

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

Hwayong Shin*

Contents

1	Experimental Design	1
1.1	Experimental Stimuli	1
1.2	Topical Scope of Fact-checking Sites	5
1.3	Manipulation Check	13
2	Distribution of Demographics across Experimental Conditions	15
3	Key Results in Tabular Form	16
4	Additional Analyses	17
4.1	Perception of Source Bias	17
4.2	Internal Reliability of Source Credibility Measures	19
4.3	Within-Party Heterogeneous Treatment Effects	20
5	Survey Recruitment and Questionnaire	22
5.1	Power Analysis	22
5.2	Survey Administration	23
5.3	Experimental Treatment	23
5.4	Post-treatment Questions	24
6	Preregistration	26
	References	27

*Postdoctoral Associate, Rockefeller Center for Public Policy and the Social Sciences, Dartmouth College,
Email: hwayong.shin@dartmouth.com.

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 [Republican] National Committee	4-R	What [Republicans] get wrong about the number of abortions over time [Democratic] National Committee
5-R	misrepresents the deportation rate of illegal immigrants	5-D	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

¹Snopes 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.

²Settle 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 genetics of dogs by Snopes, Kasprak 2016) and bioengineered artificial organs (a fact-check by Snopes, Kasprak 2018*b*). The order of headlines was randomized.

³Snopes 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.

⁴Scheufele 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.

⁵A 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

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 officials misleading statistics on gun violence	2-R	[Republican] Party officials misleading statistics on 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 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/state-ment, 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 excerpts 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	Giftng 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 conceal 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

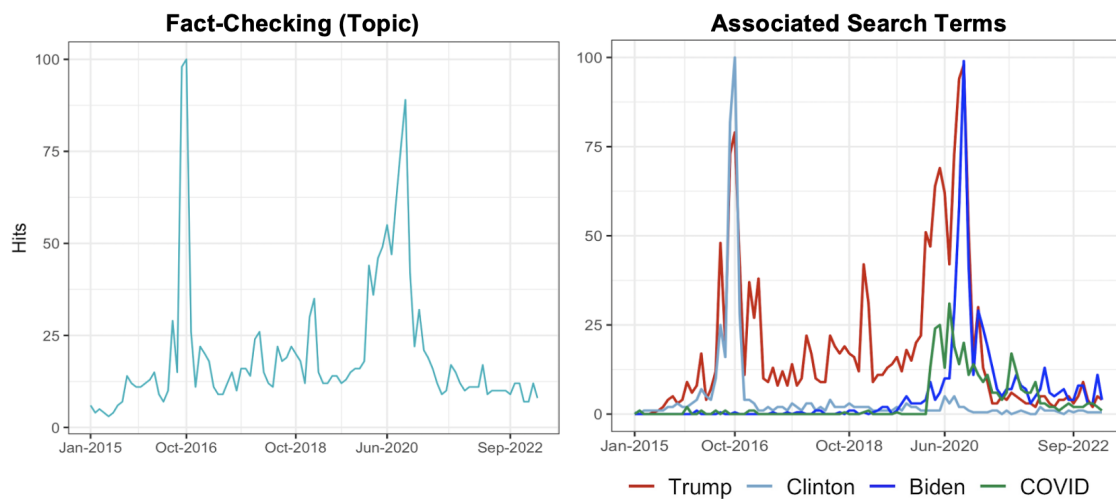
Date	Headline	Deck Summary	Topic	Challenge	Validate
09/02/22	Biden's Campaign-Style Distortions	Biden misstated statistics and misled on COVID, police, ACA, police	COVID, health care, violence	Democrat	
09/07/22	Trump Distorts Facts in Pennsylvania Rally	Trump's false, exaggerated, misleading statements 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 Is the Pandemic 'Over'? Biden Says So, But Scientists Say That's Up for Debate	Rep PAC's ad falsely claims Scholten dismissed the destruction	protest	Republican	
09/20/22	Johnson's False Claim about Barnes' Tax Plan	Biden's claim isn't supported by some scientists	COVID	Democrat	
09/22/22	NRSC's Misleading Attack on Warnock	Johnson's ad has false claim about Barnes' view	tax	Republican	
09/22/22	Q & A on Omicron-Updated COVID-19 Boosters	NRSC make misleading claims about Warnock's votes	election	Republican	
09/23/22	Biden's Misleading Claims About the Economic Recovery and Unemployment	booster vaccines targeting omicron	COVID		
09/23/22	Biden wrongly credited the Democratic COVID-19 relief bill	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 false 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					Total
	Partisan only (baseline)	Popular culture only	Science only	Partisan & Popular culture	Partisan & Science	
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					Total (%)
	Partisan only (baseline)	Pop culture only	Science only	Partisan & Pop culture	Partisan & Science	
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** (-0.03)	-0.10*** (-0.04)	-0.01 (-0.03)
Pop Culture	-0.04 (-0.03)	-0.13*** (-0.03)	-0.12*** (-0.03)
Science	0.09*** (-0.03)	-0.01 (-0.03)	0.03 (-0.03)
Partisan/Pop	-0.05* (-0.03)	-0.10*** (-0.03)	-0.08*** (-0.03)
Partisan/Sci	-0.02 (-0.03)	-0.06* (-0.03)	-0.02 (-0.03)
Pop x Rep	0.05 (-0.04)	0.07 (-0.05)	0.005 (-0.05)
Sci x Rep	-0.03 (-0.04)	0.04 (-0.05)	-0.03 (-0.05)
Par/Pop x Rep	0.04 (-0.04)	0.05 (-0.05)	-0.002 (-0.04)
Par/Sci x Rep	0.03 (-0.04)	0.08 (-0.05)	0.01 (-0.04)
Constant	0.43*** (-0.02)	0.48*** (-0.02)	0.48*** (-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 (Base: Partisan only)	Perceived news credibility		Perceived shared interest		Perceived expertise	
	Democrat	Republican	Democrat	Republican	Democrat	Republican
Pop Culture	-0.04 (-0.03)	0.01 (-0.03)	-0.13*** (-0.03)	-0.06* (-0.04)	-0.12*** (-0.03)	-0.12*** (-0.04)
Science	0.09*** (-0.03)	0.06* (-0.03)	-0.01 (-0.03)	0.03 (-0.04)	0.03 (-0.03)	0.004 (-0.03)
Par/Pop	-0.05* (-0.03)	-0.01 (-0.03)	-0.10*** (-0.03)	-0.05 (-0.04)	-0.08*** (-0.03)	-0.08** (-0.03)
Par/Sci	-0.02 (-0.03)	0.01 (-0.03)	-0.06* (-0.03)	0.02 (-0.04)	-0.02 (-0.03)	-0.01 (-0.03)
Constant	0.43*** (-0.02)	0.37*** (-0.02)	0.47*** (-0.02)	0.38*** (-0.03)	0.48*** (-0.02)	0.47*** (-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 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. * $p < .10$; ** $p < .05$; *** $p < .01$.

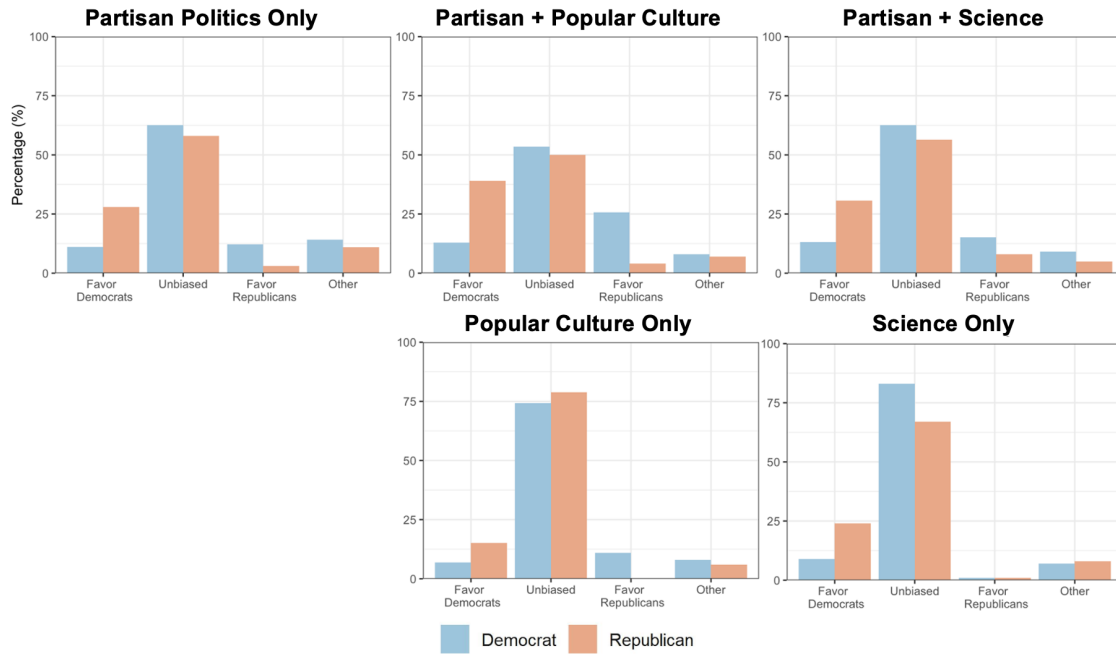
4 Additional Analyses

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

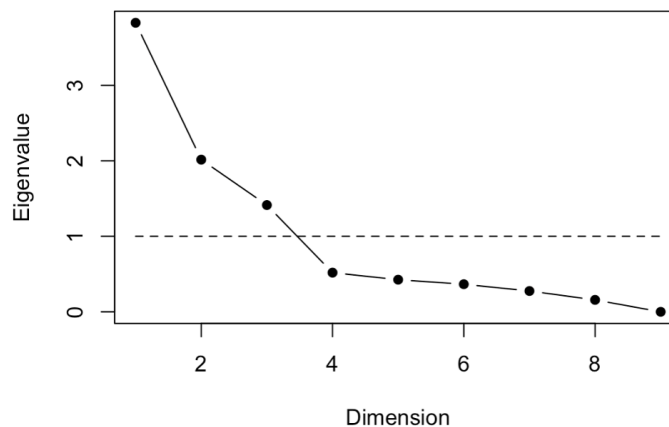


Table S17: Exploratory Factor Analysis of Source Credibility Items

Items	Factors		
	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.

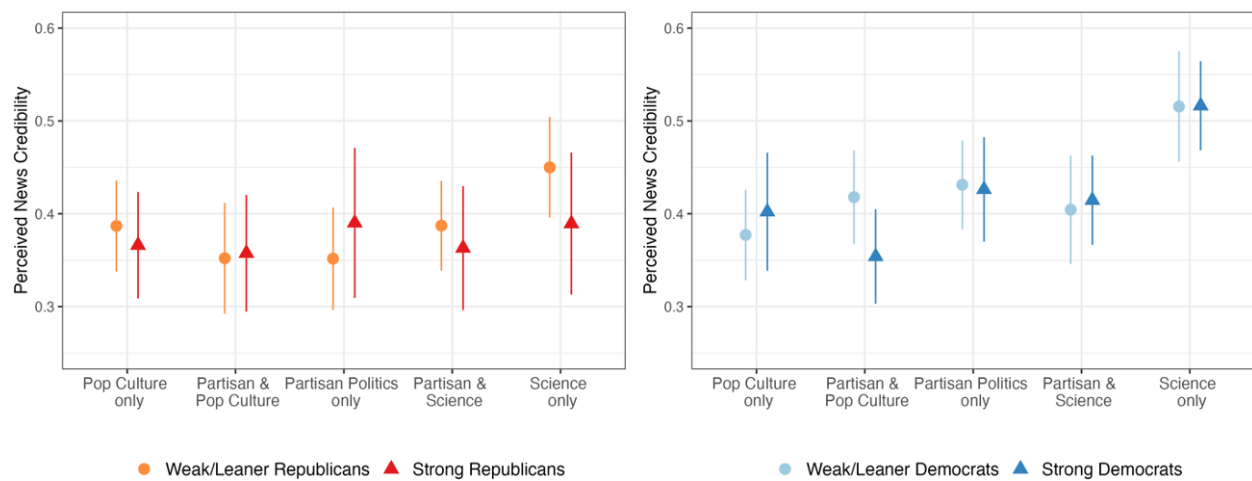
As a proxy of intraparty divisions,⁶ I used partisanship strength to identify strong Republicans ($n = 203$) versus weak or leaner Republicans ($n = 297$). I also subdivided Democrats into strong Democrats ($n = 287$) and weak or leaner Democrats ($n = 213$).

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

⁶This 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 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 ratio $N2/N1 = 1$, 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	<ul style="list-style-type: none"> • Effect size $d = .512$ • Control mean (group 1) = 0.432 • Treatment mean (group 2) = 0.306 • SD1 = SD2 = 0.246 	61
	Outgroup-adverse asymmetry	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Effect size $d = .845$ • Control mean (group 1) = 0.384 • Treatment mean (group 2) = 0.209 • SD1 = SD2 = 0.207 	23
	Outgroup-adverse asymmetry	<ul style="list-style-type: none"> • 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:

What Republicans get incorrect about the pregnancy rate among black teenagers

Democratic Party offers misleading statistics on gun violence

Are there more jobs in solar than oil in the US?

What Democrats get wrong about the number of abortions over time

Republican National Committee misrepresents the deportation rate of illegal immigrants

Has US defense spending decreased in recent years?

* *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 reporters⁷ 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.*

⁷This 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



CONFIDENTIAL - FOR PEER-REVIEW ONLY 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 analyzed 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.

References

- AP News. 2019. “Yada Yada Yada: Netflix to Air ‘Seinfeld’ Starting in 2021.” *AP News*. <https://apnews.com/article/7dc2688300154d1ebe91de9f2ef2413d>.
- AP News. 2020. “Tokyo Olympics Seem Sure to Happen – But In 2021, Not 2020.” *AP News*. <https://apnews.com/article/health-ap-top-news-olympic-games-tokyo-virus-outbreak-b7b71576eddb82422929f19d7fb32f44>.
- Aronow, Peter M., Jonathon Baron and Lauren Pinson. 2019. “A Note on Dropping Experimental Subjects who Fail a Manipulation Check.” *Political Analysis* 27(4):572–589.
- Bentler, P. M. 1990. “Comparative Fit Indexes in Structural Models.” *Psychological Bulletin* 107(2):238–246.
- Berinsky, Adam J, Michele F Margolis and Michael W Sances. 2014. “Separating the shirkers from the workers? Making sure respondents pay attention on self-administered surveys.” *American journal of political science* 58(3):739–753.
- Borenstein, Seth. 2019. “New Study Says Universe Expanding Faster and Is Younger.” *AP News*. <https://apnews.com/article/fac50d45a19f4239848b1712cfd22c36>.
- Brogan, Jacob. 2016. “Small Misunderstandings.” *Slate*. <https://slate.com/technology/2016/09/six-myths-about-nanotechnology-debunked.html>.
- Brown, Timothy A. 2015. *Confirmatory Factor Analysis for Applied Research*. Methodology in the social sciences second edition. ed. New York: Guilford Publications.
- Cattell, Raymond B. 1966. “The Scree Test For The Number Of Factors.” *Multivariate Behavioral Research* 1(2):245–276.
- Cooper, Christopher A, Scott H Huffmon, H Gibbs Knotts and Seth C McKee. 2024. “Intraparty Republican Factionalism as Identity in the Modern American South.” *American Politics Research* 52(1):30–40.
- Evon, Dan. 2019. “Is Disney’s Goofy Character Actually a Cow?” *Snopes*. <https://www.snopes.com/fact-check/goofy-cow-or-dog/>.
- Evon, Dan. 2020. “Are These America’s Favorite Fast Food Restaurants?” *Snopes*. <https://www.snopes.com/fact-check/americas-favorite-fast-food/>.
- Faul, Franz, Edgar Erdfelder, Albert-Georg Lang and Axel Buchner. 2007. “G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences.” *Behavior research methods* 39(2):175–191.
- Funk, Cary. 2015. “Chapter 1: Patterns Underlying Public Views About Science.” *Pew Research Center Science & Society*. <https://www.pewresearch.org/science/2015/07/01/chapter-1-patterns-underlying-public-views-about-science/>.

- Graves, Lucas. 2016. *Deciding What's True The Rise of Political Fact-Checking in American Journalism*. New York, NY: Columbia University Press.
- Groenendyk, Eric, Michael W Sances and Kirill Zhirkov. 2020. "Intra party polarization in American politics." *The Journal of Politics* 82(4):1616–1620.
- Hauser, David J., Phoebe C. Ellsworth and Richard Gonzalez. 2018. "Are Manipulation Checks Necessary?" *Frontiers in Psychology* 9:1–10.
- Kahan, Dan M. 2015. "Climate-Science Communication and the Measurement Problem." *Political Psychology* 36(S1):1–43.
- Kasprak, Alex. 2016. "Are Dogs Really 99.9% Wolf?" *Snopes*. <https://www.snopes.com/fact-check/dogs-99-percent-wolf/>.
- Kasprak, Alex. 2018a. "Can Drinking One Diet Drink a Day Triple the Risk of Dementia and Strokes?" *Snopes*. <https://www.snopes.com/fact-check/one-diet-drink-risks/>.
- Kasprak, Alex. 2018b. "Will Bionic Kidneys Replace Dialysis by 2020?" *Snopes*. <https://www.snopes.com/news/2018/03/16/will-bionic-kidneys-replace-dialysis-by-2020/>.
- Kohring, Matthias and Jörg Matthes. 2007. "Trust in News Media: Development and Validation of a Multidimensional Scale." *Communication Research* 34(2):231–252.
- LaMarre, Heather L., Kristen D. Landreville, Dannagal Young and Nathan Gilkerson. 2014. "Humor Works in Funny Ways: Examining Satirical Tone as a Key Determinant in Political Humor Message Processing." *Mass Communication and Society* 17(3):400–423.
- Mariano, Willoughby. 2011. "Metro Atlanta Groundhog Boasts More Accuracy than Punxsutawney Phil." *PolitiFact*. <https://www.politifact.com/factchecks/2011/feb/04/general-beauregard-beau-lee/metro-atlanta-groundhog-boasts-more-accuracy-punxs/>.
- Meeks, Lindsey. 2020. "Defining the enemy: How Donald Trump frames the news media." *Journalism & Mass Communication Quarterly* 97(1):211–234.
- Mutz, Diana C. 2007. "Effects of "In-Your-Face" Television Discourse on Perceptions of a Legitimate Opposition." *American Political Science Review* 101(4):621–635.
- Perugini, Marco, Marcello Gallucci and Giulio Costantini. 2018. "A Practical Primer to Power Analysis for Simple Experimental Designs." *International Review of Social Psychology* 31(1).
- Rahman, Grace. 2019. "Mobile Phone Base Stations Like This Do Not Pose a Radiation Risk." *Full Fact*. <https://fullfact.org/online/5g-sign-not-official/>.
- Scheufele, Dietram A and Nicole M Krause. 2019. "Science Audiences, Misinformation, and Fake News." *Proceedings of the National Academy of Sciences* 116(16):7662–7669.

- Settle, Jaime E. and Taylor N. Carlson. 2019. "Opting Out of Political Discussions." *Political Communication* 36(3):476–496.
- Shepherd, Katie. 2021. "After Spreading False Claims, Michigan Republican Wants to Register, Fine Fact-checkers: 'You Better Be Right'." <https://www.washingtonpost.com/nation/2021/05/12/michigan-matt-maddock-fact-checkers/> (Accessed on March 29, 2022).
- Snopes. 2019. "What Really Causes Home Field Advantage – And Why It's on the Decline." *Snopes*. <https://www.snopes.com/news/2019/11/01/what-really-causes-home-field-advantage-and-why-its-on-the-decline/>.
- Vallone, Robert P., Lee Ross and Mark R. Lepper. 1985. "The Hostile Media Phenomenon: Biased Perception and Perceptions of Media Bias in Coverage of the Beirut Massacre." *Journal of Personality and Social Psychology* 49(3):577–585.
- Wallace, Laura E., Duane T. Wegener and Richard E. Petty. 2020. "When Sources Honestly Provide Their Biased Opinion: Bias as a Distinct Source Perception With Independent Effects on Credibility and Persuasion." *Personality and Social Psychology Bulletin* 46(3):439–453.
- Wood, Thomas and Ethan Porter. 2019. "The Elusive Backfire Effect: Mass Attitudes' Steadfast Factual Adherence." *Political Behavior* 41(1):135–163.
- Worthington, Roger L. and Tiffany A. Whittaker. 2006. "Scale Development Research: A Content Analysis and Recommendations for Best Practices." *The Counseling Psychologist* 34(6):806–838.
- Yu, Rebecca Ping. 2016. "The Relationship between Passive and Active Non-political Social Media Use and Political Expression on Facebook and Twitter." *Computers in Human Behavior* 58:413–420.