ABSTRACT

Title of Dissertation: THE EFFECTS OF OPINION LABELS ON NEWS SOURCE CREDIBILITY ONLINE

Andrew Otis, Doctor of Philosophy, 2021

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This dissertation seeks to answer the pressing question of whether labeling opinionated content online as opinion affects readers' perceived credibility of news sources and trust in the news media. This research was motivated by the many search engines and social media sites that do not label opinionated content as such on their platforms. To answer this question, two studies explore the effects of 'opinion labels' on news previews (known as 'story cards') on readers' perceived credibility. Story cards are employed because news consumers often interact with them instead of news websites.

In study one, a 3 (news source) x 2 (headline opinion polarity) x 2 (presence of opinion labels) between-subjects design investigated the effects of opinion labels on the perceived credibility of news sources when participants ($N = 389$) were presented a feed containing biased and unbiased content from one news source. In study two, a mixed design with three levels (prominence of opinion labels) investigated the effects of opinion labels on readers' perceived credibility of news sources when participants ($N = 275$) were presented a feed containing biased and unbiased content from multiple news sources.

Study one found that labeling opinionated content as opinion significantly increased the perceived credibility of a news source ($p < .01$). Additionally, opinion labels significantly changed credibility perceptions even among political affiliates viewing oppositional content. Findings from study one suggest opinion labels increase perceived credibility because the labels increase perceived opinion segmentation – the distinctions between news and opinion and between author and source. Previous research indicated that heuristic cues need to be of sufficient visual prominence to affect perceived credibility. However, study two found that the prominence of the labels did not have an effect in a multiple source environment. Findings from study two therefore support the source blindness effect over the prominence-interpretation theory.

This dissertation deepened knowledge of heuristics and credibility theory by examining how and why heuristic cues, specifically opinion labels, affect readers' perceived credibility of news sources. The findings have broad socio-political implications as they indicate that design choices such as labeling content can significantly impact credibility and media trust.

DISSERTATION

The Effects of Opinion Labels on News Source Credibility Online

by

Andrew Otis

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Notes

1. Chicago Author-Date 17th Edition used.
2. British grammar/American spelling used.

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Chapter 1: Introduction

Research Overview

The Problem

Journalistic content online often can be presented without labels indicating whether articles are opinion or news. Such presentations may reduce the credibility of news organizations, may reduce trust in the news media as a whole, and may lead to adverse social and political consequences. An example of this common occurrence is figure 1. In this example, a *Washington Post* article about United States 2020 Presidential Candidate Joe Biden is presented on Google's search engine. The article's headline, 'Joe Biden isn't about to play Trump's game on police funding', appears biased in favor of Biden. Yet, it is not readily apparent based on this preview that the article is an opinion piece. Only upon clicking the headline link are users taken to the *Washington Post's* opinion section. This occurrence, where articles are presented without important cues for assessing credibility, is common across the internet.[1]

[1] See the schema for Facebook's Instant Articles, Google's Accelerated Mobile Pages, Apple's News Publisher, and Twitter's Pro Media API for specific details on the elements of story cards across these platforms.

Figure 1. Typical story card as it appeared on Google on June 8, 2020, showing four credibility cues: image, headline, source, and time stamp.

The example above may be one element of declining trust in the mass media in the US and internationally (Kalogeropoulos et al. 2019; Brenan 2021). Patterns of news consumption have changed dramatically since the advent of the internet in the 1990s. As of this writing, readers online often use search engines, social media, and news aggregators to initiate their first contact with news (Bell and Owen 2017; Möller et al. 2019). The credibility of a news source ('source credibility') is important and plays a role in the study of media trust. Credibility can be conceived as a perception rather than an objective measure, which is why this dissertation uses the term 'perceived source credibility' (Marchionni 2015). Research indicates that readers often build perceptions of the media as a whole from observations of individual sources. For instance, a news consumer may become distrustful of the mass media after repeated experiences with specific news organizations (van Dalen 2019).

Readers heuristically rely on cues such as brand names, labels indicating articles as opinions, or time stamps indicating recency, to ascertain the credibility of a news source (Metzger, Flanagin, and Medders 2010; Curry and Stroud 2019). Research, to be detailed in the next chapter, suggests that it is not just the amount of information but how information is presented that leads users to heuristics (Pearson 2019). Search engines, social media, and news aggregators can remove many of the cues that news consumers use to evaluate credibility, showing readers only quick previews of information. These previews are known as 'story cards' or 'cards' and are how search engines and social media sites typically present news online (see figure 1; Lurie and Mustafaraj 2018; Robertson, Lazer, and Wilson 2018).

In general, story cards show only *some* of these six potential cues (see figure 2): 1. headline (how is the article titled?), 2. image (is the article accompanied by an image?), 3. source (who published the article?), 4. time stamp (how old is the article?), 5. label (is the article labeled news, analysis, or opinion?), and 6. the first sentence (does the story card show the article's first sentence?). By stripping some of the cues that readers traditionally used to assess credibility ('credibility cues'), these mediums may reduce readers' ability to accurately evaluate source credibility (Lurie and Mustafaraj 2018).

Characteristics of Online Story Cards

Site	Headline	Image	Source	Timestamp	Opinion Label	1st Sentence
Google	Yes	Yes	Yes	Yes	No	No
Google News	Yes	Yes	Yes	Yes	Yes	Yes
Facebook	Yes	Yes	Yes	No	Partially*	Yes
Facebook Messenger	Yes	Yes	Yes	No	Partially*	No
Apple News	Yes	Yes	Yes	Yes	Partially*	No
WhatsApp	Yes	Yes	Yes	No	Partially*	Yes
Twitter	Yes	Yes	Yes	Yes	Partially*	Yes

Figure 2. Characteristics of story cards on popular online mediums as of July 20, 2021. * Currently only appear when news organizations submit this information to the social media site or search engine.

The Exploration

This dissertation sought to advance knowledge by exploring how and why readers judge source credibility based upon heuristic cues in an online environment: specifically on online story cards. This dissertation explored the role of one type of cue in particular: the labels placed on cards that indicate whether articles are opinion or news. With regard to opinion articles, these labels are known as 'opinion labels' (see figure 3).

Figure 3. Typical opinion label on a story card on social media site Facebook, on March 31, 2020. Currently, opinion labels sometimes, but not always, appear on Facebook story cards.

Opinion labels were chosen as the stimuli for this study because the separation of news from opinion content has been shown to relate to the construct of credibility (Gaziano and McGrath 1986) and because their absence may be an element in a broader relationship between changing news presentation and media trust (Tsfati and Ariely 2014; Fletcher and Park 2017; Hanitzsch, van Dalen, and Steindl 2018). This dissertation explored the role opinion labels play in forming credibility judgments, and the interaction between opinion labels and individuals' biases, ideologies, and partisanship as they form these judgments.

This dissertation also explored the underlying reasons why opinion labels may affect credibility. It first explored the effects opinion labels have on perceived source credibility when participants are presented with one source at a time ('single source environment'). Opinion labels have been theorized to act as a type of heuristic cue known as a 'transparency cue', an indicator that provides readers with insight into the journalistic process (Curry and Stroud 2019; Trust Project Indicators 2021). As a transparency cue, opinion labels may increase credibility because they indicate 'opinion segmentation', i.e., they indicate a distinction between news and opinion,

and between the intent of the author of an article and the source that published it (Kelling and Thomas 2018). Hypotheses in study 1 predicted that opinion segmentation may be related to perceptions of persuasive intent or source hostility, two competing theories that predict credibility (see chapter 2).

This dissertation then expanded upon the above by exploring the impacts of opinion labels on perceived source credibility with story cards on a more typical mixed-source online news feed ('multiple source environment'). Two competing theories seek to explain the role of transparency cues in multiple source environments: the source blindness effect, which indicates that news consumers have difficulty considering and processing source information in certain online environments, and the prominence-interpretation theory, which states that the more prominent and recognizable a cue, the more likely it is to impact credibility (Pearson 2019; Fogg 2003). Therefore, study 2 of this dissertation explored the level of 'prominence' necessary for opinion labels to affect perceptions of source credibility. These theories are detailed in chapter 2.

Justification for Two Studies

This dissertation was divided into two studies. This division was undertaken because two studies were necessary to fully explore the effects of opinion labels with story cards on perceived source credibility; it first needed to be established whether opinion labels affect source credibility when information is presented on story cards from one source alone ('single source environment') before measuring whether opinion labels affect source credibility in more environmentally frequent situations when information is presented on story cards from multiple sources ('multiple source environment'). A single study would lead to an incomplete

understanding of opinion labels as heuristic-transparency cues and would inadequately advance knowledge of credibility theory. Therefore, study 1 explored the effects of opinion labels on perceived source credibility in a single source environment, while study 2 explored their effects in a multiple source environment.

Research Context

News Media Changes

This dissertation is situated in a broader context of rapid changes in news presentation and news content that may be resulting in declining trust in news media and thus adverse socio-political outcomes (Spillane et al. 2020). Opinion labels, like other news presentation elements such as hyperlinks, information about an article's reporter, or information about how and why a story was written, may be one way of increasing trust in news media (Curry and Stroud 2019). News presentation elements like these have been found to increase perceived credibility in some circumstances (Karlsson et al. 2014; Curry and Stroud 2019).

In a detailed content and sentiment analysis of over 100,000 print, television, and online articles and news segments pre and post the year 2000, Kavanagh et al. (2019) found significant changes in media content. In general, they found that news organizations have shifted away from a style of reporting characterized by references to specific events, official titles, and authoritative institutions and figures, toward a more subjective, conversational, and storytelling style of news reporting. News content post 2000 has featured more personal perspective, emotional appeals to highlight social issues, and argumentative language aimed at persuasion (Kavanagh et al. 2019). The rise of internet-only news outlets, prime-time cable news, and opinion-based pundit shows

have heightened this trend. Kavanagh et al. (2019) suggest that trends toward subjective journalism may be linked to declining trust of specific news organizations and the media in general.

Other studies have similar findings. A content analysis of the front pages of three national American newspapers from 1988 to 2013 showed that the percent of traditional, event-centered news articles decreased from 69 to 35 percent in this time frame. These newspapers increased the percent of articles that offered more general news analysis, rather than covering specific events (Tanikawa 2017). Thus, a greater percent of news articles have become more similar in content to traditional opinion journalism.

These changes may be linked to increased perceptions of bias, decreased trust in mass media, and adverse societal consequences. Increased perceived bias, which is linked to reduced credibility, may be driven by increased selective exposure, the process by which individuals select and trust sources that support their preexisting beliefs. In return, news organizations respond to changing demand by producing more ideologically congenial content for their readers (Mullainathan and Shleifer 2005). According to one study, audience preferences for ideologically congenial news accounted for about 20 percent of the variation in bias among American news organizations' content (Gentzkow and Shapiro 2010).

The rise of social media that allow users to curate news feeds, and search engines that enable users to search for specific types of content, can further drive market forces. As Americans are increasingly likely to get their news online, new ways of accessing news have shifted content curation from news editors to algorithms and individuals and their social networks (Thorson and Wells 2016; Cardenal et al. 2019). Increased fragmentation of media

markets with the internet and social media may reduce traditional media's gatekeeping, framing, and agenda setting functions as barriers to entry in the news business have decreased. Social media has also diminished barriers that professional publications have placed to separate news from opinion, and fact from fiction (Hermida 2016). Such trends, when combined with a lack of labeling types of content as opinion or news, may impact perceptions of media bias, trust, and source credibility.

Declining Trust in News Media

The urgency of studying the effects of heuristic cues like opinion labels on credibility is heightened by the broader context of declining trust in the news media. Data indicate that declining trust is a trend among many countries, although trends vary by country and time frame (Hanitzsch, van Dalen, and Steindel 2018; CIGI-Ipsos Internet Security and Trust Survey Part 3 2019; Newman et al. 2019; Kalogeropoulos et al. 2019; Edelman 2020; Brenan 2021). Although there is limited research on why some countries have seen declining trust while others have not, the US, in particular, has experienced declining trust in the news media (Prochazka and Schweiger 2019). In one longitudinal study between 1981 to 2014, researchers found that the US had the most precipitous drop of trust in the press out of 45 countries examined (Hanitzsch, van Dalen, and Steindel 2018).

In the US, declining trust in national news organizations has partisan characteristics, with much of the decline being driven by Republican news consumers. According to data from Gallup, as of 2021, 68 percent of self-identified Democrats claim a great deal or fair amount of trust in the news media, compared to 11 percent of Republicans (Brenan 2021). American trust in

mass media reached its lowest point in 2016 with 32 percent of Americans claiming a great deal or fair amount of trust in the news media (Jones 2018). Trust has modestly increased since then, with 36 percent of Americans claiming a great deal or fair amount of trust in the news media as of 2021 (Brenan 2021). According to other data from the Pew Research Center, from 2016 to 2021, the percentage of self-identified Republicans with at least some trust in national news organizations has dropped from 70 to 35 percent, compared to 83 and 78 percent for Democrats (Gottfried and Liedke 2021). In total, 72 percent of Americans (and 92 percent of Republicans and Republican leaning independents) believe traditional news sources report news they know to be false or misleading (Fischer 2018).

A reason for this decline in trust may be a shift in the American news media system. The US may be drifting from a liberal news media model (Hallin and Mancini 2004) toward a hybrid category of polarized liberal (Nechustai 2018). As a polarized liberal system, the US news media is distinguished by the liberal characteristics of being market-based, professionalized, and independent from extensive state involvement, as well as the polarized characteristics of being ideology-driven, open to nonprofessional contributions, and highly fragmented. The contention that the news media in the US is more polarized than in other liberal democracies is further supported by Fletcher, Cornia, and Nielsen (2020), who found that the US had the most politically polarized news media system in a study comparing twelve North American and European countries.

Changes in how news is presented and consumed, particularly via search engines and social media, have been linked to increased political polarization. For instance, Levy (2021) found that Facebook's algorithm is less likely to present posts from counterattitudinal news

outlets than from congenial outlets, suggesting that social media may contribute to political polarization by limiting exposure to counter-attitudinal news. Perceptions of increased bias among many news outlets may also be fueling this decline, as Guess et al. (2021) suggest that the growth of online partisan media has eroded trust in mainstream news.

Others have suggested that certain ideologically slanted websites have created separate media ecospheres in the US (Faris et al. 2017). Sites on the political fringes may foster echo chambers of extremist thinking and expose individuals to lower quality information as well as divergent narratives of events (Starbird 2017). While the portion of the US population that regularly interacts with these types of sites appears to be relatively small, these individuals drive a disproportionate amount of traffic to these sites and also appear to participate more in politics (Guess 2021). In general, while echo chambers have been a concern for many scholars, Guess (2021) suggests that there is significant overlap in news consumption for the majority of Americans and that online echo chambers are driven by relatively small groups who exert 'disproportionate influence and visibility' on politics.

Finally, decreased public trust in journalism has been linked to changes in news presentation and fragmentation of the US media market. Increased media choice and increased production of soft news may encourage news consumers to selectively expose themselves to partisan news providers (Ladd 2012; Kelly 2019). Consumption of information from these types of sources has been correlated with negative feelings toward the media in general (Guess et al. 2020). In addition, increased tabloid-like presentation of news online, with news sites adopting larger font sizes, larger images, and more garish colors has also been linked to decreasing trust in the media (Spillane et al. 2020). These changes heighten the urgency of studying the role of

heuristic cues on credibility online. As detailed in the next section, these changes may also affect the functioning of democratic societies.

Effects of Declining Trust in the News Media

Changes in news presentation can have political and social consequences. Specifically, declining trust in the press has been linked to political polarization and political dysfunction (Barber and McCarthy 2015; McCoy, Rahman, and Somer 2018). In particular, a type of political polarization known as pernicious polarization – defined as when the 'normal multiplicity of differences in a society increasingly align along a single dimension' – has negative implications for the functioning of democracies (McCoy, Rahman, and Somer 2018, 16). McCoy and Somer (2019) suggest that pernicious polarization exacerbates social or political rifts, making it harder to find compromises in society. When a country's media system parallels its political parties, its population is less likely to be exposed to news from different political and ideological orientations (Goldman and Mutz 2011).

Some data suggest that the US might be exceptional in the extent of its political polarization when compared to other advanced economies (Dimock and Wike 2020). Literature suggests that trust in the press is generally linked to the positions of political leaders and media outlets (Ladd 2012). Barber and McCarthy (2015) found that members of the US Congress and political elites have polarized significantly since the 1990s. Jamieson and Cappella (2008) suggest that the emergence of right-wing media, particularly *Fox News*, in the late 1990s helped polarize the American electorate. New, politically extreme, digital-first outlets may further polarize politics. Faris et al. (2017) found that alt-right media fostered its own media ecosphere

during the 2016 US General Election, with alt-right online links shared almost as much as traditional news media.

Increasing exposure to partisan news media can have long-lasting effects. In a large N study, Guess et al. (2021) examined the longitudinal effects of exposure to partisan news media and found that it has produced long lasting distrust of mainstream news media among news consumers. Other research has found a link between social media and polarization. Social networks and search engines are associated with increasing ideological distance between groups (Flaxman, Goel, and Rao 2016) Filter bubbles, for instance, increase polarization by decreasing the valence of opinions within ideologically similar groups, making conservatives more like other conservatives, and liberals more like other liberals (Clemm von Hohenberg, Maes, and Pradelski 2017). Social media has been linked to less societal trust, which could widen the societal divisions that inhibit healthy democratic debate (Ceron 2015). Allcott and Gentzkow (2017) suggest that a 1 percent increase in social media friends preferring the same presidential candidate is associated with a 0.147 percent increase in belief of ideologically confirmatory headlines. Furthermore, Duncan and Coppini (2019) found that when users were exposed to a hostile opinion climate online, their partisanship and political stances significantly polarized.

Declining trust in mainstream media may make it easier for disinformation to spread, with concomitant adverse political effects. Large minorities of US adults on both the political left and right believe conspiracy theories spread on social media (Frankovic 2016). Bradshaw et al. (2019) found a one to one ratio of 'junk news' – defined as sources that deliberately publish misleading, deceptive, or incorrect information packaged as real news – to professionally produced news shared on Facebook and Twitter during the 2016 US elections. Declining trust

has been linked to people choosing highly partisan non-mainstream sources, which have been linked to the spread of misinformation on social media platforms such as Facebook (Tsfati and Ariely 2014; Newman et al. 2017; Kalogeropoulos et al. 2019). Furthermore, misinformation tends to thrive at the political extremes (Shin and Thorson 2017). Highly partisan individuals are more disposed to conspiratorial thinking and are more likely to believe ideologically aligned articles despite evident falsehoods (Uscinski, Klofstad, and Atkinson 2016; Allcott and Gentzkow 2017).

Media distrust is also linked to voting patterns. Consumption of untrustworthy websites is associated with polarized feelings toward political parties and with greater belief in certain political misperceptions. In the absence of trusted information, voters tend to distrust political news and increase their reliance on personal predispositions when voting (Ladd 2010). Guess et al. (2020) found that exposure to dubious or conspiratorial articles – such as false claims that George Soros was sponsoring a migrant caravan from Central America or that Jared Kushner played a role in the death of journalist Jamal Khashoggi – increased individuals' intent to vote.

Despite high levels of online engagement with misinformation and disinformation online, at times surpassing mainstream news media (Silverman 2016; Silverman et al. 2017; Faris et al. 2017; Allcott and Gentzkow 2017; Allcott, Gentzkow, and Yu 2019), consumption of this type of content appears to be concentrated among those with the most partisan online information diets. Multiple studies suggest that much of the consumption of content from conspiratorial or fringe websites in the US appears to come from a highly partisan and politically engaged segment of the public (Guess, Nagler, and Tucker 2019; Guess 2021). For example, the most conservative decile of Americans was responsible for 60 percent of visits to fake news websites during the US

2016 election (Guess, Nyhan, and Reifler 2020). Likewise, one percent of users consumed 80 percent of the identified misinformation on Twitter in 2016, and 0.1 percent of users were responsible for sharing 80 percent of the misinformation (Grinberg et al. 2019).

Declining trust in the news media can have further adverse societal effects. Research suggests that declining trust in the mass media is a factor behind the weakening of democratic institutions (Tsfati and Cohen 2005). Perceived media bias – a factor of trust in the news media – can lead to indignation and mistrust of democratic institutions, actions to impede government functioning, and social withdrawal and alienation among individuals (Perloff 2015). Political trust (how much individuals trust political institutions) and social trust (how much individuals trust one another) are two of the strongest indicators of trust in the news media (Ariely 2015; Hanitzsch, van Dalen, and Steindl 2018). Social trust is also a dimension of social capital, a concept that describes how well social groups function through the strength of shared senses of identity, values, and norms (Moy and Scheufele 2000; Halpern 2005). Social capital can foster understanding and reduce perceptions of hostility between different social groups, enabling citizens to work together to achieve common goals (Crnobrnja 1994; Putnam 2000).

The negative effects of declining trust in the news media add urgency to the study of credibility and heuristic cues like opinion labels. While this dissertation explores a small element of news presentation online, it is based on the premise that investigating the relationship between heuristics and news credibility may lead to a better understanding of trust in the news media and therefore the functioning of democratic societies.

Research Rationale

Why Study Cues and Online Source Credibility?

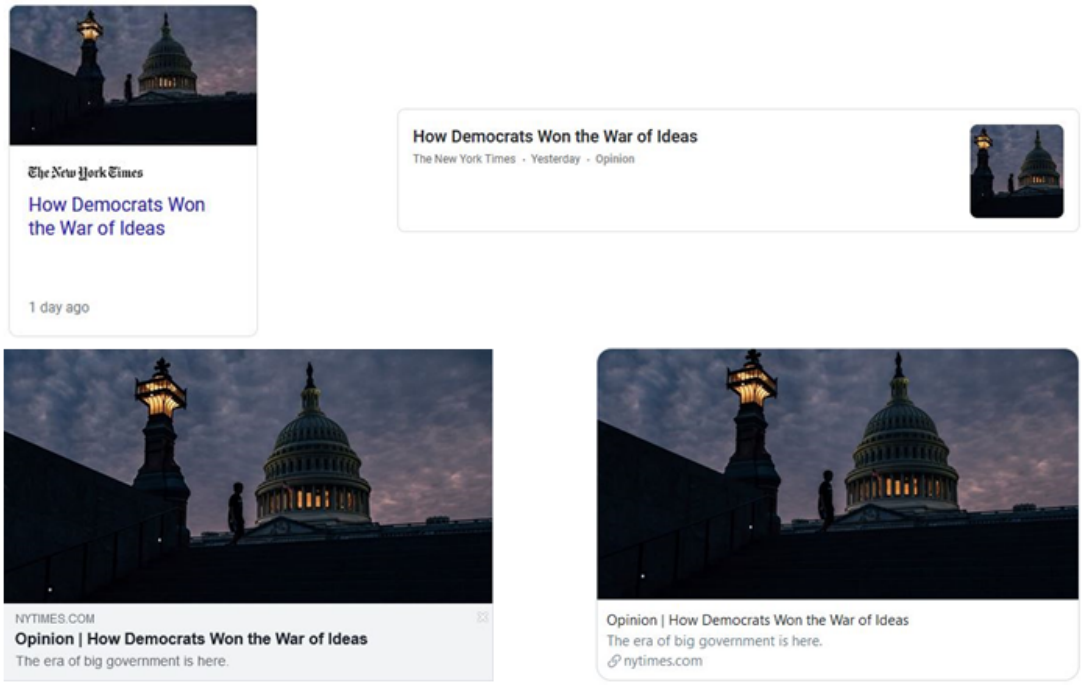


Figure 4. A comparison of a *New York Times* article as it was presented on online platforms' story cards on October 22, 2020. Clockwise from top left: Google, Google News, Twitter, and Facebook.

The varying presentation of story cards online may lead to confusion. Figure 4 shows the same news story as it was presented on four different online platforms. To a casual observer, the story card as presented on Google (top left) might indicate that the *New York Times* supports the Democratic Party. No label indicates that the article is an opinion piece, or that the *New York Times* as an organization might not endorse the provocative headline: 'How Democrats Won the War of Ideas'. The most prominent textual elements in the story card on the top left are the name of the news source (the *New York Times*) in black font, followed by the headline in blue font.

On Google News, this story card carried an opinion label, but in small gray font, perhaps too small to notice or make an appreciable difference on credibility. Both the Google and Google News story cards did not include the article's first sentence, 'The era of big government is here', which hinted that the true intent of the article was to oppose the Democratic Party, rather than to support it. The story card as presented on Facebook and Twitter included this first sentence. Thus, news consumers on these platforms might come away with entirely different impressions of the same article, and more importantly, about the source that published it. Figure 5 shows the article as it appeared on the *New York Times* website.

Figure 5. The article as it appeared on the *New York Times* website on October 22, 2020.

The internet is the most widely used medium for news among people in economically advanced democracies, with social media and search engines accounting for over half of traffic to news websites worldwide (Cardenal et al. 2019; Newman et al. 2021, p. 25). Hence, understanding the impact of heuristic cues like opinion labels helps increase the understanding of news credibility online. By exploring how cues on story cards affect perceptions of source credibility, this study is relevant to wider perceptions of trust in news media.

While declining trust in news media arises from many factors, as has been noted above, changes in how news is presented online is likely a contributing factor (Spillane et al. 2020). Research suggests that design choices can significantly impact news consumers' perceptions of credibility. Wobbrock et al. (2021) studied the relation between visual design elements and credibility in news articles. They found that participants rated articles that were between 1100 and 2250 words, had three to seven images, and medium sized body and title serif fonts more credible than articles that were shorter or longer, had more or fewer visual elements, and larger or smaller fonts. In essence, they found that online news consumers appear to rate visually balanced news articles the most credible. Karduni et al. (2021) found news consumers are more likely to find sources that portray specific politicians as angry as less credible and more biased. These results highlight how design choices and visual cues can substantially affect trust in news sources. The relation of cues and credibility deserves study for three reasons:

- First, this topic is understudied. There is a lack of research on how the presentation of news online may impact perceptions of credibility (Spillane, Lawless, and Wade 2017). Little is known about perceptions of source credibility of news organizations based on interactions with online story cards.

- Second, this topic is important. Declining trust in traditional news media can have adverse social and political effects. A lack of shared narratives and common understanding about events impacts the functioning of healthy democracies (Gaughan 2017; Scudder 2019).
- Third, this topic is international. Data indicate that trust in journalism is declining among many countries (Hanitzsch, van Dalen, and Steindel 2018; CIGI-Ipsos Internet Security and Trust Survey Part 3 2019; Newman et al. 2019; Kalogeropoulos et al. 2019; Edelman 2020; Brenan 2021).

Why Study Opinion Labels on Story Cards Specifically?

Research suggests that individuals judge credibility quickly online and that these judgements tend not to change once made (Robins and Holmes 2008). This fact, combined with research and data indicating that readers on social media and search engines primarily interact with news through story cards before visiting the original news source – if they visit the original news source at all (Pearson and Kosicki 2017) – is why this dissertation studies the effects of opinion labels on story cards rather than on news articles themselves.

Story cards can play a large role in online communications and are often the main delivery format for news on social media and search engines. However, story cards are little studied. Story cards, as they are typically designed on Google, were chosen for this dissertation because opinion labels are often not present on them, and because search engines are the most common way individuals currently view news online, surpassing social media. The most recent data suggest that Google accounts for 31 percent of publishers' external traffic and 57 percent of

external referrals, compared to 14 and 24 percent respectively for Facebook, the next most popular pathway for news (Carr 2019; 'Parse.ly Network Referrer Dashboard' 2021).

Additionally, compared to articles in print or on news websites, which traditionally carry opinion labels, story cards often do not contain opinion labels. Currently, story cards on Google often lack opinion labels, unlike social media sites such as Facebook (e.g., figure 4). Moreover, viewing news on social media such as Facebook is typically a passive experience, with viewers being exposed to news information incidentally (Newman et al. 2021). In comparison, search engines are more likely to lead to interactions such as further searching, sharing, or talking about the news (Fisher 2018; Robertson, Lazer, and Wilson 2018). While this study specifically focuses on story cards as presented on Google, its findings may be more broadly relevant because story cards are a universal feature of the internet.

Why Choose Google's Top Stories as the Medium?

Story cards on Google search engine result pages are often presented in a component called 'Top Stories', which appears at the top of many result pages (figure 6; Robertson, Lazer, and Wilson 2018).

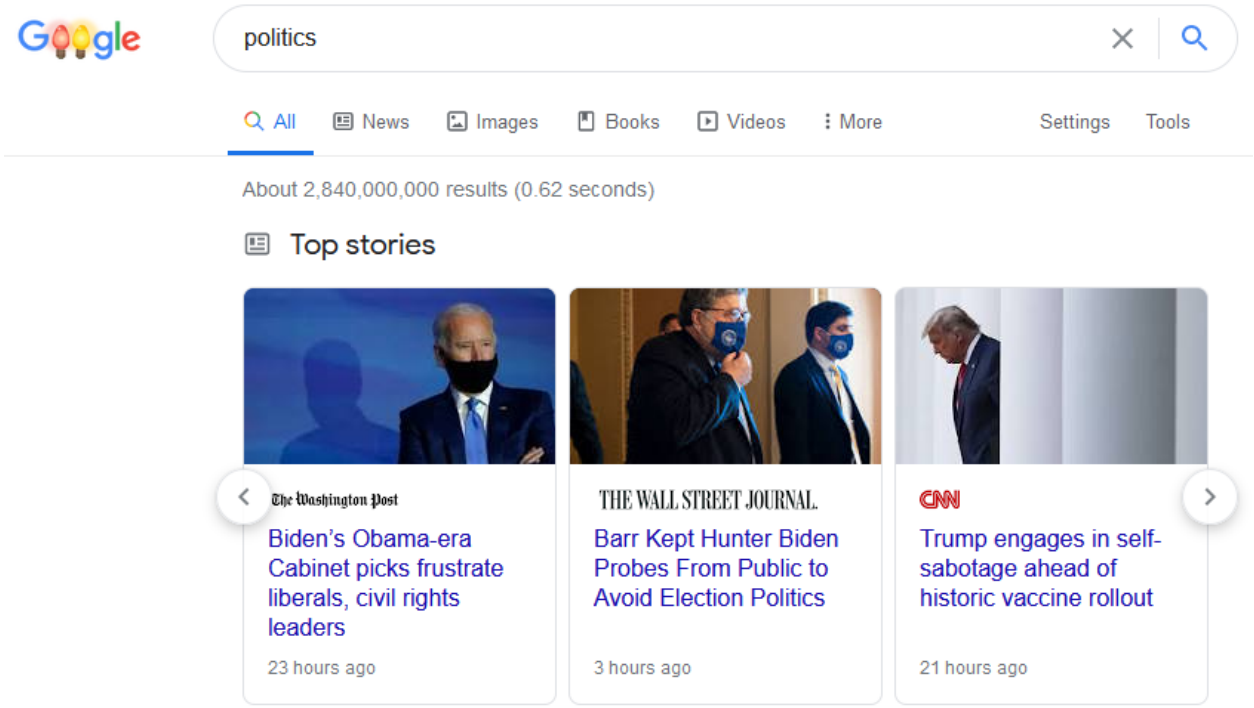


Figure 6. Typical placement of the Google Top Stories component at the top of the search results page. Results for 'politics' on Google, December 14, 2020).

Google's Top Stories component is worthy of study because of the way it may impact journalistic quality. Two studies have audited Google's Top Stories (Trielli and Diakopoulos 2019; Lurie and Mustafaraj 2019). These audits have come to three main conclusions about how the component works. First, it has a high predilection toward articles less than 24 hours old, reinforcing the daily news cycle and potentially downgrading high-quality long-form journalism (Trielli and Diakopoulos 2019; Lurie and Mustafaraj 2019).

Second, news sources in Google's Top Stories skew slightly liberal, potentially reinforcing perceptions of systemic media bias (Trielli and Diakopoulos 2019). Third, Google's Top Stories typically displays stories from a limited number of news sources, at the expense of smaller and less well-known news outlets. Articles from no more than twenty news organizations appear to account for over half the total presented (Trielli and Diakopoulos 2019), with the top

20 percent accounting for 96.1 percent of all the articles (Robertson, Lazer, and Wilson 2018). This concentration is highest in the first two-story cards, the most prominent positions (Lurie and Mustafaraj 2019). Two different studies found that the most likely domains to be featured for searches in the US were the *New York Times*, *CNN*, *Fox News*, and the *Washington Post* (Trielli and Diakopoulos 2019; Robertson, Lazer, and Wilson 2018). There is a very strong correlation (r = .97) between the number of stories a news organization publishes and the likelihood its stories appear in the Top Stories component, providing an incentive for news organizations to churn out content (Lurie and Mustafaraj 2019).

The display of story cards on Google's Top Stories, in particular, may affect democratic processes. For political search queries, the Top Stories component generally appears near the top of the viewport (or homepage screen) in a Google search engine results page, above the list of search results (Robertson, Lazer, and Wilson 2018). Top search results receive a disproportionate percent of views and clicks due to users' top-to-bottom browsing patterns on both mobile and desktop devices (Pan et al. 2007; Maynes and Everdell 2014). Thus, users may primarily interact with news through the Top Stories component rather than other components of a search engine results page (Lurie and Mustafaraj 2019).

For content to appear in Google's Top Stories on both mobile and desktop devices, publishers often use Google's publication system, known as AMP (Google 'AMP Component Catalogue' 2021; Google 'Article Reference' 2021). Launched in 2016, AMP was designed to increase the speed at which mobile stories are delivered (Besbris 2016). Although it is in transition, AMP is often the delivery mechanism for Google's Top Stories for both mobile and desktop users (Subramanian 2020). On desktop devices, non-AMP pages can sometimes be

displayed along with AMP pages. Despite some differences, basic delivery presentation is similar on desktop and mobile AMP pages. Stories are presented with an image, headline, source, and time stamp (Google 'AMP Guide' 2020).

The Top Stories component typically comprises ten story cards, with three-story cards immediately viewable in the desktop version, and one story card immediately viewable in the mobile version. The other cards are accessible by clicking a rightward arrow in the desktop version and a horizontal scroll in the mobile version. The underlying schema does not currently allow for opinion labels (Schema 'Article' 2021). However, this may change as schema for analysis and opinion articles are pending (Schema 'OpinionNewsArticle' 2021; Schema 'AnalysisNewsArticle' 2021).

It is important to study the Top Stories component in relation to news credibility because of widespread allegations of an asymmetric power balance between technology companies and news organizations. This asymmetric power balance can reduce the visibility of trustworthy news online (House Subcommittee on Antitrust Report 2020). Yet, Google's available documentation does not explore potential impacts of their product on news credibility (Google 'AMP: Vision & Mission' 2020).

The impact of search results on democracy has been demonstrated through five experiments spanning India and the US conducted by Epstein and Robertson (2015). They found that biased search rankings, such as placing favorable or unfavorable coverage at the top of a search engine result page, shifted undecided voters' candidate preferences by 20 percent or more. Moreover, users were unaware of bias in search results. In one of the experiments, Epstein and Robertson (2015) presented 2,150 people with mock search results during the 2014 Indian

elections and found that they could change the voting intentions of 24.5 percent of undecided voters. Their findings are consistent with Pan et al. (2007) who found that users clicked more often, spent more time, and thought a result was more relevant if positioned higher than other content. Taken together, these studies indicate that a higher ranked search engine component, such as the Top Stories, can impact users' political preferences.

Finally, research suggests that certain aspects of Google search engine results can be significantly polarizing (Robertson, Lazer, and Wilson 2018; Robertson et al. 2018). Google snippets – the information below search result links – have been found to amplify partisanship across many different query topics (Hu et al. 2019). Moreover, when users were exposed to a hostile opinion climate online, their partisanship and political stances significantly polarized as well (Duncan and Coppini 2019). Given that the Top Stories component is where Google typically places story cards on search results pages, these findings imply that heuristic cues on story cards may have heightened social and political consequences.

This chapter has discussed the context and justifications for this dissertation. Specifically, this dissertation is centered in a rapidly changing news landscape in which news is presented to consumers much differently than prior to the rise of search engines and social media. Concurrently, many democracies, including the US, have seen decreasing trust in mainstream news media, particularly among certain political affiliates. This declining trust has negative socio-political consequences. In addition, many news consumers use heuristics to ascertain the credibility of news sources. By examining one of these heuristic cues, namely opinion labels, this dissertation explores one path toward better representation of news content online.

Chapter 2: Theory

Credibility

Conceptualizing Credibility

Scholars have typically conceptualized credibility as perceived believability, which is predicated on a source's perceived trustworthiness and topic expertise (Hovland, Janis, and Kelley 1953; Tseng and Fogg 1999; Rieh and Danielson 2007; Metzger and Flanagin 2013). Credibility was chosen as a main theoretical construct for this dissertation because it is fundamental to how news consumers perceive news and whether they choose to accept information. Credibility has been studied since the 1950s and remains a valid construct for understanding why individuals believe certain media and information but not others. Credibility is a perception, not an objective measure, and individuals may judge credibility differently from one another (Marchionni 2015).

Metzger et al. (2003) divided credibility into three categories: source, medium, and message. Source credibility refers to the perceived credibility of the origin of a piece of information. For instance, people may perceive one organization, group, or individual to be more credible than another. Medium credibility refers to the credibility of the format in which information comes (Newhagen and Nass 1989), while message credibility refers to the credibility of a type of content (Hilligoss and Rieh 2007; Appelman and Sundar 2016). As noted earlier, this dissertation examines source credibility in particular because it plays a large role in the study of media trust (van Dalen 2019).

Source, medium, and message credibility overlap despite being distinct concepts. Message credibility, in particular, is often perceived to be higher when source credibility is

higher (Blom 2018). For example, the perceived credibility of a news message on Facebook has been strongly correlated to the credibility of the originating news source ($r = .81$), (Johnson and St. John III 2019).

One of the early studies on source credibility was Hovland and Weiss (1951), who defined the term as being determined by a source's perceived trustworthiness and expertise. The researchers found that these dimensions influenced individuals' judgments over whether to accept or believe a communicator's message (Hovland, Janis, and Kelley 1953). Subsequent studies have used trustworthiness and expertise as dimensions to identify the components of source credibility for news information (e.g., Chung, Kim, and Kim 2010; Chung, Nam, and Stefanone 2012).

Most work on the credibility of news sources can be traced to Gaziano and McGrath's (1986) seminal study. They proposed a unidimensional model of source credibility composed of twelve items, such as being fair, unbiased, trustworthy, complete, factual, accurate, beneficial to the public, and separating fact from opinion. Meyer (1988) later refined this index using binary semantic differential questions and principal components analysis into five items: trustworthiness, bias, telling the whole story (completeness), accuracy, and fairness. West (1994) validated Meyer's index through confirmatory factor analysis using 5 point Likert questions.[2] The Meyer index, or variants thereof, is currently the most commonly used index to measure the credibility of news sources, and is used in this dissertation.

While news source credibility indexes have been revisited with the advent of the internet, much research suggests that pre-internet indexes can still be valid, with adaptations depending on

[2] It should be noted that Kohring and Matthes (2007) contend that West did not in fact confirm Meyer's scale because the goodness of fit was insufficient. GFI and AGFI were .87 and .85 when GFI and AGFI should be above .9. Nevertheless, variants of this scale have consistently achieved high reliability.

context (Hellmuller and Trilling 2012; Yale et al. 2015). During the early days of the internet, scholars found that credibility could be treated similarly online as offline (Sundar 1999). As the internet increasingly became a rich and diverse medium for information, others suggested that news credibility may need to be treated differently. Chung, Kim, and Kim (2010) found that source credibility for online news from mainstream newspapers also included a dimension called attractiveness, comprising three items: visual attractiveness, interestingness, and creativity. Chung, Nam, and Stefanone (2012) found that common aspects of online news such as hypertextuality, interactivity, and multimediality – different from the visual appeal in Chung, Kim, and Kim's 2010 study – did not generally affect the perceived credibility of online news, regardless of whether the content came from traditional newspapers' webpages or digital-native news outlets. Such research suggests that in cases when visual attractiveness does not vary between sources, as in this study, the traditional factors of credibility in Meyer's index can be used with confidence for online news from mainstream outlets.

Every individual perceives credibility differently (theories detailing information processing are presented in the heuristics section later in this chapter), but certain personal and demographic factors can help predict how people perceive credibility. Experienced and novice internet users judge credibility differently, as do those who heavily curate their online news feeds (Jozsa et al. 2012; Kang and Sundar 2016). Those who use news for information seeking, social utility, and entertainment are more likely to find news sources to be credible (Go et al. 2016). Additionally, certain personality traits may impact perceptions of credibility; an individual's agreeableness and conscientiousness predict perceptions aesthetics and usability, two factors that

can influence perceptions of credibility (Oyibo et al. 2017). Thus, the numerous potential factors of credibility indicate the multifaceted nature of this concept.

Partisanship, extremism, and ideology can be strong predictors of how people judge credibility. Overall, the best predictor of perceiving systemic media bias is political cynicism (Lee 2005). The more extreme an individual's political position, the higher one's perceived bias about both self-selected media and news media in general (Barnidge et al. 2020). Perceptions of bias appear to be the proximal factor among partisans for distrust in the news media. Lee (2005) suggested that conservatives who hold traditional values may perceive news coverage on controversial issues such as gun control to be biased because such news coverage highlights conflicts between established systems and challenges to the status quo.

Perceptions of ethics may help explain the role of political ideology in credibility assessments in the US. Culver and Lee (2019) found that a lack of perceived ethical standards is a main factor why conservatives tend to trust the news media less than liberals. Fawzi (2019) suggested that in a populist world view, the news media are perceived as part of a detached elite that neglects citizens' interests. In a study allowing individuals to select ideologically congruent or dissonant articles on a social media feed, Hameleers (2019) found that holding a populist ideology and believing that one's social group was socially marginalized were strong predictors of whether an individual self-selected an ideologically congruent article. It is important to understand the role of political beliefs on perceptions of credibility because this dissertation tests heuristic cues on the credibility of sources that publish political information.

Increased interaction with the media can mediate the effects of partisanship on credibility. The more individuals use a particular source or medium, the more likely they are to judge that

source or medium as credible (Johnson and Kaye 2014; 2016). Johnson and Kaye (2016) found that this relationship holds for a variety of different types of sources, such as traditionally nonpartisan sources such as print newspapers, traditionally partisan sources such as talk radio, and newer partisan sources such as political blogs. However, increased interaction with social media can reduce perceptions of trust and credibility of mainstream news. Pearson and Knobloch-Westerwick (2018) found that greater reliance on social media reduced selective exposure to high-credibility sources. Kalogeropoulos et al. (2019) found that those who use social media more as a primary source of news were less likely to trust the news media.

At the same time, cultures, groups, and communities can perceive credibility differently from one another. Some structural factors may explain these differences. Individuals in minority communities tend to have different definitions of trust in media than those in the majority, which often depend on how well news media covers their communities (Schmidt, Heyamoto, and Milbourn 2019). Data from the US and Japan suggest that the more racially, religiously, and politically diverse a community, the lower its overall trust in news media, potentially because the news media is not seen as reflecting issues important to all sections of that community (Yamamoto, Lee, and Ran 2016; Yamamoto and Nah 2018).

Structural factors can also influence trust in the news media at the societal-level, and perceptions of credibility by extension. Civil liberties, political rights, gross domestic product per capita, post-materialism (defined as a political culture valuing autonomy and self-expression over material or economic gain), and government broadcasters' share of news audiences have all been negatively correlated to trust in the news media (Tsfati and Ariely 2014). Of these, post-materialism was the strongest correlate. Tsfati and Ariely (2014) concluded that

post-materialism makes individuals more critical of media institutions. Some international studies – though not all (e.g., Kalogeropoulos et al. 2019) – have also found that press freedoms are negatively correlated with trust in news media, potentially because a free press system can increase partisanship in news media or because the variety of perspectives in a free press can make readers skeptical of the news media's accuracy (Soon and Tan 2016; Wei et al. 2020). While researchers debate the components and predictors of credibility, there is support for the concept in general. Studying how heuristic cues such as opinion labels interact with credibility may increase understanding of how people perceive information online.

Trust v. Credibility

This dissertation applies a distinction between *source credibility* and *media trust*, a distinction that has been borne out in the literature. When referring to one source, the literature tends to use the term credibility because credibility typically requires judging a source's expertise or information accuracy (Metzger and Flanagin 2015). When referring to the news media as a whole, the literature has tended to use phrases similar to 'generalized trust in the news media' because trust is a relationship between journalists and audiences that develops over time (Kohring and Matthes 2007; Prochazka and Schweiger 2019).

While referring to 'the news media' as a singular entity in journalism studies has been controversial, evidence suggests that the public tends to conceive of 'the media' as a single entity (Daniller et al. 2017). Additionally, surveys suggest that even political partisans in the US tend to agree on what constitutes 'mainstream media', with Americans of differing partisanships identifying cable TV news channels and large newspapers such as *CNN*, *Fox News*, the *Wall*

Street Journal and the *New York Times* as 'mainstream' and newer digital entities such as *Vox*, *Newsmax*, and *Breitbart* as alternative (Shearer and Mitchell 2021). In general, media trust relies on both perceptions of journalists' claims to 'legitimate knowledge' and the authority, or power, to inspire belief in their content (Usher 2018). While credibility refers to a past or present evaluation of a source, trust includes an expectation that a source, or the media in general, will continue to behave in like fashion in the future (Hanitzsch, van Dalen, and Steindl 2018).

While it is still unclear whether trust or credibility is the higher-order concept, research is beginning to indicate a mutual relationship. Individuals generalize credibility judgments to create perceptions of the media as a whole, while overall media trust guides specific credibility judgments (Otto, Thomas, and Maier 2018). The persuasive press inference theory suggests that people extrapolate that the news in general resembles the news stories they personally view (Gunther 1998). Likewise, the law-of-small-numbers bias indicates that people are prone to think of a small sample as representative of a whole (Tversky and Kahneman 1971).

There has been imprecision in some journalism studies about the concepts of trust and credibility (McLeod et al. 2017; Hellmueller and Trilling 2012). Some researchers have seen these terms as synonyms and have used them interchangeably (van Dalen 2019). Other scholars have seen credibility as the higher-order concept in which trust is a component. For instance, these scholars consider information credible if it comes from a trustworthy source. Others have seen trust as the higher-order concept in which credibility is a component. These scholars consider a source trustworthy when its information repeatedly proves to be credible, thereby building trust (van Dalen 2020; McLeod, Wise, and Perryman 2017).

This dissertation applies a framework where trust may be the higher-order concept when evaluating the media as a whole, and credibility the higher-order concept when evaluating a single news source (Otto, Thomas, and Maier 2018). Thus, when evaluating a *source's credibility*, readers perceive that source to be credible when they trust it. However, when evaluating whether to *trust the media*, readers consider the media as a whole to be trustworthy when the information in it repeatedly proves to be credible. As noted earlier, source credibility may be one aspect of media trust since readers build individual observations of credibility into generalized perceptions of the news media. Therefore, this dissertation asks participants their perceptions of source credibility.

Credibility Limitations

Despite past research on credibility indexes (noted earlier), there exist no universally agreed-upon definitions or empirical measures of the concept of credibility (Hellmueller and Trilling 2012; McLeod, Wise, and Perryman 2017; Fisher 2018). Admittedly, there are some limitations to developing credibility indexes in the first place. First, definitions of credibility may differ widely between individuals (Hilligoss and Rieh 2007). Second, individuals appear to evaluate credibility heuristically, meaning that they may assess credibility differently than how indexes attempt to measure it (Yale et al. 2015). Third, scholars have noted that defining a concept based on its subconcepts can be problematic because it is difficult to determine whether a defining term is a synonym or a component (Appelman and Sundar 2016).

Such challenges have led to discriminant validity concerns in credibility indexes (Yale et al. 2015; Prochazka and Schweiger 2019). The lack of universally agreed-upon definitions or

measures for news credibility, as well as the apparent multifaceted nature of credibility, have created problems in designing and replicating indexes (Engelke, Hase, and Wintterlin 2019). Moreover, as noted earlier, there has been significant ontological confusion in developing indexes for generalized trust in the news media and the credibility of specific news sources (van Dalen 2019). Thus, an index measuring the credibility of one source should differ from an index measuring the news media as a whole (Engelke, Hase, and Wintterlin 2019).

This dissertation addresses these limitations by measuring source credibility differently than perceptions of the media as a whole. Specifically, this dissertation uses the Meyer Credibility Index to measure perceived source credibility, and a shortened media skepticism index derived from Kohring and Matthes (2007) and Prochazka and Schweiger (2019) to measure media trust, as addressed in the media skepticism section later.

Heuristics

This section provides an overview of heuristics because it is theorized that opinion labels, as heuristic cues, aid the heuristic process by which people often evaluate credibility. Research on how people judge news credibility has come to three main conclusions. First, that people use heuristics to evaluate credibility. Second, that people use specific cues to guide the heuristic process. Third, that people judge credibility quickly (Sterrett et al. 2019). These conclusions inform the research of source credibility because they suggest that scholars should look at how the design of news content – for instance, the presence of heuristic cues such as opinion labels as explored in this study – can affect credibility.

While participants in studies have self-reported that traditional criteria of quality journalism such as balance, relevance, and impartiality are important in how they assess credibility (Fogg et al. 2003), experimental research suggests that these criteria have a mixed impact (Urban and Schweiger 2014). Studies have pointed to a gap between what people say is important for journalistic credibility and what they indeed use to judge credibility (Lurie and Mustafaraj 2018). Such findings have led researchers to focus on heuristics to understand the process of evaluating credibility (Metzger and Flanagin 2013; Yale et al. 2015).

Heuristics can be guided by cues peripheral to content quality, such as a brand name, type of headline, font, or advertisement placement (Prochazka, Weber, and Schweiger 2018). Heuristic techniques, such as scanning an article, require less mental energy than reading carefully (Weinreich et al. 2008). Moreover, studies have documented that participants have difficulty identifying how they make credibility evaluations. In one study, participants referenced a 'gut feeling' or their intuition when asked if cues influenced how they evaluated credibility (Rothschild, Lurie, and Mustafaraj 2019). These findings support the idea that heuristic cues surrounding online news content can affect credibility.

Research on why people use heuristics suggests that the overwhelming amount of content online makes it difficult for individuals to carefully parse information (Naab et al. 2020). Research suggests that how information is presented can lead users to heuristics. Specifically, the internet and social media have made it difficult for readers to distinguish news items from non-news items. Traditionally, newspapers have separated news from other types of content, but a myriad of online feeds often present differing types of content together (Pearson 2019).

Evidence suggests that the credibility of news is judged differently than the credibility of other types of information; audiences appear to engage a different set of heuristics (Fogg et al. 2003; Metzger and Flanagin 2013). For example, audiences appear to focus more on cues that indicate information accuracy, bias, and writing tone for news websites than for other types of websites like health or sports websites where cues indicating usefulness are more focused upon (Fogg et al. 2003). In particular, a subset of heuristic cues known as transparency cues can indicate trustworthiness and bias, and can significantly influence credibility evaluations, but there has been only limited empirical research on their extent (Curry and Stroud 2019). The circumstances in which these cues are effective remain to be investigated; this dissertation responds to extend the literature.

The use of heuristics implies that people judge credibility through automatic and unconscious processes, rather than deliberative thought (Metzger, Flanagin, and Medders 2010). The exact processes explaining why news source credibility online is judged differently than other information remain unclear. However, applying psychological theories to journalism research may lead to a better understanding. Several dual-process theories posit that people tend to conserve cognitive resources where possible, although certain factors can make individuals more likely to engage in effortful thinking. For instance, the heuristic-systematic model (HSM) predicts that people use heuristics to minimize cognitive effort and conserve processing resources (Chaiken 1980). The elaboration-likelihood model (ELM) predicts that people automatically evaluate credibility when they have low motivation, interest, or need for cognition – an individual's tendency to engage in effortful information processing (Petty and Cacioppo 1986). The limited capacity model of motivated mediated message processing (LC4MP) posits

that people only process salient aspects of a news message because the human brain has limited cognitive capacity (Lang 2000). It is important to note that the particular dual-process model which best represents how people judge credibility is not the focus of this study. Rather this dissertation assumes that people generally use *some* form of automatic processing and that these existing theories suggest automatic processing is reliant on heuristic cues, such as opinion labels.

In their review of theory on heuristics and online credibility, Metzger and Flanagin (2013) identified several heuristics commonly used by individuals to assess credibility online. These include the reputation heuristic, endorsement heuristic, consistency heuristic, self-confirmation heuristic, expectancy violation heuristic, coolness heuristic, novelty heuristic, prominence heuristic, and the persuasive intent heuristic (Sundar 2008). Each heuristic is guided by a specific set of cues. For instance, the reputation (or name recognition) heuristic, whereby people trust the known over the unknown, is guided by familiarity with a source. Even weak familiarity, such as only knowing a source's name, tends to make a source more credible than an unknown source (Metzger and Flanagin 2013).

There is extensive literature linking heuristic cues and news credibility. For instance, much research has explored the role of online comments on news articles as part of the endorsement heuristic (when people find information recommended by those they trust or through aggregated testimonials as more credible). Research suggests that the mere presence of online comments, regardless of their nature, how they are moderated, or even whether they are civil and well reasoned, reduces the perceived credibility of accompanying articles (Conlin and Roberts 2016; Prochazka, Weber, and Schweiger 2018; Dohle 2018; Weber, Prochazka, and Schweiger 2019; Naab et al. 2020; Kumpel and Unkel 2020). Likewise, much research has been

conducted on the consistency heuristic (when people find information to be more credible when it also appears on other websites). This heuristic is relevant to understanding the consumption of low-quality information online, as many news consumers have been found to react to false information online and rarely or only superficially verify content by checking other sources (Flanagin and Metzger 2000; Metzger, Flanagin, and Medders 2010; Loos and Nijenhuis 2020).

Heuristics have also been studied as part of the social process of evaluating credibility online. Go, Jung, and Wu (2014) reported that people processed news systematically when recommenders were from different social groups, but heuristically when recommenders were from the same group. Recommendations on social media, such as whether a story was shared by a friend on Facebook, improved levels of trust in the news outlet that was shared (Turcotte et al. 2015). Social endorsements (e.g., Facebook likes) supporting negative user comments have been found to reduce readers' perceived credibility of a news article; these endorsements appear to heighten questions about a source and induce a skeptical mindset (Naab et al. 2020). Heuristics, therefore, play an important role in this dissertation.

Transparency Cues

This dissertation applies previous literature suggesting that opinion labels can be a specific type of heuristic cue known as a 'transparency cue'. A transparency cue has been defined as an indicator that provides readers with an understanding of the intent behind an article or gives insight into the journalistic process (Curry and Stroud 2019; Trust Project Indicators 2021). This dissertation aims to fill a gap in journalism literature by exploring the effects of transparency cues, specifically opinion labels, on credibility. While transparency has been

suggested as a remedy for declining credibility, little empirical research has been conducted into the relationship of transparency cues and credibility (Curry and Stroud 2019). A couple exceptions are Karlsson et al. (2014) and Curry and Stroud (2019), which offer starting points to researching this topic. These studies synthesize work from psychology, interpersonal communication, and organizational behaviour to suggest that the amount of information a person or organization discloses may be positively correlated to the credibility of that person or organization.

Specifically, Karlsson et al. (2014) tested the effects of an array of 21 transparency cues on the perceived credibility of a fictitious article about developing a waterpark. Conditions ranged from whether a correction was issued, whether earlier versions of the text were available, whether an explanation of the selection process was provided, whether the angle or framing of the text was explained, whether the reporter's values were disclosed, whether a time stamp appeared, whether internal and external links existed, whether user comments were displayed, or whether an image's source was detailed. The researchers found that only one of the 21 cues, that of disclosing the writer's partisanship, had an effect on perceptions of the article's credibility. Thus, their results indicate that cues for potential bias were the most likely pathway for affecting credibility judgements, which supports the goal of this dissertation.

Furthermore, Karlsson et al.'s research indicates that transparency cues may be most effective when readers want to know authors' biases about controversial political information. Issue salience, or how controversial a topic is, has been shown to affect how people process articles (Ciuk and Yost 2016). In these instances, opinion labels may be most beneficial. Therefore, this dissertation explores the effects of opinion labels on political topics. By priming

readers through opinion labels that the author of an article has an explicit persuasive motive or political bias, information can be presented in a way that guides this heuristic toward being more accurate.

The second study on transparency cues and credibility, by Curry and Stroud (2019), researched the effects of five transparency elements on the perceived credibility of three articles from a fictitious news source. Unlike Karlsson et al. (2014), the following cues were tested together rather than one by one: providing details about why a story was written, how it was written, industry best practices, details on the story's author, and the presence of opinion labels. The study's treatment condition with transparency elements led to a significant increase in perceived credibility for all articles tested.[3] Curry and Stroud found consistent increases in perceptions of credibility regardless of their participants' political ideology, indicating that transparency cues like opinion labels should have an effect on partisans and non-partisans alike.

It is important to note that Curry and Stroud (2019) tested their experiment on a fictitious news source rather than a real news organization. Moreover, since they tested five transparency cues in conjunction, rather than individually, it is unclear which of the five cues provided the most significant effect on credibility or whether there were interaction effects. These studies suggest that transparency cues do have an effect on credibility, but it is still unclear why or in what circumstances, a gap this dissertation seeks to fill.

Given the above research, the following research question and hypotheses are proposed:

RQ1: *Do transparency cues affect perceived source credibility?*

H1a: *Opinion labels on story cards will increase the perceived source credibility of news organizations.*

[3] This finding, that transparency elements significantly increased credibility for *each* article topic, not just in the aggregate, was not published in Curry and Stroud's 2019 paper, but was confirmed by email on May 7, 2020.

H1b: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for prior perceptions of a news source's credibility.*

Relevant Dimensions to Processing Opinion Content

Before exploring why opinion labels, as heuristic cues, may affect perceived credibility, this dissertation explores how transparency cues relate to the dimensions of media skepticism, brand affect, confirmation bias, and hostile media effects. These dimensions were chosen because they have been previously shown to affect how news – particularly political news – is perceived. These dimensions are explored with the assumption that audiences are not monolithic, but multifaceted and interpret messages differently from each other (Jin 2012). Because heuristic cues can affect cognitive processes involving credibility, controlling for the effects of these dimensions may give insight into how heuristics affect credibility evaluations.

Media Skepticism

The first of these dimensions is media skepticism. Media skepticism is a subconcept of generalized media trust, explicated earlier. It can be described as an individual's feeling of general distrust toward mainstream news media as a whole. It can further be described as a feeling of alienation toward news reporting (Tsfati 2003). It is a trait-like attitude, developed through an accumulation of one's experiences with news media, that portions of the population have about news media in general (Otto, Thomas, and Maier 2018). Media skepticism is included in this dissertation because it exists regardless of the specific quality of a source and

because it has been found to guide credibility evaluations of particular sources (Tsfati and Cappella 2003; Otto, Thomas, and Maier 2018).

While it might be expected that media skeptics avoid mainstream news media, research suggests that skeptics have high levels of exposure to mainstream news media. Tsfati and Cappella (2005) found that people consume news they do not trust when their motivation for news exposure exceeds their distrust. These researchers also found that media skeptics have a high need for cognition. Need for cognition motivates people to search for news – regardless of whether that news is perceived to be trustworthy – to understand and make sense of the world and to learn various points of view.

Originally operationalized using measures from credibility research (e.g., Tsfati 2003), media skepticism can more recently be determined through measures derived from media trust research (Prochazka and Schweiger 2019; Engelke, Hase, and Wintterlin 2019). This dissertation applies a previously used index of four items to measure media skepticism (Kohring and Matthes 2007; Prochazka and Schweiger 2019; see Appendix B). Specifically, the items ask the extent to which participants agree or disagree with statements about how well the news media pay attention to important topics, address essential points of topics, report facts truthfully, and whether journalists' opinions are well founded. This dissertation explores whether opinion labels will increase perceived credibility, controlling for the degree of participants' media skepticism.

H1c: *Opinion labels on story cards will increase perceived source credibility of news organizations, controlling for media skepticism.*

Brand Affect

Similar to media skepticism, brand affect has been empirically linked to credibility. Brand affect is the potential of a brand to elicit a positive or negative emotional response among consumers as a result of its usage (Chaudhuri and Holbrook 2001). It is one of the dimensions of brand equity, a measure of the 'strength, uniqueness, and favorability of audiences' perceptions of a brand' (Oyedeji 2010, 84). Exploratory research suggests that brand recognition and reputation play a larger role in credibility assessments for news websites than they do for any other type of website (Fogg et al. 2003, 71). This dissertation explores whether opinion labels increase perceived source credibility, controlling for the effects of brand affect.

A news organization's brand is one source of its credibility. It is an important heuristic in evaluating news quality (Urban and Schweiger 2014). Typically, the more positive a brand's affect, the higher its perceived credibility. Bakshi, Khan, and Misra (2014) found a strong correlation (r = .65) between brand equity and credibility. Fichter and Jonas (2008) showed participants identical content from two newspapers and found that the brand with higher favorability ratings was consistently rated as more credible. These findings may be due to the fact that news presented under a brand logo elicits higher emotional arousal and more attention than news without a brand logo, thereby influencing consumers' credibility perceptions (Laaksonen et al. 2019). Additionally, Van der Meer, Hameleers, and Kroon (2020) argue that a news source itself is an important heuristic cue allowing users to 'quickly judge the trustworthiness, relevance, and attitude-congruence of news in an overloaded information environment.'

Oyedeji's (2010) credible brand model describes how ideological congruence – the extent to which a brand's content reflects an individual's worldview – can predict brand equity, which then predicts credibility. In essence, brands that produce content that confirms users' biases are perceived to be more credible than brands that challenge users' biases. Oyedeji (2008) found that the more media outlets make ideology a part of their brand strategy, the more that ideology affects their brand equity. The potential market outcomes of such findings are remarkable, as news organizations are incentivized to produce ideological content to satisfy audiences.

While credibility and brand affect have been linked, this dissertation explores the possible role of this often-overlooked factor in credibility research. Given the demonstrated importance of brand affect, research on source credibility would be incomplete without incorporating it as a factor. Moreover, since opinion labels are typically placed near brand names or logos on news websites and story cards, and because opinion labels signal potential ideological congruence or difference (a predictor of brand equity), this dissertation explores the role of brand affect. Participants' brand affect is measured in this dissertation through Chaudhuri and Holbrook's (2001) brand affect index which asks participants about their positive or negative reactions to a brand: specifically the extent to which participants feel good when they see a brand, whether a brand makes them happy, and whether a brand gives them pleasure (see Appendix B). H1c predicts that opinion labels on story cards will increase perceived source credibility, controlling for participants' positive or negative reactions to a brand.

H1c: *Opinion labels on story cards will increase perceived source credibility of news organizations, controlling for brand affect.*

Confirmation Bias

Confirmation bias refers to an individual's tendency to test ideas in a one-sided way, finding and interpreting information that supports their preconceived notions while dismissing alternatives (Oswald and Grosjean 2004). Confirmation bias has long been tied to selective exposure, as individuals tend to engage more with news that confirms their biases than news that does not (Knobloch-Westerwick 2015). This dissertation focuses on an individual's 'proneness to confirmation bias', or how likely they are to engage in confirmation bias when evaluating credibility (Rassin 2008). Individuals who are more prone to engaging in confirmation bias may be more likely to find ideologically congruent information to be credible than ideologically incongruent information. Thus, it is important to explore opinion labels in relation to the likelihood of experiencing this bias.

Individuals may interpret the same information in different ways. While scholars have proposed that individuals selectively expose themselves to confirmatory news to reduce cognitive dissonance – a state of psychological stress from holding two or more contradictory views – evidence suggests that perceived credibility is a stronger predictor for selective exposure (Metzger, Hartsell, and Flanagin 2020). In short, people choose to engage with news sources that produce content that confirm their biases not in an attempt to reduce cognitive dissonance, but because they think those sources have the most accurate information.

Confirmation bias has been found to have effects on democratic discourse, a motivating factor for inclusion in this dissertation. In certain conditions, exposure to both attitudinally consistent as well as inconsistent information can reinforce previously held opinions, a

phenomenon called belief persistence (Nickerson 1988; Knobloch-Westerwick, Johnson, and Westerwick 2015). Disconfirmatory information may change narrow beliefs in a topic but may not alter a wider belief system (De keersmaecker and Roets 2017). Moreover, it can be difficult to correct incorrect information once learned (Wood and Porter 2016; Pennycook and Rand 2017). These findings indicate the importance of studying heuristic cues and credibility in relation to confirmation bias.

Highly partisan media that exploit confirmation biases may also spread disinformation, leading to increased polarization. In a review of 51 studies of partisan bias, Ditto et al. (2017) found that conservatives and liberals showed strong biases in interpreting evidence. Allcott and Gentzkow (2017) found that people are more likely to believe stories that favor their preferred candidates regardless of how true those stories are. These results indicate that confirmation bias has a strong impact on perceptions of credibility. However, it remains to be seen whether heuristic cues can affect credibility perceptions among those most likely to experience confirmation bias.

Most research on confirmation bias has treated it as a ubiquitous phenomenon without acknowledging differences among individuals. Some people may be more susceptible to confirmation bias than others (Rassin 2008). An individual's need for cognition and cognitive reflection – the tendency to override an incorrect intuitive response and further reflect to find a correct answer (Frederick 2005) – have been explored as potential reasons. The higher individuals' cognitive reflection and need for cognition, the more likely they are to selectively expose themselves to confirmatory political information, although they might not necessarily believe that information (Westerwick, Johnson, and Knobloch-Westerwick 2017;

Knobloch-Westerwick, Mothes, and Polavin 2020). Research also indicates that higher cognitive reflection increases motivated reasoning about political topics and may exacerbate the effects of confirmation bias (Kahan 2013).

Since opinion labels may guide how individuals perceive credibility, it is important to identify the effects of this transparency cue on confirmation bias. If opinion labels do have an effect on confirmation bias, they should increase perceptions of news source credibility regardless of an individual's proneness to confirmation bias. To measure one's proneness to confirmation bias, Rassin (2008) derived an index from an individual's tendency to trust their instinct, jump to conclusions, and stick with their original opinions despite disconfirming evidence. This dissertation adopts a shortened Rassin's *Confirmation Inventory* (Appendix B) to measure the effects of opinion labels on news consumers' perceptions of credibility when controlling for proneness to confirmation bias.

H1d: *Opinion labels on story cards will increase perceived source credibility of news organizations, controlling for proneness to confirmation bias.*

Hostile Media Effect

The hostile media effect, or phenomenon, describes the tendency for those with strong pre-existing attitudes to find content to be biased against them (Vallone, Ross, and Lepper 1985; Gunther, Miller, and Liebhart 2009). It is a form of contrast effect, which refers to the tendency for news consumers to find attitudinally inconsistent information more oppositional to their biases than that information is in actuality (Lord, Ross, and Lepper 1979). The hostile media effect has been supported by substantial literature; a review of 34 studies found consistent evidence for it (Hansen and Kim 2011). It is a competing theory to confirmation bias and is

relevant to this dissertation because opinion labels signal the potential for ideologically or politically aligned content, and because contrast effects particularly affect partisans and ideologues who may be most reactive to opinionated content. This dissertation therefore looks at whether heuristic cues such as opinion labels affect credibility when controlling for the likelihood of experiencing hostile media effects.

Like confirmation biases, contrast biases such as the hostile media effect have been found to have wider effects on democratic discourse. The hostile media effect has been negatively correlated to trust in media and trust in democratic institutions (Tsfati and Cohen 2005; Perloff 2015). The effect is also related to increased political polarization, which has been cited as a significant reason for declining trust in news media (Ladd 2012). Survey data from 35 countries indicate that partisans are less likely to trust the news media in general, but are more likely to trust the news they consume (Suiter and Fletcher 2020). Partisans in the US, particularly on the political right, may be less likely to trust the mainstream news media because they perceive it as hostile to their views (Iyengar and Hahn 2009; Stroud 2010; Benkler et al. 2018). Since many Americans identify as strong ideologues or partisans, such findings are relevant to studying heuristic cues and credibility.

Similar to the other theories discussed, the hostile media effect is likely the result of automatic rather than systematic processing. Emotional arousal and motivated reasoning help explain the effect (Taber and Lodge 2006; Matthes 2013). In particular, affective priming (particularly negative affect) heightens the effect, as certain emotions are more temporarily available in memory than others (Matthes and Beyer 2017). These findings indicate that heuristic cues may impact hostility perceptions since cues can work at a subconscious level.

Hostile media effects theory suggests that news consumers react to opinion content differently depending on their political views. Political partisans assign 'different valences to the same content' and also see information favoring the other side as 'invalid or irrelevant' (Schmitt, Gunther, and Liebhart 2004, 623). Study participants have evaluated attitudinally congruent arguments as stronger than attitudinally incongruent arguments, dismissing incongruent arguments while uncritically accepting supporting arguments (Taber and Lodge 2006). While hostile media effects can apply to weak partisans or individuals with low issue involvement, the more involved partisans are with a particular issue, the more likely they are to experience the hostile media effect (Hansen and Kim 2011; Gearhart, Moe, and Zhang 2020).

This dissertation attempts to expand hostile media effects theory by examining the role a heuristic transparency cue, specifically an opinion label, plays in partisans and ideologues' perceptions of news source credibility. To be clear, this study is not replicating whether the hostile media effect exists or in what form, but whether transparency cues can increase credibility among individuals most likely to find mainstream news sources not credible. If an individual experiences strong hostile media effects, then opinion labels may not significantly impact their perceptions of credibility. Thus, it is important to identify which news consumers are most likely to experience hostile media effects.

To that end, this dissertation turns to research that has examined hostile media effects in relation to source credibility. Research on hostile media effects has generally focused on perceptions toward specific issues (Coe et al. 2008). However, when considering perceptions of a source, studies have framed hostile media effects as opposition to participants' political identification rather than their positions on issues (Yun et al. 2018). This dissertation therefore

determines the likelihood of experiencing hostile media effects as a product of an individual's partisan and ideological identification, using measures from Coe et al. (2008).

H1e: *Opinion labels on story cards will increase perceived source credibility of news organizations, controlling for likelihood of experiencing hostile media effects.*

Single Source Environments

This dissertation next explores why opinion labels, as heuristic cues, may impact credibility perceptions. It explicates the concept of opinion segmentation and two competing theories of source hostility and the persuasive intent heuristic. It proposes the following two pathways for how opinion labels may affect credibility: they may reduce the perceived persuasive intent of a source's non-opinion articles or reduce a source's perceived hostility, reducing perceived bias, and finally increasing perceived credibility (figure 7). The theories behind these pathways are explored in this section.

RQ2: *Why might transparency cues affect perceived source credibility?*

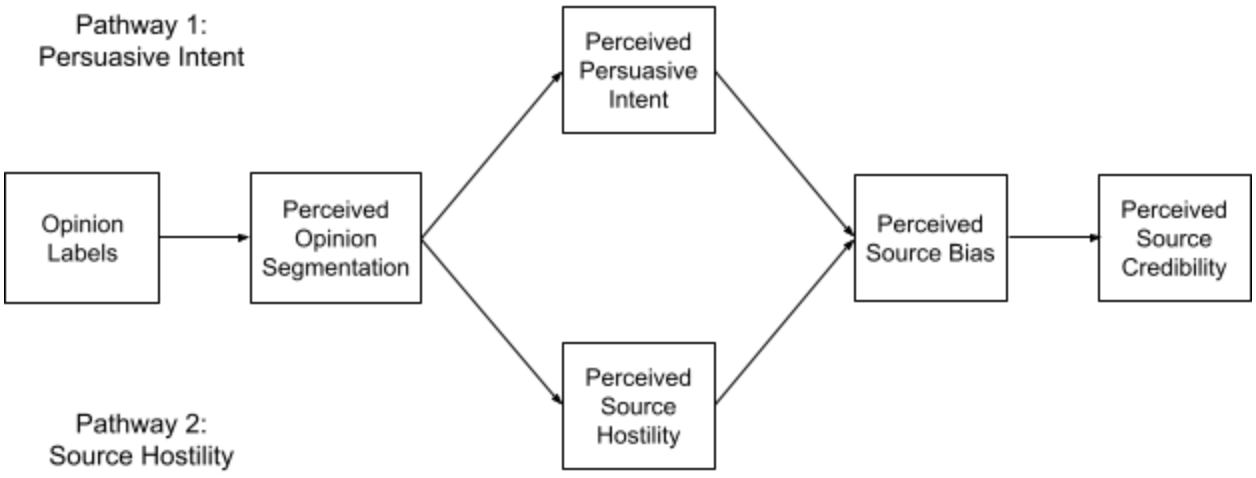


Figure 7. Model for opinion labels in study 1. Two potential pathways for how opinion labels may work in single source environments: a persuasive intent pathway (above) and a source hostility pathway (below).

Opinion Segmentation

As transparency cues, opinion labels may increase credibility because they indicate 'opinion segmentation'. This concept can have two dimensions: the perception of the traditional 'wall of separation' between news and opinion departments of news organizations in the United States, and the perception of a distinction between the intent of an article's author and the source that published it (Kahn and Kenney 2002; Kelling and Thomas 2018). The use of opinion labels indicating opinion segmentation may be related to perceptions of credibility through persuasive intent or source hostility, explored later in this section.

The separation of factual news from opinionated content has been the normative basis for much journalism in liberal democracies (Eilders 2015). Since the professionalism of news writing, journalists have typically focused on presenting the most important elements of a story at its beginning, avoiding personal commentary and opinion (Banning 1999; Pöttker 2003). While the line between fact and opinion may be more blurred in some countries than others, news organizations in the US, in particular, have traditionally prized a rigid separation between factual news reporting and opinion content (Nerone and Barnhurst 2003; Thomas 2018).

It must be noted that, while the wall of separation has traditionally been considered absolute in the US, many studies indicate that the separation may be more 'permeable' than claimed (Ho and Quinn 2008). Some researchers have found that opinions expressed in editorial sections can affect how news is selected and presented in other sections, a term known as synchronization (Eilders 2015). Furthermore, the slant – defined as the directionality of political bias – of an organization's editorial content has been linked to the slant of its news coverage

(Kahn and Kenney 2002; Gentzkow and Shapiro 2010). These studies indicate that the wall of separation may be more aspirational than practicable among traditional news organizations.

The form and location of opinionated content have changed since the advent of cable news, the internet, and more recently, social media. Some traditional news organizations have increased the rate of publication of opinionated content (Grove 2020). Mediums such as magazines, the internet, and cable television can blur the line between news and opinion. Alternative and advocacy journalism, in particular, often explicitly argue for political positions in reporting, rejecting the detachment of the professionalized model of journalism (Kelling and Thomas 2018).

Nevertheless, the separation of factual news from opinionated content remains the stated aspiration of many news organizations in the US (Jacobs and Townsley 2011; Revers 2017, 95-97; Heinderyckx 2021). However, this separation, in so far as journalists themselves conceive it, has received little scholarly attention despite common mention in market research (Kahn and Kenney 2002; for examples of market research see Iannucci 2017, Mitchell et al. 2018, and Lerner 2020). Most scholarly research on the topic has focused on the traditional separation between news and business departments in news organizations rather than between news and editorial departments (e.g., Mari 2014, Artemas, Vos, and Duffy 2018, and Duffy and Cheng 2020).

Opinionated content, once clearly marked and segmented in print media, is less segmented online. Little empirical research has studied the frequency with which opinionated content online is accompanied by explanatory labels such as opinion labels. Nonetheless, it appears that there is less segmentation online than offline. A non-peer-reviewed study from the

Duke Reporters' Lab indicated that about 40 percent of large news organizations label opinionated articles as opinion; some of these news organizations mixed opinion labels with other labels such as local, politics, and sports (Iannucci and Adair 2017). Most importantly, the rate of labeling opinionated content is low on story cards, the backbone of news presentation on search engines and social media, and the focus of this dissertation.

Specifically, the widespread lack of labeling on story cards may increase the difficulties individuals have in differentiating factual from opinionated statements in the news. Partisans, in particular, have difficulty determining the factuality of information when that information confirms their biases (Mitchell et al. 2018). As news organizations move to digital-first publishing, casual readers may not distinguish news from analysis or opinion (Pearson 2019). Thus, important context for articles is often missing online, especially in story cards, potentially leading to misunderstandings of journalistic content.

The second dimension of opinion segmentation is the distinction between the intent of the author(s) of an article and the source that published it. Traditionally, this dimension has been indicated via the use of op-eds or guest columns in newspapers. The first op-ed page, in a modern sense, appeared in 1970 in the *New York Times* and was named for its location opposite the editorial page. It was designed to be a place where a wide variety of ideas could be discussed to inform the public (Socolow 2010). Since then, op-eds, and guest opinions more broadly, have become common for many news organizations (Wahl-Jorgensen 2008). With the rise of the internet, this dimension can be indicated through tooltips placed on opinion labels explaining the nature of opinion articles (Curry and Stroud 2019).

Newspapers in the US have traditionally set a normative ideal to cultivate some guest opinions contrary to that of the editorial board and to solicit views from individuals outside journalism, such as academics, advocates, and politicians (Socolow 2010). While editorials can be considered organizational views of the editorial department of a news organization, opinion columns and op-eds typically express individual or outside views. Opinion columns may reflect content that is politically divergent from the views published by an editorial board. However, it should be noted that, like the separation of news from opinion content, these aspirational ideals may be less achieved in practice, as news organizations tend to publish opinion content from narrow ideological ranges (Day and Golan 2007).

Thus, these two dimensions: the distinction between news and opinion, and the distinction between author and source, comprise the concept of opinion segmentation. Opinion labels with explanatory tooltips can indicate these dimensions because they can signal to readers that a particular article is an opinion piece (that it has been produced or curated by a news organization's editorial or opinion department) and because they can signal that an article is the product of an individual writer or outside group, not an organization's editorial department. Therefore, they signal that an article is separate from the news organization that printed it.

The extent to which a news organization separates fact-based news and opinionated content has been closely linked to credibility and has been used in some credibility indexes (Gaziano and McGrath 1986; Karlsson et al. 2014). Since credibility and the extent to which news and opinion are separated can both be perceptions, it is reasonable to assume that the presence of opinion labels may impact how a news source is perceived. In sum, opinion labels

may increase perceptions of a source's credibility because they cue that an organization publishing opinionated content may be independent of that content itself.

H2a: *Opinion labels will increase perceived opinion segmentation.*

This dissertation specifically explores two different pathways for how opinion labels, as transparency cues for opinion segmentation, may affect news source credibility. The first pathway is through the persuasive intent heuristic. The second pathway is through source hostility. These theories are explored in the following sections.

Persuasive Intent

The persuasive intent heuristic is triggered by cues that certain information may be designed to persuade an individual of something. It appears to arise from fears of being manipulated (Metzger and Flanagin 2013). News consumers perceive that producers of biased news may have ulterior motives and may not have readers' best interests in mind. Persuasive intent appears to trigger a defense mechanism and can make both content and source appear less credible. The persuasive intent heuristic has been theorized to arise from advertising and sponsored content but may also involve opinionated content (Metzger and Flanagin 2013).

With particular reference to opinion labels, this dissertation explores whether biased content may be a cue that triggers the persuasive intent heuristic, a pathway that has often been suggested in literature and surveys but has not yet been empirically studied (Metzger, Flanagin, and Medders 2010; Metzger and Flanagin 2013). Replicated studies have found that perceived bias is a primary factor of source credibility, but research has yet to explore the mechanisms *why* (Gaziano and McGrath 1986; Meyer 1988; West 1994; Abdulla et al. 2004; Chung, Kim, and

Kim 2010; Chung, Nam, and Stefanone 2012). The fact that partisans on both sides of an issue find identical content to be biased against them implies that bias is a perception just like credibility (Goldman and Mutz 2011).

This dissertation focuses on the persuasive intent heuristic because literature and surveys indicate that this heuristic may play a more substantial role than other heuristics when individuals judge credibility (Metzger, Flanagin, and Medders 2010). Grillo and Pizzutti (2020) found that awareness of a source's persuasive intent negatively affected whether individuals trusted that source if its information challenged prior beliefs. These researchers argued that ulterior motives are processed as a threat to oneself, as recipients of persuasive messaging have an 'exogenous justification' to 'downgrade communicator credibility' (Grillo and Pizzutti 2020, 11).

While little empirical research has been conducted on biased content and the persuasive intent heuristic, researchers have looked at the persuasive intent heuristic regarding how peripheral advertising affects perceived news credibility. Perceptions of persuasive intent may differ based on how content is presented and how much it may look like news. Native advertising, which is designed to mimic the form of its host website, has been linked to lower levels of source trustworthiness than display advertising (Aribarg and Schwartz 2020). Native advertising is thought to hijack a publisher's credibility by mimicking its format, increasing perceptions of persuasive intent (Wu et al. 2016). But, when primed, news consumers can differentiate native advertising from website content (Windels and Porter 2019). Likewise, political advertising on a news website, whether liberal, conservative, or neutral, had no significant effect on readers' perceptions of the bias or credibility of the news source (Ayad,

Dunn, and Marshall 2020). Taken together, these studies offer insight into how opinion labels may change perceptions of persuasive intent.

Data suggesting readers are able to distinguish native advertising from news when primed may help explain the role of opinion labels, which also prime users to differentiate persuasive content, such as op-eds and editorials, from factual content such as news articles. In particular, empirical evidence indicates that opinion labels may decrease perceptions of persuasive intent in articles that are not labeled as opinion. Thus, opinion segmentation may increase perceived credibility through the persuasive intent heuristic.

H2b: *Perceived opinion segmentation will negatively predict perceived persuasive intent.*

H2c: *Perceived persuasive intent will be positively correlated with perceived source credibility.*

Source Hostility

Source hostility describes the phenomena when news consumers become suspicious or distrustful of a news organization that presents a worldview in opposition to their own. When referring to the news media in general, source hostility can be called oppositional media hostility, or oppositional news hostility (Arceneaux, Johnson, and Murphy 2012). Source hostility is relevant to contemporary politics and media systems because of a proliferation of news from many ideological perspectives. It is specifically relevant to this study because transparency cues like opinion labels may reduce perceptions of media hostility.

Exposure to partisan news opposed to one's worldview has been linked to source hostility. Participants in studies have perceived counter-attitudinal news as 'less fair, more hostile, and less friendly than mainstream news' (Arceneaux and Johnson 2015, 21). Peterson

and Kagalwala (2019) found that oppositional media hostility is most present among those who view oppositional news sources the least. Specifically, these researchers contend that the public assesses news organizations that produce oppositional content based on negative stereotypes. Unsurprisingly, they found that individuals with the most negative views of certain news organizations were the least likely to encounter news from those organizations.

Source hostility is an extension of hostile media effects theory. Perloff (2015) has suggested that oppositional media hostility is a useful and relevant way of approaching hostile media effects given the increase of partisan news outlets online and individuals' selective exposure to news. However, unlike hostile media effects theory, the most partisan individuals are not necessarily the most likely to find counterattitudinal news the most biased (Arceneaux and Johnson 2015). These researchers found that perceptions of bias and hostile media effects were reduced for mainstream and partisan news consumers alike when these groups were presented ideologically confirming news, regardless of whether that news was balanced for moderates or ideologically slanted for partisans.

Hostile media effects theory suggests that the greater the perceived effect and the broader a message's reach, the more likely that new consumers will reckon that others will be vulnerable to it, and the more hostile they will find the message to their views (Perloff 2015). People are more likely to take issue with biased content when they assume others will see it and when the content comes from a professional source like a journalist (Gunther and Schmitt 2004; Gunther and Liebhart 2006). Hostile media effects have also specifically been tested with biased content coming from news sources – as in this dissertation – with researchers finding significant effects (Gunther and Chia 2001; Feldman 2011).

Group dynamics also play a role in this theory. Social identity theory posits that individuals categorize themselves and others into groups. Perceptions of identity can foster belief in media bias as oppositional media hostility appears to motivate individuals to resist perceived attacks on their group (Arceneaux and Johnson 2013; Gunther et al. 2017). There is a long literature on audience preferences for news that presents their social group favorably and dissimilar groups unfavorably (Knobloch-Westerwick, Mothes, and Polavin 2020). Individuals derive self-esteem from news that confirms their biases regarding positive coverage of their group versus outside groups (Tajfel 1982). These findings indicate that when news consumers view information that appears hostile to their identity, they may perceive that information as less credible.

The stronger an individual's identification with an issue or group, the more likely they are to distrust outside information involving their group, such as news coverage. Reid (2012) found an amplified hostile media effect when a news source was perceived to come from an opposing social group and reflected on an in-group's identity. This effect appears to be related to the perceived relative status of one's group. Hartman and Tanis (2013) reported that partisans perceived an identical newspaper article about two different groups to be biased only when they considered their group to be lower in social status than the other. Further research suggests that this view may be related to political identity, as mainstream news media is often perceived to have a leftward slant. For instance, a study of four different regions of Europe found that individuals with populist ideologies were more likely to think that news reporting was hostile toward their views than others (Schultz, Wirth, and Müller 2020) .

While opinion labels may reduce source hostility, little empirical research has been conducted to link heuristic cues with source hostility and credibility. This dissertation specifically hypothesizes that one of the pathways for opinion labels to increase credibility is through reducing perceptions of source hostility. Opinion labels may indicate to news consumers that the producers of news are not attacking readers' beliefs and values. Rather, opinion labels may signal opinion segmentation (that articles do not necessarily represent the views of the publisher and that news organizations may aspire to provide a variety of viewpoints, rather than to push only one point of view), thereby indicating that news organizations themselves are not hostile to the consumer. Thus, opinion labels may reduce perceptions of source hostility and increase credibility.

H2d: *Perceived opinion segmentation will negatively predict perceived source hostility.*

H2e: *Perceived source hostility will negatively predict perceived source credibility.*

Bias and Credibility

Perceived bias and credibility are strongly linked; bias has consistently been used as a dimension of credibility since Gaziano and McGrath's (1986) seminal study (e.g., Meyer 1988, West 1994, Abdulla et al. 2004, Chung, Kim, and Kim 2010, Chung, Nam, and Stefanone 2012, and Yale et al. 2015). Perceived bias is the lever by which this dissertation theorizes either persuasive intent or source hostility impact perceived credibility. This dissertation predicts that either decreased perceptions of persuasive intent in non-opinion articles, or decreased perceptions of source hostility, will decrease perceived bias. Decreased bias may then increase

perceptions of credibility. Therefore, opinion labels, as heuristic transparency cues, may increase credibility primarily because they decrease bias.

Perceptions of media bias are widespread in the US, indicating the potential for opinion labels. Sixty-eight percent of Americans see at least 'a fair amount' of political bias in news coverage, while 72 percent of Americans think the news media are influenced by 'powerful people and organizations' (Willnat, Weaver, and Wilhoit 2017, 428). Studies of assimilation and contrast biases suggest that liberals and conservatives perceive news networks to be more, or less, biased than they really are. For instance, conservatives may perceive *Fox News* to be more similar to their ideology than *Fox News* actually is due to an assimilation effect, and *CNN* to be more distant due to a contrast effect (McLeod, Wise, and Perryman 2017). However, this is not to say these news organizations are unbiased; studies have documented slant in the content of a wide number of news outlets (Mullainathan and Shleifer 2005; Gentzkow and Shapiro 2010; Benkler et al. 2018).

Research indicates that perceived bias may partially originate from a gap in the US between how journalists and the public think news information should be presented. A factor analysis by Weaver et al. (2007) identified four core journalistic functions: 1. an interpretive function (to provide analysis of complex problems and discuss national and international policy), 2. an adversarial function (to scrutinize government and business), 3. a disseminator function (to quickly provide information for a wide audience), and 4. a mobilizer function (to develop intellectual and cultural interests, let people express their views, motivate people to get involved, and provide solutions to societal problems). Willnat, Weaver, and Wilhoit (2017, 425) found that, while journalists are more likely to think 'providing analysis of complex problems' and

discussing national and international policy are important, the public is more likely to prefer direct, less-interpreted information. This finding is in line with Abdenour, McIntyre, and Dahmen (2020), who found that average citizens were significantly less likely than journalists to say that a fundamental role of journalism is to provide analysis of complex problems.

Data indicate that trends toward interpretative journalism began in the late 1990s, around the same time that trust in news media began to decrease (Tanikawa 2017). Based on an extensive content analysis of the *New York Times*, the *Washington Post*, and the *Milwaukee Journal Sentinel*, Fink and Schudson (2014) found that contextual reporting – explanatory reporting focusing on the 'big picture' rather than just the facts of a day's events – grew from 10 to 40 percent between 1955 to 2003. The study also found that journalists were more likely to advance their own personal analysis toward the end of the period examined.

The gap in expectations between journalists and citizens may fuel perceptions of media bias and may be related to the role opinion labels can play. Research indicates that journalists tend to value the interpretive function of journalism more than the public (Willnat, Weaver, and Wilhoit 2019). In contrast, Americans may be more likely to prefer political news coverage when interpretation is not included (Barthel and Gottfried 2016). Other data suggest that the public tends to value the disseminator function of the media more than journalists. Comparing two political news articles, one that attempted to contextualize the potential impact of a local election and one that only provided the details of the election, Siker (2019) found that individuals rated the fact-based political news more credible than the news providing context and interpretation.

This finding indicates that news consumers are less likely to think a fundamental role of journalism is to provide analysis or discuss policy, which are typical roles of opinion sections

and potential sources of perceptions of bias. Since the five indicators of credibility, according to the Meyer Credibility Index (1988), are bias, trustworthiness, accuracy, fairness, and telling the whole story (completeness), it is expected that opinion labels will increase perceived credibility by affecting perceptions of bias more than perceptions of the other indicators of credibility. Specifically, it is expected that opinion labels will reduce perceptions of bias more than they will increase perceptions of trustworthiness, accuracy, fairness, and telling the whole story.

H2f: *Opinion labels on story cards will decrease the perceived bias of news organizations significantly more than the other indicators of source credibility.*

Multiple Source Environments

The theories explored so far have provided a theoretical grounding for whether and why opinion labels may affect credibility in situations where news consumers are presented with information from only one source. The following section addresses theories specific to how opinion labels, as heuristic cues, may affect credibility perceptions in multiple source environments. Two competing theories, prominence-interpretation and the source blindness effect, are explored. These theories relate specifically to the second of the two studies in the methods chapter.

RQ3: *Do transparency cues increase perceived source credibility in multiple source environments?*

Prominence Interpretation

The prominence-interpretation theory posits that people assess credibility online by first noticing something of prominence and second making a judgment (or interpretation) about it

(Fogg 2003). Users repeat the process of prominence and interpretation on different elements of a web page until they are satisfied or until constraints stop them. Individuals appear to make credibility judgments sequentially, noticing and processing one element of a website at a time (Fogg 2003). The prominence-interpretation theory relates to opinion labels because the more prominent a heuristic cue is, the more it may affect the process of evaluating credibility (Santana and Hopp 2020; Masullo et al. 2021). This theory is especially relevant in online environments where there are many cues available and only the most prominent cues are recognized and processed. The theory is essential to this dissertation because, to better understand how heuristic cues work, it is necessary to study them as they are typically presented in mixed source news feeds (multiple source environments).

The process of prominence and interpretation is guided by heuristic cues, such as opinion labels. It is also related to surface credibility theory, which suggests that individuals judge credibility on surface-level criteria such as a website's design, rather than the quality of the site's content (Tseng and Fogg 1999). In particular, research suggests that the fewer the number of cues available, the more reliant users are on those cues to judge credibility (Shariff, Zhang, and Sanderson 2017). However, cues have to be recognized, at least at subconsciously, to be processed. Tracking participants' eye movements, Santana and Hopp (2020) found that participants did not notice subtle credibility cues on news articles (such as analysis labels in small gray text), nor did these subtle cues change credibility perceptions. This dissertation tests differing levels of prominence of opinion labels on story cards where there are few cues.

The prominence-interpretation process occurs rapidly, and is related to first impressions theory, which posits that perceptions of a source are formed within seconds, and these

impressions tend to be stable once formed (Alsudani and Casey 2009; Lowry, Wilson, and Haig 2014; Selejan et al. 2016). In the context of online credibility, Robins and Holmes (2008) found that users' credibility assessments became stable after spending about 3.42 seconds on a webpage; additional time spent had little impact on changing assessments. Other research suggests that individuals appear to judge hundreds of cues in a short time (Alsudani and Casey 2009). Because credibility is assessed quickly, initial impressions of websites are critical for how users perceive online content (Lowry, Wilson, and Haig 2014).

Further evidence appears to confirm that individuals' impressions tend to stabilize after completing the prominence-interpretation process. Huang, Zhu, and Mustafaraj (2019) presented participants with screenshots of real and 'fake news' websites with identifying logos and website names removed. They found that exposure time to a website – whether it was 6, 12, or 20 seconds – made little difference in users' ability to distinguish between the websites. This finding appears to confirm that one's perceptions of news websites are stable after a first impression. The results also suggest that individuals quickly infer heuristic cues to judge credibility. These findings are important to this dissertation because they indicate that opinion labels must be among the most prominent and first noticed cues if they are to impact credibility perceptions.

Prominence-interpretation theory is relevant to story cards specifically because news consumers generally interact with news online through story cards before visiting the original news source (Pearson and Kosicki 2017). Therefore, readers may form perceptions of a source through story cards before visiting the source. This dissertation seeks to inform credibility and heuristics theory by exploring the effects of prominence-interpretation on how people perceive

source credibility online. If prominence-interpretation theory applies to story cards, the more prominent an opinion label is, the more it will guide the prominence-interpretation process. However, the following source blindness theory offers a competing vision for how heuristic cues are processed in multiple source environments.

Source Blindness Effect

The source blindness effect occurs when certain online media environments cause individuals to be either 'unable or unwilling' to process source cues (Pearson 2019, 13). This effect may reduce the role of prominence for heuristic cues, particularly in multiple source environments. The source blindness effect has been studied on social media, where news feeds collapse distinctions between topics ('information context collapse'). To illustrate, online feeds can display news alongside personal updates and entertainment, mixing information that traditionally came from separate spheres. This intermixing prevents news consumers from distinguishing the credibility of different sources. Thus, individuals online can treat the credibility of different sources similarly (Pearson 2019).

In contrast to visiting news websites directly, the source blindness effect appears to apply only to content in environments when multiple sources are mixed together, such as in social media. Johnson and St. John III (2019) presented millennials with articles on Facebook from news organizations and non-news organizations such as corporate entities. They observed that participants rated the credibility of the stories similarly regardless of the source. In another study simulating a Facebook feed, participants perceived no significant differences in credibility regardless of whether information came from a real and well-recognized news site (i.e., the

Associated Press) or a fictional news site (Sterrett et al. 2019). Similar results have been found on other social media. Bakker, Trilling, and Helfer (2013) found that users judged the credibility of articles shared on Twitter the same regardless of whether the articles came from an interest group or an independent newspaper.

Several studies also suggest that the social aspect of sharing information on social media affects credibility. While people are more likely to *say* they believe that the quality of a news source impacts credibility (Media Insight Project 2016), experiments suggest that the person sharing a story influences credibility more than the source itself. Borah and Xiao (2018) reported that study participants thought articles with more likes on Facebook were more credible than articles with fewer likes. Recommendations on social media, such as whether a story was shared by a friend on Facebook, have been found to improve levels of trust in the news outlet that published the story (Turcotte et al. 2015). In some cases, who shares an article can override previously held perceptions of a source. In an experiment, Oeldorf-Hirsch and DeVoss (2020) found that Facebook users perceived articles from websites they considered untrustworthy to be *more* credible than articles from websites they considered trustworthy when shared by a close friend. These studies indicate that differences between sources in social media environments have a relative lack of impact on credibility.

The question remains whether the source blindness effect applies to mixed source feeds comprised entirely of journalistic content (such as in the news tab of a Google search), rather than journalistic and non-journalistic content mixed together (such as in a Facebook feed). Some research gives insight into whether the effect may function in this context. Kalogeropoulos, Fletcher, and Nielsen (2019) found that users were significantly less able to identify the source of

information if they found it via an online search or through social media than if they found it by directly visiting a news organization's website. Likewise, Sundar (2008) suggests that because typical online users receive messages from many different types of sources in many different contexts, it is difficult for average users to have a well-defined sense of credibility of these various sources and message categories. As the source blindness effect has been tested in multiple source social media environments, but not on multiple source journalism-only environments, it is studied in this dissertation. Specifically, the effect may extend to story cards in mixed source online news feeds.

The source blindness effect appears to exist regardless of individual characteristics that typically mediate perceptions of credibility. While research suggests that topic salience or interest in a topic may moderate the impact of cues when accessing articles directly on a news website (Kang et al. 2011; Ciuk and Yost 2016), Sterrett et al. (2019) found that interest in a topic did not reduce the impact of the sharer on credibility on social media. These results support the strength of the source blindness effect in multiple source environments and its potential relevance to mixed source feeds comprised entirely of journalistic content.

The studies so far presented have indicated that heuristic cues may have a limited impact on credibility in environments that cause source blindness. However, the prominence of cues is important. Metzger and Flanagin (2013) suggest that the abundance and mixing of sources in the digital era have disrupted how individuals traditionally evaluate credibility. They argue that relative information scarcity in the pre-internet era meant consumers could determine credibility based on cues indicating a reporter's training and position in society. These cues can be

comparatively less salient online, furthering the importance of studying heuristics, transparency cues like opinion labels, and story cards.

Most importantly, the source blindness effect may have negative effects on democracy. Fisher (2020) showed American participants an article criticizing the Ukrainian government from *RT* (formerly *Russia Today*), a Russian international news network. Fisher found that explaining the article's source and its intentions had no effect on participants' perceptions of the article's credibility. Furthermore, exposure to dubious information about Ukraine lowered American evaluations of Ukraine regardless of explicit attempts to make participants aware of the source or its motivations. Thus, the study of opinion labels may also have broader implications for the perception of information pertinent to democracy.

The source blindness effect indicates that heuristic cues such as opinion labels may have a limited impact on credibility in multiple source environments online. However, the prominence-interpretation theory suggests that cues will influence credibility perceptions when they are sufficiently prominent. Study 2 therefore explores whether varying the prominence of opinion labels can overcome the source blindness effect. Study 2 thereby expands upon the investigation of opinion segmentation in study 1 and deepens knowledge of heuristics and credibility theory. The following hypotheses explore the prominence required for a cue to impact perceptions of source credibility in study 2:

H3a: *Subtle opinion labels will not affect perceived source credibility in a mixed source feed.*

H3b: *Prominent opinion labels will increase perceived source credibility in a mixed source feed.*

This chapter has discussed the relevant theories and explicated the concepts to be explored in this dissertation. Specifically, this chapter explicated the concept of credibility and reviewed theories related to how and why heuristic cues may moderate news consumers' perceptions of news sources, even among those news consumers most likely to be predisposed to distrust a source, including news consumers who are media skeptics, have strong feelings about a brand, or are most likely to experience confirmation bias or hostile media effects. This chapter also reviewed literature relevant to how online environments affect news consumers' use of heuristics to judge source credibility. It proposed a model with two potential pathways explaining how opinion labels may affect perceptions of news source credibility. Finally, it proposed a series of research questions and hypotheses.

In summary:

RQ1: *Do transparency cues affect perceived source credibility?*

H1a: *Opinion labels on story cards will increase the perceived source credibility of news organizations.*

H1b: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for prior perceptions of a news organization's credibility.*

H1c: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for media skepticism.*

H1d: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for brand affect.*

H1e: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for proneness to confirmation bias.*

H1f: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for the likelihood of experiencing hostile media effects.*

RQ2: *Why might transparency cues affect perceived source credibility?*

H2a: *Opinion labels on story cards will increase perceived opinion segmentation.*

Pathway 1: Persuasive Intent

H2b: *Perceived opinion segmentation will negatively predict perceived source persuasive intent.*

H2c: *Perceived persuasive intent will negatively predict perceived source credibility.*

Pathway 2: Source Hostility

H2d: *Perceived opinion segmentation will negatively predict perceived source hostility.*

H2e: *Perceived source hostility will negatively predict perceived source credibility.*

H2f: *Opinion labels on story cards will decrease the perceived bias of news organizations significantly more than the other indicators of source credibility.*

RQ3: *Do transparency cues affect perceived source credibility in multiple source environments?*

H3a: *Subtle opinion labels will not affect perceived source credibility in a mixed source feed.*

H3b: *Prominent opinion labels will increase perceived source credibility in a mixed source feed.*

Figure 8. Research Questions and Hypotheses.

Chapter 3: Method

Study 1: Effects of Transparency Cues on Source Credibility in a Single Source Environment

Study Design

A 3 (news source) x 2 (headline opinion polarity) x 2 (presence of opinion labels) between-subjects factorial design tested hypotheses H1a to H2f. Quantitative methodology, specifically an online experiment, was chosen because it was determined to be the most appropriate method to test the theories presented in the previous chapter. The three levels of news source were story cards with a liberal brand (*CNN*), a conservative brand (*Fox News*), or no brand. The two levels of opinion polarity were story cards with either politically left (pro-Democrat/anti-Republican or pro-liberal/anti-conservative) or right (pro-Republican/anti-Democrat or pro-conservative/anti-liberal) slanted headlines. The two levels of opinion labels were story cards either with opinion labels or without opinion labels. Thus, the factorial levels were:

3: Liberal Brand (*CNN*) / Conservative Brand (*Fox News*) / No Brand

2: Left Slanted Headlines / Right Slanted Headlines

2: Opinion Labels / No Opinion Labels

Sample

Participants were drawn from Amazon Mechanical Turk. An a priori power analysis via G*Power, a statistical software package, suggested a sample size of 400 for a medium effect size (.25) and an alpha error probability of .05 (Faul et al. 2007; 2009). This suggested sample size included the number of participants expected for ANCOVA (see H1b - f), which represents the most demanding test used in study 1 in regard to participants needed.

Amazon Mechanical Turk was chosen to recruit participants because it can be a reliable survey method (Thomas and Clifford 2017). Mechanical Turk is currently the dominant labor market for online research (Dube et al. 2020). It allows researchers to recruit larger and more diverse samples than many other methods, particularly convenience samples of university communities (Follmer, Sperling, and Suen 2017). Additionally, Mechanical Turk can be 'democratizing' because it allows recruitment of samples of individuals from many different job backgrounds and geographic locations. However, Mechanical Turk has some limitations. Its demographics in the US tend to over-represent Asians and under-represent Blacks and Hispanics (Berinsky, Huber, and Lenz 2012; Paolacci and Chandler 2014). It is increasingly professionalized and some scholars have raised concerns about non-naivete of samples (Loepp and Kelly 2020). In sum, although Mechanical Turk does not necessarily guarantee samples that align with the US population as a whole, it can provide diverse samples (Follmer, Sperling, and Suen 2017).

Research suggests that data quality from Mechanical Turk is similar to other sampling mediums, with insufficient attention no more of an issue than other mediums (Thomas and Clifford 2017). Some recommend best practices for data validity include using screening

questions, reverse coded questions, manipulation checks, Likert scales with each point labeled, and preventing multiple submissions (Hauser, Paolacci, and Chandley 2019; Hunt and Scheetz 2019; Chmielewski and Kucker 2020; Aguinis, Villamor, and Ramani 2021). Specifically, Hunt and Scheetz (2019) suggest placing screening questions at the beginning of a survey, as is done in this dissertation.

While some scholars have recommended CAPTCHA verification or honeypots (computer code invisible to humans) to thwart bots, most recent studies suggest bots are not a significant problem at present (Kennedy et al. 2020; Moss et al. 2021). Generally, scholars caution against burdensome validity checks because they may not be effective, or may bias samples by overwhelming some participants (Hauser and Schwarz 2015; Sylaska and Mayer 2019; Chmielewski and Kucker 2020). Qualtrics has warned against using attention checks at all, suggesting that they may degrade data quality because respondents may recognize attention checks and subsequently invest less effort in their responses once they pass them (Vannette 2017). Concerns have also recently been raised about significant increases in Mechanical Turk participants failing response validity indicators (Chmielewski and Kucker 2020). Evidence suggests that this problem stems from users outside of the US using virtual private servers to fraudulently gain access to studies limited to American participants only. Kennedy et al. (2020) have proposed screening participants who use virtual private servers to reduce low quality responses.

To increase sample diversity, the survey was posted on the weekdays and weekends and at different times of the day, as suggested by Kapelner and Chandler (2010). The sample was limited to adults aged 18 or older residing in the United States, ensuring that participants had

proper context for the American political news to be presented. Participants were paid the equivalent of federal minimum wage paid for their time ($1; the study had an estimated completion time of eight to nine minutes) as recommended by Aguinis, Villamor, and Ramani (2021).

Materials

Qualtrics, an online survey and experiment platform, was used to design study 1. Stimuli were designed to look like Google's Top Stories feed (figure 9), featuring four 'blocks' of three story cards each. To mimic the interface of Google's Top Stories, custom CSS and HTML coding (Appendix H) was used to achieve the design seen in figure 9, below.

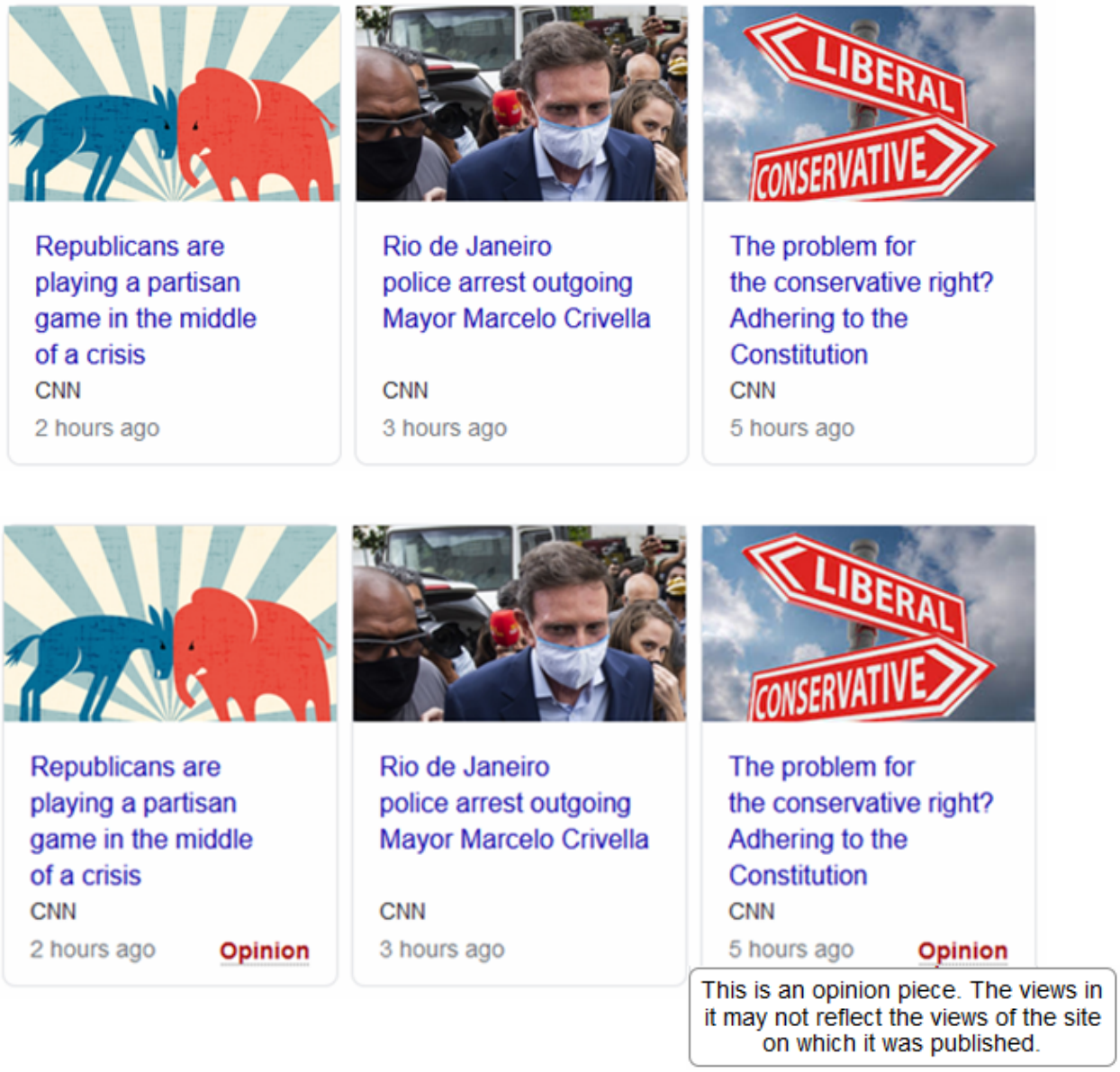


Figure 9. Two examples of one 'block' of a Google Top Stories stimuli in study 1. Top: a block used in condition 8 with *CNN*, left slanted headlines, and no opinion labels. Bottom: a block used in condition 5 with *CNN*, left slanted headlines, and opinion labels. Note the lack of opinion labels on the top example and the red opinion labels with an accompanying tooltip, activated by a mouse hover, on the bottom. See Appendix C for more details.

Story cards were designed with an image at the top, a headline, a brand logo, and a time stamp at the bottom, as in typical Top Stories format. Story cards were divided into two categories: 'news cards' and 'opinion cards'. News cards contained explanatory and unbiased headlines, while opinion cards contained politically left or right slanted headlines. Explanatory

headlines were defined as those containing three or more of the 5W1H of news articles – the who, what, where, why, when, and how (Norambuena, Horning, and Mitra 2020; Gentzkow and Shapiro 2010). Opinion headlines were defined as those slanted toward either a political ideology or a major political party. In recent years, conservative ideology and the Republican Party, and liberal ideology and the Democratic Party have become ideologically aligned in the US; conservatives are likely to be Republicans, and liberals likely to be Democrats (Webster and Abramowitz 2017). This finding allowed for both partisan and ideological slant to be dimensions of the overall left or right political slant of headlines.

Cumulatively, stimuli in study 1 consisted of six news cards, six left slanted opinion cards, and six right slanted opinion cards. After pre-testing (noted later), a selection of headlines exhibiting the best internal consistency was chosen. Slanted headline topics centered around current events and controversial political subjects in the United States. Right slanted headlines consisted of a headline:

1. supporting Republicans:
    - How Republicans won the war of ideas
2. supporting conservatives:
    - Many reasons for conservatives to be optimistic going forward
3. supporting a nationally prominent Republican politician:
    - Why Donald Trump is good for America
4. criticizing a nationally prominent Democratic politician:
    - Inside Biden's failure: the rush to abandon America's leadership role
5. criticizing Democrats:
    - Democrats are playing a partisan game in the middle of a crisis
6. criticizing liberals:
    - The problem for the liberal left? Adhering to the Constitution

Left slanted headlines consisted of a headline:

1. supporting Democrats:

    - How Democrats won the war of ideas
2. supporting liberals:
    - Many reasons for liberals to be optimistic going forward
3. supporting a nationally prominent Democratic politician:
    - Why Joe Biden is good for America
4. criticizing a nationally prominent Republican politician:
    - Inside Trump's failure: the rush to abandon America's leadership role
5. criticizing Republicans:
    - Republicans are playing a partisan game in the middle of a crisis
6. criticizing conservatives:
    - The problem for the conservative right? Adhering to the Constitution

News headlines consisted of six headlines on international affairs. News headline topics were designed so that their content could be considered newsworthy despite the specific date published. These news headlines were used in both left and right conditions. News headlines were:

1. Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh
2. G20 to extend debt relief to mid-2021, pushes private sector to help
3. Conflict in Ethiopia's Tigray region widens as missiles are fired at airports
4. Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella
5. Pollution deaths in India rose to 1.67 million in 2020
6. Thousands protest in Armenia, demand PM's resignation

News headlines were pretested to confirm they would be perceived as explanatory and unbiased, and opinion headlines perceived as left or right slanted. Specifically, a sample of 129 individuals rated a selection of headlines on a five point Likert scale, with one being not politically biased to any side and five being extremely biased to one side. The six news headlines exhibited internal consistency as unbiased with a low mean perceived bias score (Cronbach's α = .84, M = 1.30, SD = .50). The 12 opinion headlines also demonstrated internal consistency as biased with a high mean perceived bias score (Cronbach's α = .90, M = 3.55, SD = .79).

Fox News and *CNN* were chosen as the news brands in this study because previous research suggests they have high brand recognition, are thematically similar as cable news networks, and are generally trusted by conservative and liberal ideologues respectively. While *Fox News* may be a more prominent source for those on the political right, surveys suggest the two news outlets are more similar in how partisans engage with them than any other pair of news outlets in the US (Jurkowitz, Mitchell, and Shearer 2020; Mitchell et al. 2021). Republicans trust *and* turn to *Fox News* more than any other news source for political news, while Democrats trust *and* turn to *CNN* more than any other news source.

For political and election news, Jurkowitz, Mitchell, and Shearer (2020) found that 53 percent of Democrats and those who lean Democratic use *CNN* weekly, while 60 percent of Republicans and those who lean Republican use *Fox News* weekly. Additionally, 70 percent of liberal Democrats trust *CNN* while 75 percent of conservative Republicans trust *Fox News*. These brands are also the most distrusted by opposing partisans, with 77 percent of liberal Democrats distrusting *Fox News* and 67 percent of conservative Republicans distrusting *CNN* (Jurkowitz, Mitchell, and Shearer 2020). Likewise, Mitchell et al. (2021) found that 36 percent of Republicans regularly visited *Fox News* for political news and 39 percent Democrats regularly visited *CNN* for political news, more than any other news outlets surveyed. As this dissertation explores perceptions of credibility, it is also important to note that these sites were chosen because of how they are perceived by news audiences, not because of the relative objective credibility of their content.

For the opinion label conditions in this study, cards were presented to participants with the word ‘Opinion’ highlighted in bold, red letters. Opinion labels had an accompanying tooltip.

When hovered over or clicked on, the tooltip displayed the words: 'This is an opinion piece. The views in it may not reflect the views of the site on which it was published'.

This study adopted the following strategies to reduce content differences between conditions, thereby increasing the focus on source credibility. First, time stamps were standardized on the story cards so that there were no variations in time stamps between the conditions. Second, as noted earlier, opinion card headlines reflected each other, meaning that politically left and right slanted cards discussed the same content but from opposing stances with only one word or name changed. Specifically, when a left slanted story card criticized a conservative position on an issue, its right slanted counterpart criticized the liberal position on the same issue. For example, a left slanted headline was 'many reasons for liberals to be optimistic going forward'. Its right slanted equivalent read 'many reasons for conservatives to be optimistic going forward'. Only the words liberals and conservatives differed in the headlines. Thus, the content of the stimuli was similar regardless of condition; only opinion polarity differed. Third, every attempt was made to hold visuals constant within the study. Specifically, story cards shared images across conditions. For example, left and right slanted story cards in different conditions about a politician used the same image of the politician, regardless of the headline. Finally, to further reduce the possibility of content differences, images were pretested to confirm they were perceived to be unbiased. Specifically, a sample of 124 individuals rated a selection of images on a 1-5 Likert scale, with 1 being not politically biased to any side and 5 being extremely biased to one side. The results from the pretesting indicated the twelve images used in study 1 had internal consistency and were considered unbiased (Cronbach's $\alpha = .89$, $M = 1.34$, $SD = .51$).

The appearance of the stimuli was cross-checked between browsers including Chrome version 87.0, Firefox version 85.0, and Edge version 88.0 in Windows 10 and Mac Big Sur operating systems on both mobile and desktop screens.

Measures

This study included a pre-exposure questionnaire of 29 questions and a post-exposure questionnaire of 23 questions (Appendixes B & D, respectively) to measure participants' perceptions of the stimuli. The pre-exposure questionnaire adopted a number of previously used indexes to measure participants' perceptions of the concepts noted in chapter 2. First, it measured the pre-exposure perceived credibility of the news brands with the Meyer Credibility Index (Meyer 1988; West 1994) to control for the effects of pre-exposure perceptions of credibility. These indices provided high internal consistency (*Fox News* pre-exposure credibility index: Cronbach's $\alpha = .93$; *CNN* pre-exposure credibility index: Cronbach's $\alpha = .94$).

Second, the pre-exposure questionnaire used a brand affect index adopted from Chaudhuri and Holbrook (2001). Brand affect was measured for both *CNN* and *Fox News*, and the index achieved excellent reliability. (*CNN* brand affect index: Cronbach's $\alpha = .97$; *Fox News* brand affect index: Cronbach's $\alpha = .97$).

Third, the pre-exposure questionnaire adopted a shortened media skepticism index using the highest loading item of each sub index from Prochazka and Schweiger (2019) to keep the survey as parsimonious as possible. Zimmerman and Kohring (2019) used this technique on a variant of Prochazka and Schweiger's index, achieving a Jöreskog's Rho of .90, indicating excellent reliability. Likewise, the shortened media skepticism index used in this study also

exhibited excellent internal consistency (Cronbach's α = .91). This index was displayed before the study to remove the possibility that the stimuli would affect participants' generalized trust or skepticism toward the news media.

Fourth, the pre-exposure questionnaire adopted a shortened Rassin's Confirmation Inventory (2008), to measure individuals' susceptibility to confirmation bias, using the four items with the highest factor loadings. Rassin (2008) reported an internal consistency of Cronbach's α = .65. In the current study, the four items with the highest factor loadings produced a higher reliability (Cronbach's α = .73).

The post-exposure questionnaire (Appendix D) adopted indexes intended to measure the concepts noted in chapter 2 including perceived news source credibility, perceived opinion segmentation, perceived persuasive intent, perceived source hostility, and the likelihood of experiencing hostile media effects. The indexes on the post-exposure questionnaire were each tested for reliability.

Specifically, to measure perceived news source credibility, the post-exposure questionnaire adopted the Meyer Credibility Index (Meyer 1988; West 1994) which provided the high reliability of Cronbach's α = .90. This study's post-exposure questionnaire used a perceived persuasive intent index derived from Scherr and Müller (2017) and Grillo and Pizzutti (2020) with good reliability (Cronbach's α = .89). This study also used a source hostility index derived from Arceneaux, Johnson, and Murphy (2012) and Vraga et al. (2012) with the high reliability of Cronbach's α = .92. Finally, study participants most likely to exhibit hostile media effects were identified by adopting an index of questions about partisan identification and political ideology (Coe et al. 2008). It provided the high reliability of Cronbach's α = .92.

The strength of participants' political affiliation was determined using a procedure similar to Coe et al. (2008). The political ideology scale (1 = very liberal, 5 = very conservative) and political identification scale (1 = Democrat, 5 = Republican) were combined into one political affiliation scale (range 2 to 10; 2 = left political affiliates, 10 = right political affiliates), so that individuals with strong partisan and ideological positions ('political affiliation') represented the ends of the scale. Thereafter, the scale was divided into three sections, with strong left political affiliates identified by scores from 2-4, weak political affiliates by scores from 5-7, and strong right political affiliates by scores from 8-10.

Since no previous index was found to measure perceptions of opinion segmentation, this study created and tested one with four questions asking participants about their perceptions of the two dimensions of opinion segmentation (explicated in chapter 2): the distinction between news and opinion and between author and source. This new index provided good reliability with Cronbach's $\alpha = .82$. Finally, the post-exposure questionnaire included the demographic questions of age, gender, education, and ethnicity. Some questions were reverse coded to detect straight-lining or when participants rush to select the same response for every question (Kim et al. 2019).

Procedure

Participants were sent a link to a Qualtrics survey to take part in the study. Participants who agreed to participate signed an IRB approved consent form confirming their voluntary participation and explaining the purpose of the study.

Participants were presented with a screening question (Appendix A) to identify any participants unlikely to attend to the study's stimuli (Downs et al. 2010). Participants who incorrectly answered this question were removed from the study. Participants who correctly answered the screening question proceeded to the pre-exposure questionnaire (Appendix B). Then participants were given a brief description of the stimuli to follow. The instructions informed participants they would see four sets of news previews, to view these as they would normally online, and that they would not be able to return to the feed once they left it. Participants were also told about the interactive explanatory tooltips that might accompany some of the previews.

Each participant was then randomly assigned to one of the 12 conditions (representing the between-subjects factors) as presented in Appendix C. Participants progressed through each story card block by clicking an arrow at the lower right of the screen. Those participants assigned to the opinion label conditions could hover over the opinion labels to view a tooltip with the words 'This is an opinion piece. The views in it may not reflect the views of the site on which it was published'. This tooltip was displayed only for as long as the participant hovered over or clicked on the opinion labels.

Although the study contained a total of 18 story cards, only 12 cards were displayed to each participant. To be specific, participants in all conditions were presented with the same six news cards but different opinion cards. In other words, participants in the right slanted headline opinion polarity conditions were exposed to the six right slanted opinion cards and the six news cards, while participants in the left slanted headline opinion polarity conditions were exposed to the six left slanted opinion cards and the same six news cards.

After completing the stimuli, participants were directed to the post-exposure questionnaire (Appendix D). After completing the post-exposure questionnaire, participants were thanked and told they could exit the survey. The time participants spent on specific pages and the experiment as a whole was recorded. Participants' browser metadata was also recorded. This information was not visible to participants.

To ensure data validity, participants were prevented from completing the study more than once, using the method from Pe'er et al. (2012). Materials were counterbalanced to avoid order and sequence effects (Allen 2017). Specifically, story cards were presented in random order within conditions on the feed. Participants were not allowed to save and continue later. Participants were prevented from going back to view or change their previous responses. Participants who were outliers in terms of time spent on the stimuli and the experiment as a whole were removed. Specifically, outliers who spent less than two standard deviations of time than the mean were removed. Straight-lining was checked using both the simple non-differentiation and standard deviation of battery methods (Kim et al. 2019). A manipulation check was also employed; data from participants failing it were removed from the study.

Study 2: Effects of Transparency Cues on Source Credibility in a Multiple Source Environment

Study Design

A three level (prominence of opinion labels) mixed within between-subjects design tested hypotheses H2a and H2b. The three levels of opinion labels were no opinion labels, 'subtle' opinion labels, and 'prominent' opinion labels.

Sample

Participants were drawn from Amazon Mechanical Turk. An a priori power analysis via G*Power, a statistical software package, suggested a sample size of 252 for a medium effect size (.25) and an alpha error probability of .05 (Faul et al. 2007; 2009). This was the suggested sample size for multivariate analysis of variance (MANOVA), the most robust statistical test in study 2. Amazon Mechanical Turk was chosen to recruit participants because it can be a reliable survey method (Thomas and Clifford 2017). To increase sample diversity, the survey was posted on weekdays and weekends and at different times of the day, as suggested by Kapelner and Chandler (2010).

The sample was limited to adults aged 18 or older residing in the United States, ensuring participants had proper context for the American political news to be presented. Participants were paid the equivalent of federal minimum wage paid for their time ($.75; the study had an estimated completion time of six to seven minutes) as recommended by Aguinis, Villamor, and Ramani (2021).

Materials

Qualtrics, an online survey and experimental platform, collected data for study 2. Stimuli consisted of 18 story cards displayed equally in two screens of nine cards each. The content was designed to simulate the news tab of a Google search (not to be confused with Google News) to best represent the 'mixed' nature of news feeds online, as discussed in chapter 2. This design (Appendix H) used custom CSS and HTML coding (figure 10).

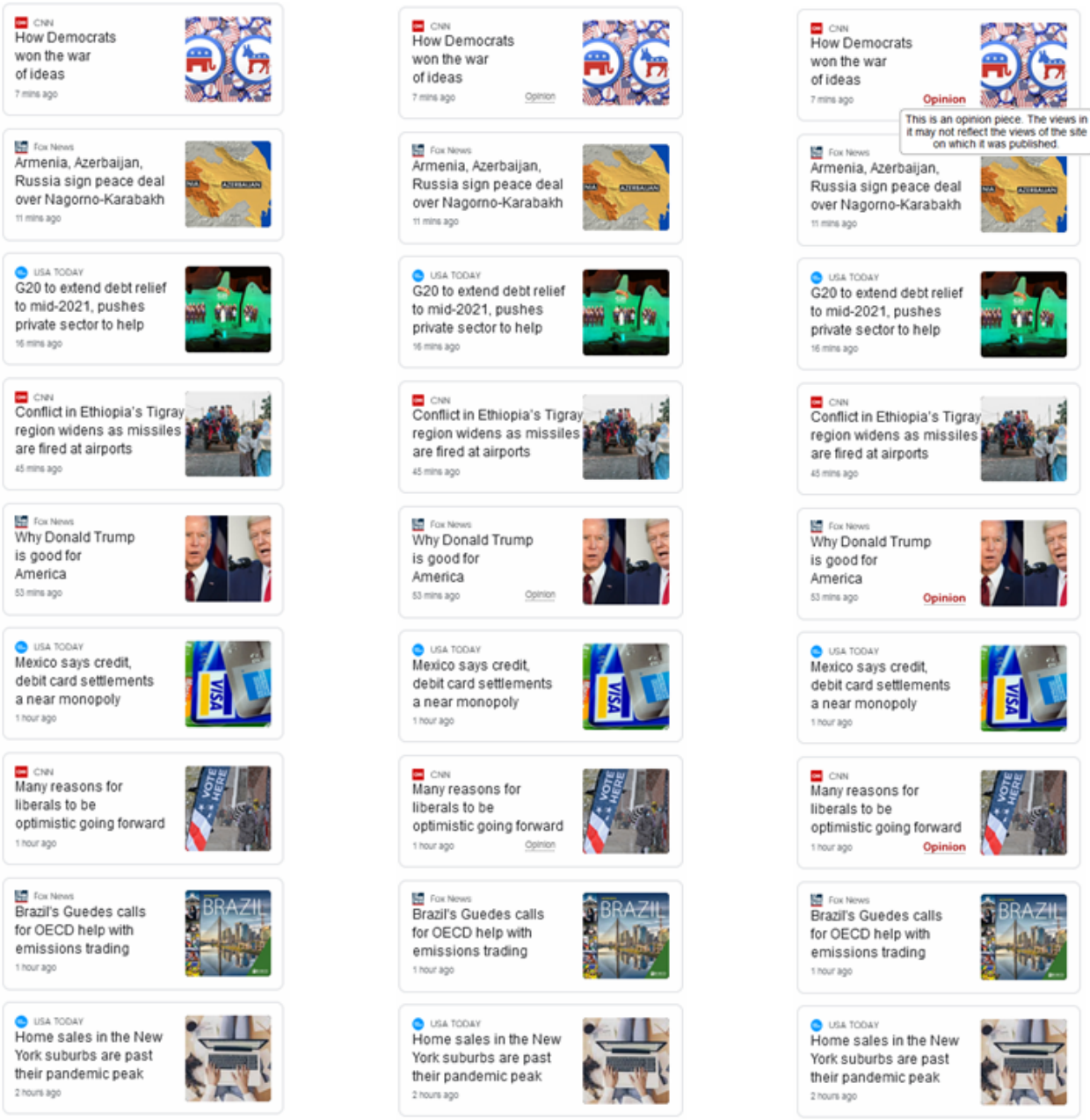


Figure 10. Sample screen of the Google search news tab stimuli showing the three levels of cue prominence in a mixed source environment: no opinion labels in Condition A on the left, subtle opinion labels in Condition B in the middle, and prominent opinion labels in Condition C on the right. See Appendix F for more.

Each story card was presented with the branding of *Fox News*, *CNN*, and *USA Today*. As in study 1, *Fox News* and *CNN* were chosen because they have high brand recognition, are thematically similar – in that they both originated as television news – and are generally trusted

by conservative and liberal political partisans respectively. *USA Today* was chosen because it has high brand recognition and evidence suggests it has a relatively politically balanced audience (Jurkowitz, Mitchell, and Shearer 2020).

Similar to study 1, story cards were designed with an image, headline, brand logo, and time stamp. Story cards were either 'news cards' or 'opinion cards'. News cards contained explanatory and unbiased headlines, while opinion cards contained politically left or right slanted headlines. To increase content consistency between the two studies, study 2 shared the same opinion headlines as study 1 with the internal consistency noted in study 1. Study 2 also shared the same news headlines as study 1, but added six news headlines to account for six more story cards (18 cards in study 2 versus 12 cards in study 1). These additional headlines were:

1. Mexico says credit, debit card settlements a near monopoly
2. Brazil's Guedes calls for OECD help with emissions trading
3. Home sales in the New York suburbs are past their pandemic peak
4. India announces new controls on sourcing telecoms gear
5. Somali hotel rises again after al Shabaab bombing
6. In South Africa, child homicides show violence 'entrenched'

These headlines were pretested with a sample of 129 individuals who rated a selection of headlines on a five point Likert scale (1 being not politically biased to any side and 5 being extremely biased to one side). The index of 12 news headlines – including the six headlines above and the six in study 1 – was internally reliable and considered unbiased (Cronbach's α =.87, M = 1.30, SD = .44).

The feed, divided over two screens of nine cards each, contained three *Fox News* right slanted opinion cards, three *Fox News* news cards, three *CNN* left slanted opinion cards, three *CNN* news cards, and six *USA Today* news cards. As in study 1, opinion card headlines reflected

each other, meaning that politically left and right slanted cards discussed the same content but from opposing stances with only one word or name changed. For example, a left slanted headline in one of the randomized conditions was ‘many reasons for liberals to be optimistic going forward’. Its right slanted equivalent in another condition was ‘many reasons for conservatives to be optimistic going forward’. Only the words ‘liberals’ and ‘conservatives’ differed in the headlines. Thus, the content of the stimuli was similar regardless of condition; only opinion polarity differed.

Study 2 had three conditions. In condition A, the story cards contained no opinion labels. In condition B, the story cards contained subtle opinion labels in gray letters. In condition C, the story cards contained prominent opinion labels in bold red letters. Opinion labels were accompanied by a tooltip with the words ‘This is an opinion piece. The views in it may not reflect the views of the site on which it was published’. The differences in the prominence of opinion labels were designed to reflect the theories discussed in chapter 2.

To reduce content differences between story cards, study 2 adopted strategies similar to study 1. Story cards were presented to participants in random order to prevent order effects. Time stamps were randomly assigned. While every attempt was made to hold visuals constant between studies, there was some variance in visuals between studies. Study 2 used 18 images, including the same 12 images that were used in study 1. Although story cards did not share exact images as in study 1 – since cards were shown together on the same feed – story cards shared similar but not identical images. Finally, images were pretested to ensure they were perceived to be neutral and thematically similar regardless of headline polarity. A sample of 117 individuals not used in study 2 rated images on a 1-5 Likert scale, with 1 being not politically biased to any side and 5

being extremely biased to one side. Pretesting indicated that the 18 images used in the story cards in study 2 had internal consistency and were considered unbiased (Cronbach's α = .92, *M* = 1.32, *SD* = .49).

The appearance of the stimuli was cross-checked between mobile and desktop and confirmed to appear identical in Chrome version 87.0, Firefox version 85.0, and Edge version 88.0 in Windows 10 and Mac Big Sur operating systems.

Measures

Study 2 included a pre-exposure questionnaire of 15 items (Appendix E) and a post-exposure questionnaire of 19 items (Appendix G) to measure participants' perceptions of the stimuli. As in study 1, the pre-exposure questionnaire included the Meyer Credibility Index to measure the perceived credibility of the news brands (Meyer 1988; West 1994) and control for the effect of pre-exposure perceived credibility on the results. These had internal consistency (*Fox News* pre-exposure credibility index: Cronbach's α = .93; *CNN* pre-exposure credibility index: Cronbach's α = .92; *USA Today* pre-exposure credibility index: Cronbach's α = .90).

Study 2's post exposure questionnaire also adopted the Meyer Credibility Index (Meyer 1988; West 1994). Like the pre-exposure credibility indexes, the post-exposure credibility indexes also provided high reliability. (*Fox News* post-exposure credibility index: Cronbach's α = .90; *CNN* post-exposure credibility index: Cronbach's α = .91; *USA Today* post-exposure credibility index: Cronbach's α = .88)

As in study 1, the post-exposure questionnaire included the demographic questions of age, gender, education, and ethnicity. Some questions were reverse coded questions to detect

straight-lining or when participants rush to select the same response for every question (Kim et al. 2019).

Procedure

Participants were sent a link to a Qualtrics survey inviting them to take part in the study. Participants who agreed to participate signed an IRB approved consent form confirming their voluntary participation and explaining the purpose of the study.

Participants were presented with a screening question unrelated to the study's content (Appendix A) to identify any participants unlikely to attend to the study's stimuli (Downs et al. 2010). Participants who incorrectly answered this question were removed from the study. Additionally, individuals who participated in study 1 were prevented from participating in study 2.

Participants who correctly answered the screening question were presented with the pre-exposure questionnaire (Appendix E). Then instructions informed participants they would see a feed of story cards, to view these cards as they normally would, and that they would not be able to return to the feed once they left it. Participants were also told about the interactive explanatory tooltips that might accompany some of the cards.

Each participant was then randomly assigned to one of the 3 conditions (Appendix F). Participants progressed by clicking an arrow at the lower right of the screen. Participants assigned to the opinion label conditions could hover over the opinion labels to view a tooltip with the words 'This is an opinion piece. The views in it may not reflect the views of the site on

which it was published'. This tooltip was displayed only for as long as the participant hovered over or clicked on the opinion labels.

After completing the stimuli, participants were directed to the post-exposure questionnaire (Appendix G). After completing the questionnaire, participants were thanked and told they could exit the survey. Time spent on specific pages and the experiment as a whole was recorded with participants' browser metadata. This information was not visible to participants.

To ensure validity, participants were prevented from completing the study more than once using the method from Pe'er et al. (2012). Participants were not allowed to save and continue later or go back to view or change previous responses. Materials were counterbalanced to avoid order and sequence effects (Allen 2017). Specifically, story cards were presented in random order within conditions on the feed. Data from any outliers who spent less than two standard deviations than the mean time recorded were removed. Straight-lining was checked using both the simple non-differentiation and standard deviation of battery methods (Kim et al. 2019).

Chapter 4: Results

Study one tested hypotheses related to whether (RQ1) and, if so, why (RQ2) opinion labels may affect readers' perceived credibility of sources in single source environments (as defined in chapter 1). Study two tested hypotheses related to whether opinion labels affect perceived source credibility in multiple source environments (RQ3). A summary of results is provided in tables 3a - c.

RQ1: Do transparency cues affect perceived source credibility?

Hypothesis	Prediction	Supported
H1a	Opinion labels on story cards will increase the perceived source credibility of news organizations.	Yes
H1b	Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for prior perceptions of a news organization's credibility.	Yes
H1c	Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for media skepticism.	Yes
H1d	Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for brand affect.	Yes
H1e	Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for proneness to confirmation bias.	Yes
H1f:	Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for the likelihood of experiencing hostile media effects.	Yes

Table 1a: Summary of results for RQ1

RQ2: Why might transparency cues affect perceived source credibility?

Hypothesis	Prediction	Supported
H2a	Opinion labels on story cards will increase perceived opinion segmentation.	Yes
H2b	Perceived opinion segmentation will negatively predict perceived source persuasive intent.	No
H2c	Perceived persuasive intent will negatively predict perceived source credibility.	Yes
H2d	Perceived opinion segmentation will negatively predict perceived source hostility.	No
H2e	Perceived source hostility will negatively predict perceived source credibility.	Yes
H2f	Opinion labels on story cards will decrease the perceived bias of news organizations significantly more than the other indicators of source credibility	No

Table 1b: Summary of results for RQ2

RQ3: Do transparency cues affect perceived source credibility in multiple source environments?

Hypothesis	Prediction	Supported
H3a	Subtle opinion labels will not affect perceived source credibility in a mixed source feed.	Yes
H3b	Prominent opinion labels will increase perceived source credibility in a mixed source feed.	No

Table 1c: Summary of results for RQ3

Study 1 Results

There were 389 valid responses out of 775 total responses for study 1. 38 percent, or 296 of the 775 responses, failed the screening question at the beginning of the study and were removed. 90 more responses which failed the manipulation check, which were more than two standard deviations in time than the mean, and which exhibited straight-lining were also removed.

Table 2: Study 1 Participant Demographics, *N* = 389

		Percent	Mean
Gender	Male	50.6	
	Female	49.1	
	Different Identity	.3	
Race/ethnicity	White	73.3	
	Black	11.1	
	Mixed Race	4.6	
	Asian/Pacific Islander	6.9	
	Hispanic	3.9	
	Other	.3	
Completed Education	High School or Less	26.4	
	College	52.1	
	Advanced Degree	21.5	
Age			40.5
Political Ideology (range = 1 to 5)[4]			2.67
Political Identity (range = 1 to 5)[5]			2.43

RQ1: *Do transparency cues affect perceived source credibility?*

H1a: *Opinion labels on story cards will increase the perceived source credibility of news organizations.*

[4] 1 = Very Liberal, 5 = Very Conservative
[5] 1 = Democrat, 5 = Republican

H1a predicted that opinion labels on story cards (IV) would increase perceived source credibility (DV). This analysis compared the mean perceived source credibility scores of participants presented story cards containing opinion labels versus participants presented story cards without opinion labels, followed by post-hoc Tukey HSD comparisons. Preliminary checks were conducted to ensure there were no violations of the assumptions of normality and of homogeneity of variances.

The mean perceived source credibility for story cards containing opinion labels (M = 3.06, SD = .93) was higher than story cards without opinion labels (M = 2.72, SD = 1.04). A one-way ANOVA indicated the difference was statistically significant: F (1, 384) = 12.03, p = .001, eta squared = .03). (Figure 11).

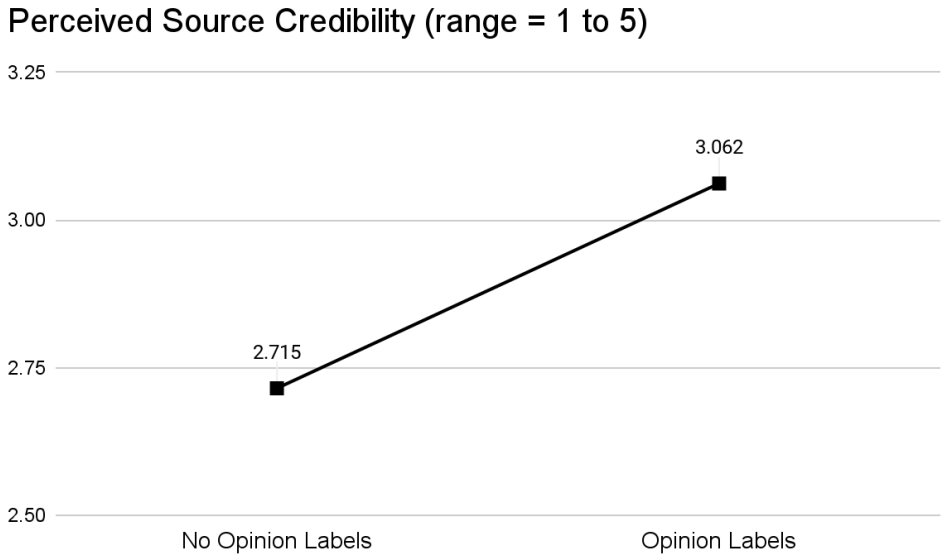


Figure 11. Difference in perceived source credibility with and without opinion labels in study 1. Higher scores indicate higher perceived source credibility.

For H1b through H1f, preliminary checks were conducted to confirm no violations of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes,

and reliable measurement of the covariate. No violations were observed except where noted below.

H1b: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for prior perceptions of a news organization's credibility.*

H1b predicted opinion labels on story cards (IV1) would increase readers' perceived source credibility (DV) when controlling for participants' prior perceptions of a source's credibility (IV2). As this analysis only involved the portion of the sample that was presented branded story cards, responses for conditions in which story cards were presented without a news brand were excluded. Therefore, this analysis compared the mean perceived source credibility scores of the participants presented with *CNN* or *Fox News* story cards containing opinion labels versus participants presented with *CNN* or *Fox News* story cards without opinion labels.

The mean perceived source credibility for story cards containing opinion labels (M = 3.00, SD = .95) was higher than for story cards without opinion labels (M = 2.69, SD = 1.07). A one-way ANCOVA indicated the difference was statistically significant: F (1, 259) = 10.10, p = .002, partial eta squared = .038.

The covariate was also significant: F (1, 259) = 208.92, p < .001, partial eta squared = .446, indicating that participants' pre-exposure perceptions of a news source's credibility had a strong effect on their post-exposure perceptions (Cohen 1988).

H1c: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for media skepticism.*

H1c predicted opinion labels on story cards (IV1) would increase perceived source credibility (DV) when controlling for media skepticism (IV2). This analysis compared the mean perceived source credibility scores of the participants presented with story cards containing opinion labels versus participants presented with story cards without opinion labels.

The mean perceived source credibility for story cards containing opinion labels (M = 3.05, SD = .93) was higher than for story cards without opinion labels (M = 2.72, SD = 1.04). A one-way ANCOVA indicated the difference was statistically significant: F (1, 382) = 7.94, p = .005, partial eta squared = .020. Since Levene's test for homogeneity of variances was violated, (p = .045; residuals plots appear in Appendix I), and no improvement was found through transforming the dependent variable, a more stringent alpha level of .025 was applied, following the recommendation of Tabachnick and Fidell (2001).

The covariate was also significant: F (1, 382) = 72.30, p < .001, partial eta squared = .159, indicating that participants' media skepticism had a strong effect on their perceptions of source credibility.

H1d: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for brand affect.*

H1d predicted opinion labels on story cards (IV1) would increase perceived source credibility (DV) when controlling for brand affect (IV2). As in H1b, this analysis compared the mean perceived source credibility scores of the participants presented with *CNN* or *Fox News* story cards containing opinion labels versus participants presented with *CNN* or *Fox News* story

cards without opinion labels; therefore responses for conditions in which story cards were presented without a news brand were excluded.

The mean perceived source credibility for story cards containing opinion labels (M = 3.00, SD = .95) was higher than for story cards without opinion labels (M = 2.70, SD = 1.07). A one-way ANCOVA indicated the difference was statistically significant: F (1, 259) = 4.46, p = .036, partial eta squared = .384.

The covariate was also significant: F (1, 259) = 161.41, p < .001, partial eta squared = .384, indicating that participants' brand affect had a strong effect on their perceptions of source credibility.

H1e: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for proneness to confirmation bias.*

H1e predicted that opinion labels on story cards (IV1) would increase perceived source credibility (DV), controlling for proneness to confirmation bias (IV2). This analysis compared the mean perceived source credibility scores of the participants presented with story cards containing opinion labels versus participants presented with story cards without opinion labels.

The mean perceived source credibility for story cards containing opinion labels (M = 3.06, SD = .93) was higher than for story cards without opinion labels (M = 2.72, SD = 1.04). A one-way ANCOVA indicated the difference was statistically significant: F (1, 383) = 10.09, p = .001, partial eta squared = .027. As the assumption of homogeneity of variances was violated (Levene's test for homogeneity of variances, p = .029; residuals plots appear in Appendix I), and

no improvement was found through transforming the dependent variable, a more stringent alpha level of .025 was applied.

The covariate was also significant: F (1, 383) = 10.22, p < .002, partial eta squared = .026, indicating that participants' proneness to confirmation bias had a weak effect on their perceptions of source credibility.

H1f: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for the likelihood of experiencing hostile media effects.*

H1f predicted opinion labels on story cards (IV1) would increase perceived source credibility (DV), controlling for likelihood of experiencing hostile media effects (IV2). This analysis compared the mean perceived source credibility scores of the participants presented with story cards containing opinion labels versus participants presented with story cards without opinion labels.

The mean perceived source credibility for story cards containing opinion labels (M = 3.05, SD = .92) was higher than for story cards without opinion labels (M = 2.72, SD = 1.04). A one-way ANCOVA indicated the difference was statistically significant: F (1, 381) = 11.59, p = .001, partial eta squared = .030. As the Levene's test for homogeneity of variances was violated (p = .04; residuals plots are presented in Appendix I), and no improvement was found through transforming the dependent variable, a more stringent alpha level of .025 was applied.

Additionally, the covariate (participants' likelihood of experiencing hostile media effects) did not have a significant effect on perceived source credibility: F (1, 381) = .63, p = n.s., partial eta squared = .002.

A summary of H1a - f can be seen in table 4.

Table 3: Mean Perceived Source Credibility Scores (range = 1 to 5)

		No Opinion Labels	Opinion Labels	Difference	N
H1a	Perceived credibility	2.715	3.062	.347**	386
H1b	Perceived credibility, controlling for prior perception of credibility	2.692	3.001	.309**	262
H1c	Perceived credibility, controlling for media skepticism	2.715	3.054	.339**	385
H1d	Perceived credibility, controlling for brand affect	2.701	2.997	.296*	262
H1e	Perceived credibility, controlling for proneness to confirmation bias	2.715	3.062	.347**	386
H1f	Perceived credibility, controlling for likelihood of experiencing hostile media effects	2.715	3.053	.338**	384

* indicates significance at the $p < .05$ level. ** indicates significance at the $p < .01$ level. Higher scores indicate greater perceived source credibility.

Given that opinion labels were found to produce significantly higher perceived credibility scores, further analysis explored the effects of opinion labels on perceived credibility when the data were isolated by news source.

Three one-way ANOVAs were followed by post-hoc Tukey HSD comparisons of the mean perceived credibility scores of participants presented with *Fox News*, *CNN*, and unbranded story cards. Opinion labels on story cards represented the IV and the perceived source credibility of each specific brand (*CNN*, *Fox News,* or unbranded) represented the DV. Analysis indicated that the aggregate differences in perceived credibility between groups noted above were driven primarily by differences in whether unbranded story cards were presented with or without

opinion labels. While *CNN* and *Fox News* saw increased perceived credibility when their content was presented with opinion labels, only unbranded content reached significance (table 5).

The mean perceived credibility score for *CNN* story cards containing opinion labels (M = 3.15, SD = .94) was higher than the mean perceived credibility score for *CNN* story cards without opinion labels (M = 2.90, SD = 1.13). However, a one-way ANOVA indicated this difference was not statistically significant: F (1, 130) = 1.96, p = n.s.. Likewise, there was no significant difference between the mean perceived credibility score for *Fox News* story cards containing opinion labels (M = 2.84, SD = .94) and *Fox News* story cards without opinion labels (M = 2.54, SD = 1.00): F (1, 129) = 3.34, p = n.s..

The mean perceived credibility score for unbranded story cards containing opinion labels *(*M = 3.19, SD = .88) was higher than unbranded story cards without opinion labels (M = 2.75, SD = .95). A one-way ANOVA indicated this difference was statistically significant: F (1, 121) = 7.17, p = .008 with a small effect size, eta squared = .056. Table 5 summarizes these one-way ANOVAs.

Table 4: Mean Perceived Source Credibility Scores by Brand (range = 1 to 5)

	No Opinion Labels	Opinion Labels	Difference	N
CNN	2.895	3.147	.252	132
Fox News	2.528	2.839	.311	131
No Brand	2.745	3.188	.443**	124

** indicates significance at the p < . 01 level. Higher scores indicate greater perceived source credibility.

Further testing explored the effects of opinion labels on story cards by the strength of participant political affiliation. Three one-way ANOVAs followed by post-hoc Tukey HSD comparisons were performed, comparing the mean perceived credibility scores of those viewing

story cards with and without opinion labels among weak politics affiliates, strong political affiliates viewing politically congenial content, and strong political affiliates viewing politically oppositional content.

The mean perceived credibility score for story cards containing opinion labels (M = 3.03, SD = .90) was higher than the perceived credibility for unbranded story cards without opinion labels (M = 2.58, SD = .98) for weak political affiliates: A one-way ANOVA indicated this difference was statistically significant: F (1, 113) = 6.49, p = .012, eta squared = .054.

A one-way ANOVA indicated no significant difference between the mean perceived credibility score for story cards with opinion labels (M = 3.25, SD = .81) and story cards without opinion labels (M = 3.12, SD = .84) among strong political affiliates viewing politically congenial content: F (1, 142) = .85, p = n.s..

The mean perceived credibility score for story cards containing opinion labels (M = 2.86, SD = .1.07) was higher than story cards without opinion labels (M = 2.42, SD = 1.13) among strong political affiliates viewing politically oppositional content. A one way ANOVA indicated this difference was statistically significant: F (1, 127) = 4.95, p = .028, eta squared = .038). Table 6 summarizes these one-way ANOVAs.

Table 5: Mean Perceived Source Credibility Scores by Participant Political Affiliation (range = 1 to 5)

	No Opinion Labels	Opinion Labels	Difference	N
Weak political affiliates	2.583	3.032	.449*	115
Strong political affiliates viewing politically congenial content	3.117	3.245	.128	143
Strong political affiliates viewing politically oppositional content	2.424	2.858	.434*	128

* Indicates significance at the p < .05 level. Higher scores indicate greater perceived source credibility.

RQ2: *Why might transparency cues affect perceived source credibility?*

H2a: *Opinion labels on story cards will increase perceived opinion segmentation.*

H2a predicted that opinion labels (IV) would increase perceived opinion segmentation (DV). Analyses compared the mean perceived opinion segmentation scores of the participants presented with story cards containing opinion labels versus participants presented with story cards without opinion labels.

The mean perceived opinion segmentation for story cards containing opinion labels (M = 4.29, SD = .70) was higher than for story cards without opinion labels (M = 3.09, SD = .92). As the assumption of homogeneity of variances was violated, Welch's test was used rather than ANOVA; the difference was statistically significant: F (1, 200.40) = 210.33, p < .001, partial eta squared = .383.

H2b: *Perceived opinion segmentation will negatively predict perceived source persuasive intent.*

H2c: *Perceived persuasive intent will negatively predict perceived source credibility.*

H2d: *Perceived opinion segmentation will negatively predict perceived source hostility.*

H2e: *Perceived source hostility will negatively predict perceived source credibility.*

For H2b - e, path analysis using IBM's AMOS structural equation modeling software was used to analyze the relationships among the hypothesized predictive variables of perceived credibility in the model proposed in chapter 2 (figure 7).

The model proposed in chapter 2 was found to have an unacceptably poor fit: chi square (4, N = 389) = 43.18, p < .001, RMSEA = .159 (90% CI: .118 – .203), CFI = .892, Model AIC =

75.178. While opinion labels were strongly related to perceived opinion segmentation (r = .59, p < .001), opinion segmentation did not significantly predict persuasive intent (r = -.07, p = n.s.) or source hostility (r = -.05, p = n.s.). However, persuasive intent and source hostility both significantly predicted source credibility (r = -.32, p <.001 and r = -.29, p < .001, respectively), indicating an unobserved relationship between opinion segmentation and source credibility. H2b and H2d were therefore not supported, while H2c and H2e were supported (figure 12).

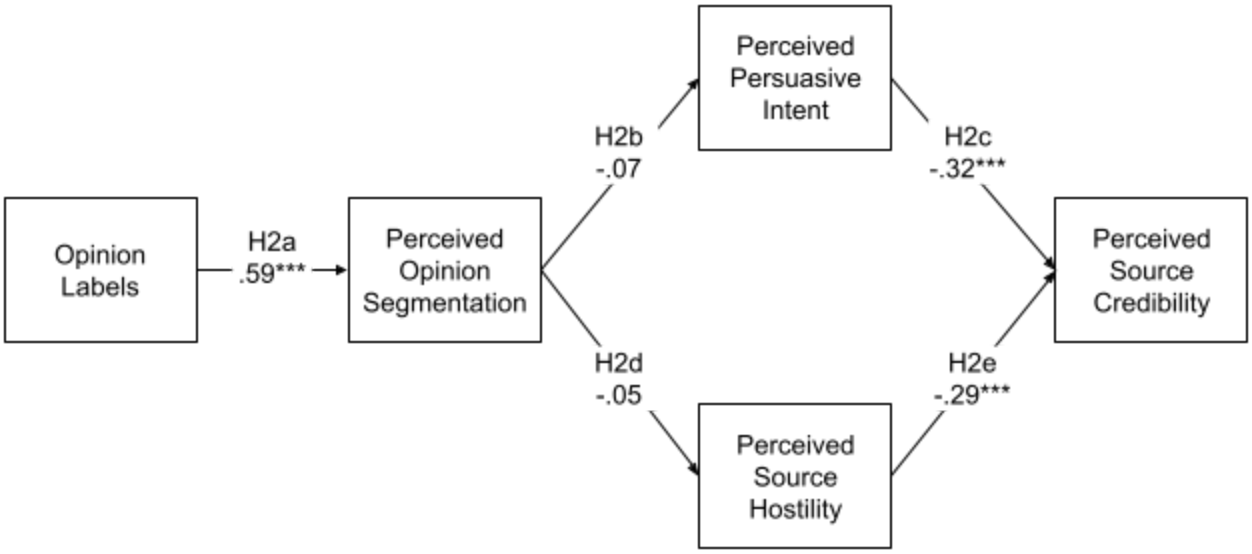


Figure 12. Standardized regression weights of study 1 model, H2a - e. *** indicates significance at the p < .001 level.

To isolate the effects of opinion segmentation on perceived source credibility and better represent the connection between opinion labels, opinion segmentation, and perceived source credibility, a second model was proposed: chi square (1, N = 389) = .24, p < .627, RMSEA = .000 (90% CI: .000 – .106), CFI = 1, Model AIC = 38.236.

In this model, opinion labels strongly predicted variance in perceived opinion segmentation (r = .59, p < .001), which predicted variance in perceived source credibility (r = .27, p < .001). There was no significant relationship between opinion labels and persuasive intent

(r = -.01, p = n.s.) or source hostility (r = -.02, p = n.s.). Nor did opinion segmentation significantly vary with persuasive intent (r = .09, p = n.s.) or source hostility (r = .07, p = n.s.). See figure 13.

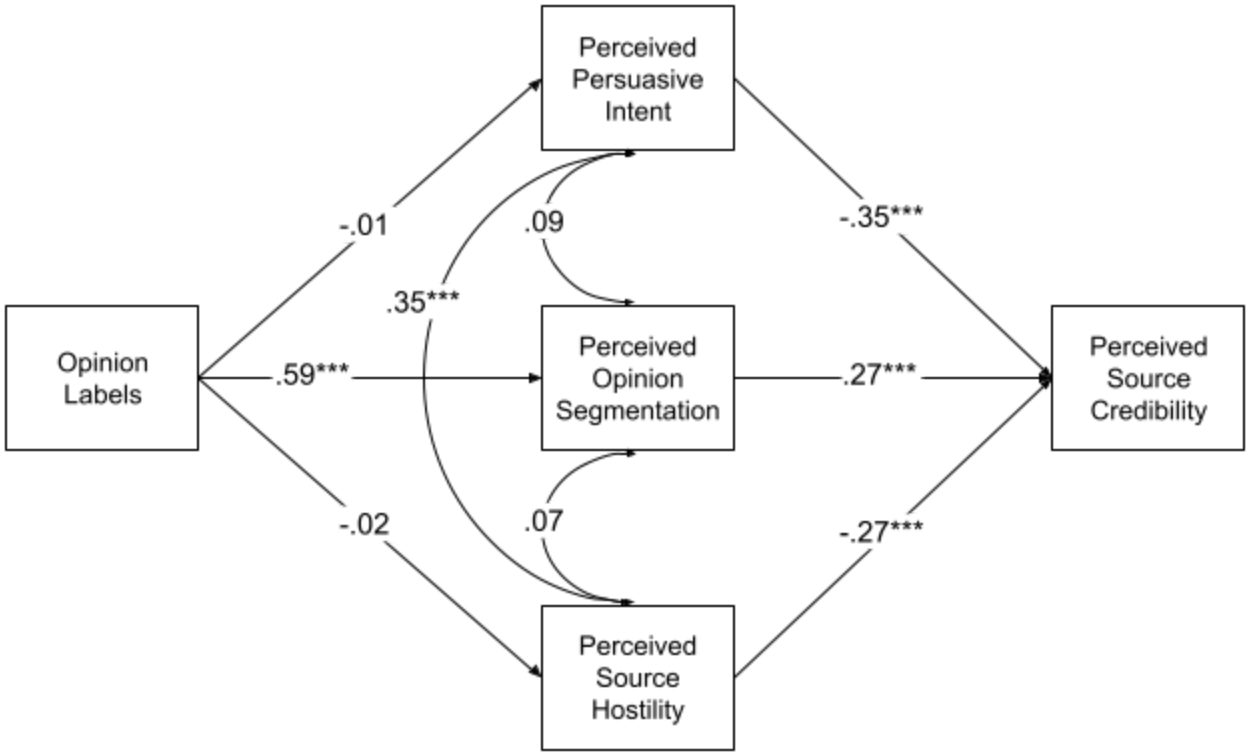


Figure 13. Standardized regression weights of revised study 1 model. *** indicates significance at the p < .001 level.

To gain additional insights into the relationships between opinion labels, opinion segmentation and credibility, hierarchical multiple regression was performed to measure how much variance in perceived source credibility could be explained by opinion segmentation when controlling for persuasive intent and source hostility.

Preliminary analyses confirmed no violations of the assumptions of normality, linearity, multicollinearity and homoscedasticity. As a whole, the model explained 33.5 percent of the

variance in perceived source credibility, F (6, 377) = 31.70, $p < .001$. The two control measures (persuasive intent and source hostility) were found to explain 25.8 percent of the variance in perceived source credibility, F (5, 378) = 26.97, $p < .001$, with the persuasive intent index recording a higher beta value (β = -.319, $p < .001$) than the source hostility index (β = -.304, $p < .001$). In model 3, opinion segmentation explained 7.2 percent of the variance in perceived source credibility (β = .271, $p < .001$) as detailed in table 7 below.

Table 6: Hierarchical Multi-regression Models Explaining Perceived Source Credibility

	Model 1	Model 2	Model 3
	β	β	β
Age	.030	.031	.028
Gender	.040	-.005	-.014
Education	.050	.083	.077
Persuasive Intent		-.319***	-.344***
Source Hostility		-.304***	-.282***
Opinion Segmentation			.271***

*** indicates significance at the p < .001 level.

H2f: *Opinion labels on story cards will decrease the perceived bias of news organizations significantly more than the other indicators of source credibility.*

H2f predicted the presence of opinion labels on story cards (IV) would decrease the perceived bias of news organizations (DV1) significantly more than the other indicators of source credibility: trustworthiness (DV2), accuracy (DV3), fairness (DV4), and completeness (DV5). The groups for comparison were 1. participants presented with story cards displaying opinion labels, and 2. participants presented with story cards without opinion labels.

Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no significant violations noted. The mean perceived source bias (M = 3.63, SD = 1.12), trustworthiness (M = 3.27, SD = 1.14), accuracy (M = 3.33, SD = 1.04), fairness (M = 3.32, SD = 1.17) and completeness (M = 3.02, SD = 1.19) for story cards containing opinion labels were each higher than for story cards without opinion labels (bias: M = 3.62, SD = 1.17; trustworthiness: M = 2.85, SD = 1.21; accuracy: M = 2.97, SD = 1.15; fairness: M = 2.84, SD = 1.23; completeness: M = 2.53, SD = 1.15).

A one-way MANOVA comparing perceived bias to the other indicators of source credibility suggested a statistically significant difference between the groups on the combined dependent variables F (5, 380) = 5.18, $p < .001$; Wilks' Lambda = .936; partial eta squared = .064. Tukey post-hoc comparisons with Bonferroni adjustments revealed that, contrary to the hypothesis, opinion labels on story cards did not significantly decrease the perceived source bias of news organizations F (1, 384) = .006, p = n.s.. Instead, the tests revealed that opinion labels on story cards significantly increased perceptions of the other indicators of source credibility: trustworthiness F (1, 384) = 12.24, p = .001), accuracy F (1, 384) = 10.20, p = .002), fairness F (1, 384) = 15.25, $p < .001$), and completeness F (1, 384) = 16.83, $p < .001$). H2f was not supported. See table 8 below.

Table 7: Mean Scores of Indicators of Perceived Source Credibility (range = 1 to 5)

	No Opinion Labels	Opinion Labels	Difference
Perceived Bias[†]	3.619	3.629	.010
Perceived Trustworthiness	2.852	3.271	.419**
Perceived Accuracy	2.972	3.329	.357**
Perceived Fairness	2.841	3.319	.478***

Perceived Completeness	2.528	3.019	.491***

** indicates significance at the p < . 01 level, *** indicates significance at the p < .001 level. † Bias was reverse coded, so that higher ratings indicated increased levels of perceived bias in the news source.

Study 2 Results

There were 275 valid responses out of 629 total responses for study 2. Forty-five percent, or 281 of the 629 responses, failed the screening question at the beginning of the study and were removed. Seventy-five more responses, which were beyond two standard deviations in time from the mean or exhibited straight-lining, were also removed.

Table 8: Study 2 Participant Demographics, *N* = 275

		Percent	Mean
Gender	Male	66.5	
	Female	33.1	
	Different Identity	.4	
Race/ethnicity	White	72.4	
	Black	11.6	
	Mixed Race	7.3	
	Asian/Pacific Islander	3.3	
	Hispanic	3.3	
	Other	2.2	
Completed Education	High School or Less	24.8	
	College	57.7	
	Advanced Degree	17.6	
Age			39.5
Political Ideology (range = 1 to 5)[6]			2.56
Political Identity (range = 1 to 5)[7]			2.48

RQ3: *Do transparency cues affect perceived source credibility in multiple source environments?*

H3a: *Subtle opinion labels will not affect perceived source credibility in a mixed source feed.*

H3b: *Prominent opinion labels will increase perceived source credibility in a mixed source feed.*

[6] 1 = Very Liberal, 5 = Very Conservative

[7] 1 = Democrat, 5 = Republican

H3a predicted that subtle opinion labels would not affect perceived source credibility in a mixed source feed, while H3b predicted that prominent opinion labels would increase perceived source credibility in a mixed source feed. The mean post-intervention perceived source credibility scores (no opinion labels: $M = 2.97$, $SD = .69$; subtle opinion labels: $M = 3.06$, $SD = .69$; prominent opinion labels: $M = 3.07$, $SD = .73$) were each higher than in the pre-intervention scores (no opinion labels: $M = 2.89$, $SD = .76$; subtle opinion labels: $M = 2.94$, $SD = .74$; prominent opinion labels: $M = 2.88$, $SD = .85$).

The independent variable was the prominence of opinion labels (none, subtle and prominent). Two dependent variables were used: the pre-exposure credibility index and the post-exposure credibility index. Preliminary assumption checks found no violations of normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity. A one-way between-groups MANOVA found no statistically significant differences between pre and post-exposure credibility indexes regardless of the prominence of opinion labels: $F (4, 257) = .88$, $p =$ n.s.; Wilks' Lambda = .986; partial eta squared = .007. Therefore, H3a was supported while H3b was not.

Table 9: Mean Perceived Source Credibility Scores in Study 2 (range = 1 to 5)

	Pre-Intervention	Post-Intervention	Difference	N
No Opinion Labels	2.889	2.969	.080	89
Subtle Opinion Labels	2.944	3.059	.115	91
Prominent Opinion Labels	2.877	3.066	.189	81
Total	2.905	3.030	.125	261

Note: higher scores indicate greater perceived source credibility.

To gain further insights into the relationships between the prominence of opinion labels and perceived credibility, three ANCOVA tests were performed to determine whether there were any significant differences in post-exposure perceived credibility scores, by brand, in groups that were shown no opinion labels, subtle opinion labels, and prominent opinion labels, controlling for pre-intervention perceived credibility scores. No significant differences were found between groups. *CNN*: F (1, 269) = .25, p = n.s.; *Fox News*: F (1, 265) = 2.97, p = n.s.; *USA Today*: F (1, 264) = .1.10, p = n.s..

Table 10: Mean Perceived Source Credibility Scores by Brand in Study 2 (range = 1 to 5)

		Pre-Intervention	Post-Intervention	Difference	N
CNN	No Opinion Labels	3.130	3.173	.043	89
	Subtle Opinion Labels	3.048	3.057	.009	91
	Prominent Opinion Labels	2.990	3.044	.054	81
USA Today	No Opinion Labels	3.298	3.396	.098	89
	Subtle Opinion Labels	3.239	3.479	.240	91
	Prominent Opinion Labels	3.285	3.526	.241	81
Fox News	No Opinion Labels	2.256	2.339	.083	89
	Subtle Opinion Labels	2.530	2.640	.110	91
	Prominent Opinion Labels	2.385	2.627	.242	81

Note: higher scores indicate greater perceived source credibility.

Chapter 5: Discussion

The first research question asked whether transparency cues affect perceived source credibility. The results of this dissertation supported the primary hypothesis (H1a) that opinion labels can indeed increase the credibility of news online. In study 1, opinion labels were found to significantly increase the perceived credibility of news sources. The effect of opinion labels remained significant when controlling for common predictors of perceived credibility such as prior perceptions of source credibility (H1b), media skepticism (H1c), brand affect (H1d), proneness to confirmation bias (H1e) and likelihood of experiencing hostile media effects (H1e). These results suggest that opinion labels on online news can have a statistically significant effect on news consumers' perceived credibility of a source.

Additional analysis revealed that opinion labels also significantly increased the perceived credibility of news sources even when these labels accompanied politically oppositional content viewed by strong political affiliates (table 6). In other words, on average, opinion labels significantly increased the credibility of news sites in the eyes of liberal, pro-Democratic participants even when those sites displayed conservative or pro-Republican content, and vice versa. Similarly, opinion labels significantly increased the perceived credibility of news sources among weak political affiliates. However, no effects were observed for strong political affiliates viewing congenial content. Furthermore, when the data were isolated by news source, opinion labels were found to have a significant effect on the perceived credibility of unbranded content (table 5). Specifically, opinion labels were found to significantly increase perceived credibility for content without a brand logo yet not for the same content with a *Fox News* or *CNN* logo.

The second research question asked why transparency cues might affect perceived source credibility. In chapter 2, this dissertation proposed a model with two hypothesized pathways for the underlying mechanisms by which opinion labels would affect perceived source credibility in single source environments (figure 7). In both pathways, opinion labels were hypothesized to increase perceptions of opinion segmentation. Then, in the first pathway, it was hypothesized that opinion segmentation would predict participants' perceptions of a source's persuasive intent, which would then predict perceived bias and finally credibility. In the second pathway, it was hypothesized that opinion segmentation would predict participants' perceptions of source hostility, which would then predict perceived bias and finally credibility.

The results suggest a nuanced picture for why opinion labels may increase perceived source credibility in single source environments. Specifically, the results supported H2a that opinion labels increase perceived opinion segmentation. Yet the results did not support either pathway, i.e., that opinion segmentation would predict persuasive intent (H2b) or source hostility (H2d), and that these variables would predict perceived bias, which is a factor of perceived credibility (H2f).

Instead, the results suggested that opinion segmentation is unrelated to persuasive intent and source hostility. When opinion segmentation was changed from a predictor of both source hostility and persuasive intent to a covariate of these two variables (figure 13), all three variables were found to significantly predict perceived credibility. Moreover, persuasive intent and source hostility had significant covariance (.35), but opinion segmentation did significantly covary not with these factors (.09 and .07 respectively).

Thus, opinion labels indeed appear to increase perceived opinion segmentation, and perceived opinion segmentation indeed predicts perceived credibility, but the mechanism explaining the connection between opinion segmentation and perceived credibility remains unclear. The findings therefore raise the following question: if opinion segmentation increases credibility – but *not* through source hostility or persuasive intent (as had been theorized in chapter 2) – then what is the mechanism?

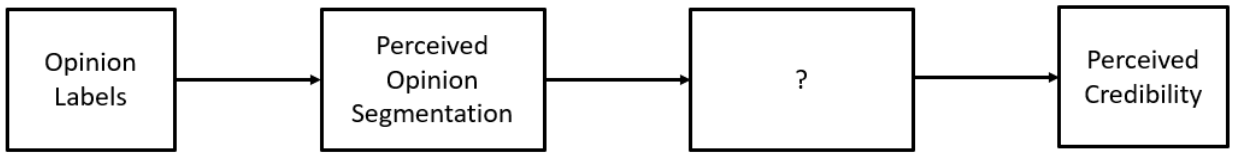


Figure 14. Path between opinion labels and perceived source credibility.

A further finding that ran contrary to expectations was that opinion labels appeared to increase credibility *not* because they reduced perceptions of a source's bias (H2f), but because they increased perceptions of the other four factors of credibility: trust, accuracy, fairness, and completeness (Meyer 1988). It was expected that opinion labels would decrease perceived bias because these labels would make news consumers more aware of a source's bias. However, results unexpectedly indicated that opinion labels increased perceptions of trust, accuracy, fairness, and completeness yet did not affect perceptions of bias.

While study 1 explored whether and why opinion labels might affect perceived source credibility in single source environments, study 2 explored whether opinion labels affect perceived source credibility in typical online multiple source environments. Study 2 found that opinion labels caused no significant difference in perceived credibility regardless of the

prominence of these labels. Specifically, no significant difference in perceived source credibility was found between conditions when opinion labels were designed to be prominent (in bold red letters), subtle (light gray letters), or not present at all.

Theoretical Implications

This dissertation extends the literature in that it explored the effects of a transparency cue (opinion labels) on perceived source credibility with story cards. Previous research explored only the effects of transparency cues on original news articles (Karlsson et al. 2014; Curry and Stroud 2019). The distinction between a story card and the originating article is important because, as noted in chapter 1, news consumers tend to view news on story cards rather than viewing the corresponding articles (Lurie and Mustafaraj 2019). Literature suggests that news consumers tend to perceive credibility differently under different conditions online. Thus, it was important to examine the effects of opinion labels in an online environment such as Google's Top Stories where relatively few credibility cues are available (Shariff, Zhang, and Sanderson 2017).

Study 1 also extends the literature by not just exploring whether a heuristic cue would affect perceived source credibility, but the underlying reasons why. Few studies have explored the important second-order factors of credibility (Yale et al. 2015). While an examination of the proposed model in this dissertation revealed that neither of the pathways explained the connection between opinion labels and perceived source credibility, it is evident that some connection exists. The results in study 1 revealed that opinion labels positively predicted variance in opinion segmentation which positively predicted variance in credibility. This finding suggests that the extent to which news organizations separate fact-based news and opinionated

content – which has been closely linked to credibility research for decades – also applies to story cards as they are displayed on mobile and desktop platforms.

The results also provide implications for hostile media effects theory. The finding that opinion labels significantly increased the perceived credibility of news sources among strong political affiliates viewing politically oppositional content suggest that heuristic cues may mitigate hostile media effects in some conditions. On the other hand, opinion labels had no significant effect on strong political affiliates viewing politically or ideologically congenial content; this, however, may be explained by the fact that political affiliates already highly rated the credibility of content congenial to their views. Thus, if political affiliates already trust content that confirms their biases, then heuristic cues likely do little to further increase their perceptions of credibility. Otherwise, the findings demonstrate these cues can have significant effects even among strong political affiliates.

Furthermore, the finding that opinion labels only significantly affected perceived credibility for unbranded content suggests that strong perceptions of a brand may mitigate the effects of transparency cues. This finding comports with Oyedeji's credible brand model (2010) which, as noted in chapter 2, predicts that the extent to which news consumers think a brand reflects their worldview will predict how credible consumers will perceive the brand to be. Transparency cues appear to have a reduced effect on perceived credibility when news consumers view well known brands that elicit strong emotional appeal (brand affect). A news organization's brand image is a strong predictor of its perceived credibility, regardless of the actual content the organization displays (Fichter and Jonas 2008). Opinion labels may therefore have the greatest effect on the perceived credibility of news brands that are unfamiliar to many

news consumers; some brands may have too strong a brand image in news consumers' minds for transparency cues to work.

Study 2 further extends the literature by exploring the roles of two competing theories that seek to explain the impact of transparency cues in typical online multiple source environments: the 'source blindness effect' and prominence-interpretation theory. Whereas the prominence-interpretation theory suggested that the more prominent a cue is, the more it will affect perceived credibility, the source blindness effect suggests that multiple source environments make individuals blind to differences between sources (Fogg et al. 2003; Pearson 2019). The results of study 2 supported the strength of the source blindness effect over the prominence-interpretation theory as no significant differences in perceived credibility were found regardless of the prominence of the opinion labels. Thus, the source blindness effect does, in fact, appear to supersede the prominence-interpretation theory in multiple source environments online.

The differing results of study 1 and study 2 suggest that individuals react differently to transparency cues when they view information from only one news source at a time (study 1) than when they view information from multiple news sources (study 2). Whereas this dissertation found that opinion labels significantly increased perceived source credibility in study 1, it found no significant effect in study 2, even though the content predominantly remained the same between the studies. This finding is in accordance with the literature on the source blindness effect, and implies that mixed source online feeds prevent individuals from recognizing cues that could otherwise make a significant impact on their formation of credibility judgments.

Socio-Political Implications

This dissertation has shown that opinion labels can improve the perceived credibility of news sources. This finding is important in a context where there is broad and often internationally declining trust in the news media (Hanitzsch, van Dalen, and Steindel 2018; Newman et al. 2019; Kalogeropoulos et al. 2019; Brenan 2021). As noted in chapter 1, declining trust in the press has been linked to political polarization, political dysfunction, the spread of misinformation, changes in voting patterns, and the weakening of institutions and social trust needed for societies to function.

This dissertation's findings have mixed socio-political implications. While opinion labels had a significant impact on credibility perceptions when individuals were presented with one source at a time (study 1), they did not have a significant impact when individuals were presented with multiple sources (study 2). These findings are relevant practically as well as academically, as changes in journalistic content and design may have political and social consequences.

First, the finding that transparency cues such as opinion labels significantly impact credibility perceptions in single source environments implies that design choices can considerably affect credibility decisions. This finding should be taken as a tip to designers of journalistic content online to be deliberate and conscious of the effects of their designs. Small design choices can have large credibility impacts. As seen in this dissertation, the addition of one word signaling whether an article was an opinion improved the perceived credibility of a news organization. As noted earlier, presentation affects not only credibility, but wider trust in the

news media and therefore social and political functioning (van Dalen 2019; McLeod, Wise, and Perryman 2017).

This first finding implies that it is important to understand which credibility cues are the most important in assisting news consumers in understanding news in online environments. As noted in chapter 1, story cards typically carry only six cues: headline, image, source, time stamp, label, and first sentence. This dissertation looked at opinion labels alone. Yet, many other cues and labels may be important in signaling credibility when there is limited visual space available, as in story cards. For example, Shen, Kasra, and O'Brien (2021) found that labeling altered images on story cards as manipulated significantly decreased their credibility. Yet more work can be done in this relatively new field. For inspiration, scholars can look at cues that are typically present on traditional newspapers or news websites but are missing on social media or search engines.

Furthermore, this first finding implies that it is not only important to understand which cues are important to credibility, but the ways in which the design of those cues may affect perceived credibility. The use of color, placement, font, and other design choices may have significant impacts. As noted in chapter 1, Spillane, Lawless, and Wade (2017) and Spillane et al. (2020) have looked at some of these variations and found significant effects, but there is more to be done. It was a conscious choice in study 1 to present opinion labels in a bold red font designed to catch the news consumer's eye. While study 2 did not find significant differences in perceived credibility between subtle and prominent cues, other relatively simple design choices may go a long way toward improving trust in the news media.

The second finding, that transparency cues such as opinion labels did not significantly impact credibility perceptions in multiple source environments, may have more concerning socio-political implications. If cues that otherwise help news consumers judge credibility have no impact in typical multiple source environments on social media or search engines, then it may be that design of (or content in) these environments require deeper change than the modification or addition of certain heuristic cues. Other scholars have noted similar concerns, specifically that individuals may minimally distinguish between sources in online feeds, especially where journalistic content is presented alongside non-journalistic content (Pearson 2019). There may be negative socio-political effects when news consumers do not distinguish between highly different sources. The gatekeeping power of traditionally authoritative news sources such as print newspapers has diminished while the power of individuals and nontraditional sources has increased (Pearson and Kosicki 2017). Nevertheless, it remains to be seen whether increasing the prominence of cues other than opinion labels may overcome news consumers' source blindness in content feeds, and moreover whether there are potential differences in source blindness between mobile and other interfaces.

It is important to note that this dissertation explored the effects of the presentation of journalistic content on credibility, not the effects of the content itself. There is evidence to suggest that changes in journalistic content since the internet and social media have led to reduced trust in mass media (Tanikawa 2017). The internet and social media have forced news organizations to adapt to retain engagement at the potential cost of credibility (Spillane et al. 2020). It is possible that design changes and credibility cues may only minimally affect

perceived credibility when trust in the news media as a whole has been reduced due to content changes.

The negative effects on society of declining trust in the news media add urgency to the further study of credibility and heuristic cues like opinion labels. While this dissertation explored a small element of news presentation online, further exploration of the relationship between heuristics and credibility may lead to a better understanding of trust in the news media and therefore the functioning of democratic societies.

Limitations

First, this dissertation does not address the different motivations of news consumers when they seek or view news online. Individuals have different motivations depending on how and when they access news online. Consumers directly visiting the homepages of news outlets tend to do it routinely and for general information at sources they trust; those who visit social media are more often incidentally exposed to news; those who use search engines tend to seek specific information and are motivated to find it in the most efficient way possible (Möller et al. 2019; Pearson and Kosicki 2017). While the experiments in this dissertation were designed to mimic Google's Top Stories component (study 1) and the news tab of a Google search (study 2), the study participants were likely not interacting with news in the experiments as they typically would. Nevertheless, it is expected that the results of this dissertation will have strong external validity; as noted in chapter 1, certain cues are shared by story cards among many online environments, meaning that the findings may be generalizable to other similar situations.

Second, study 2 had a skewed gender ratio, with 66.5 percent of its participants identifying as male and 33.1 percent as female (study 1 was 50.6 percent male and 49.1 percent female). However, this limitation was mitigated by the fact that the participants responded similarly to the treatment regardless of gender. The gender ratio of study 2 was unusual, given that, as of 2020, around 51-56 percent of Amazon Mechanical Turk workers were female (Litman et al. 2020; Moss et al. 2020). It should be noted that while samples on Mechanical Turk can approximate the ethnic diversity of the US, participants in such samples tend to be more liberal, educated, and single without children, but less religious than the US population as a whole (Chandler et al. 2019). Nevertheless, no significant differences were found between males and females in response to the treatment, indicating that the results can still be seen as reliable and generalizable. Specifically, a two-way between groups ANOVA found no significant interaction effect between gender and opinion labels on perceived credibility scores: males (M = 3.06, *SD* = .73) and females (M = 2.99, *SD* = .66); F (2, 262) = .31, p = n.s.

Third, participants in both studies skewed liberal and Democratic. However, this limitation was mitigated by the fact that the liberal and Democratic participants responded to the treatment comparatively to the conservative and Republican participants in both studies. As noted in the methods sections, participants in study 1 and study 2 had a mean political ideology of 2.67 and 2.56 respectively (1 = very liberal, 5 = very conservative) and a mean political identity of 2.43 and 2.48 respectively (1 = Democratic, 5 = Republican). No significant differences were found between self-identified liberal and conservative participants, and Democratic and Republican participants, in response to the treatment in either study. Specifically, two-way between groups ANOVAs found no significant interaction effects between ideology

(very/mostly liberal, or very/mostly conservative) and opinion labels on perceived credibility in study 1: liberals (M = 2.71, *SD* = 1.07) and conservatives (M = 2.69, *SD* = 1.05); *F* (1, 295) = .35, *p* = n.s., and in study 2: liberals (M = 3.11, *SD* = .65) and conservatives (M = 3.00, *SD* = .72); *F* (2, 205) = .80, *p* = n.s. Likewise, two-way between groups ANOVAs found no significant interaction effects between partisanship (Democratic/leaning Democratic and Republicans/leaning Republican) and opinion labels on perceived credibility in study 1: Democrats (M = 2.75, *SD* = 1.07) and Republicans (M = 2.72, *SD* = 1.00; *F* (1, 301) = .03, *p* = n.s., and in study 2: Democrats (M = 3.12, *SD* = .64) and Republicans (M = 3.04, *SD* = .65); *F* (2, 218) = .51, *p* = n.s.

Fourth, despite conducting a priori power analyses, some of the conclusions made in this dissertation were derived from low response numbers in each condition set. Study 1, with 389 valid participant responses and twelve conditions representing the 3 x 2 x 2 between-subject conditions, had between around thirty to forty responses per condition. Study 2, with 275 valid responses and three conditions, had between eighty to ninety-one responses per condition. These conditions were collapsed for the purposes of the statistical analyses, meaning that the comparisons for the statistical tests were based on larger sample sizes. For instance, the ANOVA used for H1a – which compared the responses for all conditions in which opinion labels were present versus the responses in which opinion labels were not present – employed around 190 responses in each group.

Finally, the time in which the studies were carried out – March 2021 – was likely a time of relatively high political polarization in the US (Boxell, Gentzkow, and Shapiro 2020). The tumultuous presidency of President Donald Trump had recently ended. However, in many ways,

this limitation may actually be a strength because high polarization is useful for the study of hostile media effects (Feldman 2014). Moreover, the stimuli (opinion labels) in study 1 led to significant differences in perceived credibility even despite a high level of political polarization in American society.

Directions for Future Research

This dissertation proposes three main directions for future research.

1. Exploring the underlying mechanisms by which transparency cues such as opinion labels may explain variance in perceived credibility.
2. Exploring the relation between transparency cues and the source blindness effect, specifically exploring ways in which the source blindness effect may be overcome.
3. Exploring the roles of other transparency cues on perceived credibility in online environments where few credibility cues are present, such as on story cards.

First, research could explore the underlying mechanisms by which transparency cues such as opinion labels may explain variances in perceived credibility. While this dissertation found that opinion labels increased perceived opinion segmentation (H2a) and that perceived opinion segmentation predicted perceived credibility, it did not find that opinion segmentation increased perceived credibility through reducing perceptions of persuasive intent or source hostility (H2b-e). These findings ran contrary to expectations. Specifically, there appears to be a strong link between opinion labels, opinion segmentation, and credibility but understanding the psychological mechanisms behind that link remain unknown. Understanding the mechanisms

explaining this link may lead to new research pathways on this important topic and may advance other research on transparency cues and credibility.

Second, research could explore the role of source prominence in relation to the source blindness effect. If results from this dissertation (study 2) suggest that opinion label prominence had little effect on perceived credibility in multiple source environments, then exploring whether source prominence would overcome the source blindness effect would be the logical next step. Specifically, by making the source (or brand name) more prominent in relation to the headline, the prominence-interpretation effect may supersede the source blindness effect. Further research on why users do not discern differences between sources on search engines and social media is crucial to understanding the credibility crisis in news. As research explores ways to combat digital misinformation, it is important to understand the circumstances that cause information context collapse for news consumers.

Third, research could explore the roles of other transparency cues on perceived credibility, especially in certain online environments where few credibility cues are present. As noted in chapter 1, research has looked at how the online realities of news presentation and design may be related to source credibility and trust in the news media (Spillane et al. 2020). Design choices are important in how consumers perceive the credibility of news sources (Wobbrock et al. 2021; Karduni et al. 2021). However, much work remains to be done in relation to the presentation of news on search engines and social media and credibility. Both Curry and Stroud (2019) and Karlsson et al. (2014) tested the effects of transparency cues on online news articles, not on news previews (story cards) as in this dissertation. As news presentations online increasingly transition to interfaces where there may be few credibility cues available, it is

important to better understand how the presence, absence, or design of certain cues impacts credibility. Knowledge gained from research along these lines could lead to practical improvements in the design of news presentation. Thus, research leading to better design may aid news consumers in understanding the nature of news and may help mitigate pernicious online effects of declining trust in the mass media.

These questions are important to explore because they help in understanding foundational elements of how journalistic content is displayed online and on social media. As noted in chapter 1, many online sites do not display opinion content with an explanatory label. News consumers are therefore without an important and traditional cue for judging credibility and understanding the basic nature of the content they view. Harmful socio-political consequences follow, adding urgency to further research.

Appendices

Appendix A: Screening Question

Note: This question was used for both study 1 and study 2. It is derived from Downs et al. (2010). Answers were presented in random order. Participants who incorrectly answered this question were removed from the studies.

Prompt:

> Pat,
>
> The Human Resources conference call will be held via telephone tomorrow at 2pm. We will discuss the proposed reorganization of the department to better serve the faculty and staff. We will also discuss the decisions reached at the 11am University Benefits department meeting. It is critical that all attendees of the morning meeting attend the conference call to ensure that necessary recommendations of this committee are incorporated.
>
> Thanks, Ginger Holmes
> Administrative Coordinator
> Recruiting and Staffing

Q. Which department is holding the meeting prior to the conference call?

1. Recruiting and Staffing [conspicuous distractor]
2. Learning and Professional Development
3. Temporary Employment
4. International HR
5. Equal Opportunity Employment
6. Health Insurance Options
7. Compensation
8. University Benefits [correct response]

Appendix B: Study 1 Pre Exposure Questionnaire

Pre-Exposure Source Credibility Indexes

Derived from Meyer (1988). Indexes were presented in random order. Statements were also presented in random order.

Fox News pre-exposure credibility index (Cronbach's α = .930, *M* = 2.308, *SD* = 1.130).

Please indicate your level of agreement with the following statements:

Q1. Fox News is trustworthy
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q2. Fox News is accurate
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q3. Fox News is fair
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q4. Fox News tells the whole story
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q5. Fox News is **biased**
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Page Break

CNN pre-exposure credibility index (Cronbach's α = .935, *M* = 2.941, *SD* = 1.170).

Please indicate your level of agreement with the following statements:

Q1. CNN is trustworthy
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q2. CNN is accurate
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q3. CNN is fair
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q4. CNN tells the whole story
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q5. CNN is **biased**
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Page Break

Brand Affect Indexes

From Chaudhuri and Holbrook (2001). Indexes were presented in random order. Statements were also presented in random order.

CNN brand affect index (Cronbach's α = .967, *M* = 2.800, *SD* = 1.271).

Please indicate your level of agreement with the following statements:

Q1. I feel good when I see CNN
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q2. CNN makes me happy
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q3. CNN gives me pleasure
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Page Break

Fox News brand affect index (Cronbach's α = .966, *M* = 2.195, *SD* = 1.296).

Please indicate your level of agreement with the following statements:

Q1. I feel good when I see Fox News
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q2. Fox News makes me happy
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q3. Fox News gives me pleasure
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Page Break

Media Skepticism Index

Derived from Prochazka and Schweiger (2019). Statements were presented in random order. (Cronbach's α = .907, *M* = 3.010, *SD* = 1.078).

Thinking about the *news media in general*, please indicate your level of agreement with the following statements:

Q1. The media pay appropriate attention to important topics
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q2. The media address the essential points of each topic
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q3. The opinions of journalists are well-founded
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q4. The media reports facts truthfully
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Page Break

Proneness to Confirmation Bias Index

From Rassin (2008). Statements were presented in random order. (Cronbach's α = .728, *M* = 3.299, *SD* = .788).

Please indicate your level of agreement with the following statements:

Q1. In general, I only need a little information to reach a good decision.
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q2. In general, my first impression usually seems to be correct.
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q3. I usually quickly know the ins and outs of a matter.
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q4. Some things are simply the way they are, regardless of other people's counterarguments.
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Appendix C: Study 1 Stimuli

After completing the pre-exposure questionnaire, participants were randomly assigned to one of the following twelve conditions.

Condition 1 No Brand Left Slanted Headlines Opinion Labels	**Condition 2** No Brand Right Slanted Headlines Opinion Labels	**Condition 3** No Brand Right Slanted Headlines No Opinion Labels	**Condition 4** No Brand Left Slanted Headlines No Opinion Labels
Condition 5 CNN Left Slanted Headlines Opinion Labels	**Condition 6** CNN Right Slanted Headlines Opinion Labels	**Condition 7** CNN Right Slanted Headlines No Opinion Labels	**Condition 8** CNN Left Slanted Headlines No Opinion Labels
Condition 9 Fox News Left Slanted Headlines Opinion Labels	**Condition 10** Fox News Right Slanted Headlines Opinion Labels	**Condition 11** Fox News Right Slanted Headlines No Opinion Labels	**Condition 12** Fox News Left Slanted Headlines No Opinion Labels

Study 1 Conditions

Condition 1: No Brand, Left Slanted Headlines, Opinion Labels

Page 1 of feed

How Democrats won the war of ideas

7 mins ago **Opinion**

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

45 mins ago

Many reasons for liberals to be optimistic going forward

53 mins ago **Opinion**

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

1 hour ago

Inside Trump's failure: the rush to abandon America's leadership role

1 hour ago **Opinion**

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

2 hours ago

Page 3 of feed

Republicans are playing a partisan game in the middle of a crisis

2 hours ago **Opinion**

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

3 hours ago

The problem for the conservative right? Adhering to the Constitution

5 hours ago **Opinion**

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

6 hours ago

Why Joe Biden is good for America

13 hours ago **Opinion**

Thousands protest in Armenia, demand PM's resignation

1 day ago

Condition 2: No Brand, Right Slanted Headlines, Opinion Labels

Page 1 of feed

How Republicans won the war of ideas

7 mins ago **Opinion**

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

45 mins ago

Many reasons for conservatives to be optimistic going forward

53 mins ago **Opinion**

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

1 hour ago

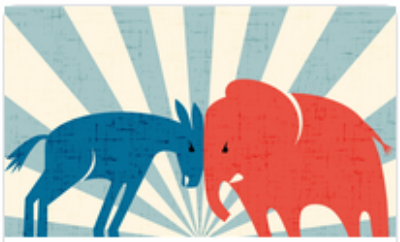
Inside Biden's failure: the rush to abandon America's leadership role

1 hour ago **Opinion**

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

2 hours ago

Page 3 of feed



Democrats are playing a partisan game in the middle of a crisis

2 hours ago **Opinion**

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

3 hours ago

The problem for the liberal left? Adhering to the Constitution

5 hours ago **Opinion**

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

6 hours ago

Why Donald Trump is good for America

13 hours ago **Opinion**

Thousands protest in Armenia, demand PM's resignation

1 day ago

Condition 3: No Brand, Right Slanted Headlines, No Opinion Labels

Page 1 of feed

How Republicans won the war of ideas

7 mins ago

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

45 mins ago

Many reasons for conservatives to be optimistic going forward

53 mins ago

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

1 hour ago

Inside Biden's failure: the rush to abandon America's leadership role

1 hour ago

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

2 hours ago

Page 3 of feed

Pollution deaths in India rose to 1.67 million in 2020

6 hours ago

Why Donald Trump is good for America

13 hours ago

Thousands protest in Armenia, demand PM's resignation

1 day ago

Page 4 of feed

Democrats are playing a partisan game in the middle of a crisis

2 hours ago

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

3 hours ago

The problem for the liberal left? Adhering to the Constitution

5 hour ago

Condition 4: No Brand, Left Slanted Headlines, No Opinion Labels

Page 1 of feed

How Democrats won the war of ideas

7 mins ago

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

45 mins ago

Many reasons for liberals to be optimistic going forward

53 mins ago

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

1 hour ago

Inside Trump's failure: the rush to abandon America's leadership role

1 hour ago

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

2 hours ago

Page 3 of feed

Republicans are playing a partisan game in the middle of a crisis

2 hours ago

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

3 hours ago

The problem for the conservative right? Adhering to the Constitution

5 hours ago

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

6 hours ago

Why Joe Biden is good for America

13 hours ago

Thousands protest in Armenia, demand PM's resignation

1 day ago

Condition 5: CNN, Left Slanted Headlines, Opinion Labels

Page 1 of feed

How Democrats won the war of ideas

CNN

7 mins ago **Opinion**

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

CNN

45 mins ago

Many reasons for liberals to be optimistic going forward

CNN

53 mins ago **Opinion**

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

CNN

1 hour ago

Inside Trump's failure: the rush to abandon America's leadership role

CNN

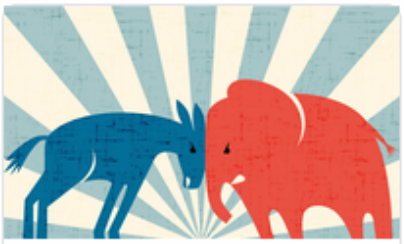
1 hour ago **Opinion**

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

CNN

2 hours ago

Page 3 of feed



Republicans are playing a partisan game in the middle of a crisis

CNN

2 hours ago **Opinion**

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

CNN

3 hours ago

The problem for the conservative right? Adhering to the Constitution

CNN

5 hours ago **Opinion**

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

CNN

6 hours ago

Why Joe Biden is good for America

CNN

13 hours ago **Opinion**

Thousands protest in Armenia, demand PM's resignation

CNN

1 day ago

Condition 6: CNN, Right Slanted Headlines, Opinion Labels

Page 1 of feed

How Republicans won the war of ideas

CNN

7 mins ago **Opinion**

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

CNN

45 mins ago

Many reasons for conservatives to be optimistic going forward

CNN

53 mins ago **Opinion**

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

CNN

1 hour ago

Inside Biden's failure: the rush to abandon America's leadership role

CNN

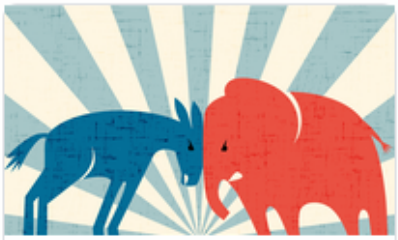
1 hour ago **Opinion**

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

CNN

2 hours ago

Page 3 of feed



Democrats are playing a partisan game in the middle of a crisis

CNN

2 hours ago **Opinion**

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

CNN

3 hours ago

The problem for the liberal left? Adhering to the Constitution

CNN

5 hours ago **Opinion**

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

CNN

6 hours ago

Why Donald Trump is good for America

CNN

13 hours ago **Opinion**

Thousands protest in Armenia, demand PM's resignation

CNN

1 day ago

Condition 7: CNN, Right Slanted Headlines, No Opinion Labels

Page 1 of feed

How Republicans won the war of ideas

CNN

7 mins ago

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

CNN

45 mins ago

Many reasons for conservatives to be optimistic going forward

CNN

53 mins ago

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

CNN

1 hour ago

Inside Biden's failure: the rush to abandon America's leadership role

CNN

1 hour ago

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

CNN

2 hours ago

Page 3 of feed

Democrats are playing a partisan game in the middle of a crisis

CNN

2 hours ago

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

CNN

3 hours ago

The problem for the liberal left? Adhering to the Constitution

CNN

5 hours ago

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

CNN

6 hours ago

Why Donald Trump is good for America

CNN

13 hours ago

Thousands protest in Armenia, demand PM's resignation

CNN

1 day ago

Condition 8: CNN, Left Slanted Headlines, No Opinion Labels

Page 1 of feed

How Democrats won the war of ideas

CNN

7 mins ago

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

CNN

45 mins ago

Many reasons for liberals to be optimistic going forward

CNN

53 mins ago

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

CNN

1 hour ago

Inside Trump's failure: the rush to abandon America's leadership role

CNN

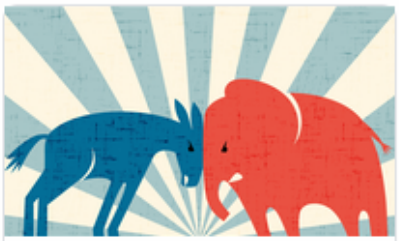
1 hour ago

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

CNN

2 hours ago

Page 3 of feed



Republicans are playing a partisan game in the middle of a crisis

CNN

2 hours ago

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

CNN

3 hours ago

The problem for the conservative right? Adhering to the Constitution

CNN

5 hours ago

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

CNN

6 hours ago

Why Joe Biden is good for America

CNN

13 hours ago

Thousands protest in Armenia, demand PM's resignation

CNN

1 day ago

Condition 9: Fox News, Left Slanted Headlines, Opinion Labels

Page 1 of feed

How Democrats won the war of ideas

Fox News

7 mins ago **Opinion**

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

Fox News

45 mins ago

Many reasons for liberals to be optimistic going forward

Fox News

53 mins ago **Opinion**

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

Fox News

1 hour ago

Inside Trump's failure: the rush to abandon America's leadership role

Fox News

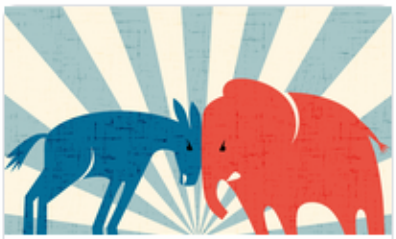
1 hour ago **Opinion**

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

Fox News

2 hours ago

Page 3 of feed



Republicans are playing a partisan game in the middle of a crisis

Fox News

2 hours ago **Opinion**

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

Fox News

3 hours ago

The problem for the conservative right? Adhering to the Constitution

Fox News

5 hours ago **Opinion**

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

Fox News

6 hours ago

Why Joe Biden is good for America

Fox News

13 hours ago **Opinion**

Thousands protest in Armenia, demand PM's resignation

Fox News

1 day ago

Condition 10: Fox News, Right Slanted Headlines, Opinion Labels

Page 1 of feed

How Republicans won the war of ideas

Fox News

7 mins ago **Opinion**

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

Fox News

45 mins ago

Many reasons for conservatives to be optimistic going forward

Fox News

53 mins ago **Opinion**

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

Fox News

1 hour ago

Inside Biden's failure: the rush to abandon America's leadership role

Fox News

1 hour ago **Opinion**

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

Fox News

2 hours ago

Page 3 of feed

Democrats are playing a partisan game in the middle of a crisis

Fox News

2 hours ago **Opinion**

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

Fox News

3 hours ago

The problem for the liberal left? Adhering to the Constitution

Fox News

5 hours ago **Opinion**

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

Fox News

6 hours ago

Why Donald Trump is good for America

Fox News

13 hours ago **Opinion**

Thousands protest in Armenia, demand PM's resignation

Fox News

1 day ago

Condition 11: Fox News, Right Slanted Headlines, No Opinion Labels

Page 1 of feed

How Republicans won the war of ideas

Fox News

7 mins ago

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

Fox News

45 mins ago

Many reasons for conservatives to be optimistic going forward

Fox News

53 mins ago

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

Fox News

1 hour ago

Inside Biden's failure: the rush to abandon America's leadership role

Fox News

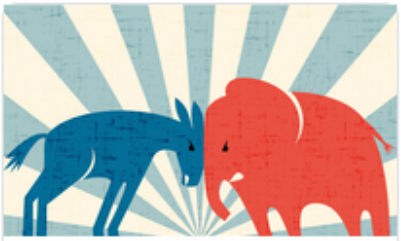
1 hour ago

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

Fox News

2 hours ago

Page 3 of feed



Democrats are playing a partisan game in the middle of a crisis

Fox News

2 hours ago

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

Fox News

3 hours ago

The problem for the liberal left? Adhering to the Constitution

Fox News

5 hours ago

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

Fox News

6 hours ago

Why Donald Trump is good for America

Fox News

13 hours ago

Thousands protest in Armenia, demand PM's resignation

Fox News

1 day ago

Condition 12: Fox News, Left Slanted Headlines, No Opinion Labels

Page 1 of feed

How Democrats won the war of ideas

Fox News

7 mins ago

Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh

Fox News

45 mins ago

Many reasons for liberals to be optimistic going forward

Fox News

53 mins ago

Page 2 of feed

G20 to extend debt relief to mid-2021, pushes private sector to help

Fox News

1 hour ago

Inside Trump's failure: the rush to abandon America's leadership role

Fox News

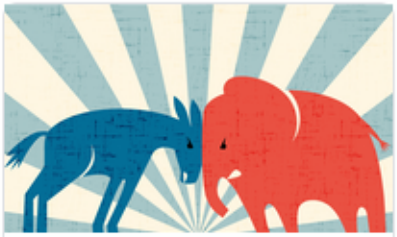
1 hour ago

Conflict in Ethiopia's Tigray region widens as missiles are fired at airports

Fox News

2 hours ago

Page 3 of feed



Republicans are playing a partisan game in the middle of a crisis

Fox News

2 hours ago

Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella

Fox News

3 hours ago

The problem for the conservative right? Adhering to the Constitution

Fox News

5 hours ago

Page 4 of feed

Pollution deaths in India rose to 1.67 million in 2020

Fox News

6 hours ago

Why Joe Biden is good for America

Fox News

13 hours ago

Thousands protest in Armenia, demand PM's resignation

Fox News

1 day ago

Appendix D: Study 1 Post Exposure Questionnaire

Post-Exposure Source Credibility Index

Derived from Meyer (1988). Statements were presented in random order. (Cronbach's α = .903, *M* = 2.904, *SD* = .993).

Thinking about the **news previews you just viewed**, please indicate your level of agreement with the following statements:

Q1. The news source was trustworthy
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q2. The news source was accurate
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q3. The news source was fair
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q4. The news source told the whole story
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q5. The news source was **biased**
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Opinion Segmentation Index

Statements were presented in random order. (Cronbach's α = .820, *M* = 3.744, *SD* = 1.006).

Thinking about the **news previews you just viewed**, please indicate your level of agreement with the following statements:

Q1. I thought that opinion articles were clearly indicated.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q2. I could tell that some of the articles expressed views that might differ from those of the site that published them.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q3. I was able to identify which articles were opinion and which were not.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q4. I could tell that the positions of some of the articles might not reflect the site that published them.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Persuasive Intent Index

Derived from Scherr and Müller (2017) and Grillo and Pizzutti (2020). Statements were presented in random order. (Cronbach's α = .890, *M* = 4.144, *SD* = .846).

Thinking about the **news previews you just viewed**, please indicate your level of agreement with the following statements:

Q1. Some of the articles were trying to persuade me of something, some were not.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q2. Some of the articles wanted to convince me of a point of view, some did not.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q3. Some of the articles were trying to influence my behavior, some were not.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Source Hostility Index

Derived from Arceneaux, Johnson, and Murphy (2012) and Vraga et al. (2012). Statements were presented in random order. (Cronbach's $\alpha = .924$. $M = 2.882$, $SD = 1.162$).

Thinking about the **news previews you just viewed**, please indicate your level of agreement with the following statements:

Q1. The news organization that printed these articles made me feel that my views are unwelcome in society.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q2. The news organization that printed these articles was hostile to my values.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q3. The news organization that printed these articles made me feel that I will be judged for my beliefs.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q4. The news organization that printed these articles was unfair to my beliefs and values.

1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Likelihood of Experiencing Hostile Media Effects Index

Derived from Coe et al. (2008). (Cronbach's $\alpha = .924$, $r = .677$, $M = 2.552$, $SD = 1.205$).

Q3. How would you best describe your political identification?

1 = Democrat
2 = leaning Democrat
3 = neutral
4 = leaning Republican
5 = Republican

Q4. How would you best describe your political ideology?

1 = very liberal
2 = mostly liberal
3 = neutral
4 = mostly conservative
5 = very conservative

Demographic Questions

Q1. What is your age?

Q2. Gender

1 = Male
2 = Female
3 = Different identity

Q5. What is your highest level of education completed?

1 = High school diploma or less
2 = Current college student
3 = Bachelor's degree
4 = Master's degree
5 = Doctoral (e.g. JD, PhD, MD etc) degree

Q6. With which race(s) do you identify? (Multiple selections were allowed. Those who selected multiple were coded as the discrete category: mixed race)

1 = White
2 = Black or African American
3 = East Asian
4 = South Asian
5 = Middle Eastern or North African
6 = American Indian or Alaska Native
7 = Native Hawaiian or Other Pacific Islander
8 = Hispanic or Latino/a
9 = Other

Manipulation Check

(Answers were presented in random order)

Q1. Did the news previews you viewed have the following label? Opinion

1 = Yes
2 = No

Appendix E: Study 2 Pre Exposure Questionnaire

Pre-Exposure Source Credibility Indexes

Derived from Meyer (1988). Indexes were presented in random order. Statements were presented in random order.

Fox News pre-exposure credibility index (Cronbach's α = .931, *M* = 2.385, *SD* = 1.171).

Please indicate your level of agreement with the following statements:

Q1. Fox News is trustworthy
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q2. Fox News is accurate
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q3. Fox News is fair
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q4. Fox News tells the whole story
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q5. Fox News is **biased**
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree

5 = Strongly agree

Page Break

CNN pre-exposure credibility index (Cronbach's α = .924, *M* = 3.073, *SD* = 1.166).

Please indicate your level of agreement with the following statements:

Q1. CNN is trustworthy
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q2. CNN is accurate
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q3. CNN is fair
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q4. CNN tells the whole story
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q5. CNN is **biased**
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Page Break

USA Today pre-exposure credibility index (Cronbach's α = .899, *M* = 3.273, *SD* = .971).

Please indicate your level of agreement with the following statements:

Q1. USA Today is trustworthy
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q2. USA Today is accurate
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q3. USA Today is fair
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q4. USA Today tells the whole story
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q5. USA Today is **biased**
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

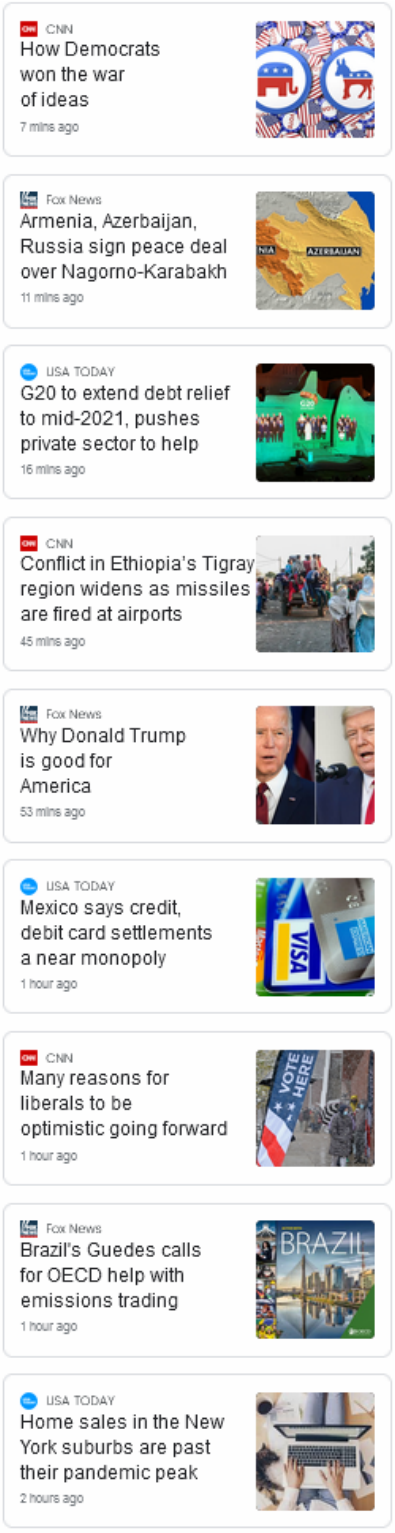
Appendix F: Study 2 Stimuli

After completing the pre-exposure questionnaire, participants were randomly assigned to one of the following three conditions.

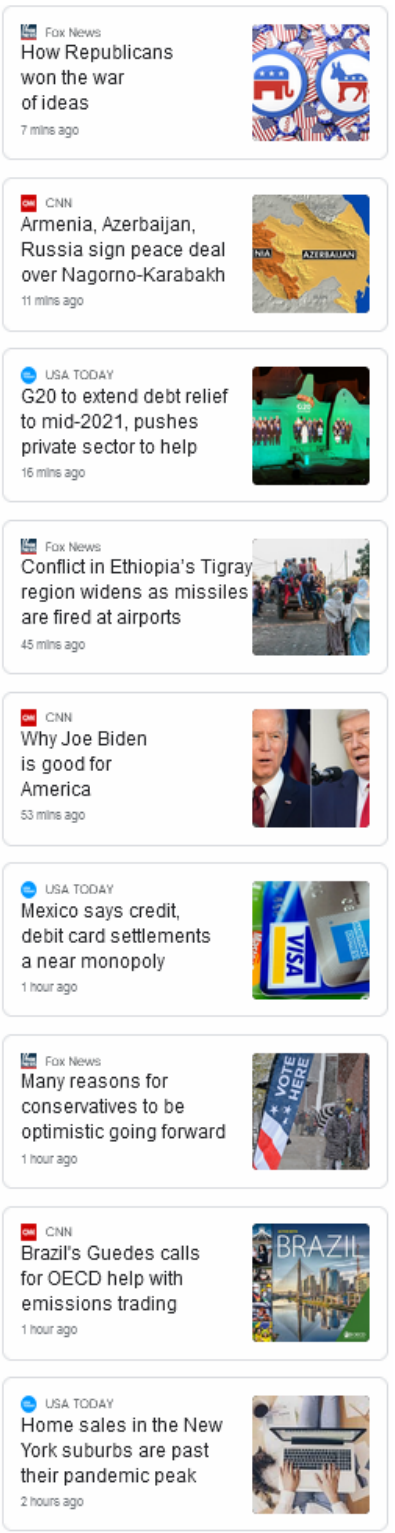
Condition 1: No Opinion Labels

Page 1 of feed

Example A



Example B



Condition 1: No Opinion Labels

Page 2 of feed

Example A

CNN
Republicans are playing a partisan game in the middle of a crisis
2 hours ago

Fox News
Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella
3 hours ago

USA TODAY
India announces new controls on sourcing telecoms gear
5 hours ago

CNN
Somali hotel rises again after al Shabaab bombing
6 hours ago

Fox News
Inside Biden's failure: The Rush to Abandon America's Leadership Role
13 hours ago

USA TODAY
Thousands protest in Armenia, demand PM's resignation
20 hours ago

CNN
The problem for the conservative right? Adhering to the Constitution
1 day ago

Fox News
Pollution deaths in India rose to 1.67 million in 2020
1 day ago

USA TODAY
In South Africa, child homicides show violence 'entrenched'
1 day ago

Example B

Fox News
Democrats are playing a partisan game in the middle of a crisis
2 hours ago

CNN
Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella
3 hours ago

USA TODAY
India announces new controls on sourcing telecoms gear
5 hours ago

Fox News
Somali hotel rises again after al Shabaab bombing
6 hours ago

CNN
Inside Trump's failure: The Rush to Abandon America's Leadership Role
13 hours ago

USA TODAY
Thousands protest in Armenia, demand PM's resignation
20 hours ago

Fox News
The problem for the liberal left? Adhering to the Constitution
1 day ago

CNN
Pollution deaths in India rose to 1.67 million in 2020
1 day ago

USA TODAY
In South Africa, child homicides show violence 'entrenched'
1 day ago

Condition 2: Subtle Opinion Labels

Page 1 of feed

Example A

CNN
How Democrats won the war of ideas
7 mins ago Opinion

Fox News
Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh
11 mins ago

USA TODAY
G20 to extend debt relief to mid-2021, pushes private sector to help
16 mins ago

CNN
Conflict in Ethiopia's Tigray region widens as missiles are fired at airports
45 mins ago

Fox News
Why Donald Trump is good for America
53 mins ago Opinion

USA TODAY
Mexico says credit, debit card settlements a near monopoly
1 hour ago

CNN
Many reasons for liberals to be optimistic going forward
1 hour ago Opinion

Fox News
Brazil's Guedes calls for OECD help with emissions trading
1 hour ago

USA TODAY
Home sales in the New York suburbs are past their pandemic peak
2 hours ago

Example B

Fox News
How Republicans won the war of ideas
7 mins ago Opinion

CNN
Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh
11 mins ago

USA TODAY
G20 to extend debt relief to mid-2021, pushes private sector to help
16 mins ago

Fox News
Conflict in Ethiopia's Tigray region widens as missiles are fired at airports
45 mins ago

CNN
Why Joe Biden is good for America
53 mins ago Opinion

USA TODAY
Mexico says credit, debit card settlements a near monopoly
1 hour ago

Fox News
Many reasons for conservatives to be optimistic going forward
1 hour ago Opinion

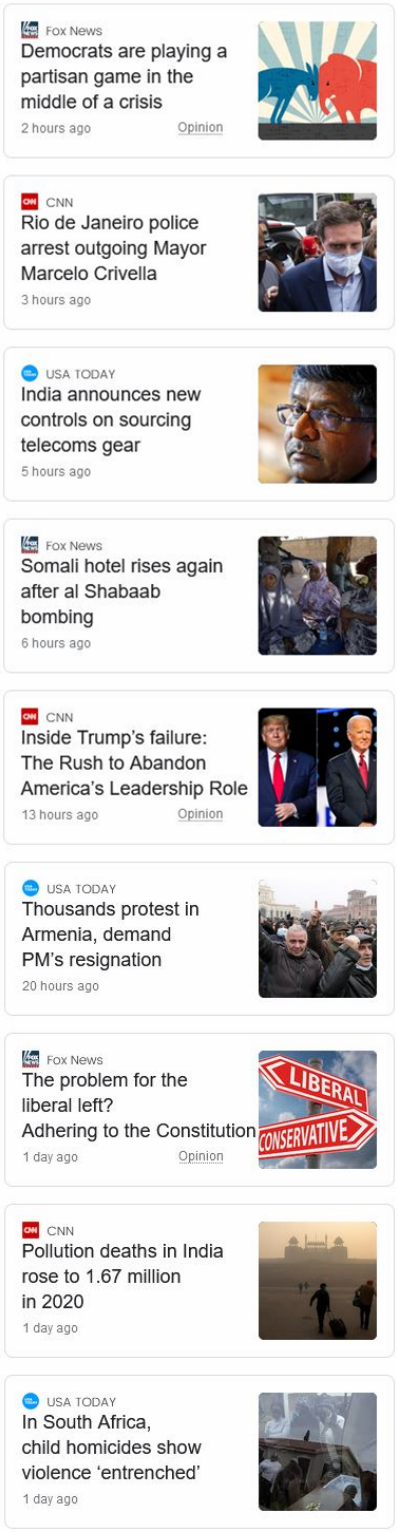
CNN
Brazil's Guedes calls for OECD help with emissions trading
1 hour ago

USA TODAY
Home sales in the New York suburbs are past their pandemic peak
2 hours ago

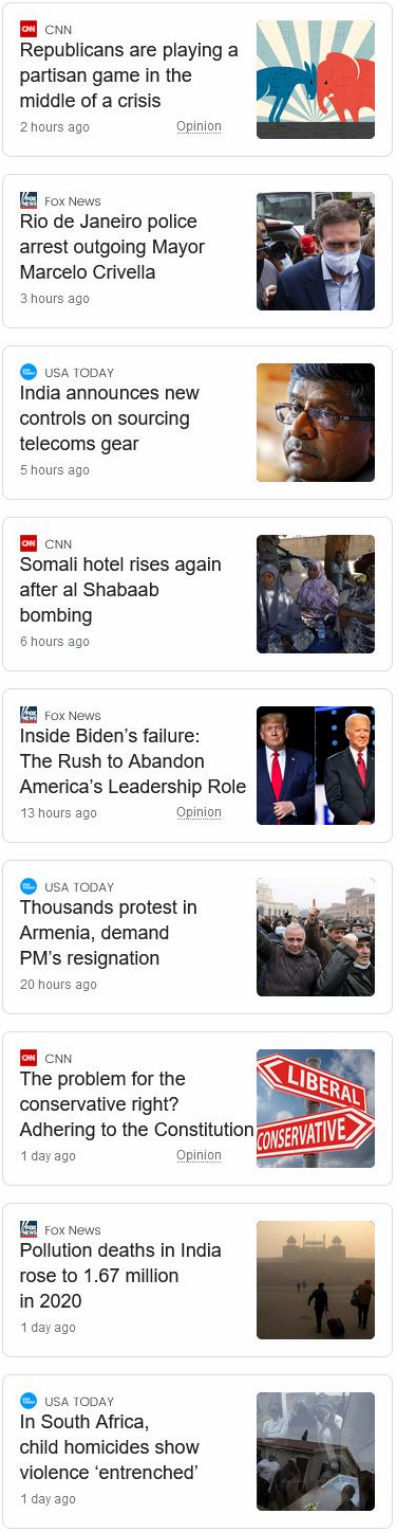
Condition 2: Subtle Opinion Labels

Page 2 of feed

Example A



Example B



Condition 3: Prominent Opinion Labels

Page 1 of feed

Example A

CNN
How Democrats won the war of ideas
7 mins ago Opinion

Fox News
Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh
11 mins ago

USA TODAY
G20 to extend debt relief to mid-2021, pushes private sector to help
16 mins ago

CNN
Conflict in Ethiopia's Tigray region widens as missiles are fired at airports
45 mins ago

Fox News
Why Donald Trump is good for America
53 mins ago Opinion

USA TODAY
Mexico says credit, debit card settlements a near monopoly
1 hour ago

CNN
Many reasons for liberals to be optimistic going forward
1 hour ago Opinion

Fox News
Brazil's Guedes calls for OECD help with emissions trading
1 hour ago

USA TODAY
Home sales in the New York suburbs are past their pandemic peak
2 hours ago

Example B

Fox News
How Republicans won the war of ideas
7 mins ago Opinion

CNN
Armenia, Azerbaijan, Russia sign peace deal over Nagorno-Karabakh
11 mins ago

USA TODAY
G20 to extend debt relief to mid-2021, pushes private sector to help
16 mins ago

Fox News
Conflict in Ethiopia's Tigray region widens as missiles are fired at airports
45 mins ago

CNN
Why Joe Biden is good for America
53 mins ago Opinion

USA TODAY
Mexico says credit, debit card settlements a near monopoly
1 hour ago

Fox News
Many reasons for conservatives to be optimistic going forward
1 hour ago Opinion

CNN
Brazil's Guedes calls for OECD help with emissions trading
1 hour ago

USA TODAY
Home sales in the New York suburbs are past their pandemic peak
2 hours ago

Condition 3: Prominent Opinion Labels

Page 2 of feed

Example A

CNN
Republicans are playing a partisan game in the middle of a crisis
2 hours ago **Opinion**

Fox News
Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella
3 hours ago

USA TODAY
India announces new controls on sourcing telecoms gear
5 hours ago

CNN
Somali hotel rises again after al Shabaab bombing
6 hours ago

Fox News
Inside Biden's failure: The Rush to Abandon America's Leadership Role
13 hours ago **Opinion**

USA TODAY
Thousands protest in Armenia, demand PM's resignation
20 hours ago

CNN
The problem for the conservative right? Adhering to the Constitution
1 day ago **Opinion**

Fox News
Pollution deaths in India rose to 1.67 million in 2020
1 day ago

USA TODAY
In South Africa, child homicides show violence 'entrenched'
1 day ago

Example B

Fox News
Democrats are playing a partisan game in the middle of a crisis
2 hours ago **Opinion**

CNN
Rio de Janeiro police arrest outgoing Mayor Marcelo Crivella
3 hours ago

USA TODAY
India announces new controls on sourcing telecoms gear
5 hours ago

Fox News
Somali hotel rises again after al Shabaab bombing
6 hours ago

CNN
Inside Trump's failure: The Rush to Abandon America's Leadership Role
13 hours ago **Opinion**

USA TODAY
Thousands protest in Armenia, demand PM's resignation
20 hours ago

Fox News
The problem for the liberal left? Adhering to the Constitution
1 day ago **Opinion**

CNN
Pollution deaths in India rose to 1.67 million in 2020
1 day ago

USA TODAY
In South Africa, child homicides show violence 'entrenched'
1 day ago

Appendix G: Study 2 Post Exposure Questionnaire

Post-Exposure Source Credibility Indexes

Derived from Meyer (1988). Indexes were presented in random order. Statements were presented in random order.

Fox News post-exposure credibility index (Cronbach's α = .902, *M* = 2.524, *SD* = 1.096).

Thinking about the **news previews you just viewed**, please indicate your level of agreement with the following statements:

Q1. Fox News was trustworthy
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q2. Fox News was accurate
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q3. Fox News was fair
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q4. Fox News told the whole story
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q5. Fox News was **biased**
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree

5 = Strongly agree

Page Break

CNN post-exposure credibility index (Cronbach's α = .907, *M* = 3.102, *SD* = 1.161).

Thinking about the **news previews you just viewed**, please indicate your level of agreement with the following statements:

Q1. CNN was trustworthy
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q2. CNN was accurate
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q3. CNN was fair
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q4. CNN told the whole story
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Q5. CNN was **biased**
1 = Strongly disagree
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Strongly agree

Page Break

USA Today post-exposure credibility index (Cronbach's α = .883, *M* = 3.456, *SD* = .893).

Thinking about the **news previews you just viewed**, please indicate your level of agreement with the following statements:

Q1. USA Today was trustworthy
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q2. USA Today was accurate
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q3. USA Today was fair
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q4. USA Today told the whole story
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Q5. USA Today was **biased**
- 1 = Strongly disagree
- 2 = Somewhat disagree
- 3 = Neither agree nor disagree
- 4 = Somewhat agree
- 5 = Strongly agree

Demographic Questions

Q1. What is your age?

Q2. Gender

1 = Male
2 = Female
3 = Different identity

Q3. What is your highest level of education completed?

1 = High school diploma or less
2 = Current college student
3 = Bachelor's degree
4 = Master's degree
5 = Doctoral (e.g. JD, PhD, MD etc) degree

Q4. With which race(s) do you identify? (Multiple selections were allowed. Those who selected multiple were coded as the discrete category: mixed race)

1 = White
2 = Black or African American
3 = East Asian
4 = South Asian
5 = Middle Eastern or North African
6 = American Indian or Alaska Native
7 = Native Hawaiian or Other Pacific Islander
8 = Hispanic or Latino/a
9 = Other

Appendix H: Code

Study 1 CSS

```
.tooltip {
  position: absolute;
  display: inline-block;
  border-bottom: 1px dotted black;
  color: #a10000;
  font-weight: bold;
  font-size: 14px;
  font-family: Arial, Helvetica, sans-serif;
  margin-top: 118%;
  margin-left: 62%;
    line-height: 1.1em;
}

.tooltiptext {
  visibility: hidden;
  width: 250px;
  background-color: white;
  color: black;
  text-align: center;
  border-radius: 6px;
  border-color: gray;
  border-style: solid;
  border-width: 1px;
  padding: 5px;
  position: absolute;
  z-index: 999;
  top: 100%;
  left: 50%;
  margin-left: -160px;
  font-weight: normal;
  line-height: 1.1;
}

.tooltip:hover .tooltiptext {
  visibility: visible;
}

#cnt {
  width: 652px;
  font-family: Arial, Helvetica, sans-serif;
  margin-left: 50px;
```

```
}

.e2BEnf {
  font-size: 20px;
  line-height: 1.3;
}

.U7izfe {
  padding: 0 0px 12px
}

g-section-with-header {
  display: block;
  margin: 0 0 40px 0
}

.iJ1Kvb {
  display: inline-block;
  line-height: 24px
}

.GmE3X {
  display: inline-block;
  margin-right: 12px;
  position: relative;
  top: -3px
}

.mJVYJe {
  margin: -4px;
  width: auto
}

.mR2gOd {
  display: block;
  /* overflow-x: visible;
  overflow-y: visible;
  overflow: hidden;
  overflow-x: visible;
  position: relative;
  white-space: nowrap;*/
  transform: translate3d(0, 0, 0);
  transform: translate3d(0, 0, 0);
}
```

```
.mR2gOd::-webkit-scrollbar {
  display: none
}

.rSr7Wd {
  display: box;
  display: flex;
  display: -ms-flexbox;
  display: flex;
}

.So9e7d {
  padding: 4px;
  width: 312px;
  position: relative;
  display: block
}

g-scrolling-carousel {
  display: block;
  position: relative;
}

.ttfMne {
  display: flex;
  flex-direction: column;
  height: 100%;
  box-sizing: border-box;
}

.cv2VAd {
  border: 1px solid #dfe1e5;
  border-radius: 8px;
  box-shadow: none
}

.VlJC0 {
  text-decoration: none;
  color: #1a0dab
}

.qV9w7d {
  overflow: hidden;
  position: relative
}
```

```
.KNcnob {
  background-color: #f8f9fa;
  position: absolute;
  z-index: 0;
  margin: auto;
  left: -100%;
  right: -100%;
  top: -100%;
  bottom: -100%
}

.KNcnob img:not([src]) {
  visibility: hidden
}

g-img {
  display: block
}

.rISBZc {
  display: block;
  border: 0;
}

g-img {
  height: 100%
}

.M4dUYb {
  position: relative
}

.pAx2Gb {
  padding: 16px 16px 0 16px;
  display: block;
}

.I0pANb {
  flex: 1
}

/* a:hover .pAx2Gb {
  text-decoration: underline
} */
```

```
.QgUve {
  font-size: 16px;
  line-height: 1.375;
}

.jBgGLd {
  overflow: hidden;
  text-overflow: ellipsis;
  white-space: nowrap
}

.Z25Gce {
  overflow: hidden;
  text-overflow: ellipsis;
  white-space: nowrap
}

.YQPQv {
  font-size: 14px;
  line-height: 1.58;
  padding: 0 16px 1px
}

.GJhQm {
  font-size: 14px;
  padding-bottom: 11px;
  padding-left: 16px;
  padding-right: 16px;
  line-height: 1.58;
}

.f {
  color: #70757a;
}

.a,
cite,
cite a:link,
cite a:visited {
  color: #202124;
  font-style: normal
}

a.fl:link,
```

```
.fl a,
.gl a:link {
  color: #1a0dab
}

.r a.fl {
  font-size: 14px
}

.DAVP1 {
  display: inline-block
}

.Lu0opc {
  cursor: pointer;
  height: 72px;
  position: absolute;
  display: block;
  visibility: inherit;
  width: 36px;
  bottom: 0;
  margin-bottom: auto;
  margin-top: auto;
  outline: none;
  opacity: 0.8;
  top: 0;
  z-index: 101
}

.Lu0opc .tHT0l {
  transition: opacity 0.5s, visibility 0.5s;
  transition: opacity 0.5s, visibility 0.5s
}

.Lu0opc:hover {
  opacity: 0.9
}

.Lu0opc:focus {
  outline: none
}

.Lu0opc.pQXcHc,
.Lu0opc.pQXcHc:hover {
  cursor: default;
```

```
  opacity: 0;
  visibility: hidden
}

.Lu0opc.eSq3C {
  height: 36px;
  width: 36px;
  opacity: 0.9
}

.Lu0opc.eSq3C:hover {
  opacity: 1.0
}

.Lu0opc.eSq3C.pQXcHc,
.Lu0opc.eSq3C.pQXcHc:hover {
  opacity: 0
}

.Lu0opc.eSq3C:hover g-fab {
  color: #202124 !important
}

.BlOseb.eSq3C g-fab,
.k2Oeod.eSq3C g-fab {
  box-shadow: 0 0 0 1px rgba(0, 0, 0, 0.04), 0 4px 8px 0 rgba(0, 0, 0, 0.20);
  cursor: pointer;
  height: 36px;
  width: 36px
}

.CNf3nf {
  border-radius: 50%;
  cursor: pointer;
  display: block;
  position: relative;
  border: 1px solid #dfe1e5;
  z-index: 0
}

.CNf3nf:focus {
  outline: none
}

.CNf3nf .PUDfGe {
```

```
  position: absolute;
  left: 0;
  right: 0;
  top: 0;
  bottom: 0;
  margin: auto;
  width: 24px;
  height: 24px
}

.LhCR5d {
  width: 40px;
  height: 40px
}

.z1asCe {
  display: inline-block;
  fill: currentColor;
  height: 24px;
  line-height: 24px;
  position: relative;
  width: 24px
}

.z1asCe svg {
  display: block;
  height: 100%;
  width: 100%
}
```

Study 1 HTML

As used in condition 6: CNN, Right Slanted Headlines, Opinion Labels

```
<div class="content big" id="cnt">
  <g-section-with-header>
        <div class="e2BEnf U7izfe mfMhoc">
        <title-with-lhs-icon>
        <div class="iJ1Kvb">
        <h3 class="GmE3X" aria-level="2" role="heading"><br></h3>
        </div>
        </title-with-lhs-icon>
        </div>
        <g-scrolling-carousel class="mJVYJe">
        <div class="mR2gOd">
        <div class="EDblX DAVP1">
        <div class="rSr7Wd" role="list">
        <div class="So9e7d" role="listitem" style="width:212px">
        <g-inner-card class="ttfMne cv2VAd">
                <a class="VlJC0">
                <div>
                <div class="qV9w7d" style="height:119px">
                <div class="KNcnob"
style="height:119px;width:212px;background-color:#659ed4">
                <g-img><img
src="https://www.baltimoresun.com/resizer/aBU6KMt7JhgCFTJ9GmScKA8iR-g=/800x569/top/
arc-anglerfish-arc2-prod-tronc.s3.amazonaws.com/public/NAHASRHZWFAQ5EPYIQWRAUN
LUI.jpg" width="212" height="119">
                </g-img>
                </div>
                </div>
                </div>
                <div class="pAx2Gb">
                <div class="mRnBbe QgUve oz3cqf p5AXld jBgGLd" style="height:5.5em"
aria-level="3" role="heading">How Republicans<br>won the war<br>of ideas
                </div>
                </div>
                </a>
                <div class="I0pANb">
                </div>
                <div class="Z25Gce YQPQv">
                <cite>CNN<br></cite>
                </div>
                <div class="Z25Gce GJhQm">
                <span class="f">
```

7 mins ago

Opinion
This is an opinion piece. The views in it may not reflect the views of the site on which it was published.

</g-inner-card>

<g-inner-card class="ttfMne cv2VAd">

<g-img><img src="https://cf-images.us-east-1.prod.boltdns.net/v1/static/694940094001/1dbdb06f-fdb0-430e-b2c5-dadc1656f902/9a9ad33c-e8bd-4beb-9a83-e0441886f780/1280x720/match/image.jpg" width="212" height="119">
</g-img>

Armenia, Azerbaijan,
Russia sign peace
 deal over
Nagorno-Karabakh

<cite>CNN</cite>

45 mins ago

</g-inner-card>

<g-inner-card class="ttfMne cv2VAd">

<g-img><img src="https://www.bostonherald.com/wp-content/uploads/2020/10/votesc002.jpg?w=747" width="212" height="119">
</g-img>

Many reasons for
conservatives to be
 optimistic going forward

<cite>CNN</cite>

53 mins ago

Opinion
This is an opinion piece. The views in it may not reflect the views of the site on which it was published.

</g-inner-card>

</g-scrolling-carousel>
</g-section-with-header>

Study 2 CSS

```
.tooltip {
/* used in prominent opinion label conditions */
  position: absolute;
  display: inline-block;
  border-bottom: 1px dotted black;
  color: #a10000;
  font-weight: bold;
  font-size: 14px;
  font-family: Roboto-Regular, sans-serif;
  margin-top: -4%;
  margin-left: 40%;
  line-height: 1.1em;
}

.tooltipa {
/* used in subtle opinion label conditions */
  position: absolute;
  display: inline-block;
  border-bottom: 1px dotted black;
  color: #70757a;
  font-weight: bold;
  font-size: 12px;
  font-family: Roboto-Regular, sans-serif;
  margin-top: -4%;
  margin-left: 40%;
  line-height: 1.1em;
}


.tooltiptext {
  visibility: hidden;
  width: 250px;
  background-color: white;
  color: black;
  text-align: center;
  border-radius: 6px;
  border-color: gray;
  border-style: solid;
  border-width: 1px;
  padding: 5px;
  position: absolute;
  z-index: 999;
  top: 100%;
```

```
  left: 50%;
  margin-left: -160px;
  font-weight: normal;
  line-height: 1.1;
}

.tooltip:hover .tooltiptext {
  visibility: visible;
}

.tooltipa:hover .tooltiptext {
  visibility: visible;
}

html {
  font-family: arial, sans-serif;
}

body,
h1 {
  font-family: arial, sans-serif;
  font-size: 14px;
}

h1 {
  font-weight: normal;
  margin: 0;
  padding: 0
}

h3 {
  font-size: medium;
  font-weight: normal;
  margin: 0;
  padding: 0
}

body {
  margin: 0;
  background: #fff;
  color: #202124;
}

#cnt {
  clear: both;
```

```
  min-width: 100px;
  margin-left: 0;
  padding-top: 10px;
  box-sizing: border-box;
  position: relative;
  min-height: 100vh;
}

.big .lEXIrb {
  max-width: 1280px
}

#center_col .di8g3 {
  margin: 0 -35px 0 -8px;
  padding: 6px 20px 0;
}

#center_col {
  clear: both;
  position: relative;
  margin-right: 264px;
  margin-left: 10px;
  width: 370px
}

#center_col g-card {
  margin-left: -16px;
  margin-right: -16px
}

#center_col .rhsl5 {
  display: none
}

.eqAnXb {
  font-size: medium;
  font-weight: normal;
  border: 0;
  margin: 0;
  padding: 0 16px
}

#res h3,
#botstuff h3 {
  font-size: 22px;
```

```
  line-height: 1.273;
}

.nChh6e {
  display: block;
  border: 1px solid #DADCE0;
  border-radius: 8px;
}

.Jb0Zif .nChh6e {
  border: 1px solid #dfe1e5;
  border-radius: 8px;
  box-shadow: none
}

.DyOREb {
  margin-bottom: 16px;
  width: 370px
}

.Jb0Zif .gO9czf {
  margin-top: 16px
}

.Ub31p .gO9czf {
  margin-top: 0
}

.yr3B8d .vC5xic {
  margin-left: 16px;
  margin-right: 0
}

.sYpfDb {
  border-radius: 8px;
  position: relative
}

.KWQBje,
.LOcuIb {
  padding: 16px
}

.ek9pZe,
.yr3B8d {
```

```
  display: box;
  display: flex;
  display: -ms-flexbox;
  display: flex;
  justify-content: space-between
}

.ek9pZe {
  flex-direction: row
}

.yr3B8d {
  flex-direction: row-reverse
}

.KWQBje .XTjFC {
  padding-bottom: 4px;
  height: 16px
}

.KWQBje .JheGif {
  font-size: 18px;
  line-height: 1.3333333333333333em
}

.vC5xic {
  display: box;
  display: flex;
  display: -ms-flexbox;
  display: flex;
  justify-content: center;
  margin-top: 0
}

.ek9pZe .vC5xic {
  margin-right: 16px
}

.qV9w7d {
  position: relative
}

.KNcnob {
  background-color: #f8f9fa;
  position: absolute;
```

```
  z-index: 0;
  margin: auto;
  left: -100%;
  right: -100%;
  top: -100%;
  bottom: -100%;
  border-radius: 5%;
}

.KNcnob img:not([src]) {
  visibility: hidden
}

.hI5pFf {
  flex-grow: 1;
  width: 0
}

.WF4CUc,
.o5GQac img {
  color: rgba(60, 64, 67, 1.0);
  font-size: 12px;
  line-height: 16px;
  white-space: nowrap;
  text-overflow: ellipsis;
}

.QyR1Ze {
  display: inline-block;
  margin-right: 8px;
  vertical-align: top
}

.QyR1Ze {
  display: inline-block;
  vertical-align: top;
  margin-right: 8px
}

.rISBZc {
  display: block;
  margin-left: auto;
  margin-right: auto;
  margin-top: auto;
  margin-bottom: auto;
```

```
  object-fit: cover;
  border: 0
}

.M4dUYb {
  position: relative
}

.JheGif {
  color: #202124;
  font-family: Roboto-Medium, sans-serif
}

.LOcuIb .JheGif {
  font-size: 16px;
  line-height: 20px
}

.shdb .JheGif {
  border-width: 2px;
  border-style: solid;
}

.jBgGLd {
  text-overflow: ellipsis;
  white-space: nowrap;
}

.yJHHTd {
  padding-top: 4px;
  font-size: 12px;
}

.Y3v8qd {
  color: #70757a;
  font-family: Roboto-Regular, sans-serif;
  font-size: 14px;
  line-height: 1.4285714285714286em;
  max-height: 4.285714285714286em;
}

.wxp1Sb {
  font-family: Roboto-Regular, sans-serif;
  padding-top: 2px;
  line-height: 1em;
```

```
}

.YCV9ed {
  font-size: 12px;
}

.isfR2 {
  color: #70757a;
}

.WG9SHc {
  font-size: 12px;
  line-height: 14px;
}

img {
    height: 100% !important;
    border-radius: 5%;
}
```

Study 2 HTML

As used in condition 3: Prominent Opinion Labels

```
<div id="cnt" class=" big">
	<div id="center_col">
	<div class="eqAnXb" id="res" role="main">
	<div>
	<g-card class="nChh6e DyOREb gO9czf">
	<div class="yr3B8d KWQBje">
	<div class="vC5xic">
		<div class="sYpfDb" style="width:112px;height:112px">
		<div class="qV9w7d" style="height:112px;border-radius:8px">
		<div class="KNcnob"
style="height:112px;width:112px;background-color:#130909">
		<g-img><img id="dimg_11"
src="https://www.baltimoresun.com/resizer/aBU6KMt7JhgCFTJ9GmScKA8iR-g=/800x569/top/
arc-anglerfish-arc2-prod-tronc.s3.amazonaws.com/public/NAHASRHZWFAQ5EPYIQWRAUN
LUI.jpg" class="rISBZc M4dUYb" alt="" data-atf="1" width="112" height="112"></g-img>
		</div>
		</div>
		</div>
	</div>
	<div class="hI5pFf">
		<div class="XTjFC WF4CUc">
		<g-img class="QyR1Ze"><img
src="https://logo-logos.com/wp-content/uploads/2016/10/CNN_logo.png" class="rISBZc
M4dUYb" alt="" data-atf="1" width="16" height="16"></g-img>CNN
		</div>
		<div class="JheGif jBgGLd" aria-level="2" role="heading">How
Democrats<br>won the war<br>of ideas</div>
		<div class="yJHHTd">
		<div class="wxp1Sb"><span class="YCV9ed isfR2"><span
class="WG9SHc"><span>7 mins ago</span></span></span>
		</div>
		<div class="tooltip">Opinion
		<span class="tooltiptext">This is an opinion piece. The views in it may not reflect
the views of the site on which it was published.
		</span>
		</div>
		</div>
	</div>
	</div>
	</g-card>
	</div>
```

<g-card class="nChh6e DyOREb gO9czf">

<div class="KNcnob"
style="height:112px;width:112px;background-color:#130909">
<g-img><img id="dimg_11"
src="https://cf-images.us-east-1.prod.boltdns.net/v1/static/694940094001/1dbdb06f-fdb0-430e-b2c5-dadc1656f902/9a9ad33c-e8bd-4beb-9a83-e0441886f780/1280x720/match/image.jpg"
class="rISBZc M4dUYb" alt="" data-atf="1" width="112" height="112"></g-img>

<g-img class="QyR1Ze"><img
src="https://logo-logos.com/wp-content/uploads/2016/11/FOX_News_logo.png" class="rISBZc M4dUYb" alt="" data-atf="1" width="16" height="16"></g-img>Fox News

Armenia, Azerbaijan,
Russia sign peace deal
 over Nagorno-Karabakh

11 mins ago

</g-card>

<g-card class="nChh6e DyOREb gO9czf">

<div class="KNcnob"
style="height:112px;width:112px;background-color:#130909">
<g-img><img id="dimg_11"
src="https://static.reuters.com/resources/r/?m=02&d=20201122&t=2&i=1542082

247&r=LYNXMPEGAL0F9&w=2048" class="rISBZc M4dUYb" alt="" data-atf="1" width="112" height="112"></g-img>

<g-img class="QyR1Ze"><img src="https://umdsurvey.umd.edu/ControlPanel/Graphic.php?IM=IM_8crEbgZOcKaEt3U" class="rISBZc M4dUYb" alt="" data-atf="1" width="16" height="16"></g-img>USA TODAY

G20 to extend debt relief
to mid-2021, pushes
 private sector to help

16 mins ago

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Conflict in Ethiopia’s Tigray
region widens as missiles
 are fired at airports

45 mins ago

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Why Donald Trump
 is good for
 America

53 mins ago

Opinion
This is an opinion piece. The views in it may not reflect the views of the site on which it was published.

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Many reasons
for
liberals to be
 optimistic going forward

<span
class="WG9SHc">1 hour ago

Opinion
This is an opinion piece. The views in it may not reflect
the views of the site on which it was published.

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calls<br> for OECD help with<br> emissions trading

                </div>
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New <br>York suburbs are past<br> their pandemic peak
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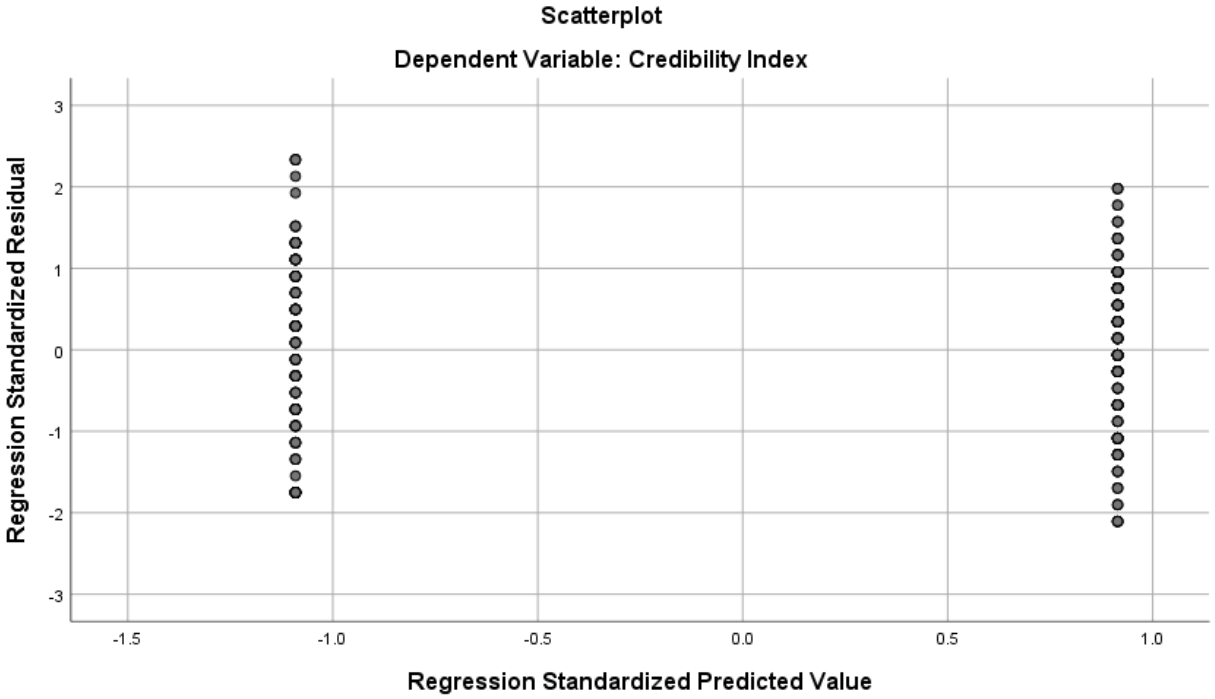
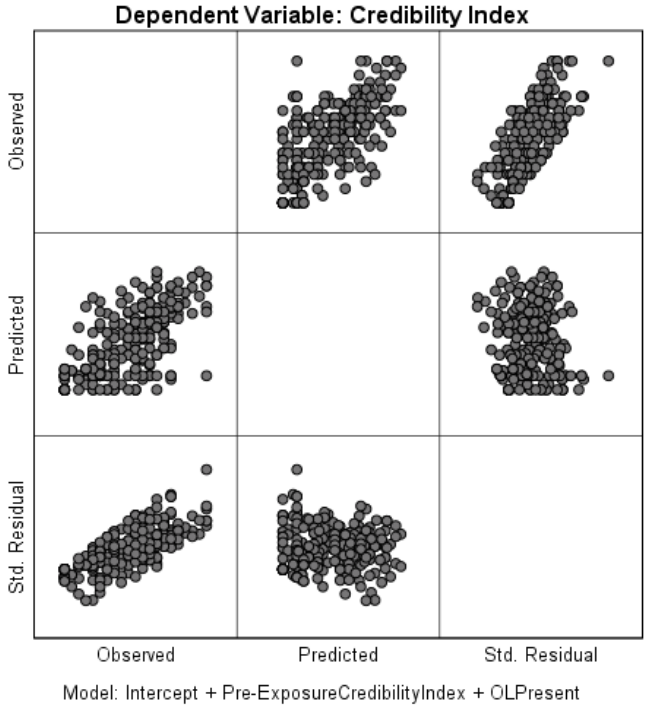
Appendix I: Residuals Plots

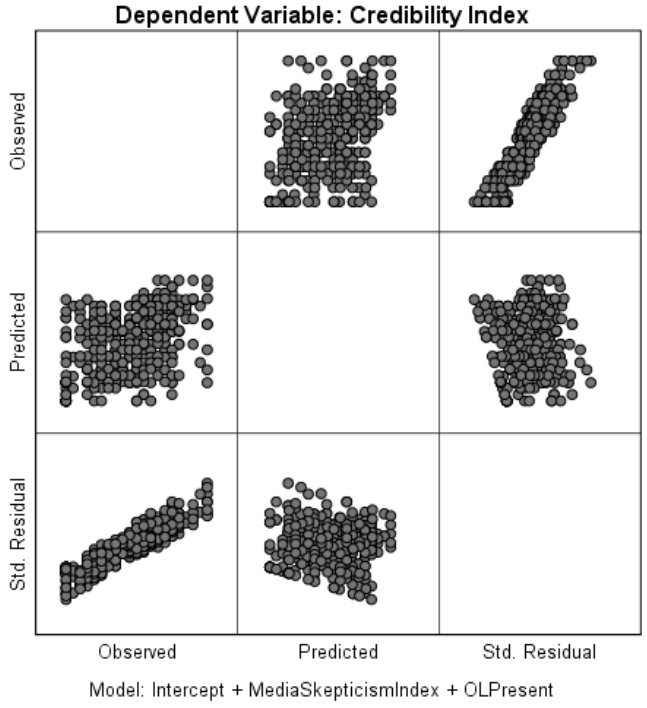
H1a: *Opinion labels on story cards will increase the perceived source credibility of news organizations.* (ANOVA)



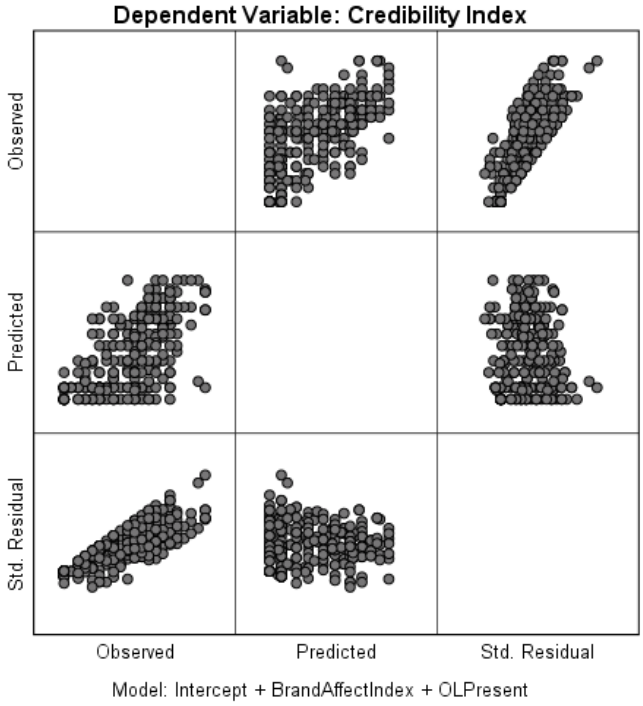
H1b: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for prior perceptions of a news organization's credibility.* (ANCOVA)



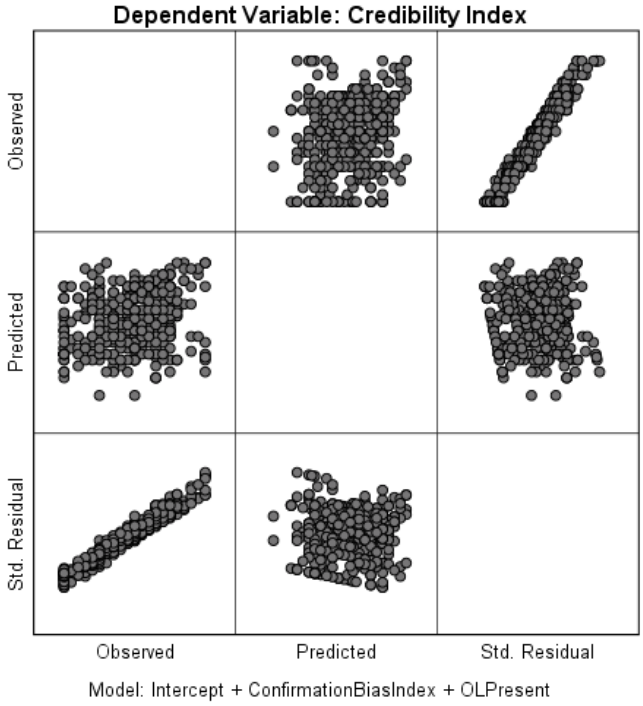
H1c: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for media skepticism.* (ANCOVA)



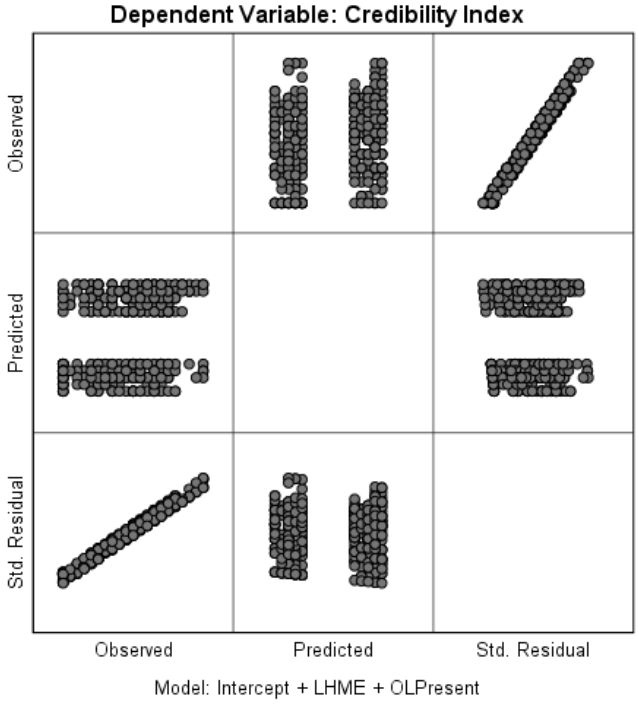
H1d: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for brand affect.* (ANCOVA)



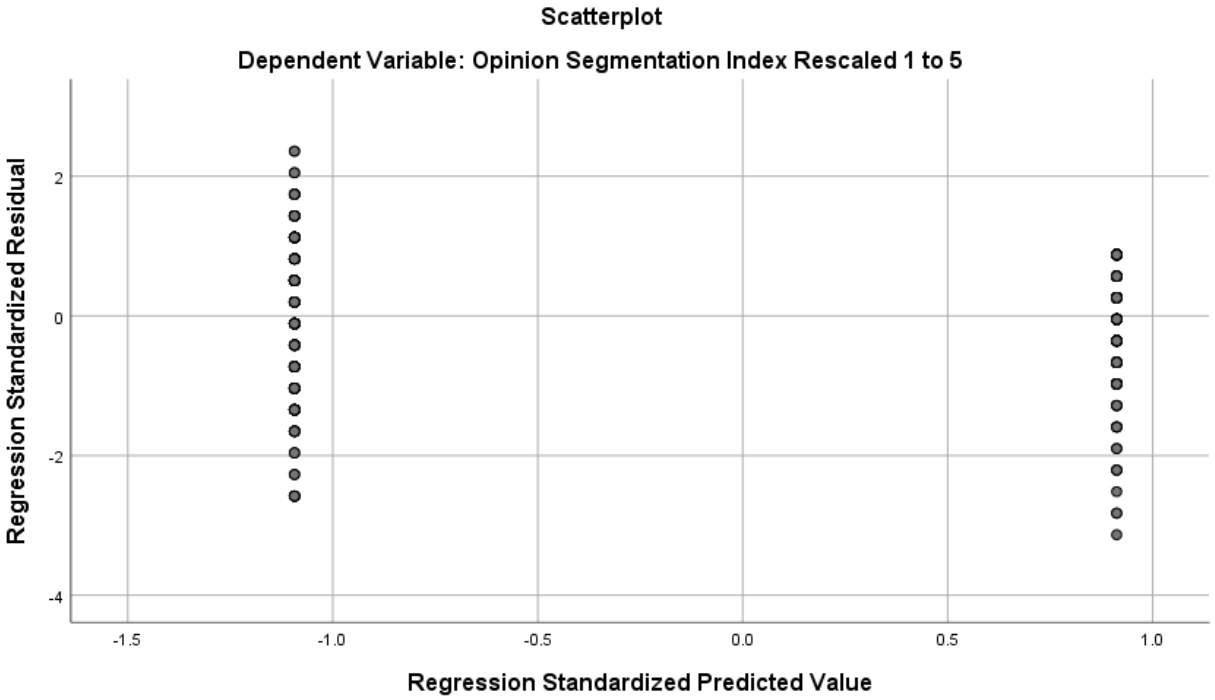
H1e: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for proneness to confirmation bias.* (ANCOVA)



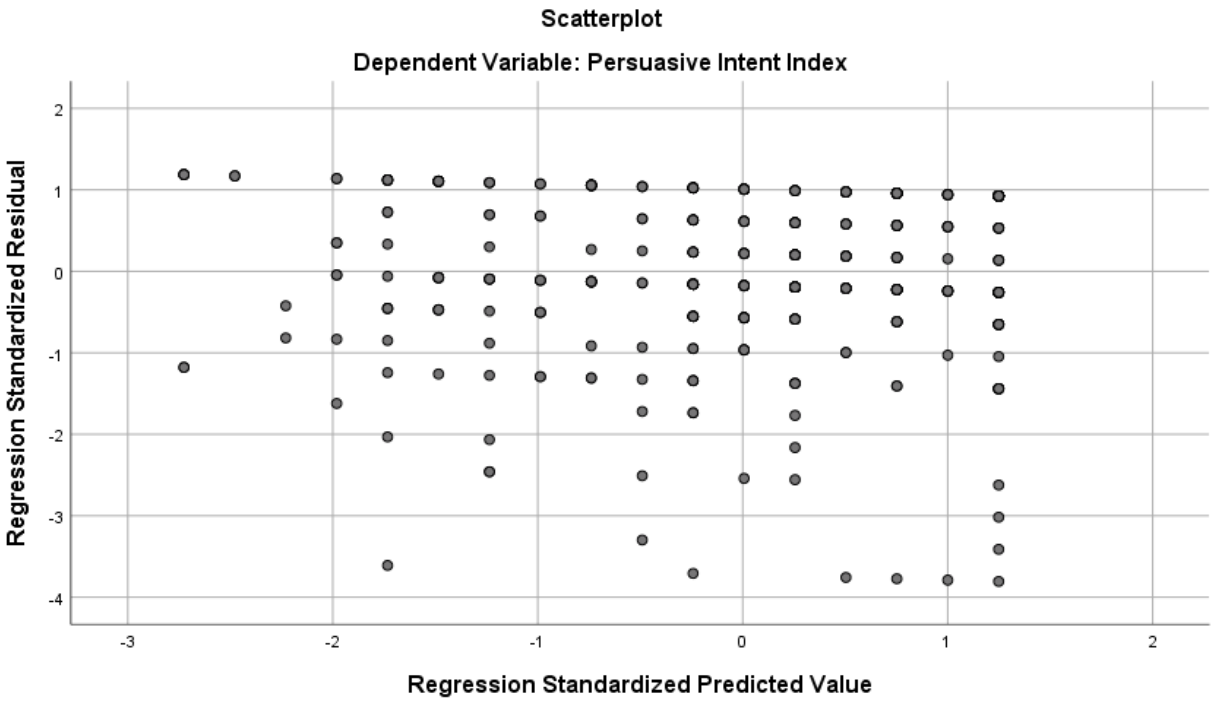
H1f: *Opinion labels on story cards will increase the perceived source credibility of news organizations, controlling for the likelihood of experiencing hostile media effects.* (ANCOVA)



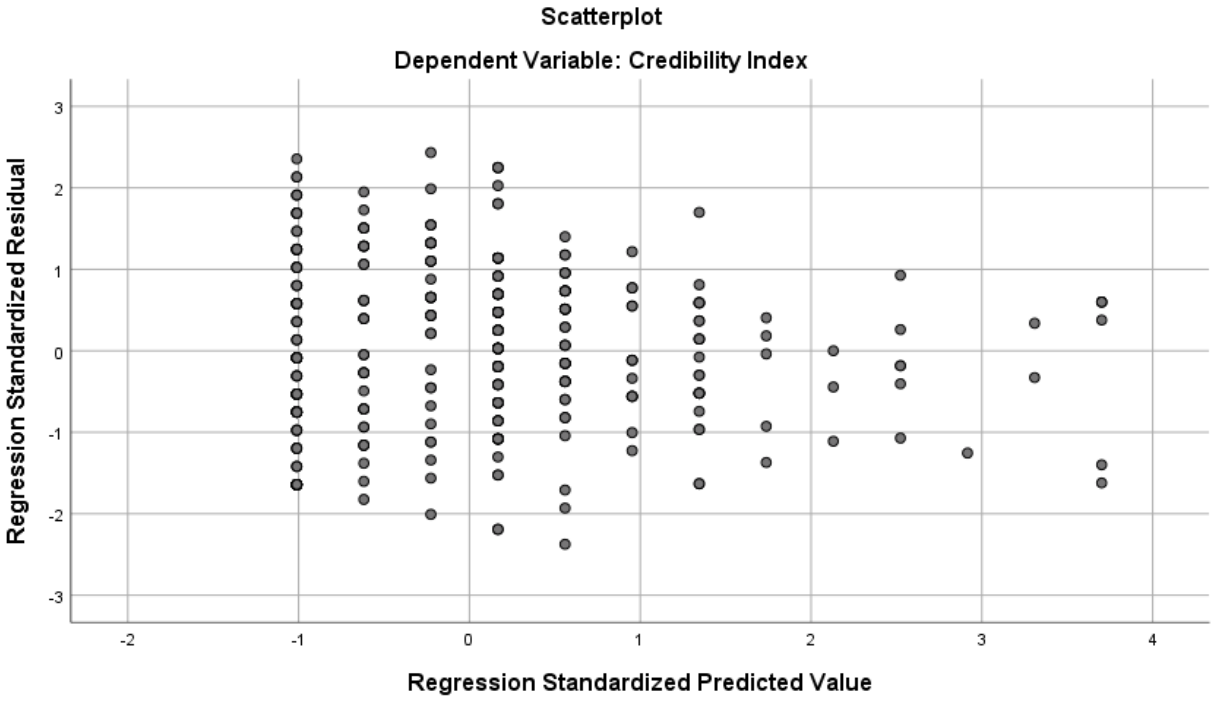
H2a: *Opinion labels on story cards will increase perceived opinion segmentation.* (ANOVA)



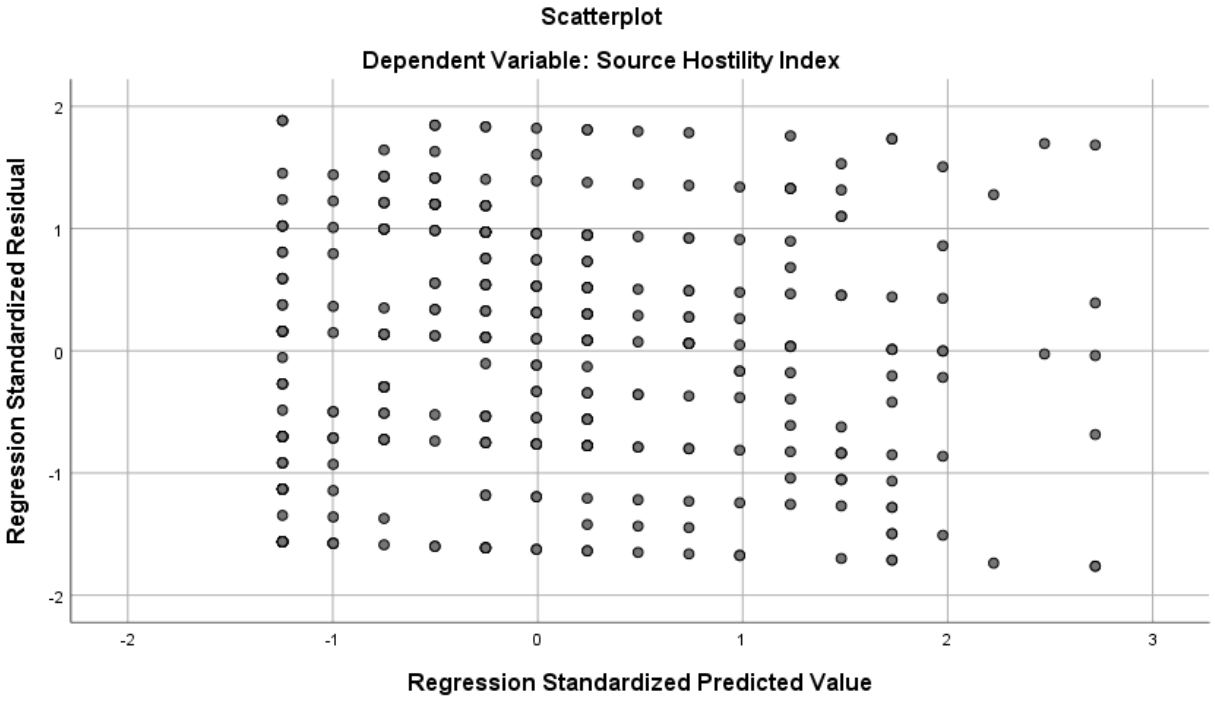
H2b: *Perceived opinion segmentation will negatively predict perceived source persuasive intent.* (Multiple Regression)



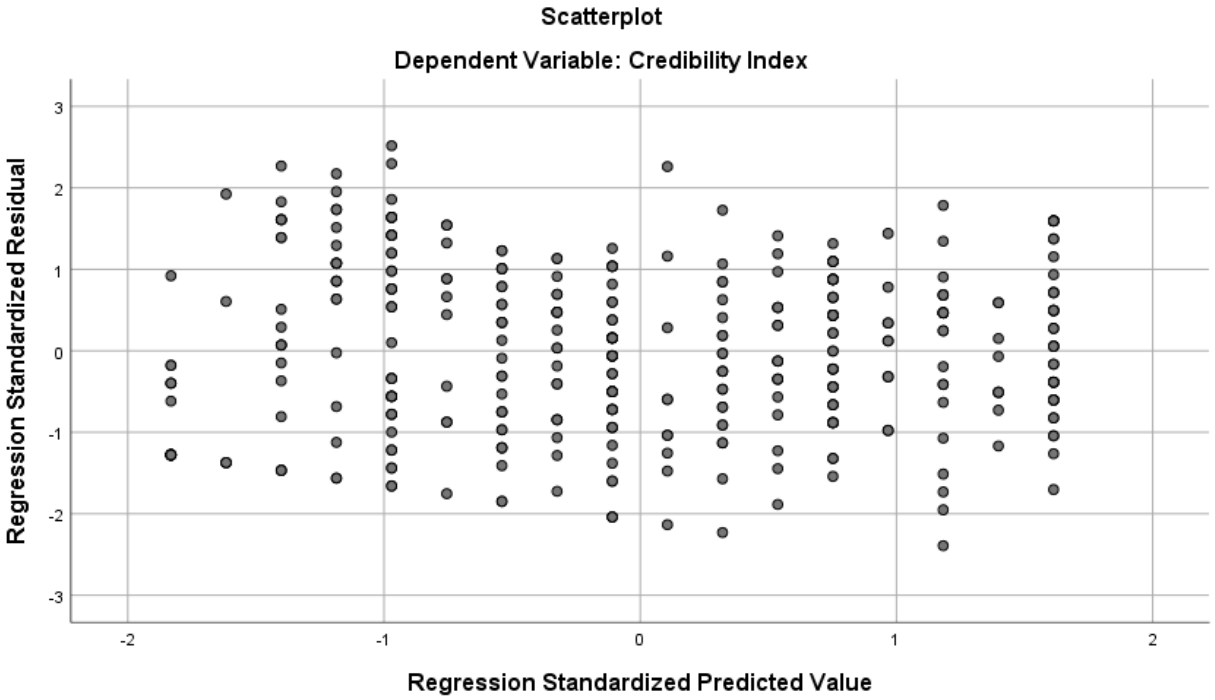
H2c: *Perceived persuasive intent will negatively predict perceived source credibility.* (Multiple Regression)



H2d: *Perceived opinion segmentation will negatively predict perceived source hostility.* (Multiple Regression)

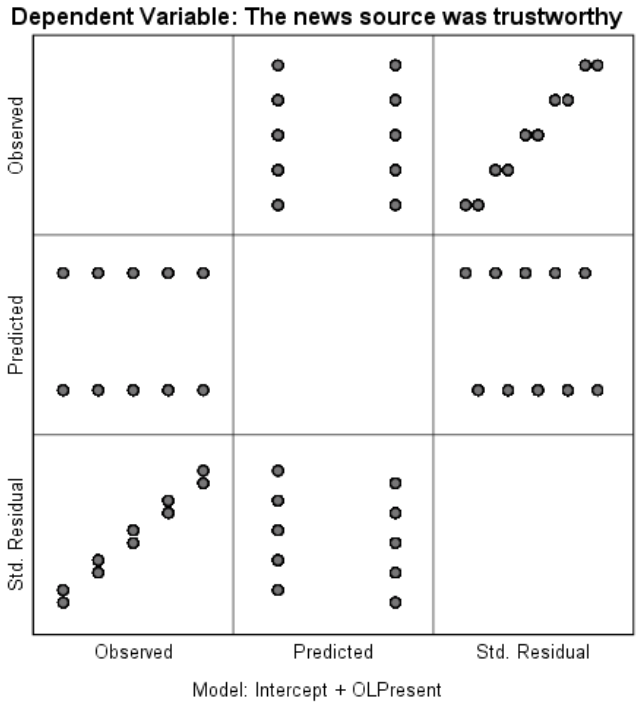


H2e: *Perceived source hostility will negatively predict perceived source credibility.* (Multiple Regression)

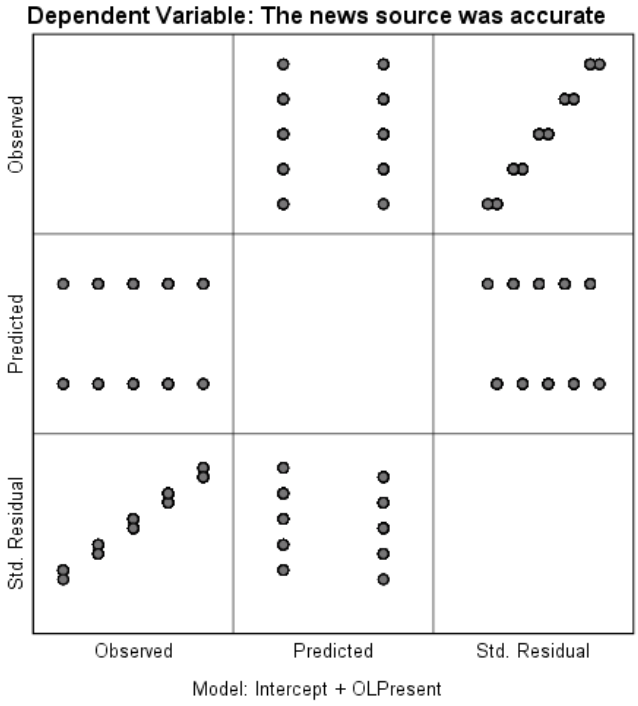


H2f: *Opinion labels on story cards will decrease the perceived bias of news organizations significantly more than the other indicators of source credibility.* (MANOVA)

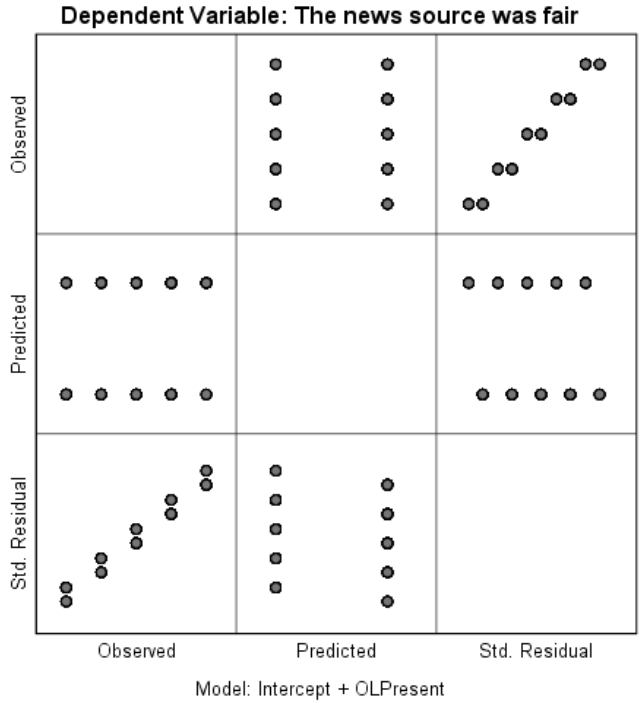
DV1: Perceived source trustworthiness



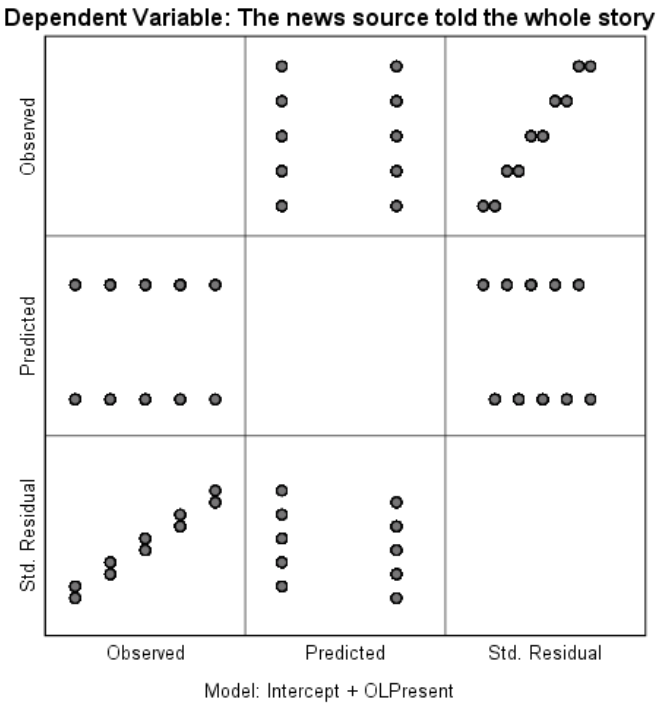
DV2: Perceived source accuracy



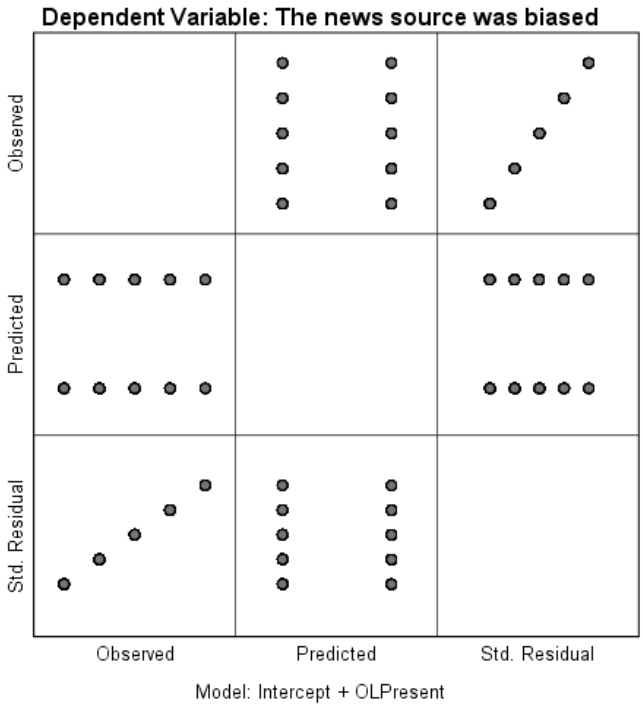
DV3: Perceived source fairness



DV4: Perceived source completeness



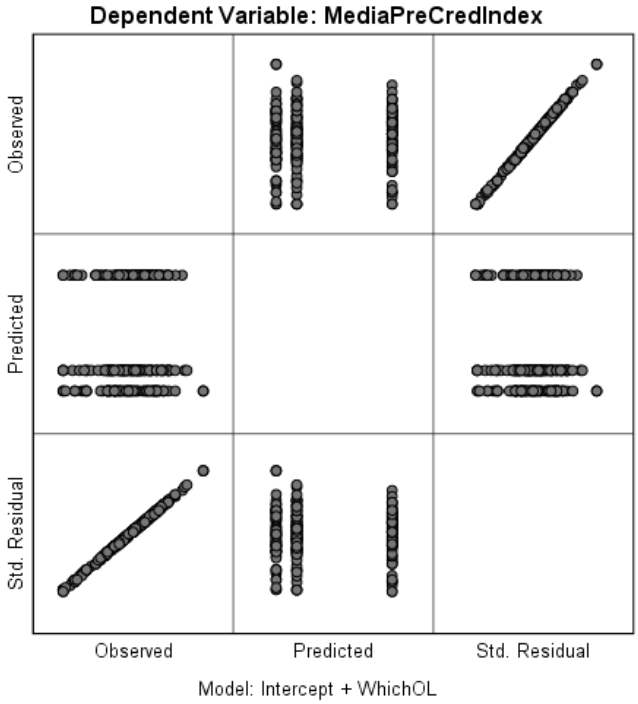
DV5: Perceived source bias



H3a: *Subtle opinion labels will not affect perceived source credibility in a mixed source feed.*
H3b: *Prominent opinion labels will increase perceived source credibility in a mixed source feed.*
(MANOVA & ANCOVA)

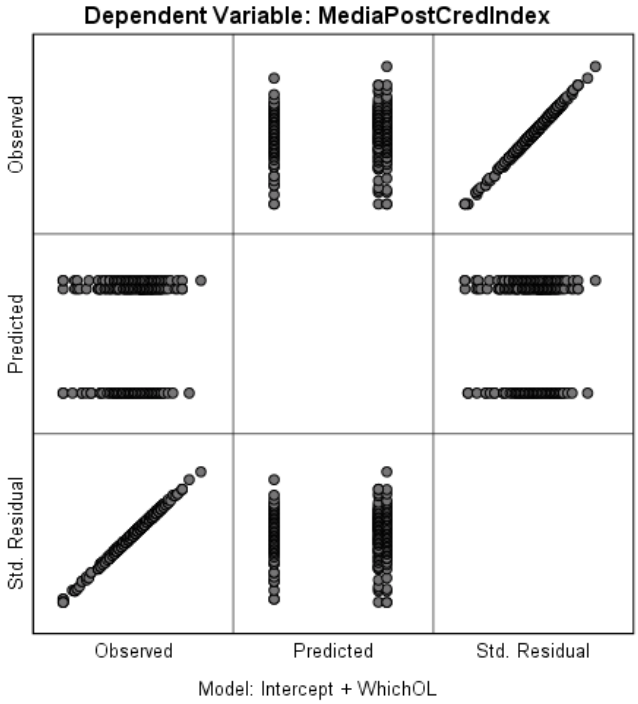
MANOVA DV 1: Pre-Exposure Perceived Credibility Index

(This index combines perceived credibilities of *USA Today*, *CNN*, and *Fox News*)



MANOVA DV 2: Post-Exposure Perceived Credibility Index

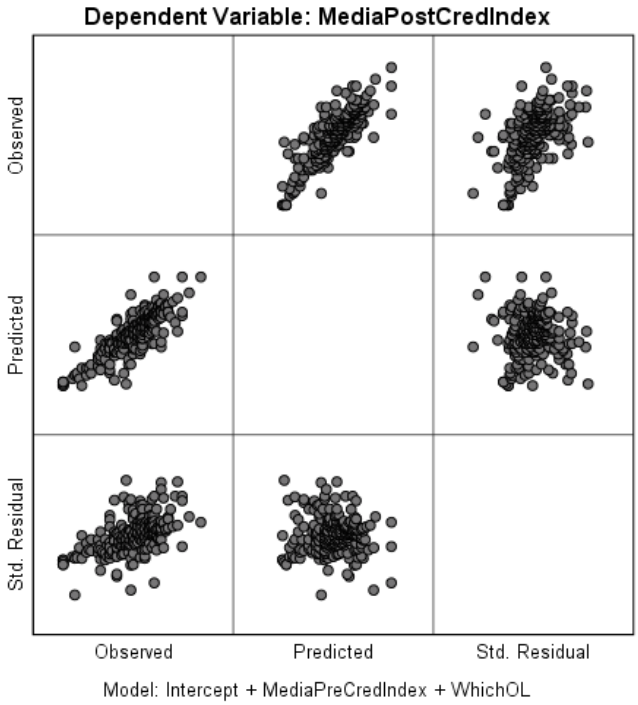
(This index combines perceived credibilities of *USA Today*, *CNN*, and *Fox News*)



ANCOVA DV: Post-Exposure Perceived Credibility Index

Covariate: Pre-Exposure Perceived Credibility Index

(These indexes combine perceived credibilities of *USA Today*, *CNN*, and *Fox News*)



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