; Shepherd 2021), there is a chance that heterogeneous treatment effects may exist within partisan groups.

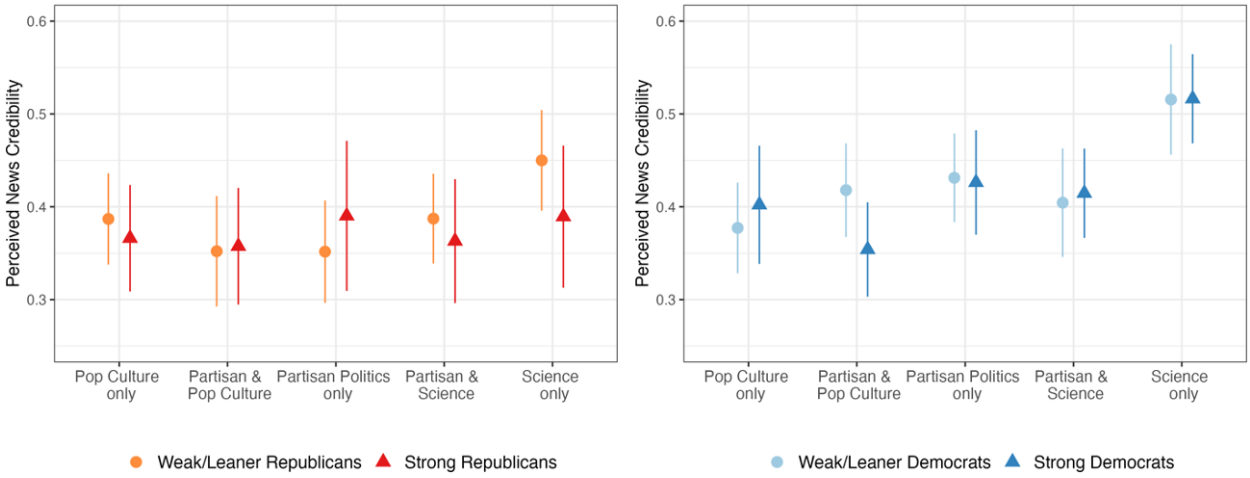
As a proxy of intraparty divisions,[6] I used partisanship strength to identify strong Republicans (n = 203) versus weak or leaner Republicans (n = 297). I also subdivided Democrats into strong Democrats (n = 287) and weak or leaner Democrats (n = 213).

Figure S5 shows the levels of perceived news credibility by the strength of partisan identity. When the magnitude of treatment effects (compared to the baseline—Partisan Politics only—condition) are compared, there was no statistically significant difference between

[6]This study lacked a measure that can identify MAGA Republicans from old-school Republicans.

strong and weaker (i.e., weak & leaner) partisans for all treatment conditions. When the levels of perceived news credibility are compared by partisanship strength, there was no statistically significant difference between strong and weaker partisans. The only exception was Democrats under the Politics & Popular Culture condition. Under this condition, weaker Democrats indicated a higher level of perceived news credibility than strong Democrats, with a statistically significant difference ($t = 1.85, p = .08$). Yet, even in this case, the difference in the treatment effects between strong and weaker Democrats was not statistically significant ($t = -1.12, p = .26$). Overall, the current data suggest minimal differences in how strong and weaker partisans react to news sources that cover different topical scopes.

Figure S5: Perceived News Credibility by the Strength of Partisan Identity



Note: Means and 95% confidence intervals by experimental conditions. Perceived news credibility was coded to range from 0 to 1.

Yet, it should be noted that the subgroup analyses above lack statistical power (33-65 observations per cell, Table S19). Future research should employ a larger sample to draw more reliable inferences about the heterogeneous treatment effects within partisan groups.

Table S19: Number of Observations by Experimental Conditions and Partisanship Strength

Experimental Condition	Republicans		Democrats	
	Weak/Leaner	Strong	Weak/Leaner	Strong
Politics only	59	41	40	59
Pop culture only	65	34	55	46
Science only	67	33	45	55
Politics + Pop culture	47	53	39	62
Politics + Science	59	42	34	65
Total	297	203	213	287

5 Survey Recruitment and Questionnaire

5.1 Power Analysis

I conducted power analysis for the difference in means between two independent groups using the software G*Power (Faul et al. 2007; Perugini, Gallucci and Costantini 2018). To identify a sample size that will ensure enough power for treatment effects, I conducted power analysis based on an experiment conducted in a similar context—assessing the credibility of a source based on news coverage (i.e., a list of headlines). The reference study estimated the effects of two different treatments (ingroup-adverse and outgroup-adverse asymmetric coverage), compared to baseline condition (symmetric coverage), among Democrats and Republicans respectively.

When calculating effect sizes (cohen's d) on the basis of my prior experiment, the sample sizes of control and treatment conditions were expected to be roughly the same ($N1 = N2$). Because there was no reason to be believe that standard deviation (SD) would significantly differ across conditions, SDs for control and treatment conditions were assumed to be same as the pooled standard deviation of those conditions. The effect sizes ranged from .25 to .85. Assuming two-tailed t-tests, $\alpha = .05$, power $(1 - \beta) = .8$, and allocation ration $N2/N1 = 1$, the sample size per condition was calculated as shown in Table S20.

Table S20: Sample size per condition from power analysis

Partisan identity	Treatment	Effect size (d)	Sample size per condition
Republicans	Ingroup-adverse asymmetry	• Effect size $d = .512$ • Control mean (group 1) = 0.432 • Treatment mean (group 2) = 0.306 • SD1 = SD2 = 0.246	61
	Outgroup-adverse asymmetry	• Effect size $d = .479$ • Control mean (group 1) = 0.432 • Treatment mean (group 2) = 0.328 • SD1 = SD2 = 0.217	70
Democrats	Ingroup-adverse asymmetry	• Effect size $d = .845$ • Control mean (group 1) = 0.384 • Treatment mean (group 2) = 0.209 • SD1 = SD2 = 0.207	23
	Outgroup-adverse asymmetry	• Effect size $d = .250$ • Control mean (group 1) = 0.384 • Treatment mean (group 2) = 0.330 • SD1 = SD2 = 0.216	253

To ensure enough power in all treatment effects of interest, my preregistration indicated that I would recruit 100 subjects per condition, with a total sample size of 1,000 (100 subjects x 2 partisan groups x 5 experimental conditions). The fourth case, outgroup-adverse asymmetry, was found to have heterogeneous effects by the two different randomized con-

tents, which reduced the overall effect size. Because I did not expect heterogeneous treatment effects across randomized contents of each treatment in this study, I reasoned that 100 subjects per condition would ensure sufficient power based on three other treatment conditions in Table S20.

5.2 Survey Administration

The study materials, data, and codes will be made available at an OSF repository upon the publication of this paper. At the beginning of the study, participants were given a consent form that described the study instrument (evaluating online news outlets, reading a set of headlines), ensured that their responses will be kept anonymous and that the study involved minimal risks. After the study, participants were told that the set of headlines they read did not appear on a single real website. Participants were paid $1.3 for an 8-min survey, which was set to be higher than the minimum hourly wage at the time of the study. Out of three attention checks, 98.8% of Democrats (494 out of 500) and 99.2% of Republicans (496 out of 500) passed all three attention checks, implying that both groups were highly attentive to the survey. Following Berinsky, Margolis and Sances (2014), I included all respondents in the analyses.

5.3 Experimental Treatment

[Instructions]

Now, we'd like to show you some **headlines** from an online news outlet.

After reading the headlines, we will ask you some questions about how you **evaluate the website** that reported these news stories. We'd especially like to know how interesting and credible you find the news from this site.

* Once headlines are loaded and ready to display, **an arrow (→)** will appear below. Please click it to proceed.

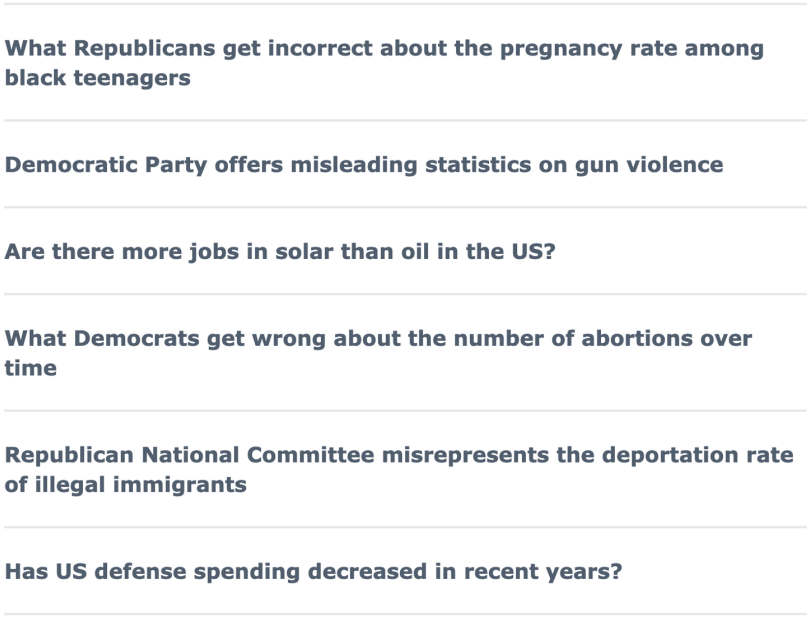
[page break]

The headlines from the website are listed below. Please take a moment to read the entire list carefully.

When reading the headlines, please think about how you would **evaluate the website**:

- How **credible** (informative, accurate, etc.) does the website seem to you?
- How **interested** would you be in visiting this website and reading more about news stories like these?

Example screenshot of Baseline Condition:



** PLEASE NOTE:* You **won't be able to refer back** to the headlines once you reach the next screen. So make sure to read the headlines carefully and think about your reactions to the website before you move on to the next screen.

5.4 Post-treatment Questions

[**Perceived News Credibility**] How well do you think each of the following describes the website?

The website...	Not at all (1)	A little (2)	Moderately (3)	Very (4)	Extremely (5)
Is fair (1)					
Is accurate (2)					
Is unbiased (3)					
Tells the whole story (4)					
Can be trusted (5)					

Note: The order of items was randomized across respondents.

[**Perceptions of Shared Interest / Expertise**] Based on the headlines you read, how well do you think each of the following describes **the reporters**[7] **of the website**?

The reporters of the website...

	Not at all (1)	A little (2)	Moderately (3)	Very (4)	Extremely (5)
Are concerned about the public interest (1)					
Watch out for your interests (2)					
Are well trained (3)					
Are experienced (4)					

Note: The order of items was randomized across respondents.

[**Perceived source bias**] Do you think the website tends to be unbiased or biased when presenting information?

- It is not biased (1)
- It is biased in favor of Republicans (2)
- It is biased in favor of Democrats (3)
- Other (4) _____
- *The order between the second and third choices was randomized.*

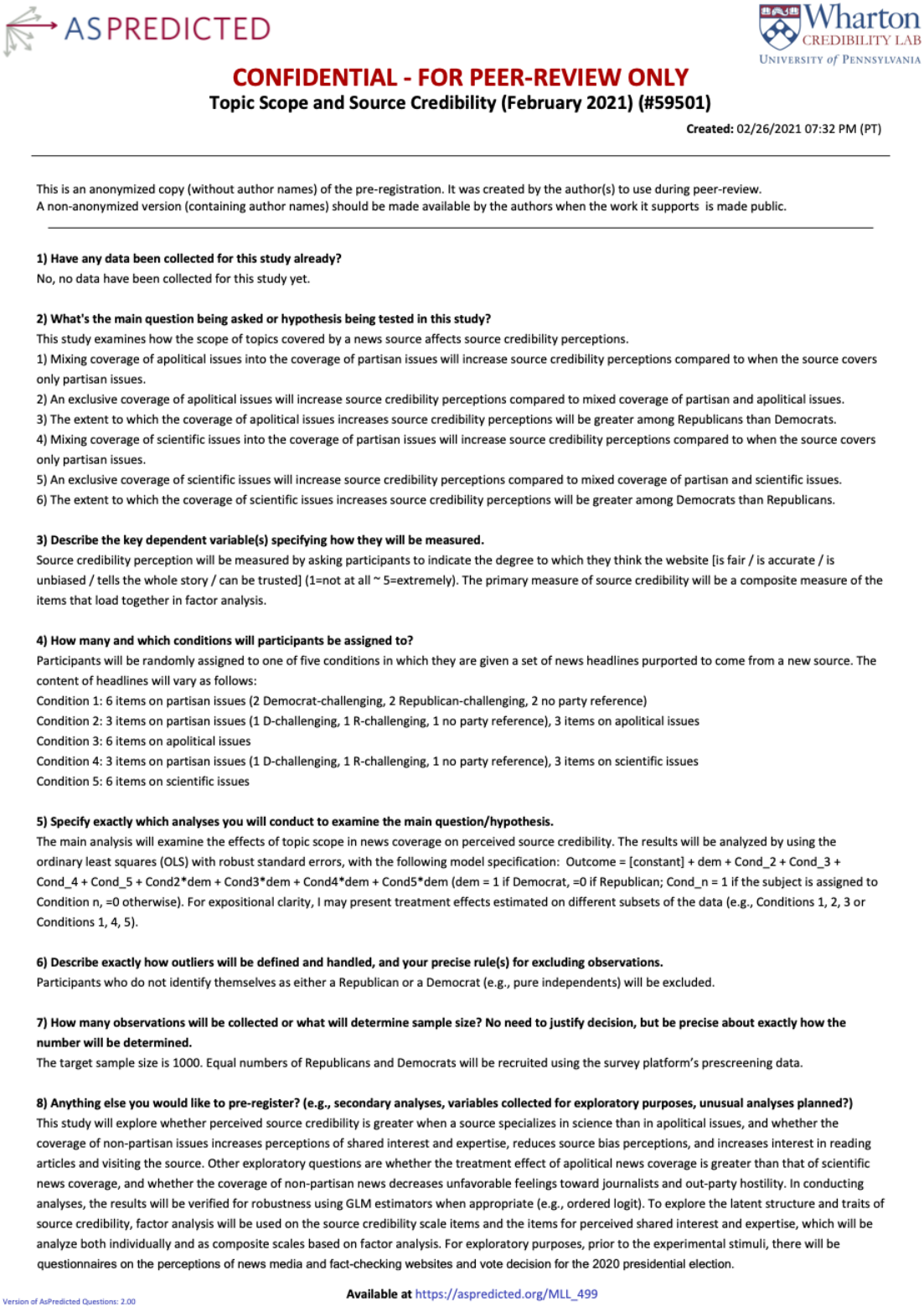
[page break]

[**Manipulation Check**] Thinking back to the headlines you were shown, which of the following topics did the headlines cover? (Choose all that apply)

- Political topics (e.g., immigration, gun control) (1)
- Sports, entertainment, and lifestyle topics (2)
- Science and health topics (3)
- *The order of response choices was randomized.*

[7]This question pertains to reporters. Because the website is an inanimate object, it may be less reasonable to assess a website on the given items. Journalists are the ones who select topics and facts to report, are responsible for reporting the information accurately, and offer their assessment of the issue—thus consisting key components of news trust, according to (Kohring and Matthes 2007).

6 Preregistration



ASPREDICTED

Wharton CREDIBILITY LAB
University of Pennsylvania

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Topic Scope and Source Credibility (February 2021) (#59501)

Created: 02/26/2021 07:32 PM (PT)

This is an anonymized copy (without author names) of the pre-registration. It was created by the author(s) to use during peer-review.
A non-anonymized version (containing author names) should be made available by the authors when the work it supports is made public.

1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?
This study examines how the scope of topics covered by a news source affects source credibility perceptions.
1) Mixing coverage of apolitical issues into the coverage of partisan issues will increase source credibility perceptions compared to when the source covers only partisan issues.
2) An exclusive coverage of apolitical issues will increase source credibility perceptions compared to mixed coverage of partisan and apolitical issues.
3) The extent to which the coverage of apolitical issues increases source credibility perceptions will be greater among Republicans than Democrats.
4) Mixing coverage of scientific issues into the coverage of partisan issues will increase source credibility perceptions compared to when the source covers only partisan issues.
5) An exclusive coverage of scientific issues will increase source credibility perceptions compared to mixed coverage of partisan and scientific issues.
6) The extent to which the coverage of scientific issues increases source credibility perceptions will be greater among Democrats than Republicans.

3) Describe the key dependent variable(s) specifying how they will be measured.
Source credibility perception will be measured by asking participants to indicate the degree to which they think the website [is fair / is accurate / is unbiased / tells the whole story / can be trusted] (1=not at all ~ 5=extremely). The primary measure of source credibility will be a composite measure of the items that load together in factor analysis.

4) How many and which conditions will participants be assigned to?
Participants will be randomly assigned to one of five conditions in which they are given a set of news headlines purported to come from a new source. The content of headlines will vary as follows:
Condition 1: 6 items on partisan issues (2 Democrat-challenging, 2 Republican-challenging, 2 no party reference)
Condition 2: 3 items on partisan issues (1 D-challenging, 1 R-challenging, 1 no party reference), 3 items on apolitical issues
Condition 3: 6 items on apolitical issues
Condition 4: 3 items on partisan issues (1 D-challenging, 1 R-challenging, 1 no party reference), 3 items on scientific issues
Condition 5: 6 items on scientific issues

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
The main analysis will examine the effects of topic scope in news coverage on perceived source credibility. The results will be analyzed by using the ordinary least squares (OLS) with robust standard errors, with the following model specification: Outcome = [constant] + dem + Cond_2 + Cond_3 + Cond_4 + Cond_5 + Cond2*dem + Cond3*dem + Cond4*dem + Cond5*dem (dem = 1 if Democrat, =0 if Republican; Cond_n = 1 if the subject is assigned to Condition n, =0 otherwise). For expositional clarity, I may present treatment effects estimated on different subsets of the data (e.g., Conditions 1, 2, 3 or Conditions 1, 4, 5).

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
Participants who do not identify themselves as either a Republican or a Democrat (e.g., pure independents) will be excluded.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.
The target sample size is 1000. Equal numbers of Republicans and Democrats will be recruited using the survey platform's prescreening data.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)
This study will explore whether perceived source credibility is greater when a source specializes in science than in apolitical issues, and whether the coverage of non-partisan issues increases perceptions of shared interest and expertise, reduces source bias perceptions, and increases interest in reading articles and visiting the source. Other exploratory questions are whether the treatment effect of apolitical news coverage is greater than that of scientific news coverage, and whether the coverage of non-partisan news decreases unfavorable feelings toward journalists and out-party hostility. In conducting analyses, the results will be verified for robustness using GLM estimators when appropriate (e.g., ordered logit). To explore the latent structure and traits of source credibility, factor analysis will be used on the source credibility scale items and the items for perceived shared interest and expertise, which will be analyze both individually and as composite scales based on factor analysis. For exploratory purposes, prior to the experimental stimuli, there will be questionnaires on the perceptions of news media and fact-checking websites and vote decision for the 2020 presidential election.

Version of AsPredicted Questions: 2.00

Available at https://aspredicted.org/MLL_499

Note: The preregistration is available at: https://aspredicted.org/MLL_499.

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