*Article*

# Popularity or Partisanship? Cue Taking on Social Media Among Teens and Adults

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**Abstract**

The proliferation of social media and rising political polarization have radically changed the landscape of political information transmission. We know little about the effects of these changes in the media landscape on the process of political socialization, despite an expectation that the information adolescents encounter on social media may be particularly relevant to their political development. Canonical research on American political behavior concluded that teenagers do not have firm partisan attachments or ideological orientations. However, recent research suggests that rising polarization has induced teenagers to develop partisan attachments, opening questions about the heuristics they use to parse the information they encounter. In an age where the information environment demands skills for assessing source credibility, we ask: do teens differ from adults in their reliance on traditional party and source cues? What cues do teens use in the absence of strong party cues to assess political arguments? We conducted two studies: a study fielded on a sample of American teenagers ($n$ = 803) and an identical study fielded to a nationally representative sample of American adults ($n$ = 1000). We find that while both teenagers and adults find counter-attitudinal messages and partisan messages to be less credible, there is no interaction between those features. Overall, adults' and teenagers' political attitudes are affected by message cues in mostly the same way: neither source credibility cues alone nor higher popularity cues affect political attitudes, but counter-attitudinal and partisan messages move respondents in the opposite direction of the tweet's ideological message.

**Keywords**

polarization, political cues, social media, youth, political socialization

## Introduction

Before the advent of social media, most Americans learned about politics from television news programs on one of the established broadcast channels that strive for partisan balance or one of the 24-hour cable news networks with an identifiable partisan slant (Arceneaux & Johnson, 2013; Stroud, 2011). The news they received followed a familiar script, delivered by a known source. In this post-broadcast media environment, people largely controlled whether they were exposed to news, by seeking it out, or not (Prior, 2007). Those who sought out news gravitated toward sources they viewed as credible (Arceneaux et al., 2012).

The proliferation of social media changed political information transmission in ways that reduced people's control over exposure to political messages, including the source of those messages. Political information consumption on social media is affected by users' broader social networks, which for most people, includes acquaintances, old friends, influencers, and celebrities—many of whom may hold opposing political opinions. These diverse social networks increase the chance of encountering information with which users disagree (Anspach, 2017; Bail, 2022; Bakshy et al., 2015). Today, the information people encounter is curated and packaged by a diverse set of individuals, groups, and organizations; it is not limited to information provision from news organizations following a familiar script or adhering to norms of reporting. This increases the probability of encountering less credible information, such as mis- and disinformation (Guess, 2021; Munger, 2020).

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To develop informed opinions, this new media environment requires citizens to both correctly identify credible sources of information and ignore misinformation, regardless of whether the underlying ideological position of the source or message is consistent with their own. Yet we know little about the acquisition of these skills and the role that political socialization could play in their development. The unnatural task of sorting through partisan, ideological, news quality, and popularity cues is difficult enough for adults (e.g., Anspach, 2017; Pennycook & Rand, 2019), and it may be more so for teenagers with less experience upon which to draw (Stoker & Jennings, 2008). Combining the greater partisan and ideological heterogeneity of social media feeds with teenagers' heavy use of these platforms means teens are exposed to more diverse messaging relative to what older cohorts were exposed to in traditional media environments during their adolescence (Boutyline & Willer, 2017).

In this paper we focus on two related research questions. First, what is the relative influence of social versus traditional political endorsement cues on assessments of source credibility and policy attitudes? Second, how do these influences differ between teenagers and adults? Our preregistered hypotheses anticipated some similarities between the groups, but also that teenagers and adults would navigate social media posts about politics in different ways. Given their deeper experience with traditional news media and more established political attitudes and identities, we predicted that adults would be better at sorting out cues about partisanship and news quality than teenagers. In contrast, given their deeper experience with navigating social media, we expected teenagers would react more to other types of cues afforded by social media that are not found in traditional media, such as popularity cues.

We show that both teenagers and adults, to a similar degree, find political messages with which they disagree (counter-attitudinal messages) and partisan messages to be less credible. These unexpected findings square with recent research (published after our preregistration) that show that polarized political environments can strengthen and hasten the transmission of partisan identities from parent to child (Lay et al., 2022), and thus, in contrast with previous research on teenage cohorts (Stoker & Jennings, 2008), today's adolescents who identify with a political party dislike the opposing party just as much as adults (Tyler & Iyengar, 2022) and respond to partisan cues in the same way (Lay et al., 2022). Moreover, contrary to our expectations, neither teenagers nor adults appear to find tweets from news sources or tweets with more popularity cues to be more credible, nor do tweets from news sources or tweets with more popularity cues move policy attitudes.

## Credibility Assessments in Complex Information Environments

Assessing the credibility of a news source—and relatedly the effect of the information on policy attitudes—requires people to evaluate the degree to which the source has a partisan agenda and the degree to which a particular message from the source is consistent with their own political attitudes (Weber et al., 2012). The unique affordances of social media changed the environment in which people make these assessments (Messing & Westwood, 2014). In the social media world of network and algorithm-based information streams, the once-stark lines between opinion and news, and between social, political, and authoritative sources are increasingly blurred. When confronted with information about politics or policy, in addition to determining the credibility of cited information sources (when present) and the direction and issue content of the message itself, social media users must grapple with an additional dimension to the task of determining source credibility: they must also assess the credibility of the person who posted the message. Below we unpack our expectations about how the complexity of the information environment operates in tandem with age-related processes of political socialization and development to affect how these assessments are formed, identifying the ways in which teenagers should behave similarly or differently to adults as they process political information encountered on social media.

### *Traditional News and Trusted Source Cues*

Prior to the expansion of media choice, assessments of news source credibility were influenced by one's familiarity with the source, habitual use of the source in question, and the source's journalistic reputation for accurate and objective reporting (Hovland & Weiss, 1951; Metzger et al., 2003; Metzger et al., 2020; Zhao & Chaffee, 1995). During the "broadcast era" in the United States (1960s to the late 1990s), most Americans learned about politics from newspapers or one of the three major broadcast news networks (ABC, CBS, or NBC), which offered news programming at fixed intervals during the day (Prior, 2007). These news outlets followed the objectivity norm taught in journalism schools, which held that news reporting should strive to be politically neutral and non-partisan (Hamilton, 2004). In this context, audiences had a relatively straightforward heuristic to judge the credibility of news sources: mainstream news outlets were deemed more credible than other political information sources (e.g., Druckman, 2001), especially if the source, such as a newsletter from an interest group, party, or campaign, had a political motive (Lupia, 1994). Moreover, fewer news outlets in the low-choice media environment meant that people were more familiar with each outlet, enabling easy assessment of their credibility.

In contrast, today's high-choice media landscape features both a proliferation of platforms through which individuals can access news (Collier et al., 2021; Nelson & Lei, 2018) as well as greater variability in the commitment to objectivity norms (Munger, 2020). Such variation makes it more difficult for individuals to be familiar with each source let alone form unique impressions of every source's credibility. Despite

these shifts in the media landscape, we expect legacy media will at least maintain its brand recognition, and thus we anticipate that stories attributed to established mainstream sources should lend credibility to social media posts relative to those that are not (**Trusted Source Hypothesis**).

For more than 70 years, scholars have observed the tight and interconnected relationship between evaluations of source credibility and policy attitudes: the more credible the source, the more likely people are to adopt the message's recommendation (e.g., Druckman, 2001; Jerit & Zhao, 2020; Zaller, 1992). Our expectations for the effect of social media posts on policy attitudes mirror those outlined for source credibility. We anticipate that social media posts that reference mainstream news sources will move policy attitudes in the direction of the political message.

## *Information Congeniality*

With the arrival of cable and the internet, but before the social media era, people were in a world of expanding media choice – with more channels, more entertainment content, and more variations of news. This high choice setting meant that people were largely responsible for seeking out news content—or avoiding it altogether—by tuning into a particular program or channel, buying a newspaper, or navigating to a particular webpage.[1] Because people tend to find sources and messages with which they agree (pro-attitudinal) to be more credible than those with which they disagree (counter-attitudinal) (Ladd & Podkul, 2018; Lodge & Taber, 2013; Petty & Cacioppo, 1984), the high-choice environment enabled news audiences to select mostly pro-attitudinal sources or messages for consumption (Iyengar & Hahn, 2009; Stroud, 2011).

The arrival of social media disrupted consumer choice once again. Social networking platforms wrought changes in the manner, frequency, and agency with which people encounter disagreeable opinions. While some political observers initially registered concerns that the digital landscape would lead to "filter bubbles" and "echo chambers" where politically homogeneous social networks encourage audience extremity by providing constant attitude reinforcement via peer-to-peer sharing and re-sharing information (e.g., Pariser, 2011; Sunstein, 2018),[2] more recent research reveals that social networks are not as politically homogeneous as once feared (Cargnino & Neubaum, 2021).[3] People are regularly exposed to cross-cutting ideological information, even if that exposure occurs less often than exposure to pro-attitudinal content (Anspach, 2017; Bail, 2022; Bakshy et al., 2015).

Individuals are more likely to encounter information diversity on social media because the agency they can exert over that exposure is more limited than it is on traditional news media platforms. Though the high-choice media setting allows users to select among many social media platforms, many (if not most) of these platforms limit user choice once on the site. They allow for choice in the construction of social networks (i.e., selecting people to follow and accepting followers), but absent taking proactive steps to avoid unwanted content from individuals in the network — like blocking, unfriending, or unfollowing — the choice over exposure to feed content is relatively limited (Settle, 2018) and preferences only indirectly affect exposure via algorithmic filtering (Thorson et al., 2021). Moreover, most people do not typically seek out political information on social media sites, even if they regularly encounter it there (Lelkes et al., 2017; Settle, 2018). Instead, they tend to use it to learn about the personal lives of their friends, sports, or entertainment. Yet, because the individuals in self-selected networks may decide to post information about politics — for example, posting a news article with their own commentary or simply opining about their views on a particular controversy — platform users may be exposed to political content on social media platforms even when they are not seeking it out.

Incidental exposure to cross-cutting information often motivates partisans to subsequently seek out and share attitude-congruent content instead of engaging with new information (Weeks et al., 2017). This suggests that despite people's increased exposure to attitude-incongruent information on social media, they will still view pro-attitudinal messages as more credible. We expect social media users to find counter-attitudinal social media posts to be less credible than pro-attitudinal messages (**Counter-attitudinal Hypothesis**), and that counter-attitudinal social media posts will move respondent beliefs/policy attitudes in the opposite direction of the message.

## *Political Socialization and Partisan Cues*

Research on social media in the US consistently finds that people evaluate messages from out-partisans to be less persuasive and credible than those from in-partisans (e.g., Peterson & Iyengar, 2021; Van Bavel & Pereira, 2018). Yet, all of this research examines the behavior of adults, who tend to have crystalized partisan identities. Seminal research on political socialization and the development of partisan identities over the life cycle (e.g., Converse, 1969) suggests young people are less likely to have fully formed and firmly held partisan identities before their 20's and 30's. At the same time, that and other research also suggests political development is a complex interplay between developmental processes at the individual-level and cohort effects born from features of the political environment when people come of political age.

On the one hand, individuals are less open to new information and change over time, which means that partisan-ideological constraint tends to increase with age; older people should have stronger and more ideologically coherent partisan attachments than young people, and polarization should be more acute among age cohorts as they progress through the political life cycle. On the other hand, the specific age cohorts

in which people are born exert significant influence because the political context in place at the time young people first come of political age is particularly influential on political identity. For example, youths who came of political age during the Vietnam War or 9/11 are likely to exhibit very different patterns of partisan identity and development over time relative to those entering the political scene during the Reagan years (Converse, 1969; Stoker & Jennings, 2008).

Moreover, a great deal of the seminal research on political socialization and the development of partisan attitudes took place during a time in which political polarization was not as stark as it is today – and as it has been – during the years since digital and social media arrived. It nevertheless acknowledges the socializing impact polarization is likely to have. A significant body of research on motivated reasoning suggests polarized contexts affect the degree to which partisan reasoning governs both information seeking and processing (Druckman et al., 2013). Taking all this into account, it is difficult to predict how the more polarized context of recent years shaped the development of partisan attitudes among teens. Our expectation regarding the influence of partisan cues is thus straightforward for adults, but less clear for adolescents.

The Michigan School Model, which remains the standard model of partisanship in the study of US politics, presumes that parents transmit their partisan attachment to their children, who develop a partisan identity during adolescence (Campbell et al., 1960; see also Hyman, 1959). Longitudinal studies conducted in the 1970s, 1980s, 1990s, however, suggested that while most adolescents shared their parents' partisan identities, these identities did not fully crystalize until their late-20s (Alwin et al., 1991; Jennings & Markus, 1984; Jennings & Niemi, 1981; Niemi & Jennings, 1991; Stoker & Jennings, 2008). These findings imply that people learn about the parties while they are young and are influenced by family partisan identities in early years, but that familial influence gives way to the influence of friends and other acquaintances during early adulthood. Throughout early adulthood, people continue to learn about the parties, both through political experiences and through improved understanding that comes with educational advancement (Sears & Valentino, 1997), which correlates with a "declining openness to change beyond young adulthood, an increase in party-issue constraint as age advances, and cohort-specific responsiveness to changes in the partisan environment" (Stoker & Jennings, 2008, p. 619). As a result, a general conclusion from political socialization research is that the stability, strength, and constraint of party attachments increase over the course of a political lifetime (Jennings & Markus, 1984; Niemi & Jennings, 1991).

With this classic research on socialization in mind, and in line with recent work showing adults and teenagers will respond to partisan cues in similar ways (Lay et al., 2022; Tyler & Iyengar, 2022), we preregistered the expectation that adults and teenagers should find explicitly partisan social media posts, especially counter-attitudinal ones, to be less credible than implicitly partisan messages (**Partisan Cues Hypothesis**). As a result, their policy attitudes should be less likely to move in response to explicit out-party cues.

That said, on the presumption that teenagers have more malleable partisan identities, and possibly hold a dim view of partisanship in light of their political socialization occurring in a different environment — an environment in which partisanship and media bias is much more hostile and salient, we hypothesize that teenagers will generally find explicitly partisan social media posts to be even less credible than adults (**Disaffected Youth Hypothesis**) than those without explicit party cues. Even if partisan identities are not more malleable, the timing of teens' socialization could yield an overall distaste for polarized and negative forms of partisanship, and discount partisan messages accordingly. Again, our expectations for policy attitudes mirror those for source credibility.

However, research also stresses the formative influences of major life events and political contexts on the development of partisanship (Hobbs, 2019). Recent research published after our preregistration suggests that the growing partisan polarization among young adults identified by Stoker and Jennings (2008) in the late 1990s extends to current day teenagers. Tyler and Iyengar (2022) compared a sample of adolescents living in Wisconsin in 1980 to a national sample of adolescents collected in 2019 and found that current day adolescents dislike their out-party much more than adolescents in 1980, mirroring the secular increase in affective polarization among adults over the same period of time. Supporting this finding, Lay et al. (2022) find that some children aged 6–12 adopt partisan identities in similar ways to other social identities, and that this partisanship is associated with more negative affective evaluations. Because affective polarization can cause adults to perceive online messages from the out-party as less credible (Pedersen and Iyengar 2021; Van Bavel & Pereira, 2018), it is possible that today's teenagers will evidence similar partisan reactions as adults, contrary to the Disaffected Youth Hypothesis.

### *Do Social Endorsements Have Differential Influences?*

Younger age cohorts disproportionately use and rely on social media for news and political information (Shearer & Mitchell, 2021), as well as information on products and services (De Jans et al., 2020; De Veirman et al., 2019). Previous research – and concerns about the impact so-called social media influencers on adolescents - suggests the importance of investigating the relative influence of political and social source cues among young people on digital and social media (Thorson, 2014; Vraga et al., 2015). Our final line of inquiry investigates the possibility that teens' political socialization in our contemporary media environment makes them differentially receptive to the kinds of social cues that uniquely appear on social media.

The many changes in how information is shared and displayed on social media platforms not only affect how people encounter new information, but also the way in which people receive and interact with information altogether. Both the affordances of social media platforms and the purposes behind those affordances mean that user expectations, behaviors, experiences, and reactions are very different than those of direct search-based visits to familiar news websites or the perusal of aggregated headlines on Google or Yahoo News (Collier et al., 2021). When people visit social media, it's primarily with social intentions in mind. They may not react to political information in the same way they might if they were to encounter it in an overtly political information context (Collier et al., 2021; Settle, 2018). For example, in their study of information exposure on social media, Messing and Westwood (2014) find that social endorsements or popularity-based cues – the volume of likes, retweets, etc. from the network – can outweigh traditional source cues (i.e., the name of the news organization) in decisions about whether to attend to, trust, or accept political information. When people see that many people in their networks like or share a message, they are more inclined to select it, even if it comes from an out-party source. In other words, despite our general expectation that most people view counter-attitudinal (out-party) messages as less credible than pro-attitudinal (in-party) messages, as discussed in the last section, high popularity metrics may increase perceptions of credibility even when traditional source cues such as news brand suggest a message is counter-attitudinal.

To the extent that teenagers' partisan identities are more malleable than adults, we expect that relative to adults, teenagers should be more open to a wider array of information sources and more receptive to changing their attitudes in response to what they encounter. We expect this greater openness to opposing voices to especially be the case in the social media context where teenagers' credibility assessments may be *more* susceptible to influence from popularity cues (De Jans et al., 2020; De Veirman et al., 2019) because they are at a stage in life where needs for social acceptance are more valuable (Castro et al., 1987; Eiser & Van der Pligt, 1984), and because teens tend to engage more with social media features (Chang et al., 2015; Glynn et al., 2012; Hayes et al., 2015). These dynamics are certainly at play for adults, too (Anspach, 2017; Messing & Westwood, 2014), but adults should respond differently based on their relatively less pressing need for social acceptance (Castro et al., 1987; Eiser & Van der Pligt, 1984), and the higher weight they place on partisanship. In the presence of explicit partisan cues, the primacy of popularity cues is lessened for adults for whom party attachments are fully formed (Peterson & Iyengar, 2021). Therefore, while we expect all respondents to find social media posts with high popularity metrics to be more credible than those with low popularity metrics (**Popularity Hypothesis**), we expect teenagers to weigh popularity cues more heavily in their assessments of credibility relative to adults (**Teen Influencer Effect Hypothesis**). Similarly, policy attitudes will be more congruent with the message's stated position when the social media post has high popularity metrics, and this effect also will be greater among teenagers.[4]

## Research Design and Methods

To test our preregistered expectations summarized in Table 1, we designed and fielded a survey experiment with two independently drawn samples—a sample of teens aged 13–17 and a sample of adults[5]—through the Time Share Experiments for the Social Sciences (TESS) using the AmeriSpeak Panel.[6] Consistent with the TESS research model, our studies were fielded with those of two other funded research groups. The study was fielded to the two samples nearly simultaneously in December 2020 through March 2021.[7] The median response time in the teen study was 15 minutes to complete the survey and the median response time for the adult sample was 11 minutes. There were 803 subjects in the teen study and 1000 subjects in the adult study. Each sample was weighted to be representative of the US population for the respective age groups. Table 2 presents the descriptive details of each sample (survey weights included).

The most notable difference across the two samples is that when compared to the full adult sample, the teenager sample was less white (52% vs. 63%) and less conservative (27% vs. 33.6%) but also less likely to be strong Democrats (12% vs. 17%) and more likely to be weak Democrats (20% vs. 14%). This descriptive pattern supports the view that teenagers have meaningful political opinions and preferences but are less set in their partisan attachments.

### *Experimental Procedure*

Our core Experiment 2 (pro-attitudinal/counter-attitudinal social media post) × 2 (explicitly/implicitly partisan social media post) factorial design measures the extent to which subjects found counter-attitudinal and/or explicitly partisan messages to be credible and the messages' effect on policy attitudes. We constructed the mock social media content by simulating a series of posts on the social media platform Twitter. We presented each participant with four types of "tweets" and we constrained the randomization such that all subjects observed each type of message from the 2 × 2 matrix (e.g., one pro-attitudinal/implicit tweet, one pro-attitudinal/explicit tweet, one counter-attitudinal/implicit tweet, and one counter-attitudinal/explicit tweet).[8]

We exposed participants to more than one social media post in order to create a range of possible treatments and minimize the possibility that a particular issue, source, or post wording would drive the results (e.g., Fong & Grimmer, 2023). To further strengthen the generalizability of our study, we created liberal and conservative tweets on four different topics that would have been salient to both adults and teenagers at the time of our study: school prayer, minimum

**Table 1.** Hypotheses.

| | |
|---|---|
| Trusted source | Stories attributed to established mainstream sources add *credibility* to social media posts and move *policy attitudes* in the direction of the message relative to those that are not. |
| Counter-attitudinal | Counter-attitudinal social media posts will cause both adults and teenagers to give lower *credibility assessments* and express less congruent *policy attitudes*. |
| Partisan cues | Explicit partisan cues in social media posts, especially counter-attitudinal ones, will cause both adults and teenagers to give lower *credibility assessments* and express less congruent *policy attitudes*. |
| Disaffected youth | Explicit partisan cues in social media posts will cause teenagers to give even lower *credibility assessments* and express less congruent *policy attitudes* than adults. |
| Popularity | Social media posts with high popularity cues will cause both adults and teenagers to give higher *credibility assessments* and express more congruent *policy attitudes*. |
| Teen influencer effect | Social media posts with high popularity cues will cause teenagers to give even higher *credibility assessments* and express more congruent *policy attitudes* than adults. |

**Table 2.** Descriptive Statistics of Teen and Adult Samples.

| | Teen Sample | Adult Sample |
|---|---|---|
| *N* | 803 | 1000 |
| Female | 49.6% | 51.5% |
| Age | 13 = 15.6%<br>14 = 23.9%<br>15 = 19.7%<br>16 = 23.6%<br>17 = 17.3% | Under 30 = 13.1%<br>30 – 39 = 23.1%<br>40 – 49 = 12.9%<br>50 – 59 = 16.0%<br>60 – 69 = 22.1%<br>Over 70 = 12.8% |
| White | 52.4% | 62.8% |
| Partisanship | Strong Democrat = 11.5%<br>Weak Democrat = 19.8%<br>Lean Democrat = 10.2%<br>Independent = 25.9%<br>Lean Republican = 7.0%<br>Weak Republican = 11.5%<br>Strong Republican = 12.9% | Strong Democrat = 17.3%<br>Weak Democrat = 13.9%<br>Lean Democrat = 10.8%<br>Independent = 19.8%<br>Lean Republican = 9.7%<br>Weak Republican = 15.1%<br>Strong Republican = 12.6% |
| Ideology | Very liberal = 6.8%<br>Liberal = 13.0%<br>Somewhat liberal = 12.0%<br>Moderate = 39.1%<br>Somewhat conservative = 9.8%<br>Conservative = 10.7%<br>Very conservative = 6.4% | Very liberal = 6.4%<br>Liberal = 11.7%<br>Somewhat liberal = 10.7%<br>Moderate = 36.6%<br>Somewhat conservative = 14.3%<br>Conservative = 12.0%<br>Very conservative = 7.3% |

wage, police shootings, and marijuana legalization. Implicitly partisan tweets made no reference to a political party, while explicitly partisan tweets connected liberal tweets to the Democratic Party and conservative tweets to the Republican Party.[9] We also wrote the tweets in the informal and provocative style that is consistently found on social media platforms.

To assign participants to pro- or counter-attitudinal tweets, we asked them about their general attitudes about the four issue areas in the beginning of the survey using a 4-point Likert scale (strongly agree; somewhat agree; somewhat disagree; strongly disagree) that deliberately pushed them to pick a side for the following four statements:

(1) It should be legal for adults to buy and use marijuana.
(2) The federal minimum wage should be raised to $15 an hour.
(3) Police are too quick to shoot suspects.
(4) Teachers and principals can lead students in prayer at public schools.

Figure B2 of Appendix B shows the distribution of general attitudes about the four issue areas in both samples. Overall, the differences between the two samples are marginal; however, relative to adult participants, the teen participants are less supportive of marijuana legalization, more supportive of increasing the minimum wage, and less

supportive of the police. On the issue of prayer in schools, the teen subjects appear slightly less polarized than their adult counterparts. If the randomly assigned policy position expressed in the tweet agreed with the respondent's pre-study preference, it was coded as pro-attitudinal. If the tweet espoused the position contrary to the respondent's preference, it was coded as counter-attitudinal. Table 3 displays the wording of the tweets and describes our coding rules.

Immediately after these pre-treatment questions, respondents viewed the experimental tweets and were asked to evaluate each tweet's credibility and persuasiveness. No distractor tasks were included between the pre-treatment questions, tweet exposure, and post-treatment evaluations. While this design minimizes cognitive fatigue, it may bias results toward the null by priming respondents to think about their attitudes immediately before exposure to the tweets (however, the significant effects observed in our study underscore the robustness of the experimental design despite this potential limitation). A detailed layout of the survey and embedded survey experiment is provided in Appendix A.

We then layered two additional experiments on our factorial design to better understand how teens and adults process political information on social media given the presence of additional cues that could affect credibility assessments and policy attitudes. Both of these experiments involved manipulating additional components of the tweets.[10] The first add-on experiment varied the source of the re-tweet, either from an unknown Twitter user or from a mainstream news source (one of four sources: the AP wire service, the Reuters service, UPI, or USA Today). To isolate the effect of the source rather than the content of the two, the text of the tweets was identical and only the attribution changed across conditions. The text of these re-tweets was drawn from actual posts by news outlets and lightly edited to credibly come from a personal account as well. The second add-on experiment varied the extent to which a tweet was shared, liked, and referenced in comments.[11] In total, three elements of each tweet were randomized: the tweet's topic, source, and engagement.

Figure 1 presents an example of the stimuli with the component parts labeled. We include the full set of stimuli in Appendix A and a balance check in Figure B1 of Appendix B.

**Table 3.** Wording and Coding Rules of Tweet Stimuli.

| Topic | Ideology of Tweet | Coding Question- How Much do you Agree or Disagree | Pro-Attitudinal | Counter-Attitudinal |
|---|---|---|---|---|
| Police | Liberal: The police shoot unarmed people with no fear of punishment. [Democrats/I] stand with protestors who hold the men in blue accountable when they abuse their power. | With protesters who say that the police are too quick to shoot suspects? | 1 = strongly agree, 2 = agree | 3 = disagree, 4 = strongly disagree |
| Police | Conservative: The police have a hard job and risk their lives every day. [Republicans/I] stand with our men in blue and support them in their work. | With protesters who say that the police are too quick to shoot suspects? | 3 = disagree, 4 = strongly disagree | 1 = strongly agree, 2 = agree |
| Prayer | Liberal: I can't believe that prayer is allowed in some schools! [Isn't our nation founded/Democrats know our nation founded] on religious liberty and the separation of church and state? | With the idea that teachers and principals can lead students in prayer at public schools? | 3 = disagree, 4 = strongly disagree | 1 = strongly agree, 2 = agree |
| Prayer | Conservative: I can't believe that prayer is forbidden in most schools! [Isn't our nation founded/ Republicans know that our nation is founded] on religious liberty and Christian principles? | With the idea that teachers and principals can lead students in prayer at public schools? | 1 = strongly agree, 2 = agree | 3 = disagree, 4 = strongly disagree |
| Marijuana | Liberal: Let's legalize it!!!! Weed is not dangerous, and I'm glad that [Democrats/people] are finally willing to say it. | That it should be legal for adults to buy and use marijuana? | 1 = strongly agree, 2 = agree | 3 = disagree, 4 = strongly disagree |
| Marijuana | Conservative: Stop with the lies that weed is safe. There's a reason it was illegal! I'm glad there are [Republicans/people] willing to stand up for what is right. | That it should be legal for adults to buy and use marijuana? | 3 = disagree, 4 = strongly disagree | 1 = strongly agree, 2 = agree |
| Minimum wage | Liberal: It's time to make the minimum wage a living wage. Retweet if you support the [Democratic] plan to #RaisetheWage. | That the federal minimum wage should be raised to $15 an hour? | 1 = strongly agree, 2 = agree | 3 = disagree, 4 = strongly disagree |
| Minimum wage | Conservative: Do you wanna destroy jobs and wreck the economy? Raise the minimum wage. Retweet if you want to join [Republicans/me] in stopping the plan to #RaiseTheWage | That the federal minimum wage should be raised to $15 an hour? | 3 = disagree, 4 = strongly disagree | 1 = strongly agree, 2 = agree |

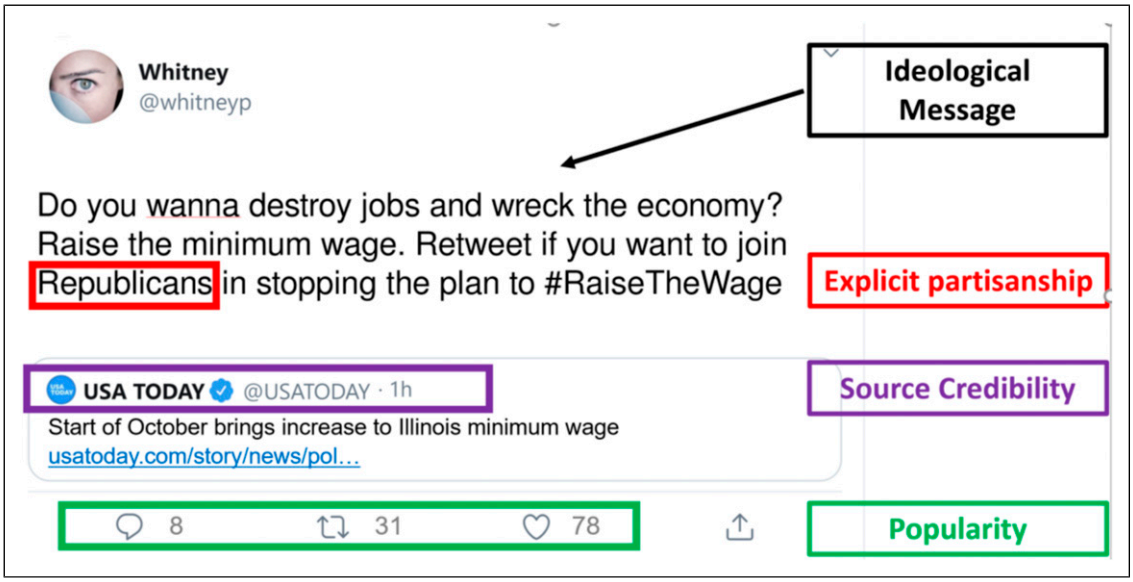


**Figure 1.** Treatment stimulus — example tweet.

### *Outcome Measures*

Our primary outcome variable in the experiment was the subject's perception of the credibility of the tweet. We assessed this using two questions, both on an ordinal (1–5) scale. We first asked, "How accurate is the argument in this tweet?" (1 = not at all accurate, 2, 3, 4, 5 = very accurate). We then asked "How convincing is the argument in this tweet?" (1 = not at all convincing, 2, 3, 4, 5 = very convincing). These adjectives (accurate, convincing) were selected in conjunction with representatives from NORC who specialize in reading-level appropriate survey question wording. To construct our dependent variable—credibility—we took the average of the subjects' responses to the two questions.[12]

We also asked respondents a question related to a secondary outcome of interest: policy attitudes. Respondents were asked to place themselves on a 10-point scale regarding the four issues we ask about after reading the tweet. Since tweets are randomly assigned to advocate for the liberal or conservative position, the coding of our dependent variable depends on the treatment assignment. So, instances where the tweet advocates for the liberal position, the scale will run from 1 to 10 where 10 is the liberal position. In conditions where the tweet advocates for the conservative position, the scale will run from 1 to 10 where 10 is the conservative position. Thus, positive coefficients on variables will mean that the tweet successfully shifted a respondent's opinion on the subject in the direction of the tweet.

### *Modelling Strategy*

Following our preregistered pre-analysis plan, we estimated an OLS regression model, shown below, that accounted for the experimental conditions in the 2 × 2 matrix (i.e., *pro-attitudinal/con-attitudinal* by *explicitly/implicitly partisan*), plus the add-on conditions (*mainstream news source* and *popularity cues*). Because we asked respondents to evaluate the tweets in all four policy areas, we include two-way fixed effects for the tweet topic or policy area ($\delta_d$) and for each participant ($\eta_i$). Including fixed effects for both policy areas and participants obviates concerns that our results are driven by a particular message.[13] We estimated separate models for teenagers and adults as well as separate models where the dependent variable (Y) measured credibility or policy attitudes.

$$\mathrm{Y_{i,d}} = \mathrm{b_0} + b_1 \mathrm{T_{con_{i,d}}} + b_2 T_{party_{i,d}} + b_3 T_{conXparty_{i,d}} + b_4 T_{News_{i,d}} + b_5 T_{Popular_{i,d}} + \delta_d + \eta_i + \mathrm{e_{i,d}}$$

## Results

As shown in Table 4, we find mixed support for our hypotheses regarding the effects of the experimental conditions on credibility assessments and policy attitudes. First, we find negligible support for the **Trusted Source Hypothesis**. Whether a tweet cites a reliable news source does not meaningfully (0.004 for adults and 0.030 for teenagers) or significantly ($p < .906$ for adults and $p < .588$ for teenagers) affect credibility assessments, nor does it meaningfully (0.145 for adults and 0.076 for teenagers) or significantly ($p < .22$ for adults and $p < .65$ for teenagers) move adults or teenagers to support the policy position supported by the tweet. Ideological messages that cite unknown Twitter users do not elicit lower credibility assessments or less congruent policy attitudes than ideological messages that cite the AP wire service, the Reuters service, UPI, or USA Today.

**Table 4.** The Effect of Political Cues on Credibility Assessments and Policy Attitudes.

| | Dependent Variable | | | |
|---|---|---|---|---|
| | Credibility Assessments | | Policy Attitudes | |
| | Adult | Teen | Adult | Teen |
| | (1) | (2) | (3) | (4) |
| Counter | −1.123 *** (0.051) | −1.205 *** (0.060) | −1.167 *** (0.161) | −0.899 *** (0.176) |
| Party | −0.212*** (0.049) | −0.133** (0.056) | 0.035 (0.154) | 0.181 (0.165) |
| Counter*party | 0.079 (0.073) | 0.049 (0.085) | −0.209 (0.229) | −0.705*** (0.249) |
| News | 0.004 (0.038) | 0.030 (0.056) | 0.145 (0.118) | -0.076 (0.163) |
| Engagement | −0.022 (0.038) | 0.048 (0.044) | −0.125 (0.119) | −0.151 (0.128) |
| Observations | 3921 | 3134 | 3930 | 3137 |
| $R^2$ | 0.271 | 0.244 | 0.048 | 0.044 |
| Adjusted $R^2$ | 0.020 | −0.015 | −0.277 | −0.284 |

We find strong support for the **Counter-attitudinal Hypothesis**. Counter-attitudinal messages are perceived to be substantially less credible than pro-attitudinal messages by adults (−1.123, which is 90% of a standard deviation in the credibility outcome) and teenagers (−1.205, which is 97% of a standard deviation in the credibility outcome), and cause substantially less congruent policy attitudes among adults (−1.167, which is 36% of a standard deviation in the policy attitudes outcome) and teenagers (−0.899, which is 28% of a standard deviation in the policy attitudes outcome). The sizes of these effects are statistically indistinguishable between the adult and teenager samples.[14]

Next, and providing mixed support for the **Partisan Cues Hypothesis**, we find that adults and teenagers assess explicitly partisan messages as less credible than implicitly partisan messages. However, there is not a significant interactive effect when adults or teenagers receive explicitly partisan and counter-attitudinal messages ($p < .283$ and $p < .562$ respectively). Explicitly partisan cues lead to lower credibility assessments regardless of whether the message is counter-attitudinal or pro-attitudinal. As shown in Figure 2, counter-attitudinal messages that include an explicit party cue receive slightly lower credibility assessments (−1.257 for adults and −1.289 for teenagers) than counter-attitudinal messages without an explicit party cue (−1.123 for adults and −1.205 for teenagers). There are not meaningful differences in the effect of explicit party cues on adult or teenager credibility assessments—providing little support for the **Disaffected Youth Hypothesis**.

In contrast to the **Partisan Cue Hypothesis**, we do not find that explicitly partisan messages move respondents to express less congruent policy attitudes relative to implicitly partisan messages. As shown in Figure 3, there is suggestive evidence that adults' and teenagers' policy attitudes move closer to the message (0.035 and 0.181 respectively) when the message contains an explicit partisan cue. Counter-attitudinal messages with an explicit party cue, on the other hand, significantly ($p < .005$) move teenager policy attitudes in the expected direction (away from the position stated in the message)—in support of the **Disaffected Youth Hypothesis**. Though teens don't express lower credibility ratings in the presence of explicit party cues, messages with explicit party cues yield something like a backlash effect among teens. Although the effect is in the same direction, there is not a corresponding significant ($p < .360$) interaction effect on adult policy attitudes. Despite these differences, the size of the effects does not substantially differ between the adult and teenager samples (−1.341 for adults and −1.423 for teenagers).

The effects (or lack thereof) of popularity are less ambiguous. For both the adult and teenager samples the effect of tweet popularity did not improve the perceived credibility of a tweet (−0.022 and 0.048, respectively). Thus, the **Popularity** and **Influencer Effect Hypotheses** are not supported by these data when it comes to credibility. This null finding is reassuring because it suggests that while popular tweets with high engagement may be more likely to be seen, users will not find them more credible on the basis of high popularity metrics alone. In line with the previous analyses, a highly engaged-with tweet is not more likely to move political attitudes towards or away from the tweet's ideological message. Overall, adults' and teenagers' political attitudes are affected by message cues in mostly the same way.

We include two alternative specifications of these models in Appendix B. First, we estimate a triple interaction between affective polarization—operationalized as the difference in feeling thermometers for the two parties—and the existing interaction between counter-attitudinal and explicitly partisan messages. The results from these models are shown in Table B2 of Appendix B.[15] We find that affectively polarized adults and teenagers find pro-attitudinal messages to be more credible and counter-attitudinal messages to be less credible than their non-polarized counterparts. Similarly, affectively polarized adults move their policy attitudes in the direction of

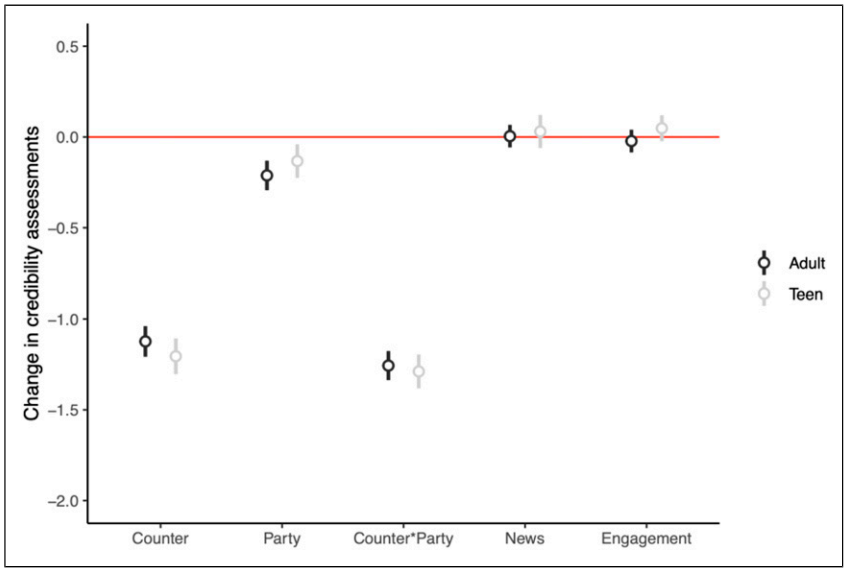


**Figure 2.** Interactive effect of counter-attitudinal partisan messages on credibility assessments.

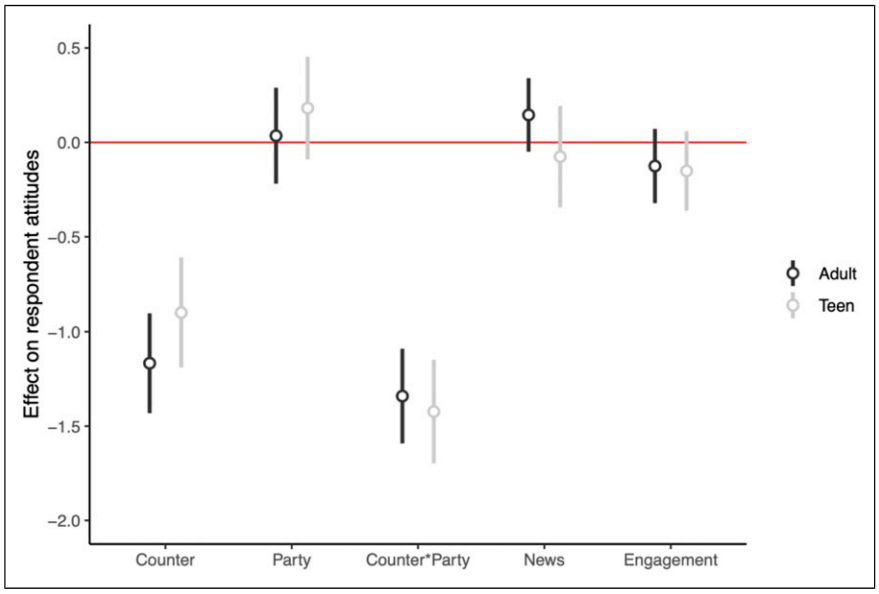


**Figure 3.** The interactive effect of counter-attitudinal and partisan messages on policy attitudes.

pro-attitudinal messages; however, affectively polarized teenagers are not moved closer by pro-attitudinal messages. Overall, adults and teenagers exhibit similar levels of affective polarization, and they respond in a polarized manner to counter- and pro-attitudinal messages.

Second, we explore whether explicit party cues have different effects on credibility assessments and policy attitudes when they match a respondent's party versus when they reference the opposing party. Because we are interested in the effect of explicit party cues when they match or do not match a respondent's party ID, we drop true independents from this analysis. The results are presented in Table B3 of Appendix B. Adults and teenagers view counter-attitudinal messages with an explicit party cue that matches their partisanship as more credible than plainly counter-attitudinal messages. But, when the explicit party cue is of the opposing party, adults and teenagers assess the counter-attitudinal message as less credible than counter-attitudinal messages without the accompanying partisan cue. Additionally, the negative effect of an opposing-party cue is much larger than the explicit party cue effect from the earlier analyses—more than double the size for adults and teenagers. Meanwhile, matching-party

cues have no effect on credibility assessments with either sample. Thus, partisan subjects do not deem all ideological messages with explicit party cues as less credible. They view messages with opposing-party cues as less credible. The relationship between matching-/opposing-party cues and policy attitudes is less clear. Adults move further away from messages with opposing-party cues, yet they do not move closer to messages with same-party cues. Teenagers exhibit the opposite behavior, moving closer to matching-party cues but not moving further away from opposing-party cues.

## Discussion and Conclusion

Amid the drumbeat of concern posited by pundits about echo chambers (Sunstein, 2018) and filter bubbles (Pariser, 2011), evidence remains mixed about how much people are exposed to more pro- or counter-attitudinal information on social media. Some work suggests users are regularly exposed to information from the other side (Flaxman et al., 2016; Gentzkow & Shapiro, 2011; Guess, 2021; Guess et al., 2018; Guess et al., 2020). More recent work reveals that exposure to like-minded sources is common, but does not polarize as much as once expected (Nyhan et al., 2023).

The results of our study suggest that we should focus our attention on refining our theories about information exposure in the era of social media in order to accommodate more nuance about how people process the news and ideas to which they are exposed. Social networks and content displayed through social media news feeds may be more diverse than scholars once feared, but social media users do not view content they disagree with as credible. This finding corroborates much of the work on motivated reasoning (e.g., Kunda, 1990), and suggests that despite higher than anticipated rates of exposure diversity on social media, its users are good at drowning out the noise of news with which they disagree and focusing on the content they deem credible – news and opinion consistent with their predispositions.

The normative implications of our findings may depend on one's tendency toward half empty or half full interpretations of water in glasses. On the one hand, the evidence we observe suggesting young people might be more partisan now than in decades past may be unwelcome news. Previous research depicted teens and young adults as lacking well-formed partisan attachments (Stoker & Jennings, 2008); we do not observe many clear differences between the teen and adult samples when it comes to the influence of partisanship. For some, this will be disheartening news and most likely attributed to rising partisan polarization. At minimum, combined with Tyler and Iyengar (2022) and Lay et al. (2022), our findings support the broader argument embedded in Stoker and Jennings (2008) and Ulbig (2020): that political socialization reflects not just individual-level processes, but also the political context and era in which it occurs, and that our understanding of the process may need updating given the differences in political culture between mid 20th and early 21st century America.

On the other hand, there is reason for optimism. False information tends to spread faster than the factual information on social media networks (Vosoughi et al., 2018) and endorsements and algorithmic filtering can create "credibility cascades" (Munger, 2020). If social media exposure to misinformation is as rampant as some of the literature suggests (e.g., Lazer et al., 2018), popularity cues may not help people accurately differentiate between what information is real and what is fake. Nonetheless, our findings show that neither the teen nor the adult users appear to be as susceptible to popularity cues or the digital influencer culture as many assume. Although social engagement may drive the process of selection (Messing & Westwood, 2014), this effect does not appear to extend to assessments about credibility of the message. Engagement metrics signal interestingness and serve as popularity cues, but our findings suggest that neither teenagers nor adults are using them as proxy for the credibility of information sources.

Our findings are an important step in understanding the effects of changes in the information environment on political socialization, but much work remains. The relative political sophistication of the teenage sample could be a cohort-specific effect. This youth sample is coming of political age in the era of Trump, which was well populated with dramatic political events capable of leaving a lasting imprint on political development, and during which both partisanship and interest and engagement in politics substantially intensified.

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### Supplemental Material

Supplemental material for this article is available online.

### Notes

1. Of course, even in this context, people were sometimes exposed to news inadvertently — for example, while sitting in a waiting

room that had a television set to a news show or engaging in conversation with someone who brought up a political topic.

2. There is a body of research downplaying the threat of massive effects from partisan media (e.g., Arceneaux & Johnson, 2013; Prior, 2013). It demonstrates the degree to which the expansion of the media environment was just as (if not more) likely to produce higher rates of entertainment seeking and news avoidance than exposure to partisan news. Implicit in the debate is the question of whether we should be more concerned about polarization and attitude extremity from partisan news exposure or the emergence of a low-information, low-engagement electorate enabled by constant entertainment diversions afforded by a high choice setting. Despite the counter-arguments and evidence to the contrary, pundits, politicians, and the conventional wisdom seem to view the former as the more urgent threat.
3. Social network members can be selected on a number of criteria (Ouwerkerk & Johnson, 2016; Reich et al., 2012; Utz & Breuer, 2016); political views or like-mindedness are important criteria for some, but not all – its use as a determinant of network membership is variable (Cargnino & Neubaum, 2021).
4. In our pre-analysis plan the *Trusted Source* hypotheses corresponds to pre-registered hypotheses H3 (credibility) and H12 (policy attitudes); the *Counter Attitudinal* hypothesis corresponds to pre-registered hypotheses 1 (credibility) and 9 (policy); the *Partisan Cues* reflects pre-registered hypotheses 2 and 10; *Disaffected Youth* corresponds to hypothesis 6; *High Engagement* captures pre-registered hypotheses 4 and 13; *Teen Influencer Effect* reflects pre-registered hypothesis 5.
5. We replicate our main analysis on a restricted sample of adults (over 29 years old) and our findings are not substantively different. This robustness check is included in Table B1 of Appendix B.
6. For more information about the panels, see https://amerispeak.norc.org/Pages/default.aspx. Teen Study: the Weighted AAPOR RR3 Recruitment rate: 23.61. Weighted Household retention rate: 84.74 Survey completion rate: 53.57. Weighted AAPOR RR3 cumulative response rate: 10.72. Adult Study: Weighted AAPOR RR3 Recruitment rate: 20.75 Weighted Household retention rate: 80.62. Survey completion rate: 30.0. Weighted AAPOR RR3 cumulative response rate: 5.02.
7. The teen study was fielded as one of three studies conducted on the same sample; our study was always fielded third, and the order of the other two studies was randomized. The teen study was in field from Monday, December 28, 2020 through Tuesday, March 23rd. A sub-sample AmeriSpeak panelists were invited to the survey on December 28, 2020, in a soft-launch. The initial data from the soft-launch was reviewed and the remainder of sampled AmeriSpeak teen panelists were invited to the survey on December 30th. Additional teen panelists were recruited to the AmeriSpeak Teen Panel and were invited to the survey on February 23, 2021 and March 8, 2021. The Adult/parent panelists started consenting for additional teens age 13–17 on February 2, 2021. The initial data for the "parent consent" were reviewed, and due to the complex screener programming, the remaining sample was invited in slow roll outs on February 5, and February 22. NORC sent 9 email reminders 3 SMS reminders to non-responders throughout the fielding period. NORC closed the survey on March 23rd. Panelists were offered the cash equivalent of $10 for completing the study. The adult study was in field from Thursday, January 21, 2021 through Monday, February 22, 2021. Panelists were offered the cash equivalent of $3 for completing the study.
8. Using G*Power version 3.1.9.4, the four-cell experiment that we propose with $N = 800$ has sufficient power to detect a moderate effect (d = 0.27), which is smaller than the average treatment effect in partisan cue studies (d = 0.51) (Ditto et al., 2019).
9. This design decision confounds partisan cues with the ideological position of the tweet. We made this choice for two reasons. First, it increases the power of the experiment given the constraint of our sample size. Second, it creates ecologically valid treatments in the polarized context of US politics where Democratic and Republican elites take consistently liberal and conservative positions on these issues, respectively.
10. Since we have no theoretical reason to expect an interaction between the primary experiment and the two additional layered experiments, the statistical power of our main experiment should be largely unaffected by the addition of the layers of popularity and journalistic source. Given the observed variation in respondent rating of the credibility of the tweet, our experiment has the power to reliably detect changes on the 5-point Likert scale as small as 0.12 points.
11. To generate believable engagement numbers, we sampled 500 tweets from a co-author's Twitter feed and calculated the mean and standard deviation for likes, retweets, and comments among the 90th to 95th percentiles of engagement. From these distributions, four "high engagement" profiles were randomly generated and randomly appended to tweets.
12. Responses to the two questions correlate at $\rho = 0.755$.
13. We use listwise deletion for missing observations when present. The results by topic—police, prayer, marijuana, and the minimum wage—are presented in Tables B4, B5, B6, and B7 of Appendix B. The coefficients are remarkably similar in magnitude across topic.
14. Differences and their standard errors are calculated using the delta method.
15. Because the models in Table B2 include respondent-level characteristics, we cannot include the respondent fixed effects. Instead, the standard errors are clustered at the individual level.

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