Don't let the truth get in the way of a good story: Persuasive influences in narrative misinformation

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Don’t let the truth get in the way of a good story:
Persuasive influences in narrative misinformation

by

Kelly A. Kane

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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The student author, whose presentation of the scholarship herein was approved by the program
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Iowa State University
Ames, Iowa
2020

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DEDICATION

This dissertation is dedicated to the people who have given me invaluable support throughout this entire process: my sister Catharine Kane and my friends Rachel Dianiska, Dahwi Ahn, and Krista Manley, all of whom took the time to read or listen to my drafts and provide me feedback. It is dedicated to my advisor, Kevin Blankenship, who has supported me through countless wild ideas and overlong re-writes in spite of my often scattered approach to research.

Most of all, it is dedicated to my partner Jason Geller. He has been an invaluable source of support and guidance throughout this project, from its earliest inception as a collection of unanswered questions to its “final” drafts (all 17 of them). I cannot estimate the number of hours he watched me draw hypothesized results on napkins and listened to my ramblings about unpredicted data patterns, and I cannot begin to thank him for his help in this process.
### ACKNOWLEDGEMENTS

### ABSTRACT

### CHAPTER 1. INTRODUCTION AND LITERATURE REVIEW

**Literature Review**

- Encountering Misinformation ................................................................. 8
  - Selective exposure .................................................................................. 9
  - Confirmation bias .................................................................................. 10
  - “Echo chamber” effects ....................................................................... 12
- Believing Misinformation .......................................................................... 13
  - Source effects ....................................................................................... 14
  - Narrative processes ............................................................................... 16
  - Source effects in narrative ................................................................... 18
- Character effects in narrative .................................................................. 20
  - Limits of expertise ................................................................................ 23
- Processing Misinformation ....................................................................... 25
  - Dual process models ............................................................................. 25
- The Elaboration Likelihood Model of Persuasion ...................................... 26
  - Ego involvement .................................................................................... 28
- Retaining Misinformation ......................................................................... 30
- Fake News as Narrative .......................................................................... 31

**Current Research**

**Materials Pretest** ..................................................................................... 34

### CHAPTER 2. STUDY 1: PROTAGONIST AND SOURCE CREDIBILITY

**Method** ....................................................................................................... 39

**Design** ....................................................................................................... 39

**Participants** ................................................................................................ 39

**Materials** .................................................................................................... 40

- Pre-reading measures .............................................................................. 41
  - News sources questionnaire .................................................................. 41
  - Overclaiming questionnaire .................................................................. 41
- Independent variable manipulation ............................................................ 42
  - Author credibility .................................................................................. 42
  - Protagonist credibility .......................................................................... 42
  - Post-reading manipulation check ............................................................ 42
- Dependent variable measures .................................................................... 43
  - Trust in the news story ......................................................................... 43
  - Confidence in rating ............................................................................ 43
  - Bases for judgment .............................................................................. 43
  - Author rating ....................................................................................... 43
  - Character rating ................................................................................... 44
  - Attitudes toward caffeine .................................................................... 44
REFERENCES..................................................................................................................98

APPENDIX A: MATERIALS FROM PRETESTING .................................................................108
Author And Protagonist Perception Measures ..........................................................108
Ego Involvement Measures .....................................................................................110
Social Dominance Orientation ..............................................................................110
APPENDIX B: STUDY MATERIALS

Study 1
- News Sources Questionnaire
- Overclaiming Questionnaire
- Stimulus Materials
  - Commitment item
  - High credibility author, low credibility protagonist
  - Low credibility author, low credibility protagonist
  - Low credibility author, high credibility protagonist
  - High credibility author, high credibility protagonist
- Post-reading items
- Post-reading attitudes measure
- Narrative transportation – short form
- Debrief
- Demographic items

Study 2
- Commitment Item
- News Sources Questionnaire
- Overclaiming Questionnaire
- Trust in Mass Media
- Trust in Authority
- Stimulus Materials
  - High ego involvement, low source expertise
  - Low ego involvement, low source expertise
  - High ego involvement, high source expertise
  - Low ego involvement, high source expertise
- Post-Reading Items
- Author Rating and Character Rating
- Thought Listing
- Attitude Measure
- Debrief
- Demographic Items
- Social Dominance Orientation
- Religious Motivations
  - Intrinsic motivation subscale
  - Extrinsic motivation subscale

APPENDIX C: STUDY 2.1 RESULTS

APPENDIX D: IRB APPROVAL LETTER
ACKNOWLEDGEMENTS

I would like to thank my committee for all of the support they have given me throughout this process. This project would not be nearly as rigorous nor as complete without all of their hard work, including a great deal of discretionary mentorship on the part of all five members. Thank you Craig, Kristi, Michael, and Alison, for all of the ways that you helped to make this project better. Thank you especially to Kevin Blankenship for helping me to develop and polish every stage of this dissertation.

I would also like to thank the individuals in my life who have supported me throughout my time in graduate school. That list includes (but is certainly not limited to) my parents, my siblings, my good friends and roommates, my peers in my cohort, and my informal mentors from both my undergraduate and graduate education. Thank you to Leigh Ann Vaughn for first recommending that I research narrative persuasion. Thank you to Judith Pena-Shaff for my training in how to design research projects. Thank you to Marielle Machaceck and Tyler Knaplund for giving me lab space, research assistants’ hours, SONA credits, and emotional support. Thank you to Alex Gustafson and Sarah Jones for collecting and coding so much of my qualitative data. Thank you to Ann Schmidt for going out of your way to ensure I entered this graduate program prepared to succeed. Thank you to Sarah Kallsen for going out of your way to ensure that I graduated on time. Thank you to Annie Kane, who may not have coined the aphorism “don’t let the truth get in the way of a good story,” but who certainly taught it to me. Thank you, Catharine Kane, for copy-editing the several hundred pages’ worth of drafts. Thank you, Jason Geller, for teaching me more than anyone about how to be an ethical and rigorous researcher.
ABSTRACT

Misinformation, or false content presented as true on social media and other internet platforms, has spread rapidly over the last several years and reaching a level of penetration where it has arguably influenced national and international political actions. This dissertation explored known influences of misinformation effects such as source monitoring errors and dual process theories of persuasion. It conducted two studies to further our understanding of the influence of misinformation on individuals’ attitudes and beliefs through examining the role of source effects in narrative-form fake news. Study 1 examined the relative influence of author information and character (central figure) information on source credibility perceptions and subsequent persuasion, and found news stories with high-credibility authors and high-credibility characters create greater trust in a news story among readers. It also found evidence that participants’ perceptions of the author are highly correlated with their perceptions of the protagonist. Study 2 presented two different types of source credibility cues in order to examine the potential moderating influence of ego involvement. This study found that participants did not differ in their trust of news stories across conditions of protagonist credibility, but that they did experience greater trust in the news story that had high ego involvement or high protagonist similarity. It also found that participants’ narrative transportation and perceptions of the protagonist predicted their trust in the news stories. Together, these studies suggest that perceiving the central figure of a news story as trustworthy or similar to oneself is an important predictor of trust in the news story.
CHAPTER 1. INTRODUCTION AND LITERATURE REVIEW

“Great storytellers embellish and conceal information to evoke a response in their audience. Inconvenient truths are swept away, and marginalities are spun to make a point more spectacular. A storyteller would plot the data in a way most persuasive rather than most informative or representative. Storytelling encourages the unrealistic view that scientific projects fit a singular narrative... nearly all experiments afford multiple interpretations—but storytelling actively denies this fact.”


As Katz explains, the goals of entertaining readers and informing readers are often at odds with one another in persuasive communications. Strictly informative writing and purely entertaining writing do not have to be mutually exclusive, but they often look very different from one another in practice. Content that engages the reader in an interesting story will often by its very nature obscure or oversimplify the truth in order to maximize narrative coherence, just as content that aims to inform the reader as truthfully as possible about complex realities will prioritize ambiguity and nuance over flashy certainty. Narratives are engaging, but it do not optimally present factual information, even when intending to do so. The very qualities that make a narrative enjoyable to read—personable characters, vivid images, and coherent plots—also serve to conceal complex or messy truths. One particular type of narrative that is engaging but also misleading is fake news.
Fake news is any type of information shared between individuals, usually through online media, that purports to be factual or informative but does not originate with verified fact-checking sources and exists to draw attention or ad revenue rather than to share only true information (Lazer et al., 2018). Although there are other forms of fake news, such as memes or single-line rumors, a large subset of fake news takes the form of stories shared between individuals that — as Katz (2013) discusses — contain oversimplified, emotionally evocative information that conceals or ignores the reality of complex and messy real events. Fake news spreads quickly because of the very qualities that make it narratively engaging and thus further from verified reporting: it is vivid, specific, entertaining, and unconstrained by reality.

The current set of incentives around ad revenue and page clicks have caused unscrupulous internet users to prioritize the entertainment value over the truth value of content. This trend is detrimental to the overall quality of news and information on the internet, because this information is narratively engaging but contains little or no factual content. Branded “fake news,” or “false news,” this new content presents itself as true, even though it is fictional or otherwise non-factual. It fits into the broader category of misinformation, which is any false or misleading content that nevertheless presents itself as true and intends to deceive individuals into believing that it is true (Lazer et al., 2018).

Greater awareness of the dissemination of misinformation arose from the 2016 U.S. presidential election. Widespread concern with the influence of fake news on voting behavior (e.g. Gunther et al., 2018) became the for both the public and social scientists to recognize the role of this type of misinformation played in individuals’ understanding of politics, social issues, and the state of reality. An analysis tool called FactCheck.me, which uses text analysis to estimate the penetration of robots into conversations on social media platform Twitter,
consistently finds that over 40% of the tweets using hashtags related to major news stories will derive from fake or robotic accounts (Lopowsky, 2018). However, most of these robotic accounts simply act to amplify existing trends in misinformation; much of the fake news on the internet comes from individual human practitioners, many of whom reject genuine journalism. Nationally representative Gallup polls found that 2016 represented the year during which Americans had the lowest level of trust in mainstream media ever recorded (Swift, 2016). Misinformation crept into the gap left by lack of engagement with these traditional news sources.

No longer did researchers talk about individuals believing fake news as a curiosity that occurred when naïve social media users mistook articles from the satirical paper *The Onion* for serious journalism (e.g. Rubin et al., 2016). Instead, there occurred a paradigm shift toward viewing fake news as a genuine threat to the well-being of American democracy, and as an insidious force which affects more internet users than not. *Science* magazine published a call for scientists to understand and fight back against fake news and other forms of misinformation. The article, co-authored by sixteen different researchers from fields as diverse as political science and cognitive psychology, urged the general public to remain skeptical consumers of internet content (Lazer et al., 2018).

Although individuals within and beyond social science understand the power of fake news and other misinformation, this widespread awareness has not succeeded in countering its continued influence. Analysis of the level of engagement on Facebook for various news stories found that the top 20 most popular fake news stories were more popular in the latter half of 2016 than the top 20 most popular real news stories (Silverman, 2016). Not all social media users “shared” fake news, and in fact most individuals do not propagate misinformation, either intentionally or unintentionally. However, the sheer popularity of Facebook and its subsidiaries
(e.g. Instagram) creates considerable vulnerabilities in the quality of information encountered by the 67% of Americans who use Facebook as their primary news source (Shearer & Gottfried, 2017). In spite of calls from lawmakers, and in spite of other social media companies such as Twitter taking active steps to combat fake news, Facebook has thus far refused to impose any quality-control measures on its content, outside of asking users to flag content for review if it is potentially false (Isaak & Hanna, 2018). Thus, it is little surprise that fake news proliferates rapidly, even after attempted correction, on Facebook and Instagram (Friggeri et al., 2018).

Of special concern to many analysts is the question the degree to which fake news has the power to influence world events such as the American 2016 presidential election and the United Kingdom’s 2016 “Brexit” vote to leave the European Union. Guess et al. (2018) collected web traffic data from a national sample of American internet users (n = 2,525) and found that about 25% of participants visited a known fake news website in the two-month period before the 2016 presidential election. Within this sample, approximately 10% of participants predominantly visited fake news websites and rarely experienced any exposure to mainstream news sites. Even individuals who did not visit these sites often shared or commented upon some of their most popular fake news stories leading up to the 2016 election, including the item “Pope Francis Shocks World, Endorses Donald Trump for President,” which accrued an estimated 8,700,000 likes and shares on Facebook in 2016 alone (Silverman, 2016).

Even individuals who do not share fake news content on their own pages will often end up inundated with poor-quality information because of sharing by friends and official pages they follow. There is evidence that simply being repeatedly exposed to a background of misinformation can make individuals more uncertain about the state of the world and the ground truth of various news stories (Rutenberg, 2018). Even if individuals do not read a single fake
news story, they may nevertheless encounter constant contradictions in headlines. For instance, true reporting that indicates (as of this writing) COVID-19 is incurable becomes diluted by misinformation about everything from ibuprofen to chloroquine can kill the virus, and at least one individual has died as a result of ingesting the latter substance (Shepherd, 2020). True information about the need to reserve medical masks and gloves for health care workers becomes diluted by contradictory advertisements claiming masks can prevent or even cure the virus, and social media users are left with the contradictory impressions — both false — that the masks can cause the virus, or that they are completely safe if they wear a mask while out in public (Tufekci, 2020). Many of these individuals did not have to engage directly with fake news; they only had to be present in online environments where it proliferated. Thus, many estimates of the prevalence of fake news engagement have a large margin of uncertainty, and many are likely to be underestimates. Simply measuring page clicks or shares cannot capture the full picture of fake news’s influence.

Often, this misinformation originates with politically motivated agents, both within and outside of the United States. Facebook estimates that Russian actors alone successfully spread misinformation to 126,000,000 users (Ingram, 2017), whereas Twitter found that many of the most popular tweets leading up to the Brexit vote, approximately 1% of total tweet volume, originated with Russian-language accounts tweeting in English (Londongrad, 2017). An analysis of British “remain” voters who supported the U.K. remaining in the European Union and “leave” voters who favored leaving found a discrepancy across voting behaviors, with 71% of “leave” voters indicating that they believe one or more popular conspiracy theories whereas only 49% of “remain” voters endorsed one or more of these theories (Addley, 2018). This analysis demonstrates the degree to which fake news and other misinformation can create a sense of
confusion or mistrust for major political issues that can lead to isolationist and nationalist voting patterns. A similar discrepancy emerged across American voters in the 2016 presidential election, with 84% of Trump voters (who are more likely to support nationalism) reporting belief in one or more conspiracy theories whereas only 50% of Clinton voters reported belief in conspiracy theories (Addley, 2018). These results hint at a link between populist nationalism and conspiratorial beliefs. However, fake news sharing from Russian agents is far outstripped by that of other organizations seeking the financial or popularity-based incentives offered to pages which accrue clicks, regardless of how they attract web traffic. Misinformation which does not have malicious origin—such as false advertising, data mining, and “clickbait” designed to manipulate metrics of page views—is even more prevalent than Russian-based fake news (Lewandowsky et al., 2017) and its prevalence is probably underestimated. Therefore, the need to understand the influence of this type of misinformation cannot be overstated.

One specific avenue for examining the understanding of fake news that remains to be explored is the role of narrative engagement and processing. If we examine fake news as a form of narrative, and define it as any news content that does not let the truth get in the way of a good story, then we can draw upon the theoretical groundwork of Narrative Transportation theory and related areas to examine the influence of fake news. Many of the negative effects of fake news on attitudes and beliefs derive from perceptions of the intent and expertise of the source of a news story. Individuals who scroll through social media and decide which content to read and share are often conducting a sort of real-time Turing test (see Saygin et al., 2000, for a review), trying to determine if any given news story is the product of a robotic or otherwise fake account, or if the intent of the information is simply to inform the reader as accurately as possible. Understanding how these decisions come about, and how the narrative nature of this information
influences those decisions, will help psychologists guide interventions against misinformation both at the level of the individual and at the level of the social networking site or search engine. Although observational research has already begun to delineate some of the demographic risk factors for engagement with fake news, and many other studies in attitudes and persuasion can inform our understanding of why individuals sometimes cling to demonstrably false beliefs, our understanding of how users encounter and come to believe fake news is still in its infancy.

The present studies examined the ways that our understanding of classic persuasion effects, including confirmation bias and narrative persuasion, can inform our understanding of how fake news creates persistent and action-inspiring attitudes in spite of a lack of factual basis or genuine content. These two studies reframed source effects in persuasion in the specific context of vivid anecdotes or narratives, using narrative persuasion research to further our understanding of the influential power of misinformation. Study 1 examined the relative role of pertinent but underused author credibility information and the role of salient but non-diagnostic protagonist credibility information in perceptions of news veracity in a narrative context. Study 2 extended these effects through looking at the different types of source credibility that influence attitude change and veracity perceptions, depending on the level of involvement participants have in the news stories. First, it is important to review some of what we already know about the prevalence of fake news and its effectiveness in changing attitudes.

**Literature Review**

Research on the ways that individuals experience and engage with misinformation has blossomed in the past three years, drawing on known persuasion processes while also branching into new areas of research. Individual internet users all too often encounter information which varies in quality from sensationalized or oversimplified accounts of real events, to entirely
invented falsehoods that present themselves as genuine reporting of real events in a deliberate attempt to deceive readers, collectively referred to as “fake news” (Lazer et al., 2018). Once they have encountered that information, individuals process it at different levels, with more effortful processing resulting in stronger impressions of the information. This information is also more likely to be remembered, and that remembering can lower the threshold for subsequent belief of further misinformation. If the individual reader believes the information is true, or at least does not receive overt signals that the information is false, then the information will be incorporated into a broader understanding of world issues. Finally, individuals often share misinformation, unknowingly amplifying the effects of fake news stories and increasing their exposure. Psychological research can explain pieces of how each of these processes occur, and present possible solutions.

**Encountering Misinformation**

Although humans have likely shared misinformation with each other for as long as there have been humans — there are known evolutionary advantages to “bullshit,” or low-quality information that makes the speaker look good (Frankfurt, 1986) — the internet and other forms of rapid information transmission have accelerated the rate at which misinformation is communicated. Crockett (2017) argues that all forms of social media amplify the rewards and minimize the risks associated with spreading information of questionable veracity, given that posts which inspire strong emotional reactions earn “likes” and other indications of approval, while even individuals repeatedly caught lying are at little risk for personal censure during computer mediated communication. Crockett finds growing concern that the design and structure of social media can inadvertently entrench individuals in misinformed opinions. For instance, platforms such as Facebook use individuals’ past activity to choose which content to present and
conceal on their news feeds, which can lead to individuals seeing only support for their existing opinions (Guess et al., 2018). These algorithms inadvertently facilitate selective exposure effects.

**Selective exposure**

Selective exposure is a form of motivated cognition that involves seeking out and retaining information that supports one’s existing opinions over information that refutes those opinions. Freedman and Sears (1965) first demonstrated this effect through showing that participants “forewarned” about a persuasive communication (i.e. told in advance that a message would try to change their minds) were less likely to read the message carefully and were more likely to ignore parts of the message. Subsequent research has demonstrated that individuals who are motivated to bolster their existing opinions more than they are motivated to seek ground truth will engage in various processes that value reinforcement of existing opinions. Selective search involves ceasing to seek out new information after finding support for one’s existing beliefs (Jonas et al., 2001). Selective interrogation is a process of approaching counterattitudinal information with greater cynicism and a lower threshold for rejection. Selective retention involves having better memory for, and more use of, proattitudinal as opposed to counterattitudinal information (Brannon et al., 2007; Frey, 1986). Not only does selective exposure cause one’s existing attitudes to become more extreme (attitude polarization), but it creates a false consensus effect wherein an individual will believe that his or her own attitudes are supported by a disproportionately large subset of the population, thereby entrenching the perceived correctness of a particular position (Rosset et al., 1976). Unfortunately, these processes are often facilitated by modern media.

For instance, Stroud (2008) found that individuals are more likely to select media that agree with their existing positions when given a choice between several newspaper subscriptions
or several television channels, with individuals who had strong attitudes about the Iraq invasion showing especially marked patterns of selecting media with views similar to their own. Bakshy et al., (2015) found that although Facebook’s tendency to show users content similar to content they already “like” does play a role in selective exposure; individual choice also played a far larger role. Most individuals in their sample of 10 million Facebook users had several political outgroup friends, and thereby viewed a subset of content which disagreed with their own political views. Nevertheless, most participants chose to view, read, like, and share news stories which supported their own political opinions when exposed to a mixture of political perspectives. The influence of individual selection of news stories had a far greater effect on subsequent selective exposure than the algorithms used by the social media programming. One of the major reasons that individuals find news stories that agree with their existing opinions so motivating is that these stories play into confirmation bias.

**Confirmation bias**

This form of motivated cognition involves greater liking and approval for information that aligns with one’s existing worldview and confirms one’s opinion (Mynatt et al., 1976). Whereas selective exposure involves seeking out and using information that supports one’s existing views, confirmation bias is a form of motivated search wherein individuals actively seek support (rather than possible disconfirmation) for their existing hypotheses and avoid directly testing these hypotheses. As Lewandowsky et al. (2012) argue, this heuristic is not entirely invalid: information is more likely to be true in field settings if it is in line with prior knowledge. For instances, most individuals create social media posts with the intent to communicate or inform others, and thus do not deliberately share false information (Friggeri et al., 2014). It would render social media sites meaningless if individuals automatically disbelieved every piece
of information they encountered on one of these sites. Similarly, search engines such as Google are fraught with misinformation but successfully lower the return rate of misinformation sites through training algorithms to prioritize web sites connected to a particular search term that have a great deal in common with other sites in terms of key words or links. Thus, more-common information and more-used information are more likely to be true in practice.

However, information can become more popular for reasons other than its truth value. If a piece of information supports an individual’s existing worldview, then the individual is also more likely to use it and share it with others. Incorporating only information that supports existing beliefs about the world can also cause individuals to find indefinite support for their stereotype-based beliefs while ignoring evidence which would otherwise disconfirm those beliefs (Klayman & Ha, 1987). Pennycook and Rand (2017) found that individuals were less likely to engage in analytical processing of news stories which confirmed existing beliefs. Individuals were especially likely to believe news headlines which came from ingroup sources and supported ingroup beliefs; for example, politically conservative participants were most likely to accept researcher-selected conservative headlines from conservative sources as true, even if these headlines reported factually unlikely news stories.

The influence of these biases is not easily dispelled. Lazer et al. (2018) argue that fact-checking websites and media experts’ tags on news stories subject to suspicion are unlikely to overcome confirmation bias, because oftentimes individuals experience confirmation bias in the form of failing to check on the veracity of information at all if it supports their existing beliefs. Indeed, Google’s attempt to flag fake news stories with Knowledge Panel, a service that indicated a particular story had been refuted by independent fact-checking sites, lasted less than a year before it closed down amid conservative users’ accusations that it was ineffective and
demonstrated strong liberal bias (Dwoskin & Shaban, 2018). The internet affords its users a near-infinite quantity of information about pretty much any political position, no matter how fantastical, and can thereby amplify these effects through creating political “echo chambers.”

**“Echo chamber” effects**

An echo chamber is a computer-mediated meeting space such as a forum where like-minded individuals reinforce the same attitude indefinitely, building off one another and allowing no outside influence or contradictory opinions (Sunstein, 2001; Garrett, 2009). Internet users will often seek out these spaces where they can express political positions, because they are actively motivated to communicate with individuals who will affirm their existing opinions, even more so than they are motivated to avoid disconfirming information. Individual decisions can also amplify existing opinions. Most individuals have some political outgroup friends on social media who post information counter to those individuals’ own convictions, but largely choose not to engage with this counterattitudinal information (Bakshy et al., 2015). Instead individuals opt to read only news stories whose headlines indicate likely agreement with their existing political views. Social media echo chambers are thus not entirely insulated from outside influence, but selection effects prevent these outside influences from having much of an effect, likely accounting for some of the known polarizing effects of heavy social media use. For instance, Hampton, Shin, and Lu (2017) found that participants’ amount of social media use negatively predicted their willingness to engage in debate with someone who disagreed with their stances on important political issues, and that the heaviest social media users were also the least willing to entertain alternative positions on important political issues.

Another important effect of these echo chambers is the amplification of conspiracy theories that would otherwise be shut from widespread awareness by the strict journalistic
standards of mainstream media (Lazer et al., 2018). Lewandowsky et al. (2013) found that individuals who sought out and used internet forums for climate change denialism were often exposed to other science-denying conspiracies, such as the belief that the U.S. government intentionally developed the AIDS virus. These conspiracy theories are especially subject to echo chamber effects because they are by their very nature impossible to refute; one of the key markers of a conspiracy theory is that disconfirming evidence is almost always treated as proof that the conspirators wish to discredit the conspiratorial thinkers (Whitson et al., 2015). These theories offer simple and alluring explanations for complex world events, increasing their believability, in contrast to often abstract and difficult-to-comprehend scientific reporting, which can increase their believability.

**Believing Misinformation**

Amidst growing awareness that fake news produces an outsize influence on social media, advice on ways to avoid such news has also become prevalent. Perhaps the most common recommendation is simply to look at the source of the information as a cue to its veracity. This suggestion has been put forth by organizations as diverse as *The Washington Post* (Fowler, 2018), the International Federation of Library Associations and Institutions (IFLA, 2017), cognitive scientists who study memory phenomena (Lewandowsky et al., 2017), fact checking websites (Lacapria, 2017) and individual educators (Catapano, 2018). This advice cites a valid signal of a news story’s likely veracity—items from journalistic organizations are extensively fact-checked and held to high standards of veracity and integrity, while items from outside these media are typically the work of agents motivated by ad revenue or shock value rather than the truth (Lazer et al., 2018). Even individual users who lack extensive knowledge of mainstream media sources can nevertheless find extensive information on unfamiliar sources using search
engines or links. However, individuals typically do not pay sufficient attention to the source of news items, and continue to spread misinformation. Why does this effect occur? Study 1 of this dissertation seeks to explore the nature of this question through examining the relative influence of the central figures or protagonists of narratives against the authors of those narratives when understanding source effects. Emerging evidence suggests that within narrative, characters’ expertise and likeability has an outsized influence on perceptions of credibility when compared to authors’ expertise and likeability.

**Source effects**

In traditional research on persuasion, the source of a message is treated as the author of a particular persuasive communication. Generally, this author is the individual or group that put together a message that has the potential to change attitudes, regardless of the intent of the author. When judging the validity of persuasive messages, readers tend to use source characteristics as cues about the quality of a message. In a meta-analysis of various source effects, Wilson and Sherrell (1993) found that sources with greater expertise (relevant knowledge on a topic) are more persuasive than sources with less expertise. Sources who are similar to the message receiver in attitudes or ideology are more persuasive than sources less similar to the message receiver. Sources with more likeable qualities, such as upbeat personalities or passion for the subject, are more persuasive than sources with fewer of these attractive qualities. Sources with greater social power tend to be more persuasive than sources with less social power, especially when powerful individuals are perceived as speaking against their own self-interests. These effects persist across a variety of manipulations of these qualities, and tend to produce more favorable opinions of the messages as well as greater attitude change.

Source credibility often acts as an especially important cue for individuals who are less
motivated or less able to process a message effortfully, because it is a peripheral signal as to the quality of a message (Petty & Cacioppo, 1986). It can also change the interpretation of ambiguous cues within a message, for instance making tag questions appear more certain if coming from a high-expertise source and more uncertain if coming from a low-expertise source (Blankenship & Craig, 2007).

Not only do source characteristics quickly signal the validity of a message to the message receiver, they can also increase the strength of post-reading attitudes. Research within the Elaboration Likelihood Model dual-process framework has found that individuals devote more effortful processing to a message with a high-credibility source than one with a low-credibility source if they see the source before reading the message (Petty & Cacioppo, 1986). This greater degree of effortful consideration can produce stronger and more lasting attitude change than a more rapid and shallow judgment. Not only can high source credibility signal that one should effortfully consider a message, it can also act to validate one’s thoughts about a message. Tormala et al. (2007) found that source credibility manipulations introduced after a message change the degree of confidence with which one holds one’s thoughts about that message. If participants saw a message and only learned that the message came from a high-credibility source after reading, they reported greater confidence in their thoughts about the message. Source credibility can signal to less-engaged readers that a news story is valid, it can shift some readers from considering a news story heuristically to considering it systematically, it can produce stronger attitude change through inspiring greater effortful consideration, and it can validate individuals’ thoughts about a message through increasing confidence in one’s attitudes after reading. However, these effects do not consistently generalize to narrative, or story-based, messages.
**Narrative processes**

A narrative message is one that describes the events of an anecdote or story—a set of interconnected events with reference to tropes and at least one agentic actor or character. There is ample evidence that narrative persuasion functions differently from traditional rhetorical persuasion effects, and that some of the power of fake news may come from its entertaining narrative format. For instance, Appel and Richter (2007) found that inappropriate retention of fictional information occurs at least partially due to source monitoring errors, as participants who saw information about the effects of exercise on health in a fictional narrative initially made the correct decision to reject this information, but within two weeks had forgotten the source of the information but not the information itself, leading to greater endorsement of story-consistent beliefs. Narrative information seems to be especially subject to these kinds of effects; Lewandowsky et al. (2012) argue that the vivid and internally coherent nature of narrative increases the extent to which it “feels” true, regardless of its actual veracity, and can increase recall beyond the metacognitive markers of fiction rather than nonfiction.

However, narrative persuasion effects are not solely due to characteristics of the source. Fictional information can also change attitudes because it is often more enjoyable and immersive to read than non-narrative rhetorical information. Green and Brock (2000) demonstrated that narrative information can change individuals’ attitudes through a state of intense immersion known as transportation. In this study, participants who encountered support for negative attitudes toward an outgroup (individuals with schizophrenia) while reading a narrative did not interrogate or reject that information while immersed in the narrative itself. Therefore, these participants failed to recognize that a single piece of vivid emotional information constitutes at best a weak argument in favor of the attitude. These individuals then incorporated the narrative
information into their attitudes toward people with schizophrenia, because of the lack of interrogation associated with this state of narrative transportation. On a test of trust of individuals with schizophrenia, these individuals reported more negative stereotyping than individuals who read a control story.

The broader mechanisms associated with incorporating misinformation into one’s worldview are partially underpinned by the highly often entertaining and engaging nature of fake news as opposed to true information. Whether or not an individual comes to believe any given piece of information depends on several variables including the nature of the information, the context within which the communication occurs, the life experiences of the individual, and the perceptions of the source of that information (Nolder & Blankenship, 2019). However, the context of narrative communication changes these known influences on persuasion effects, including the influence of source credibility, in ways that researchers are only beginning to understand. In fact, authorial information has an unusually undersized effect on reader perceptions of sources in narrative as opposed to rhetorical contexts.

When reading narrative (as opposed to non-narrative) messages, individuals will often report relatively little effortful consideration of a message and indeed have few well-developed thoughts about a narrative message after reading (Green & Brock, 2000) but will also demonstrate strong attitudes that change behaviors and persist over time (de Graaf et al, 2016). Van Laer et al. (2013) argue that narrative persuasion is categorically distinct from classic persuasion effects which use rhetorical materials and do not produce narrative transportation. Narrative persuasion has unique mechanisms, and shows little influence from known paratextual moderators that influence individuals’ perceptions of non-narrative messages, including source credibility.
**Source effects in narrative**

In their exploration of narrative persuasion effects, Green and Brock (2000) found that participants not only had difficulty reporting meaningful thoughts about the source of a narrative, they also misremembered the genre of the source and mistook the fictional story for a factual account. These effects occurred in spite of explicit labeling about the source and genre of the story, and in spite of the relatively short narrative which took less than five minutes for most participants to read, thereby minimizing the delay between encountering author information and failing to recall it. Similarly, Marsh and Fazio (2006) found that participants used incorrect information from fictional stories to answer trivia questions in spite of incentives to answer correctly, and that explicitly forewarning participants that fiction often contains made-up information did not cause them to scrutinize the stories enough to reject the misinformation. Green et al. (2003) found that participants low in Need for Cognition (a dispositional tendency to consider propositions effortfully) were more likely to scrutinize a message labeled as “fiction” than one labeled as “fact,” but that post-reading attitude change did not differ across the two different types of labels (Cacioppo et al., 1984).

Participants’ ego involvement also overrode the effect of labeling, such that stories with highly personal content inspired high levels of scrutiny regardless of labeling. One possible mechanism for this change is the “sleeper effect” wherein individuals recall the content of a message even after having forgotten its source, thereby recalling the events of a persuasive message but not the fact that it was fictional (Appel & Richter, 2007). Metacognitive tags such as the truth value of information or lack of trust in the source of information are often lost before the information itself is, causing individuals’ mistrust of low-quality persuasive material to fade over time (Hovland et al., 1949; Kumakale & Albarracin, 2004) once they have no memory of
the low-quality source. There is also evidence, however, that even individuals who recall the source of a narrative simply do not care, provided the narrative itself is sufficiently interesting.

For instance, Appel and Malečkar (2012) found that participants actually reported greater enjoyment for a narrative explicitly labeled as fake news than a narrative reported as nonfiction, and that individuals reported approximately equal degrees of attitude change after reading the fake-labeled and nonfiction-labeled versions of the same narrative, with only fiction-labeled narratives emerging as more persuasive. Although it is possible that this effect would not replicate in 2020, given the heightened awareness of the negative impact of fake news, other contemporaries have shown that participants have little concern with the source of entertaining or self-affirming information. Pennycook and Rand (2018) found that participants tended to disregard explicit source information when evaluating a headline and preview image for validity, especially when the headline agreed with existing worldviews.

In an earlier examination of misinformation in news reports (Lewandowsky et al., 2005), participants with social motivation to believe that the U.S.-Iraq War was justified were more convinced by news stories about the discovery of Iraqi Weapons of Mass Destruction than by the immediate correction of those mistaken reports, but participants who lacked motivation to support the War in Iraq easily disbelieved the earlier incorrect reports. These effects can even distort post-hoc recall of sources: participants became more convinced of the truth of fictional misinformation with repeated exposure, and also became more convinced that they had acquired the information from a nonfictional source before ever reading the fictional story (Marsh et al., 2003). Given that all of the “facts” referenced in these fictional stories were invented for the purpose of the study, these memory effects point to the role of post-hoc forecasting in incorrect recall of fictional misinformation as nonfictional fact.
Even when participants are explicitly instructed to reject information contained within a narrative, they frequently show a minimal engagement with the source of the narrative information. Kane and Blankenship (in preparation) found that participants asked to resist a persuasive attempt in the form of a narrative infrequently used source derogation, an “easy” strategy for persuasion resistance that requires relatively few mental resources (e.g. Jacks & Cameron, 2010) and instead consistently derogated the protagonist of the narrative as if the fictional character, not the author, was the source of the information. Additionally, individuals often fail to interrogate the motivations of internet sources following explicit signals that these sources cannot be trusted; over 80% of a student sample chose to endorse a news story specifically labeled as “sponsored content,” and over 30% chose to trust a page about financial planning written by a bank with clear bias toward its own services (Donald, 2016). Narrative transportation seems to compound these effects, because it frequently makes readers reluctant to break the experience of immersion to interrogate the propositions presented in a story (Dahlstrom, 2013) and can also make readers more reluctant to admit that they were themselves influenced by the narratives (Dahlstrom & Rosenthal, 2018). However, readers will occasionally interrogate and resist persuasive messages contained in message. When they do, they are more likely to focus on the credibility of the protagonist than the credibility of the author.

**Character effects in narrative**

In some ways, the outsize effect of a protagonist on individuals’ perceptions of a narrative makes intuitive sense. The protagonist is highly visible, an agentic actor who drives the story forward, and information tends to be more memorable and persuasive to the extent that it has a clear impact on the main characters of a narrative (Dahlstrom, 2014). There is also growing
evidence that credibility manipulations have a greater effect in narrative contexts when they affect the protagonist rather than the author.

The key characteristics of protagonists have to do with credibility—expertise, ideological similarity, likeability, and power—rather than mere demographic matching. De Graaf et al.’s (2016) review of narrative persuasion effects in health communication found no evidence that changing the demographic or personal characteristics of protagonists to match readers’ demographics changed perceptions of the protagonists or the narratives. Instead, what matters is emotional content: narratives that feature more emotional events in characters’ lives are more memorable and persuasive than narratives that focus on low-impact events (Nabi & Green, 2015). This effect even extends as far as narratives which dwell on the extreme impact of protagonist death. Jensen et al. (2017) found the greatest effect on participants’ intentions to use skin self-examinations to check for skin cancer when they presented a narrative that foreshadowed and then described the protagonist’s death from cancer, in contrast to less-effective narratives which had sudden character death or no character death. In fact, there are several studies indicating that character identification, or feelings of liking and closeness for a narrative protagonist, fully mediate the effect of narrative transportation on subsequent attitudes (de Graaf et al., 2012; Iguarta, 2010; Kim et al., 2012; Mahood & Hanus, 2017; Mar et al., 2011; McQueen et al., 2012; Murphy et al., 2013; etcetera). If readers like the main character of a narrative and feel close to that character, then they are more likely to agree with propositions contained within that narrative.

Not only are characters more persuasive if they are perceived as more likeable and socially close to the reader, but they are also more persuasive to the extent that they are perceived as trustworthy. In a test of prior knowledge influencing story belief, Foy et al. (2017)
found that participants generally did not interrogate assertions contained within a story using prior knowledge, even if the plausibility of those statements was relatively low (e.g. “There are wolves in the backyard” of a house containing a loud party, p. 289). However, if the same low-plausibility assertion was uttered by a character described within the story as high on bath salts (Study 1) or insane (Study 3) then participants processed the statements more and correctly rejected most assertions that were unlikely to be true.

In a similar series of studies, Appel and Mara (2013) found that trust for a character moderates the persuasiveness of assertions about the importance of environmentalism within a narrative. When information about the importance of minimizing car emissions was presented as coming from a character with strong self-interests and unattractive characteristics such as hypocrisy (in this case, driving a heavy-polluting car himself), participants did not report intentions to change attitudes or behavior. However, when the same character presented the same information after being described as trustworthy and dedicated to his principles (in this case, biking to work to avoid driving), participants came to agree with the attitude endorsed in the narrative and reported intentions to change their own driving behavior as a result. In each case, the story was explicitly marked as fiction and there were no direct mentions of it containing factual information, but this paratextual information had no discernable influence when compared to the impact of character credibility. Thus, individuals appear capable of incorporating credibility cues into their judgment of narrative information, but are more likely to do so when the information relates to protagonists rather than authors of narratives. Study 1 of this dissertation explored these effects more thoroughly through testing two types of source credibility cues—from the author and from the protagonist—against one another. To the extent that narratives do indeed create outsized influence for character-sources compared to author-
sources, I hypothesized participants would change their beliefs on the basis of high-credibility characters and less so on the basis of high-credibility authors. However, there is also evidence that source credibility is not a uniform construct.

**Limits of expertise.**

There is ample evidence that in most persuasive communications, more-expert sources are, on average, perceived as more trustworthy than less-expert sources (Petty & Cacioppo, 1984; Wilson & Sherrell, 1993). However, one of the known forces underpinning engagement with fake news over mainstream news is anti-intellectualism, or mistrust of experts and other well-educated individuals perceived as elitist and disconnected from important events (Guess et al., 2018). Individuals who have many conspiratorial beliefs are especially prone to perceiving experts as sinister and self-motivated when compared to non-expert individuals (Wood et al., 2012), because of the perception that scientific evidence which contradicts one’s existing beliefs must be the product of researchers being paid or threatened to report false information. Even individuals who do not have these dispositionally high levels of anti-expert attitudes can nevertheless perceive expert sources as less similar to themselves and therefore less informative about certain issues.

The increased use of individual exemplars in news stories demonstrates that different types of opinions from different sources will be matched to various types of content. Individuals may find expert and non-expert sources of opinions in the news to be equally persuasive, but for different reasons. For example, in the Zerback and Peter (2018) paradigm, participants viewed a news story which either contained an ordinary exemplar source, a “person on the street” (an individual implicitly presented as representative of a broader whole) or did not contain an individual exemplar, but instead cited a more abstract source, such as “people in general”
Participants trusted news stories more if the news stories featured exemplars, regardless of the exemplars’ high or low level of personal involvement with the issue at hand. However, the different types of exemplars created different impressions of the information they presented when participants regarded them as the source of that information. Expert sources, or specifically individuals who had extensive direct experience with the issue at hand (e.g. individuals who had experienced the disease that formed the focus of the news story) were perceived as more well-informed and personally experienced about important political issues, whereas ordinary exemplar sources (e.g. individuals who were not well-informed about the disease at the center of the news story) were perceived as more trustworthy and more tapped into the opinions of the majority. These results suggest that the same message might be highly persuasive if it comes from an expert source in conditions where an expert would be most highly regarded (e.g. a message about a technical issue with which message receivers have little experience) but less persuasive if it comes from an expert source in conditions where an expert might be regarded as less trustworthy (e.g. a message about an issue with high personal involvement for message receivers).

Study 2 of this dissertation examined these effects in greater detail, extending Zerback and Peter’s paradigm beyond factual news stories toward news stories of dubious quality or origin in order to look at how exemplar protagonists influence perceptions of veracity. For individuals reading about a news story with greater personal connections, I hypothesized a source with low expertise but high similarity to the reader would be persuasive, whereas individuals reading a news story with few personal connections would perceive an expert but dissimilar source as more persuasive. These effects help to explain why social media users sometimes trust blogs, memes, and other low-quality sources enough to share this information.
Processing Misinformation

The impact of fake news stories can occur even outside of direct engagement, and yet the process of engaging with a news story increases the memorability and impact of its content. Engagement can be measured in a variety of ways—through shares and likes on social media, through clicking to follow a link, through recalling information later, through attitude change—but it indicates the degree to which an individual thinks about any given message. Messages which inspire relatively more thought will usually produce stronger attitudes, whether positive or negative, than messages which inspire little or no thought at all (Petty et al., 1981). Not only do circumstances such as degree of effort influence degree of engagement with a message, but qualities of the message itself, such as the amount of sensory information (i.e. vividness) and the number of times one has viewed a similar message before (i.e. mere exposure; Pennycook et al. 2018) can change an individual’s degree of processing for that message. The current set of studies seeks to expand our understanding of fake news effects through looking at the degree to which individuals engage in effortful processing, which can both mitigate and enhance the effects of fake news depending on the individual’s motivation.

Dual process models

Individuals who use social media often have a moderate to low level of motivation to process information effortfully. Social media are primarily viewed as a form of recreation, especially when individuals engage in “cyberloafing” or using social media websites instead of performing necessary work- or education-related tasks (Lim, 2002). These individuals are more likely to be using low-effort processing, judging the quality of information they encounter on the basis of heuristics or rules of thumb rather than effortful systematic consideration of the quality of the information contained within (see Chen & Chaiken, 1999, for a review).
The Elaboration Likelihood Model of Persuasion

One of the most influential dual process models of persuasion is the Elaboration Likelihood Model (ELM) which studies the ways that individuals respond to a persuasive message on the basis of their degree of motivation and ability to think effortfully about that message (Petty et al., 1981). The ELM explains attitude change following a persuasive message as resulting from two possible qualities of the message: central cues and peripheral cues. When individuals have high motivation and ability to process a message effortfully, such as when they have a personal stake in the outcome of a message, they will often judge a message on the strength of its arguments, including the likelihood and attractiveness of proposed outcomes for adopting a particular opinion. However, when individuals have less motivation or less ability to engage in this level of effortful processing, they are more likely to form quick heuristic-based judgments of messages. Peripheral cues as to the trustworthiness of information, such as the length of an article or the number of times it has been retweeted, will have greater influence under these conditions (Cacioppo & Petty, 1984). For instance, Petty et al. (1981) found that participants reading an argument which did not inspire a great deal of motivation to process (little connection to participants’ own lives) trusted expert sources more than non-expert sources and celebrity sources more than non-famous sources, regardless of the actual quality of the information contained within the argument. These individuals had little motivation to engage in central (i.e. high-effort) processing and thus took the source’s fame or expertise as a cue to the quality of the argument. This finding, that motivated individuals who also have the ability to consider information carefully (Cacioppo et al., 1983) will effortfully consider the merits of arguments when deciding whether to accept or reject them, has inspired research into the amount of processing that various users put into novel news stories.
There is some evidence that increasing level of processing can also increase accuracy of rapid judgments. Pennycook and Rand (2018) found that participants who performed well on the Cognitive Reasoning Task (CRT, which measures motivation to think effortfully about stimulus materials) had greater accuracy in their judgment of the veracity of headlines and preview images of news stories than participants who performed poorly on the CRT. These materials, which presented participants only with headlines and images, closely parallel the brief exposure to news stories which one might encounter on a social media news feed. However, they also did not allow participants to scrutinize qualities such as internal logic of news stories or degree of journalistic integrity that might have otherwise further influenced their opinions. Similarly, Pennycook et al. (2018) found that participants who processed news stories more fluently (because of prior exposure to a subset of headlines) trusted those news stories more, but again did not give participants the opportunity to engage with the full news stories. This research is nevertheless important because it demonstrates that labeling probably-fake news stories as “disputed” is not sufficient to dispel the effect of mere exposure on trust of news stories, but should be extended to understand how these processes affect full engagement with news items.

Both studies in this dissertation tested the role of source effects and levels of processing using a set of materials that went beyond simply presenting participants with headlines and preview images, instead offering entire messages that the participants were then able to read at different levels of processing. These materials allow greater differences in level of motivation to process to have a greater effect, because they afford more material for participants to examine. Although Pennycook and Rand (2018) provide some important preliminary evidence about the role of levels of processing in judgments of questionable news stories, the absence of any central cues as to the stories’ veracity means that this research has only definitively demonstrated that
highly-able individuals have greater skill at judging peripheral cues of news veracity. It is important to examine these effects with a full set of materials, across different levels of ego involvement.

**Ego involvement**

The quality of ego involvement—a personal stake in the outcome of an argument—causes individuals to engage in more central processing, inspiring more effortful consideration of the information and greater interrogation of the text. Petty et al. (1981) found that participants who had strong ego involvement in a particular argument (it described a policy allegedly about to be introduced to individuals’ own universities) engaged in more effortful processing of the message. These individuals correctly distinguished stronger from weaker arguments and chose whether or not to reject the message based on the internal coherence of its arguments. However, when individuals had little ego involvement in the outcome (because the same message suggested the policy would be implemented at a different college), they returned to using peripheral cues such as source expertise to make heuristic judgments about the text. Ideally, a combination of greater motivation and greater ability to make effortful judgments about news stories with personal involvement for the reader should result in higher accuracy.

Unfortunately, there is evidence that simply engaging in greater processing will not necessarily increase accuracy of perceptions, especially under conditions of motivated reasoning because of extremely high ego involvement. Kahan (2017) found that individuals with deeply entrenched false beliefs were able to recruit internally coherent arguments to support those beliefs in order to counter factual attempts to refute misinformation. Participants who performed well on a CRT became more successful at fitting ambiguous evidence into their existing worldviews rather than more accurate at self-perceptions of those views. Logic and other forms
of internal coherence are very poor metrics for judging the veracity of a belief system, given that individuals who have been exposed to a great deal of confirmatory information and are strongly motivated to rationalize their beliefs can develop logical explanations for just about any phenomenon, no matter how fantastical. Part of this effect occurs because of differential processing across sources: Cohen (2003) found that participants engaged in greater scrutiny of arguments presented from a political outgroup, and found more reasons to reject those arguments, when compared to participants presented with the same arguments but presented from their own political group. When sufficiently motivated by personal stakes, individuals will seek out information which supports their existing beliefs at the expense of accuracy. The relationship between level of processing and accuracy is therefore not a simply linear one.

One especially strong form of ego involvement involves news stories that shift perceptions of important social groups. Individuals often have social identities, or facets of their self-concept which derive from membership in important groups (Inzlicht & Kang, 2010). If individuals perceive news stories as attacking an important social identity, they are more likely to reject those news items and will indicate lower trust overall for their contents (Sterling et al., 2016). This effect occurs partially because of the disconfirmatory stance suggested by such news items, which can pose a threat to positive perceptions of oneself and one’s ingroup, but also occurs because of selective exposure processes. Politically fractious misinformation (also called disinformation) deliberately targets these effects: Russian misinformation campaigns successfully influenced political perceptions in the U.S. through drawing upon individuals’ identities as Christians or African-Americans in order to increase political divisions and create mistrust for mainstream media (Shane & Frenkel, 2018). Although these effects can occur under
conditions of high processing, it is also important to bear in mind that the simple act of seeing a news story can lower its threshold for believability.

**Retaining Misinformation**

Individuals who encounter misinformation, especially when they see the same misinformation repeatedly, will often come to endorse beliefs associated with fake news stories. Most troublingly, these beliefs will often resist change, with individuals altering their own standards of truth to hold onto their convictions even in the face of strong contradictory evidence. Even when individuals encounter information explicitly marked as false and correctly refute that information, they sometimes default to believing that information later. This continued influence effect (Johnson & Seifert, 1994) causes individuals to rely on information they have already rejected when they are motivated to provide an answer, or when they lack unambiguous alternatives to the misinformation.

In order to ensure that participants are at minimal risk of leaving these studies with false impressions about real world events because of the stimuli they will read, this dissertation presented participants with only news stories that had little impact on potential voting behavior (i.e. focusing on nutritional issues) and sought to inspire only positive lines of action just in case participants did incorrectly recall the stories as being true. In line with Hyman and Jalbert’s (2017) recommendations about carefully dispelling any potential influence of misinformation encountered during a study procedure, both studies also required participants to indicate that they fully understood they read only false information during the study before being allowed to continue. This active engagement with the process of dispensing the material, and the requirement that all participants indicate their understanding of the debriefing procedure, helped maximize all
individuals’ understanding that they should reject the information they encounter during these studies.

It is important to expand beyond classic paradigms of attitude change, which focus on the ways that careful examination of evidence can result in persuasion, and to focus more on less rational forms of attitude change that come from personal biases and emotionally laden materials such as narratives. These studies therefore explored the role of source effects in fake news through incorporating research on ego involvement, author and protagonist credibility, levels of processing, narrative persuasion, and social identity processes. Using a paradigm that taps the moral and emotional facets of narrative (while also seeking to dispel the lingering effects of fake news stories), it examined protagonist credibility, confirmation biases, and levels of processing when individuals were asked to judge news stories. Participants’ standards of judgment can then inform our understanding of how fake news has an influence across social media platforms.

**Fake News as Narrative**

Several different frames have examined the influence of fake news as a form of “bullshit,” as motivated cognition, or as implied truth. This analysis takes the frame that fake news is a form of narrative — that news stories are a form of storytelling, and that fake news stories are ones that focus on the elements of an engaging story as discussed above (e.g. confirmation bias, ego involvement) rather than concerning themselves with veracity. Although not comprehensive, this frame nevertheless presents fake news as compelling to the extent that it directs attention away from key elements of paratext such as authors’ credentials, and toward compelling but non-diagnostic elements of the narrative itself such as attention to the author. This narrative source model (see Figure 1) theorizes that individuals engaging with narrative information derive their judgments of source credibility, and thus their trust in novel news
information, from perceptions of the protagonist, and that the narrative focuses attention away from the author and toward the protagonist. This model proposes that individuals’ trust judgments derive from their perceptions of characters or central figures in these stories (Foy et al., 2017) and not the actual authors of these stories (Appel & Malečkar, 2012). Upon deciding how much they trust a news story, individuals then change their attitudes in light of the new information, or do not experience attitude change to the extent that they reject the message (Caccioppo et al., 1983).

This model aims to describe the ways that engaging with narrative differs from engagement with rhetorical or non-narrative information, including the unique ability of narrative to present misinformation in ways that individuals are less likely to reject (e.g. Marsh & Fazio, 2006). Study 1 will act as a preliminary test of the idea that in narrative contexts, there is considerable attention to protagonists. It will test the theory that that source credibility perceptions (and subsequent attitudes) derive from those perceptions. Study 2 will examine ego involvement as moderating the influence of protagonist perceptions on source credibility perceptions, causing source similarity and trustworthiness to become more important than source expertise and power. Both studies will examine trust in a news story as a partial mediator of the effect of source credibility on subsequent attitudes, which should be more important in contexts framed as fake news than ones framed as simply stories with no signals of (mis)trust.
Current Research

These studies examined the role of source effects on narrative persuasion within the context of individuals judging online news of questionable veracity. The first study presented individuals with two conflicting source cues — one embedded within the narrative as the protagonist, one presented in paratext as the author — and examine the relative influence of each of these cues on not only attitude change but also on judgments of each story’s veracity. In the process, this study examined the degree to which the protagonist is regarded as the source of narrative information. Using research on source credibility effects in traditional rhetorical persuasion and on the relatively unusual patterns of source effects in narrative persuasion, it measured post-reading perceptions of truth and post-reading attitudes to determine the extent to which these cues change perceptions of a narrative message.

The second study expanded the first study’s understanding of source effects through pitting two different sets of source cues against one another, in this case examining the relative
influence of source expertise and source likeability in contexts of high and low ego involvement. Given that low ego involvement tends to be associated with less effortful processing of central cues about argument strength, I predicted participants would show greater agreement with a message that had a peripheral cue of validity in the form of an expert source. However, the same source would appear disconnected from the issue and the arguments would appear to be less valid when ego involvement was higher and participants scrutinized messages more closely. Under conditions of high ego involvement, a more persuasive source would be one more directly connected to the issue covered in the story, in spite the author of not having as much traditional expertise. Due to an unforeseen error in data collection materials, I chose to run Study 2 in two versions. Study 2.1, which suffered a failure of randomization, is discussed in Appendix C. Study 2.2, which implemented all manipulations as I intended, is discussed in this document in detail.

All scales used in this study were previously validated in other research, although they were also tested for reliability and discriminant validity within this sample. I pretested the materials for each study, using a convenience sample of participants recruited through social media. In light of these results, the materials were modified slightly before use in these studies.

**Materials Pretest**

Pretesting of the character and author information involved a survey in which participants \(N = 34\) reported their impressions of a series of individuals based on short descriptions, without contextual information about the news stories themselves. Three participants completed some subscales but not others; their data were retained for any subscale where they reported complete information. The first part of the pretest presented participants with short descriptions of the
authors (high-credibility and low-credibility) and the protagonists (high-credibility and low-credibility) associated with Study 1 and Study 2 (see Appendix A).

All participants rated the authors and protagonists on a seven-point Likert-type scale from 1 (strongly disagree) to 7 (strongly agree) for the statements “This person seems trustworthy,” “…knowledgeable,” “…competent,” and “…likeable.” Paired-samples t-tests revealed that participants perceived the high-credibility author as more trustworthy ($M = 5.58, SD = .70$) than the low-credibility author ($M = 3.55, SD = .59$), $t(31) = 3.45, p = .002$. They also perceived the high-credibility author as more knowledgeable ($M = 5.80, SD = .60$) than the low-credibility author ($M = 3.36, SD = .57$), $t(31) = 6.88, p < .001$, and perceived the high-credibility author as more competent ($M = 5.80, SD = .65$) than the low-credibility author ($M = 3.31, SD = .49$), $t(31) = 7.94, p < .001$. However, perceptions of the high-credibility author’s likeability ($M = 3.47, SD = .62$) did not differ from perceptions of the low-credibility author’s likeability ($M = 3.80, SD = .83$), $t(31) = -1.73, p = .092$. Therefore, participants perceived the high-credibility author as more credible (competent, knowledgeable, and trustworthy) than the low-credibility author, but not simply because of liking the high-credibility author more (i.e. these results rule out a halo effect).

Analyses of the protagonists’ credibility revealed a similar pattern of results. The high-credibility protagonist was perceived as more trustworthy ($M = 5.81, SD = .72$), more knowledgeable ($M = 6.08, SD = .58$), and more competent ($M = 5.94, SD = .70$) when compared to perceptions of the low-credibility protagonist’s trustworthiness ($M = 3.30, SD = .59$), knowledge ($M = 2.83, SD = .68$), and competency ($M = 3.13, SD = .49$), supporting our hypotheses (all $t$s > 7.0, all $p$s < .01). Once again, the protagonists did not differ in likeability from the high-credibility protagonist ($M = 3.31, SD = .56$) to the low-credibility protagonist ($M = 3.55, SD = .79$), $t(31) = -1.74, p = .092$. Once again, these results support the face validity of the
materials, through suggesting that the high-credibility protagonist has higher perceived expertise but not higher likeability than the low-credibility protagonist.

In order to pretest the ego involvement (personal stakes) of the materials for Study 2, to ensure that the high ego involvement narrative did indeed feel more personal for participants in a SONA sample, I presented two interest items to 248 participants (199 female, 49 male; 207 white, 41 students of color) recruited through the Iowa State psychology department’s Mass Testing procedure. Participants were simply asked to rate their relative level of interest in and personal connection to the issue of fresh food on college campuses, and their relative level of interest in and personal connection to the issue of fresh food in professional settings (reflecting an earlier version of Study 2 materials). Each item used a 7-point scale, with higher scores indicating greater agreement. Paired-samples *t*-tests revealed that students had greater interest in the issue of fresh food on college campuses (*M* = 4.94, *SD* = 1.60) than the issue of fresh food on business parks (*M* = 4.47, *SD* = 1.51), *t*(245) = 2.447, *p* = .015. Similarly, participants rated the issue of fresh food on college campuses (*M* = 5.19, *SD* = 1.67) as more relevant to their own lives than the issue of fresh food on business campuses (*M* = 4.48, *SD* = 1.65), *t*(245) = 6.157, *p* < .001. Therefore, it is evident that Iowa State SONA pool participants will perceive an issue of fresh food on a college campus as more interesting and relevant to their own lives than an issue of fresh food on a different campus, not a college setting.

Also in preparation for an earlier set of these materials, I asked participants to complete the Social Dominance Orientation (SDO) scale (Pratto et al., 1994) and a demographic questionnaire that included religiosity (see Method for Study 2). I found that participants in this sample had relatively low levels of SDO (*M* = 2.54, *SD* = 1.00 on a 7-point scale) and that SDO was lower among Christian participants (*M* = 2.37, *SD* = .98) than non-religious participants (*M* = 2.61, *SD* = 1.07), *t*(245) = 1.938, *p* = .052. Additionally, SDO was negatively correlated with interest in the issue of fresh food on college campuses (*r* = -.18, *p* = .012) and positively correlated with interest in the issue of fresh food in professional settings (*r* = .20, *p* = .006). Therefore, it is likely that individuals with lower levels of SDO will be more interested in and connected to the issue of fresh food on college campuses than those with higher levels of SDO.
= 2.68, SD = 1.01), \( t(296) = 2.592, p = .01 \). In light of this finding, which runs counter to other literature in this area (e.g. Jost et al., 2003), I chose to add measures of SDO and religiosity to Study 2.2.
CHAPTER 2. STUDY 1: PROTAGONIST AND SOURCE CREDIBILITY

The first study examined the relative influence of protagonist and author effects on narrative persuasion, judgments of news veracity, and perceptions of source credibility. Based on the research that narrative readers tend to disregard author information in favor of focusing on cues of a story’s protagonist, this paradigm presented each participant with information about the author of a news story and about the main character. Participants either saw a high-credibility author, described as a highly experienced journalist, or a low-credibility author, described as an inexperienced blogger. They then read a news story which either described the opinion of a high-credibility protagonist, a nutrition scientist with ample expertise in decisions about food, or a low-credibility protagonist, a friend of the writer who was simply enthusiastic about food. Afterward, they rated their trust in the news story, their perceptions of the author and protagonist, and their opinion about the attitude object described in the news story. This design tested the following hypotheses:

H₁: Participants who read a news story with a protagonist high in expertise will show greater trust in the news story, agreement with the attitudes in the news story, and trust in the protagonist. Participants who read a news story with a protagonist low in expertise will show less levels of trust in the news story, agreement with the attitudes in the news story, and trust in the protagonist.

H₂: Participants who see the journalist author will report greater trust in the author than those who see the blogger author, but their post-reading attitudes and trust in the news story will not differ based on their trust in the author.

This paradigm forwarded our understanding of persuasive misinformation through examining the role of central figures such as highly-trusted celebrities in biasing individual
readers’ judgments of news stories. It gave additional insight into the relative neglect many social media users show for the sources of news stories, continuing to share information from websites with clear signals of low expertise or trustworthiness.

**Method**

**Design**

This study used a 2(author credibility: high vs. low) x 2(protagonist credibility: high vs. low) between-subjects design. Participants each read one news story, with a combination of high credibility and low credibility information for both the author and protagonist.

**Participants**

This study recruited 346 participants ($M_{age} = 41.28, SD_{age} = 1.95$), sufficient to test an interaction with small effect sizes according to conventional power recommendations, which indicate that small effects ($r \geq .1$) can be detected at $\beta = .80$ with sample sizes greater than 280 participants (Faul, Erdfelder, Lang, & Buchner, 2007). All participants were recruited through Amazon’s Mechanical Turk and compensated with $1.25$ USD for 30 minutes or less of study participation (see Table 1. This recruitment procedure allowed for a focus on online behavior, while also giving consideration to the potential for rapid responding (see Anderson et al. 2018 for a review). All participants indicated that they were older than 18 and spoke English as their first language.
Table 1. Demographic Information for Participants

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>170</td>
<td>49.1</td>
</tr>
<tr>
<td>Male</td>
<td>168</td>
<td>48.6</td>
</tr>
<tr>
<td>Other/None</td>
<td>8</td>
<td>2.3</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>European-American</td>
<td>291</td>
<td>84.1</td>
</tr>
<tr>
<td>Asian American</td>
<td>24</td>
<td>6.9</td>
</tr>
<tr>
<td>African-American</td>
<td>21</td>
<td>6.1</td>
</tr>
<tr>
<td>Latinx</td>
<td>10</td>
<td>2.9</td>
</tr>
<tr>
<td>Native American</td>
<td>3</td>
<td>.9</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>.9</td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>32</td>
<td>9.2</td>
</tr>
<tr>
<td>Some college</td>
<td>141</td>
<td>40.8</td>
</tr>
<tr>
<td>College degree</td>
<td>133</td>
<td>38.4</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>32</td>
<td>9.2</td>
</tr>
<tr>
<td>Political Affiliation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberal</td>
<td>153</td>
<td>45.3</td>
</tr>
<tr>
<td>Conservative</td>
<td>99</td>
<td>28.6</td>
</tr>
<tr>
<td>Independent</td>
<td>79</td>
<td>22.8</td>
</tr>
<tr>
<td>None</td>
<td>6</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Note. Some participants (n = 8) indicated multiple ethnicities, and some participants chose not to answer the items about education (n = 8) or political affiliation (n = 9).

Materials

All materials were approved by the Iowa State University Institutional Review Board (see Appendix D). They were presented to participants through Qualtrics survey software. The cover story around the study indicated that this study involved a test of participants’ skill at judging the veracity of news stories, in order to gather base-rate information about news perception and also information on the bases that individuals use to judge news stories. The cover story emphasized that any data would useless if participants used external websites, and that there are no right or wrong answers, but that it is extremely important to be honest in reporting one’s impressions of a news story and how one made those judgments.
Pre-reading measures

Participants completed the following pre-reading measures.

News sources questionnaire

This measure included 45 news sources in a checklist ($\alpha = .949$), where participants had the opportunity to indicate the extent to which they used each news source with answer options 0 = never, 1 = sometimes, 2 = often. The checklist contained known real (sample item: New York Times), known fake (sample item: Occupy Democrats), and known tabloid sources (sample item: Us Weekly); participants scored higher on each of these subscales to the extent that they checked off more news sources from each category. It included two items participants could check off in lieu of the sources checklist that said “I do not regularly consume news” and “I do not know where my news comes from.” There were also two open-ended items that asked “What news sources do you use that were not on the preceding list?” and “What is the single news source you use most often?”

Overclaiming questionnaire

This measure included two sets of 15 Likert-type items each in two subscales, one focused on media literacy ($\alpha = .832$) and one focused on nutrition ($\alpha = .829$). Each item began with the question stem “Please rate your familiarity with the following terms” and went on to list a set of 12 real concepts (sample item: “polysemy”) and 3 fake but obscure-sounding concepts (sample item: “MRK”) from each topic. Participants rated each of these terms for their familiarity on a scale from 1 = not at all familiar to 7 = extremely familiar. Participants are higher in media literacy and nutrition knowledge to the extent that they endorsed more real concepts and no fake concepts; participants are higher in overclaiming to the extent that they claimed knowledge of nonexistent terms (Feeny & Goffin, 2015).
Independent variable manipulation

Participants were randomly assigned to see one About the Author description and one news story, based on their Author Credibility and Character Credibility condition.

Author credibility

Any participant who saw a High Author Credibility story saw a description “Please read the following piece by Dakota Harley, a New York Times journalist who has over 30 years of experience...” Any participant who saw a Low Author Credibility story saw a description “Please read the following piece by Dakota Harley, a blogger who runs a ‘foodie’ blog and who is just starting to learn about nutrition...” (see Appendix B).

Protagonist credibility

Each participant saw a news story approximately 500 words long that contained the same information about the importance of consuming caffeine in moderation. All news stories with Low Protagonist Credibility started out “Lin Arlo is a self-described lover of all things fresh and healthy, who has a lot of opinions about nutrition...” and then describe his lack of expertise on the subject while also describing an interview where he explains why he decided to cut back on his own use of caffeine. All news stories with High Protagonist Credibility start with “Dr. Lin Arlo is a professor of Nutritional Science at Stanford University with a lot of expertise in nutrition...” and then present his personal history with drinking healthy amounts of caffeine followed by several recommendations for doing the same (see Appendix B).

Post-reading manipulation check.

All participants completed four multiple-choice questions that contained factual information about the news story. One item asked about the author of the news story, and one item about the protagonist; participants were only retained if they answered both items correctly.
(Sample item: “What is the main argument of this news story?” Correct answer: “caffeine should be consumed in moderation.”) Participants were removed from all analyses if they gave more than two wrong answers.

**Dependent variable measures**

Regardless of condition, participants completed the following scales.

**Trust in the news story**

Participants indicated their trust in news item they just read using a sliding scale to rate the statement “This news story is true.” Response options ranged from 0 = *not at all* to 100 = *absolutely*.

**Confidence in rating**

Participants indicated their confidence in their rating of the news story using a sliding scale to rate the statement “I am confident my judgment of the news story.” Response options ranged from 0 = *not at all* to 100 = *absolutely*.

**Bases for judgment**

Participants completed an open-ended item that said “Please explain the basis for your judgment of the news story’s truth value.” Participants typed open-ended responses to this item, which were later coded by two independent raters.

**Author rating**

This measure included Likert-type items with 15 adjectives ($\alpha = .927$). Following the question stem “Please rate the writer/author (Dakota Harley) on the news story you just read, using the following qualities,” participants rated how much each adjective described the author of the narrative from 7 = *strongly agree* to 1 = *strongly disagree*. The adjectives included
qualities such as “trustworthy,” and “biased” (reverse-coded). Higher scores indicate greater trust and liking for the author.

**Character rating**

This measure the same Likert-type items with the same 15 adjectives as the Author Rating scale ($\alpha = .918$). Following the question stem “Please rate the central figure (Lee Park) of the news story you just read, using the following qualities,” participants rated how much each adjective described the character with the same adjectives. Higher scores indicate greater trust and liking for the character.

**Attitudes toward caffeine**

This measure included five Likert-type items where participants rated their agreement on statements about caffeine directly relevant to the narrative ($\alpha = .754$). Answer options ranged from $7 = \text{strongly agree}$ to $1 = \text{strongly disagree}$. The items included statements such as “Caffeine should be consumed in moderation,” and higher scores indicate greater agreement with the narrative. There was also a single slider where participants rated their view of caffeine from $0 = \text{unfavorable}$ to $100 = \text{favorable}$.

**Narrative transportation**

Participants completed the short-form version of the Narrative Transportation Scale (Green & Brock, 2000). This measure included six Likert-type items such as “The news story affected me emotionally” meant to measure participants’ engagement with the news story while reading ($\alpha = .792$). Answer options ranged from $1 = \text{strongly disagree}$ to $7 = \text{strongly agree}$, with higher scores indicating greater engagement with the narrative.
**Demographic measures**

All participants reported their political affiliation (answer options: Democrat or liberal, Republican or conservative, independent, other, none), education level, age in years, gender, and ethnicity (see Table 1).

**Procedure**

All participants signed up for the study through Mechanical Turk. Upon signing up, they were directed to Qualtrics to complete this study. Participants read and electronically signed the Informed Consent document, and had the option to print it for their records. All participants then saw the cover story and indicated their understanding. Participants saw the Overclaiming Questionnaire and the News Sources Questionnaire, presented in a random order. After completing these questionnaires, all participants saw a short description of the author of the news story they read (either the High Credibility Author or the Low Credibility Author description). Participants needed to enter the author’s last name into an open-ended response to indicate that they understand the information they were been presented. They were informed that they needed to answer a few questions about the news story after reading.

Participants then saw a news story with either the High Credibility Protagonist or the Low Credibility Protagonist and caffeine information. They were required to stay on the page for at least 60 seconds, and were prompted with a warning message if they tried to proceed before that time. After reading, they completed three manipulation check items to indicate comprehension of the narrative, and then completed the News Veracity and Attitude Certainty items. They then listed thoughts, and completed the Author Judgment Scale and Protagonist Judgment Scale in a random (counterbalanced) order. After completing these measures,
participants rated their agreement with various statements about the news story, and reported their attitudes toward the subject of the news story.

When they completed all of these measures, participants then saw the item that checked their understanding that the news story they read was false. They then completed demographic measures. After this, they were fully debriefed that the news story they rated was false. The participants received a code through Mechanical Turk which allowed them to indicate their completion of the study, in exchange for $1.25.

**Analysis Plan**

Data for this study would be tested through planned comparisons between each of the four conditions. Using univariate Analysis of Variance (ANOVA), this analysis compared the mean trust in the news story (as measured with the News Veracity item) after reading each item. Planned comparisons examined High Credibility vs. Low Credibility Author versions against each other, the High Credibility vs. Low Credibility Protagonist versions against each other, and the interaction between protagonist credibility and author credibility.

If the data supported my hypotheses, then participants who saw the High Credibility Protagonist versions of the news story would indicate greater trust in the story’s veracity and greater confidence in their opinions than participants who saw the Low Credibility Protagonist versions, as indicated by mean differences in ratings on the Trust in News Story. This difference would emerge regardless of the Author Credibility condition; there would be a main effect of Protagonist Credibility but not an interaction with Author Credibility. Participants would not differ in their Trust in the News Story across Author Credibility conditions. However, they would demonstrate more attitude change following the stories that they trusted more, meaning that attitudes would closely align with Trust in the News Story.
Analyses of Variance also examined Post-Reading Attitudes and endorsement of factual information following the news stories. I predicted that individuals who reported higher Trust in the News Story would show stronger story-congruent attitudes and endorsement of story-congruent facts, whereas participants with lower Trust would show lower endorsement of story-congruent attitudes.

If there were no meaningful differences between conditions on perceived veracity of the news stories, exploratory analyses would look at possible post-hoc explanations for this pattern of results. There were exploratory analyses of the Overclaiming Questionnaire, in order to test the prediction that participants with a high degree of genuine knowledge of nutritional science would have lower trust in all news stories regardless of source credibility. Similarly, exploratory analyses of the News Sources Questionnaire tested the prediction that participants chronically poor at distinguishing real from fake news (i.e. those participants who endorsed more fake news than real news sources) would have markedly poor ability to diagnose the veracity of news stories regardless of source credibility, and would be therefore unable to make meaningful use of the source credibility cues.

Results

Study 1 tested the hypothesis that participants who saw a news story with a high-credibility protagonist would show greater trust in the news story, agreement with the attitudes endorsed by that news story, and trust in the protagonist, when compared to participants who saw a news story with a low-credibility protagonist. It also tested the hypothesis that participants who saw a news story with a high-credibility author would trust the author and the news story more than those who saw a news story with a low-credibility author, but that this effect would be smaller in magnitude than the effect of protagonist credibility.
Data Cleaning and Missingness

Of the 377 individuals who completed some subset of the study, 31 were removed for noncompliance or missing data. The 31 who were removed include 18 participants who failed to complete more than 25% of materials (usually due to timing out, because participants were given an hour to complete the study), nine who failed two or more of the attention checks to indicate comprehension of the news story, and two who entered capricious or nonsensical responses to open-ended items (e.g. listing “I didn’t memorize anything” when asked about a favorite news source).

The responses from the remaining 346 participants were examined for internal coherence by two independent coders, in order to ensure high-quality data from online sources. None of the responses outside of the 31 we removed showed nonsensical or capricious responding. Therefore, data were retained for all of those participants. It is also notable that 23 of the participants in this final data set chose to skip one or more items (most often demographic identifiers, possibly due to the sensitive nature of those questions), missingness as reflected in degrees of freedom for all analyses.

Pretesting Measures

As a measure of media literacy and news consumption habits, all participants indicated what news sources they used from a list that included mainstream (real), tabloid, and fake news sources. In this sample, 168 participants indicated that they used one or more of those news sources, while 178 indicated that they did not consume news (n = 25), did not know where their news came from (n = 30), or used other sources not on the list (n = 123). These open-ended responses were coded by two independent raters, who found that five responses were known news sources (e.g. Arutz Sheva) and 120 responses were social media sites (e.g. Twitter),
thereby leading me to add a Social Media category to the classification of news sources (see Figure 2). I was able to obtain continuous measures of individuals’ relative engagement with Fake News, Real News, and Tabloid News. For each of these measures, the total value represents the relative degree of endorsement of each of the news sources, with higher values representing greater consumption of news from those sources. However, these measures did not capture the extent to which individuals engaged with unknown sources, social media, or no news at all. Therefore, the categorical analysis was most appropriate for these data.

![Figure 2. Most Common News Source Type Reported by Each Participant](image)

Participants also reported their actual familiarity with terms related to media literacy and nutrition on the Overclaiming Questionnaire. Individuals’ actual familiarity with nutrition and media literacy was calculated as the difference between their mean reported knowledge of real topics and mean reported knowledge of topics that do not exist, in line with the analyses developed by the original authors of the scale format (Feeney & Goffin, 2015). Participants’
willingness to claim knowledge of nonexistent nutrition and media topics were positively correlated \((r = .474, p < .01)\) and general overclaiming was positively correlated with the continuous measure of individuals’ engagement with fake news (see Table 2).

Table 2. Correlations Between Overclaiming, Actual Knowledge, Fake News Consumption, and Rating of News Story

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total Overclaiming</td>
<td>3.37</td>
<td>1.39</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. Media Knowledge</td>
<td>1.17</td>
<td>.57</td>
<td>-.227*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3. Nutrition Knowledge</td>
<td>.68</td>
<td>.70</td>
<td>-.463*</td>
<td>.177*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4. Fake News Consumption</td>
<td>1.09</td>
<td>.19</td>
<td>.564*</td>
<td>-.281*</td>
<td>-.233*</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5. Trust in News Story</td>
<td>65.01</td>
<td>27.80</td>
<td>-.054</td>
<td>.101</td>
<td>.007</td>
<td>-.073</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6. Confidence in Rating</td>
<td>72.84</td>
<td>22.57</td>
<td>.103</td>
<td>.155*</td>
<td>.004</td>
<td>-.001</td>
<td>.223*</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note 1. \(p < .01\). Note 2. Overclaiming ranges from 0 to 18. Media and nutrition knowledge range from 0 to 5, and fake news consumption ranges from 0 to 5. Trust in news story and confidence in rating range from 0 to 100.*

**Dependent Variables**

Participants reported their Trust in the News Story and then their Confidence in their Rating. Participants reported moderate Trust \((M = 65.01, SD = 27.80)\) and high Confidence \((M = 72.84, SD = 22.57)\) on average. Both the Trust \((Mdn = 71.00, Range = 100)\) and Confidence \((Mdn = 79.50, Range = 100)\) measures demonstrated the full possible range of responses (see Figure 3).
Figure 3. Distribution of Trust in News Story and Confidence in Rating by Condition
Figure 3. (continued)

Note. 1 = High Author Credibility, High Character Credibility. 2 = High Author, Low Character. 3 = Low Author, Low Character. 4 = Low Author, High Character.

Given that several individuals reported 0 Confidence in their own ratings of the news story, and it would not therefore be meaningful to treat an opinion expressed with 100% Confidence the same as one expressed with little Confidence or none at all, I entered Confidence as a covariate in the measure of varying Trust across conditions of author and character credibility. A two-by-two ANOVA tested the effects of Character Credibility and Author Credibility on Trust (see Table 3).
Table 3. Analysis of Variance for Post-Reading Trust in News Story

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certainty</td>
<td>1</td>
<td>1277.18</td>
<td>17.327</td>
<td>&lt; .001</td>
<td>.048</td>
</tr>
<tr>
<td>Character Credibility</td>
<td>1</td>
<td>328.86</td>
<td>.446</td>
<td>.505</td>
<td>.000</td>
</tr>
<tr>
<td>Author Credibility</td>
<td>1</td>
<td>737.02</td>
<td>3.164</td>
<td>.048</td>
<td>.003</td>
</tr>
<tr>
<td>Author X Character</td>
<td>1</td>
<td>1767.35</td>
<td>5.217</td>
<td>&lt; .001</td>
<td>.008</td>
</tr>
<tr>
<td>Error</td>
<td>341</td>
<td>121.05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rather than the set of hypothesized main effects, I instead found evidence of an unhypothesized interaction between Author Credibility and Character Credibility. When Author Credibility was high, participants reported greater trust in the High-Credibility Character than the Low-Credibility Character (see Table 4). However, there was also a marginal effect of Author Credibility on Trust, with participants who saw the High-Credibility Author reporting greater trust across conditions of Character Credibility than participants who saw the Low-Credibility Author.

Overall, it appears that there is a greater degree of attention to the character under conditions of high author credibility, whereas individuals show fewer differences in ratings in the condition of low author credibility. However, the effect of Narrative Transportation showed an interaction wherein participants reported greater transportation if they saw the high-credibility character in the low-credibility author condition, but did not differ in transportation in the high-credibility author condition (see Table 4). This pattern of results supports the post-hoc explanation that author credibility acts as a filtering mechanism and changes the degree of attention to different aspects of the narrative.
Table 4. Conditional Means of Dependent Variables

<table>
<thead>
<tr>
<th>Measures</th>
<th>Author Credibility</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>M(SD)</td>
<td>M(SD)</td>
<td>d</td>
<td>M(SD)</td>
</tr>
<tr>
<td>Trust</td>
<td>63.81 (27.03)</td>
<td>60.62 (28.73)</td>
<td>.127*</td>
<td>64.43 (27.77)</td>
</tr>
<tr>
<td>Confidence</td>
<td>72.81 (22.66)</td>
<td>71.04 (22.96)</td>
<td>.123</td>
<td>73.53 (21.78)</td>
</tr>
<tr>
<td>Author Rating</td>
<td>52.63 (15.96)</td>
<td>56.74 (12.66)</td>
<td>.285*</td>
<td>52.92 (17.64)</td>
</tr>
<tr>
<td>Character Rating</td>
<td>54.77 (14.28)</td>
<td>55.16 (15.31)</td>
<td>.026</td>
<td>51.38 (17.31)</td>
</tr>
<tr>
<td>Narrative Transportation</td>
<td>2.66 (.96)</td>
<td>2.93 (.99)</td>
<td>.277*</td>
<td>2.80 (.92)</td>
</tr>
<tr>
<td>Caffeine Attitude</td>
<td>47.42 (19.17)</td>
<td>44.35 (16.65)</td>
<td>.171</td>
<td>42.35 (18.87)</td>
</tr>
</tbody>
</table>

Note 1. * = interaction is driven by this particular difference. For instance, the interaction of author and character credibility occurs due to the difference in Trust under conditions of high author credibility. Note 2. Confidence did not differ across conditions, and was used as a covariate in the measure of Trust by condition (see Figure 4).

Therefore, the hypotheses were only partially supported, as I did not see a main effect of character credibility on top of a main effect of author credibility (see Figure 4). Instead, there was an unhypothesized interaction between the credibility manipulations on Trust in the news story.
After reporting their Trust and Confidence, participants reported their impressions of the author and character of the news story. The Author Rating and Character Rating were presented in a random order. These ratings were strongly positively correlated with one another ($r = .811, p < .01$) and negatively correlated with Trust (see Table 3). Participants did not differ in their Author Ratings when they saw the high-credibility ($M = 52.77, SD = 16.76$) or low-credibility ($M = 55.32, SD = 14.47$) authors, $F(1, 326)^1 = 2.167, p = .142, \eta^2_p = .007$. Participants also did

---

1 Differences in degrees of freedom reflect missingness in data; all participants’ data was retained for all questionnaires they completed in full.
not differ in their Character Ratings when they saw the high-credibility ($M = 53.17$, $SD = 16.45$) or low-credibility ($M = 55.55$, $SD = 13.91$) characters, $F(1, 324) = 1.978$, $p = .161$, $\eta^2_p = .006$.

Participants reported levels of Narrative Transportation that were, on average, below the mean of the scale ($M = 2.77$, $SD = .98$, Range $= 0 – 7$), which suggests that average levels of Transportation were not high and did not indicate strong degrees of immersion into the news story (see Table 5). However, the range of levels of Transportation nevertheless captured all possible values, indicating that some participants were highly transported while others were not. Therefore, I conducted a simple moderated regression analysis, with an outcome of Trust, a predictor of Narrative Transportation, and Character Condition as a potential moderator. The analysis revealed an interaction between Narrative Transportation and Character Condition, $F(1, 316) = 3.804$, $b = -5.156$, 95% CI[-2.060, -8.215], $p = .011$. Participants who saw the High-Credibility Character demonstrated a stronger relationship between Transportation and Trust ($b = -5.187$, 95% CI[-9.440, -.933], $p = .017$ than participants who saw the Low-Credibility Character ($b = -2.126$, 95% CI[-9.608, -.645], $p = .025$. The participants who experienced greater Transportation also had higher Trust if they saw the High-Credibility Character. There was no moderating effect of Author Credibility $F(1, 316) = .838$, $b = 2.861$, 95% CI[-3.289, 9.012], $p = .361$.

Table 5. Correlations between Author Rating, Character Rating, Caffeine Attitude, Trust, and Confidence

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Author Rating</td>
<td>54.00</td>
<td>15.72</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Character Rating</td>
<td>54.40</td>
<td>15.21</td>
<td>.811*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Caffeine Attitude</td>
<td>49.54</td>
<td>11.42</td>
<td>-.098</td>
<td>-.150*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Trust in News Story</td>
<td>65.01</td>
<td>27.80</td>
<td>.232*</td>
<td>.194*</td>
<td>-.015</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Confidence in Rating</td>
<td>72.84</td>
<td>22.57</td>
<td>.154*</td>
<td>.105</td>
<td>-.032</td>
<td>.223*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>6. Narrative Transportation</td>
<td>2.77</td>
<td>.981</td>
<td>.366*</td>
<td>.303*</td>
<td>.018</td>
<td>.184*</td>
<td>.142*</td>
<td>-</td>
</tr>
</tbody>
</table>
Note 1. * p < .01. Note 2. Author and Character Ratings and Caffeine Attitude all range from 10 to 100; Narrative Transportation ranges from 0 to 7. Higher numbers indicate more positive attitudes.

Given the strength of the correlation between these two measures, I performed post-hoc measures of normality for both ratings to rule out the possibility of outliers or range restriction driving the strength of the effect. Author Rating is approximately normally distributed with a skew of .176 ($SE = .135$) and kurtosis of .300 ($SE = .268$), and Character Rating also shows normality (skew = .342, $SE = .135$, kurtosis = .307, $SE = .270$). The two measures show consistent alignment across the full range of values (see Figure 5). This pattern of results suggests a possible manipulation failure, because although individuals correctly recalled the author of the news story on the manipulation check (93% correct responses), they may have viewed the author and character as a single source or else discounted one in favor of examining the other. There was a notably strong correlation between the two measures ($r = .811$, $p < .01$, 95%CI: [.774, .910], $r^2 = .658$) which I had not predicted.

The strength of this correlation between Character Rating and Author Rating did not vary meaningfully between conditions (from $r = .892$ to $r = .733$), and did not differ in strength across participants who saw the Character Rating Scale first ($r = .831$, 95% CI:[.757, .956], $p < .01$, $r^2 = .691$) or the Author Rating Scale first ($r = .790$, 95%CI: [.732, .914], $p < .01$, $r^2 = .624$), which suggests that the order of elements did not influence participants’ responses and there was not a difference between the correlations ($z = 1.028$, $SEM = 8.202$, $p = .152$). The elements were presented one at a time in random order, and there is not evidence that one order of items led to greater correspondence between ratings than the other.
After reading, participants also reported their attitudes toward caffeine. The ANOVA revealed no differences in participants’ attitudes toward caffeine by Author Credibility or Character Credibility, and an interaction that did not achieve statistical significance (see Table 6). Therefore, there is no evidence that participants differed in their attitudes toward caffeine after reading on the basis of which news story they saw. Trust also did not predict attitudes toward caffeine (see Table 5), so this finding suggests that participants’ attitudes toward caffeine did not change regardless of the news story.
Table 6. Analysis of Variance for Post-Reading Attitudes Toward Caffeine

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Character Credibility</td>
<td>1</td>
<td>154.17</td>
<td>.454</td>
<td>.501</td>
<td>.001</td>
</tr>
<tr>
<td>Author Credibility</td>
<td>1</td>
<td>35.04</td>
<td>.103</td>
<td>.748</td>
<td>.000</td>
</tr>
<tr>
<td>Author X Character</td>
<td>1</td>
<td>1164.90</td>
<td>3.431</td>
<td>.055</td>
<td>.010</td>
</tr>
<tr>
<td>Error</td>
<td>335</td>
<td>339.48</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1. A subset of participants did not complete this measure, as reflected in the degrees of freedom.

In order to examine the relative influence of Author Rating and Character Rating on post-reading Trust in the News Story, I used hierarchical linear regression analysis to examine these relationships. The analysis revealed that Author Rating is a positive predictor of Trust ($b = .518$, $SE = .097$, $t = 4.293$, $p < .001$) but that Character Rating does not explain additional variance in Trust beyond Author Rating ($b = -.130$, $SE = .172$, $t = -.756$, $p = .450$), likely due to multicollinearity with Author Rating (see Figure 5). Overall, both ratings explained 5.8% of the variance in Trust, $F(2, 310) = 9.488$, $p < .001$, $R^2 = .058$. Participants’ trust and liking for the author thus positively predicted their trust for the news story as a whole.

These findings provide partial support for the hypothesis that participants would report greater Trust to the extent that they saw a news story with a High-Credibility Author and a High-Credibility Character. They suggest that participants who saw the news story with the High-Credibility Author reported the greatest level of trust, and also that participants’ attitudes toward the Author and the Character were closely aligned.

**Discussion**

The results of this study indicate that participants do indeed report greater trust of a news story if that story features a high-credibility author, when the news story in question also features
a high-credibility protagonist. When participants saw a news story allegedly written by a high-credibility author, they reported greater trust when it also contained a high-credibility character than a low-credibility character. There was an overall effect of author credibility, with participants reporting greater trust in a news story if it had a high-credibility author than a low-credibility author. These findings suggest that author credibility may act as a filtering mechanism for trust in a news story, and that participants are less influenced by character credibility when the credibility of authors is low. The results also suggest that individuals’ perceptions of authors and characters are strongly linked, such that higher trust and liking for authors predicts higher trust and liking for characters.

One reason that the interaction between author credibility and protagonist credibility may have occurred is due to the interaction of a high-credibility author with a low-credibility protagonist and vice versa, in the conditions where this juxtaposition occurred. It is possible that perceptions of the character as low-credibility then reflected poorly on the author. For instance, if an alleged mainstream journalist interviews an individual who knows almost nothing about caffeine when writing about the health effects of caffeine, that decision reflects poorly on the journalist to the extent that the individual being interviewed is perceived as inexpert. Similarly, a blogger author may be untrustworthy, but could increase perceptions of trustworthiness through interviewing a highly expert professor from a relevant field about the health effects of caffeine. The relatively lower trust for authors in the conditions where the protagonist was low-credibility, and lower trust for protagonists interviewed by low-credibility authors, could then be a product of participants observing this discrepancy.

These findings suggest that these participants were able to judge the quality of the news story at least partially using the quality of the authors. Although these findings do not support my
hypothesis, they do suggest that this sample included many individuals who used the cue of author credibility in an appropriate way to base their judgment of the news story. It also suggests that low-credibility authors can successfully cause participants to disengage from news stories that are not likely to be trustworthy.

**Limitations**

The main limitation of this research study is that it sought to examine the behavior of individuals in their everyday lives in an online setting, and may have captured a subset of participants who did not put in the effort necessary to complete all measures in a meaningful way. For instance, although all data were carefully examined for careless and capricious responding, and although the scales did include attention checks, it is still possible that individuals succeeded in participating automatically or in ways that did not align with the instructions (e.g. through using Google to distinguish real from fake items on the Overclaiming Questionnaire). There were two clear instances of individuals responding in markedly abnormal ways that we successfully removed from analyses, but the lack of formal online screening for “bot” activity means that there is still a possibility that some individuals included in the study were using copy-paste or other rapid completion techniques to complete the study.

The online sample also excluded 153 individuals who indicated their interest in participating in the study through formally accepting the Human Intelligence Task (HIT) through the Mechanical Turk system, but then never provided any responses to items within the study itself. It is not possible to determine how these individuals may have differed from the individuals who did complete the study, because no data exist for them, but the data set may have incurred a volunteer effect by failing to give these individuals the chance to participate. Given the pattern of individuals who did not fully complete the study, and the fact that the HIT
was set to a relatively short completion time (60 minutes to complete all materials) compared to other HITs on the MTurk site, it is possible that individuals who did not realize they had a time limit for the task accepted it and then left to complete other tasks, failing to return within the time limit. If these non-responders differ systematically from the responders, then this unknown source of extraneous variance is undetectable under the current conditions.

One other minor consideration concerns the News Sources Questionnaire. The original data analysis plan intended to use responses to this questionnaire as a single continuous measure of media literacy, placing all respondents on a spectrum from those who are highly engaged in several high-quality news sources to those who are primarily engaged with low-quality or fake news. However, the large proportion of individuals who reported social media sources (over one-third of responses, the most popular type of response) for their news are not possible to classify nicely on this spectrum. For instance, an individual who follows the Washington Post and Reuters on Twitter will see primarily real news, but an individual who follows Breitbart and Occupy Democrats on Twitter will see primarily fake news, and in each case the individual simply reported a primary news source of “Twitter.” Asking a subset of participants follow-up probes also did not reveal any further information, as many individuals lacked insight as to the actual source of the information they saw on social media feeds. This low insight suggests poor media literacy and greater risk of viewing fake news, but ultimately all responses to do with social media reflect an unknown degree of engagement with fake news. The inability to distinguish the media literacy of this subset of users also means that all analyses of media literacy by the variables of interest are necessarily constrained.
Implications

This study provided preliminary evidence that authors as well as characters can act as a form of source credibility cue in the context of assessing potential fake news. The results do not provide an unequivocal picture of individuals’ basis for their judgment, and also cannot yet distinguish between characters’ influence on author perceptions and vice versa. Study 2 aimed to clarify the bases that individuals used to judge character credibility, going beyond the emphasis on expertise in Study 1 to contrast character expertise against similarity between characters and readers.
CHAPTER 3. STUDY 2: SOURCE CREDIBILITY BY EGO INVOLVEMENT

Study 1 examined the relative influence of different types of sources. Study 2 then sought to clarify the qualities of these sources most important for influencing participants’ judgments. The second study examined two different facets of source credibility on individuals’ judgment of news stories. In this case, the paradigm expanded upon Study 1 through pitting two different facets of source credibility against one another to develop a more nuanced understanding of which components of source credibility would be most important for judgments of news stories. Wilson and Sherrell (1993) describe differences in source expertise, or the degree of knowledge a source appears to have on a relevant subject, and source attractiveness, or the degree to which the source is likeable and similar to the recipient. There is some evidence (e.g. Zerback and Peter, 2018) that these source qualities have different types of influence across different topics within a persuasion context. Fake news often persuades through familiar sources perceived as close to the individual reader, whether those are social media friends or simply accounts on Instagram with locations or interests in common with the individual. This study looked at the relative level of scrutiny individuals devoted to these kinds of messages with sources similar to the message receiver, when compared to messages with sources that have lower similarity but higher expertise. It tested the relative influence of these source qualities across different levels of ego involvement, or personal motivation to consider a message effortfully.

This paradigm presented participants with cues that signaled these two disparate types of source credibility, and examined their influence under different conditions of ego involvement. It recruited a sample of college students from the United States 18 years of age or older, and presented them with either a topic highly relevant to their immediate concerns or less relevant to their concerns. It also presented either a source similar to participants (a young college student)
or dissimilar (an older researcher). Thus, participants either saw a source high in expertise and low in similarity (a researcher who has not attended college in many years) or a source high in similarity and low in expertise (a current college student). They read either a news story that describes the difficulty of finding fresh food on a college campus (high ego involvement) or a news story that describes the difficulty of finding fresh food within an assisted living facility (low ego involvement). After reading the news story, participants again rated their trust in the source, their trust in the news story, and their attitudes toward the attitude object of the news story. The data were tested for interactions of ego involvement by source expertise and likeability. Thus, this paradigm tested the following hypotheses:

\[ H_3: \] Participants who read a news story featuring a high-expertise but low-similarity character on a topic with low ego involvement will report higher levels of trust in the story, trust in the source, and attitude change.

\[ H_4: \] Participants who read a news story featuring a low-expertise but high-similarity character on a topic with high ego involvement will report higher levels of trust in the story, trust in the source, and attitude change.

To the extent that there is a high degree of alignment between the source of the news story and the topic of the news story, participants reported greater concern with food deserts and nutritional scarcity (in line with the view endorsed by the news story). Participants who read a news story with a high degree of ego involvement often scrutinize the message more carefully (Petty et al., 1981) but should also regard the high-similarity low-expertise source as more valid than the low-similarity high-expertise source. Participants who read a news story with a low degree of ego involvement were predicted to scrutinize the message less, and also use the expertise of the source (but not the similarity of the source) as a cue that a message is valid,
thereby finding the high-expertise low-similarity source more persuasive than the low-expertise high-similarity source.

**Study 2.1**

The first version of Study 2 presented participants with all materials as described above. It initially recruited a sample of 384 student participants ($M_{age} = 19.70$, $SD_{age} = 2.18$), 203 women and 180 men, and presented them with all of the materials also used for Study 2.2. However, the original version of the study contained a coding error in the manipulation check item “Who does this news story focus on?”; rather than being prompted to reread the news story more closely if they chose any answer but the correct answer “a college student,” participants were instead prompted to read the news story more closely if they chose any answer but the incorrect (for that condition) answer of “a microbiology researcher.” This error thereby implied to a subset of participants that they had read the High Protagonist Expertise version of the news story, when they had in fact read the Low Protagonist Expertise version. Of the 96 participants who saw the incorrect prompt, 78 (81.3%) changed their answers in response to the prompt and instead indicated that they had read a news story about a microbiology researcher, or about one of the other distractor options (“a human resources manager,” “a professional chef,” or “a pizza delivery driver”). Two participants from this particular condition indicated in the debriefing procedure or in open-ended items that they thought they had in fact seen a news story about a microbiology researcher, probably due to confusion created by the prompt.

Given the specific nature of this error, including the fact that it created misleading impressions about one of my independent variables among a subset of participants, I collected two additional versions of Study 2 data. The first data collection procedure sought to manage limited resources through only collecting an additional set of data focusing on the condition that
had previously seen the misleading manipulation check item. Participants’ demographics, trust of the story, confidence in their ratings, and post-reading attitudes were comparable between the first and second versions of this particular condition. Study 2.1 and Study 2.2 have similar patterns of correlations between Character Rating and Trust ($r = .295, p < .001$), Attitude Toward Food Deserts and Trust ($r = -.139, p = .013$), and other key outcomes. The data summaries and analyses for Study 2.1 can be found in full in Appendix C.

**Study 2.2**

With the remaining resources available to me, I conducted Study 2.2, identical to Study 2.1 in almost all ways. There were two key changes, however. First, Study 2.2 incorporated a corrected manipulation check item that prompted participants with accurate information about all versions of the news story, such that participants were only prompted to read the news story more carefully if they incorrectly chose an option other than “a college student” for the Low Protagonist Expertise condition and an option other than “a microbiology researcher,” so participants were all prompted with the correct response following the news story. The second change was to the post-reading measures. In light of research conducted between Study 2.1 and Study 2.2, I also sought to explore the relationship between not only Social Dominance Orientation and engagement with fake news, but also between religious motivations and these measures.

The procedures and materials for Study 2.1 and Study 2.2 were otherwise identical. However, Study 2.2 successfully implemented random assignment to conditions, while Study 2.1 suffered a failure of randomization, and therefore I will here discuss Study 2.2 in detail. For Study 2.1, please see Appendix C.
Method

Design

This study used a 2(source expertise: high vs. low) x 2(ego involvement: high vs. low) between-subjects design. Participants each saw one news story, on a subject that involved both high or low personal involvement and high or low author expertise.

Participants

This study recruited 398 people (\(M_{age} = 19.71, SD_{age} = 2.87\)), sufficient to test an interaction with small effect sizes according to conventional power recommendations, which indicate that small effects \((r \geq .1)\) can be detected at \(\beta = .80\) with sample sizes greater than 280 participants (Faul et al., 2007).

All participants were recruited through the Iowa State University SONA subject pool (see Table 7). These student participants received 1 class credit for each 30 minutes of participation. Exclusion criteria for this study (noncompliance, fast reading, English as a second language, age under 18) remained the same as for Study 1.

Materials

Participants signed up for the study through their university’s SONA system. All materials were approved by the Iowa State University Institutional Review Board (see Appendix D). They completed all materials on the Qualtrics survey software on their personal computers.
Table 7. Demographic Information for Participants

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>276</td>
<td>69.3</td>
</tr>
<tr>
<td>Male</td>
<td>121</td>
<td>30.4</td>
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<tr>
<td>Other/None</td>
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<td>.3</td>
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<tr>
<td>Ethnicity</td>
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<tr>
<td>Religious Affiliation</td>
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<td>Christian</td>
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<tr>
<td>Nonreligious</td>
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<td>1.0</td>
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<td>Buddhist</td>
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<td>.8</td>
</tr>
<tr>
<td>Jewish</td>
<td>2</td>
<td>.5</td>
</tr>
</tbody>
</table>

*Note. This political affiliation category includes both participants who chose “none” \(n = 80\) for their political affiliation and those who did not respond \(n = 3\).

**Pre-reading measures**

Participants completed the same News Sources Questionnaire \(\alpha = .915\) and the Overclaiming Questionnaire (Media Literacy \(\alpha = .908\), Nutrition \(\alpha = .857\)) as in Study 1. They then completed the Trust in Mass Media scale, with three items measuring trust for media with answer options ranging from 4 = *A great deal* to 1 = *Not at all* (sample item: “How much trust do you have in the mass media when it comes to reporting the news accurately?”, \(\alpha = .804\)).
Similarly, the Trust in Government scale had six items measuring trust in the U.S. government with answer options ranging from $4 = \text{A great deal}$ to $1 = \text{Not at all}$ (sample item: “The government does its best to take care of its citizens”, $\alpha = .779$).

**Independent variable manipulation**

Participants saw a news story about the difficulty of securing a nutritious diet on a college campus (High Ego Involvement condition) or a news story about the difficulty of securing a nutritious diet while in assisted living (Low Ego Involvement condition); these news stories were presented randomly. The High Ego Involvement story featured facts and experiences relevant to college students, whereas the Low Ego Involvement story will featured facts and experiences relevant to older adults in assisted living facilities.

Each news story in the High Source Expertise condition started out with a statement indicating that the source had a high degree of expertise but a low degree of similarity (“Although a few decades removed from current trends in health and dieting, Dr. Park has also spent most of that time developing expertise in the molecular structure of food…”) to the participant. Each news story in the Low Source Expertise condition started out with a statement indicating that the source had a high degree of similarity to the participants but a low degree of expertise (“Lee has attended a large Midwestern university for the last two years, and knows better than anyone how difficult it can be to get good information about food—much less good food…”) in this particular area (see Appendix B).

**Dependent variable measures**

Participants completed the same measures of Trust in the News Story and Confidence in Rating as in Study 1. They reported their Author Rating ($\alpha = .806$) and Character Rating ($\alpha = .851$) on the same scales as Study 1. The Post-Reading Attitude item contained two subscales,
one relating to food deserts in general (sample item: “Food deserts are concerning”, $\alpha = .455$) and one relating to the specific nutritional program described in the narrative (sample item: “This program is helpful”, $\alpha = .541$). They then reported their Narrative Transportation on the same scale as Study 1 ($\alpha = .774$).

Participants also completed the Social Dominance Orientation scale, a 16-item measure of participants’ attitudes toward differences between groups in society ($\alpha = .907$). Sample items included “Inferior groups should stay in their place,” and answer options ranged from $1 = strongly disagree$ to $7 = strongly agree$. Higher scores indicate participants hold greater views of the world as filled with struggles between groups, and indicate greater rationalization of social inequality to the extent that their own groups get ahead. If participants indicated any religious affiliation, they also completed the Religious Motivations scale, a 12-item measure with two subscales (Pratto et al., 1994). The Intrinsic Religiosity subscale measured participants’ tendency to be religious for internal and personal reasons (6 items, sample item: “I pray because I enjoy it”, $\alpha = .898$). The Extrinsic Religiosity subscale measured participants’ tendency to be religious for external and self-presentation reasons (6 items, sample item: “I attend religious services because one is supposed to go”, $\alpha = .820$). All items had answer options ranging from $7 = strongly agree$ to $1 = strongly agree$. In past studies, these subscales have been independent measures of different motivations (Hoge, 1972). Participants also completed the same demographic measures as in Study 1.

**Procedure**

Participants signed up to complete the study though the Iowa State University SONA system. They completed a procedure similar to that of Study 1; all participants were informed that they would read a news story. They completed pre-reading measures, saw either the High
Ego Involvement story or the Low Ego Involvement story, and then rated the story. Once they rated the news story for its veracity, persuasiveness, and source credibility, participants then completed the same debriefing procedure as Study 1. They were then thanked and receive a debriefing form, along with one class credit for their 45 minutes or less of participation.

**Analysis Plan**

Data for this study will be tested through planned comparisons between each of the four conditions. Analysis of variance (ANOVA) will compare the mean trust in the news story (as measured with the News Veracity item) after reading each story. Planned comparisons will examine the effect of High Ego Involvement against Low Ego Involvement and of High Source Expertise against Low Source Expertise, and the interaction of Ego Involvement with Source Expertise.

If the data supported my hypothesis, then there would be an interaction between Ego Involvement and Source Expertise wherein participants who saw the High Ego Involvement story would find the Low Source Expertise version more trustworthy than the High Source Expertise version, and participants who saw the Low Ego Involvement story would find the High Source Expertise version more persuasive than the Low Source Expertise version. The participants who saw the High Ego Involvement and Low Source Expertise version of the story would not differ in their mean rating of the story’s veracity from the participants who saw the Low Ego Involvement and High Source Expertise story, but both groups would indicate greater trust in the story than participants who saw the High Ego Involvement and High Source Expertise or the Low Ego Involvement and Low Source Expertise versions of the story.

Once again, I hypothesized that patterns of attitude change would parallel patterns of belief, with participants indicating greater attitude change following news stories that inspired
higher perceptions of veracity. The Overclaiming and News Sources Questionnaires would act as exploratory background, and could help to explain potential null effects through providing evidence for the interpretation that participants differed in their ability to diagnose false news.

**Results**

Study 2.2 tested the hypothesis that participants with low ego involvement who saw a news story with a high-expertise (low-similarity) protagonist would show greater trust and attitude change when compared with participants who read a news story with a low-expertise protagonist. It also tested the hypothesis that participants with high ego involvement who saw a news story with a high-expertise protagonist would show less trust and attitude change when compared to participants who saw a news story with a low-expertise protagonist. Said another way, I predicted that high ego involvement would lead participants to trust a low-expertise high-similarity protagonist more, while low ego involvement would lead participants to trust a high-expertise low-similarity protagonist more.

**Data Cleaning and Missingness**

Of the 430 individuals who completed some subset of the second version of this study, 32 were removed for noncompliance or missing data. The 32 who were removed include 12 participants who failed to complete more than 25% of materials (possibly due to timing out) and 20 participants who were removed for failing attention checks about the news story. Therefore, the final sample included 398 participants. It is also worth noting that 12 of the participants in this final data set chose to skip one or more items (most often demographic identifiers, possibly due to the sensitive nature of those questions), missingness as reflected in degrees of freedom for all analyses.
**Predictor Variables**

Participants saw the same measures of media literacy and news consumption habits as in Study 1. In this sample, 180 participants indicated that they used one or more of those news sources, while 218 indicated that they do not consume news (n = 137), or used other sources not on the list (n = 81). These open-ended responses were coded by the same two independent raters as in Study 1. They found that every single one (n = 81) of the open-ended responses in the student sample listed a social media source (e.g. Snapchat), thereby collapsing the “Other” and “Source Unknown” categories into the “Social Media” category for this particular sample (see Figure 6). Once again, I was able to obtain continuous measures of individuals’ relative engagement with Fake News, Real News, and Tabloid News, but these sources did not capture the full range of engagement with news. Consistent with Gunther et al. (2018), engagement with fake news approached being higher among Conservative participants (M = 2.05, SD = .09) than Liberal participants (M = 2.10, SD = .16), t(152) = 2.167, p = .032, although the effect size was quite small (95% CI: [.004, .082]).
Participants also completed the same measures of actual media literacy, nutrition, and overclaiming knowledge in the Overclaiming Questionnaire. Willingness to claim knowledge of nonexistent nutrition and media topics was once again positively correlated ($r = .757, p < .01$), and general overclaiming was once again positively correlated with willingness to engage with fake news ($r = .288, p < .01$). However, participants in this sample also showed a positive correlation between endorsement of real and nonsensical media literacy ($r = .409, p < .01$) and nutrition knowledge items ($r = .660, p < .01$), indicating possible evidence of acquiescence bias (see Table 8).
Table 8. Correlations Between Overclaiming, Actual Knowledge, Fake News Consumption, and Rating of News Story

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total Overclaiming</td>
<td>1.78</td>
<td>.71</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Media Knowledge</td>
<td>1.69</td>
<td>.59</td>
<td>.409*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Nutrition Knowledge</td>
<td>1.99</td>
<td>.67</td>
<td>.660*</td>
<td>.431*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Fake News Consumption</td>
<td>2.08</td>
<td>.15</td>
<td>.288*</td>
<td>.365*</td>
<td>.205*</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Trust in News Story</td>
<td>40.25</td>
<td>25.80</td>
<td>.134*</td>
<td>.052</td>
<td>.079</td>
<td>.159*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>6. Confidence in Rating</td>
<td>63.50</td>
<td>23.82</td>
<td>- .031</td>
<td>.093</td>
<td>.082</td>
<td>-.078</td>
<td>-.121*</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note 1. *p < .05. *Note 2. Overclaiming ranges from 0 to 5. Media and nutrition knowledge range from 0 to 5, and fake news consumption ranges from 0 to 5. Trust in news story and confidence in rating range from 0 to 100.

**Dependent Variables**

Participants reported their Trust in the News Story on the same 0 (*no trust*) to 100 (*absolute trust*) scale as in Study 1, and Confidence in Rating from 0 (*no confidence*) to 100 (*absolute confidence*) as well. In this study, participants reported moderate Trust (*M* = 40.25, *SD* = 25.80) and high Confidence (*M* = 63.50, *SD* = 23.92). As with the previous news story, the Trust (*Md* = 38.50, *Range* = 100) and Confidence (*Md* = 7.00, *Range* = 100) measures demonstrated the full possible range of responses. Once again, I entered Confidence as a covariate in the measure of varying Trust across conditions of ego involvement and character credibility (see Figure 7).
Figure 7. Distribution of Trust in News Story and Confidence in Rating by Condition
In order to test the hypothesis that participants who saw a high ego involvement narrative would trust the high expertise (low similarity) character more, while participants who saw the low ego involvement narrative would trust the low expertise (high similarity) character more, I examined the difference in mean Trust across conditions of character credibility and ego involvement. A full factorial ANOVA examined the influence of Condition on Trust, with Confidence as a covariate, and found that participants’ Trust varied based on the Condition they saw, $F(1, 398) = 6.070, p = .014, \eta_p^2 = .015$. Pairwise comparisons with Bonferroni correction revealed that participants in the Low Ego Involvement, High Expertise condition ($M = 38.19, SD$...
= 25.83) differed in their Confidence-weighted Trust from participants in the Low Ego Involvement, Low Expertise condition \((M = 40.71, SD = 24.43), F(3, 393) = -4.87, p = .014, 95\% CI[-9.67, -4.9]\).

Participants in the Low Ego Involvement, High Expertise condition also differed in their mean trust from those in the High Ego Involvement, High Expertise condition \((M = 40.53, SD = 25.24), F(3, 393) = -3.941 p = .021, 95\% CI[-8.57, -1.06]. Participants’ Trust did not differ between the Low Ego Involvement, High Expertise condition and the High Ego Involvement, Low Expertise condition \((M = 39.65, SD = 27.85), F(3, 393) = 1.46, p = .168. Pairwise comparisons found no other differences between conditions (see Table 9).

When I further decomposed the effect of ego involvement on weighted Trust, I found a marginal effect wherein Trust did not quite differ between participants in the High Ego Involvement conditions \((M = 40.05, SD = 26.54) and Low Ego Involvement conditions \((M = 39.42, SD = 25.11), F(1, 397) = 2.99, p = .051, \eta^2_p = .015. There was also not an effect of character expertise alone on weighted Trust; participants did not differ in their Trust if they saw the High Expertise protagonist \((M = 39.32, SD = 25.49) or the Low Expertise protagonist \((M = 40.15, SD = 26.15), F(1, 397) = .109, p = .741, \eta^2_p < .001. Therefore, I found partial support for the hypothesized interaction between ego involvement and protagonist expertise, and no main effect of either variable (see Figure 8).
Table 9. Conditional Means of Dependent Variables

<table>
<thead>
<tr>
<th>Measures</th>
<th>Ego Involvement</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Character Expertise</td>
<td>Character Expertise</td>
<td>Character Expertise</td>
<td>Character Expertise</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M(SD)</td>
<td>M(SD)</td>
<td>M(SD)</td>
<td>M(SD)</td>
<td>M(SD)</td>
<td>M(SD)</td>
</tr>
<tr>
<td>Trust</td>
<td>41.46 (25.83)</td>
<td>38.35 (24.43)</td>
<td>.124</td>
<td>40.55 (27.85)</td>
<td>39.55 (25.23)</td>
<td>.038</td>
<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>62.95 (24.25)</td>
<td>66.13 (22.51)</td>
<td>.136</td>
<td>61.98 (26.44)</td>
<td>62.85 (21.90)</td>
<td>.036</td>
<td></td>
</tr>
<tr>
<td>Author Rating</td>
<td>62.89 (7.92)</td>
<td>62.34 (9.10)</td>
<td>.064</td>
<td>63.71 (9.86)</td>
<td>63.38 (7.64)</td>
<td>.037</td>
<td></td>
</tr>
<tr>
<td>Character Rating</td>
<td>51.69 (10.62)</td>
<td>48.67 (11.43)</td>
<td>.274</td>
<td>54.16 (12.10)</td>
<td>50.43 (10.76)</td>
<td>.326</td>
<td></td>
</tr>
<tr>
<td>Narrative Transportation</td>
<td>3.38 (.94)</td>
<td>3.52 (1.01)</td>
<td>.143</td>
<td>3.37 (1.08)</td>
<td>3.55 (1.04)</td>
<td>.170</td>
<td></td>
</tr>
<tr>
<td>Food Desert Attitude</td>
<td>38.66 (19.15)</td>
<td>40.51 (21.55)</td>
<td>.091</td>
<td>45.07 (22.85)</td>
<td>39.56 (18.52)</td>
<td>.265</td>
<td></td>
</tr>
<tr>
<td>Nutrition Attitude</td>
<td>49.55 (17.28)</td>
<td>46.04 (16.12)</td>
<td>.210</td>
<td>44.89 (20.95)</td>
<td>47.03 (14.87)</td>
<td>.118</td>
<td></td>
</tr>
</tbody>
</table>
After reporting their Trust and Confidence, participants also reported their impression of the character of the news story, and the author. No specific author information was present for this particular paradigm outside of the author’s name and the news story itself, but it was nevertheless revelatory to collect information about impressions of the writer. Participants completed first the Character Rating and then the Author Rating. Two-by-two ANOVA revealed a main effect of character condition on Character Rating, but no effect of ego involvement on Character Rating (see Table 10). Post-hoc tests revealed that participants who saw the low expertise but high similarity character in the high ego involvement story showed higher positive
ratings for the character than did participants in the other three conditions, $F(1, 388) = 8.970, p = .003, \eta^2_p = .023$ (see Table 11).

### Table 10. Analysis of Variance for Character Rating

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Character Expertise</td>
<td>1</td>
<td>1108.54</td>
<td>8.751</td>
<td>.003</td>
<td>.022</td>
</tr>
<tr>
<td>Ego Involvement</td>
<td>1</td>
<td>134.88</td>
<td>3.433</td>
<td>.065</td>
<td>.009</td>
</tr>
<tr>
<td>Expertise X Involvement</td>
<td>4</td>
<td>12.58</td>
<td>.099</td>
<td>.735</td>
<td>.001</td>
</tr>
<tr>
<td>Error</td>
<td>389</td>
<td>126.68</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

However, two-by-two ANOVA did not reveal any effect of either character expertise or ego involvement on ratings of the narrative’s author (see Table 11).

### Table 11. Analysis of Variance for Author Rating

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Character Expertise</td>
<td>1</td>
<td>18.70</td>
<td>.428</td>
<td>.619</td>
<td>.001</td>
</tr>
<tr>
<td>Ego Involvement</td>
<td>1</td>
<td>84.14</td>
<td>1.115</td>
<td>.292</td>
<td>.003</td>
</tr>
<tr>
<td>Expertise X Involvement</td>
<td>4</td>
<td>1.06</td>
<td>.014</td>
<td>.906</td>
<td>.000</td>
</tr>
<tr>
<td>Error</td>
<td>386</td>
<td>75.44</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In order to examine the role of differences in Character Rating on Trust, I performed a post-hoc exploratory analysis of the potential moderating effect of ego involvement and character expertise on the relationship between Character Rating and Trust. In order to explore this effect further, I performed simple moderated regression analysis, with an outcome of Trust, a predictor of Character Rating, and condition as a potential moderator. This analysis revealed an interaction between Character Rating and Condition, $F(3, 382) = 4.410, \beta = .823, 95\% \text{ CI} [.350,
1.295], \( p = .001 \). Participants in the High Character Expertise, Low Ego Involvement condition showed no relationship between Character Rating and Trust, \( \beta = .391 \) 95%CI[-.085, .867], \( p = .107 \).

However, participants in the High Character Expertise, High Ego Involvement condition did show a relationship, \( \beta = .456 \) 95%CI[.028, .884], \( p = .037 \), as did those in the Low Character expertise conditions, whether Low Ego Involvement, \( \beta = .7823 \) 95%CI[.350, 1.295], \( p = .001 \), or in the High Ego Involvement narrative, \( \beta = .720 \) 95%CI[.308, 1.132], \( p = .001 \). The participants who saw the high-expertise character in the low-involvement narrative demonstrated less of a relationship between Character Rating and Trust than those in the other conditions (see Figure 9).

Participants reported levels of Narrative Transportation that were below the mean of the scale on average (\( M = 3.45 \), \( SD = 1.02 \), \( Range = 0 – 7 \)), which suggests that Transportation was relatively low for this particular narrative. Participants did not differ in Narrative Transportation across conditions of character expertise or ego involvement, \( F(1,394) = .029, p = .865, \eta^2_p < .001 \). However, individuals’ Narrative Transportation correlated positively with their Character Ratings (\( r = .342, p < .001 \)) and Author Ratings (\( r = .294, p = .003 \)), suggesting that individuals who experienced greater Transportation also held more positive attitudes toward the author and protagonist (see Table 12).
Figure 9. Relationship of Trust in News Story and Character Rating by Condition
Table 12. Correlations between Author Rating, Character Rating, Caffeine Attitude, Trust, and Confidence

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Author Rating</td>
<td>63.08</td>
<td>8.67</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Character Rating</td>
<td>51.22</td>
<td>11.39</td>
<td>.422*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Nutrition Attitude</td>
<td>36.63</td>
<td>18.73</td>
<td>.209*</td>
<td>.279*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Food Desert Attitude</td>
<td>69.88</td>
<td>16.76</td>
<td>-.102*</td>
<td>-.158*</td>
<td>-.326*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Trust in News Story</td>
<td>40.25</td>
<td>25.80</td>
<td>.060</td>
<td>.254*</td>
<td>.152*</td>
<td>-.161*</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Confidence in Rating</td>
<td>63.50</td>
<td>23.92</td>
<td>-.096</td>
<td>-.213*</td>
<td>-.052</td>
<td>.106*</td>
<td>-.121*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7. Narrative Transportation</td>
<td>3.45</td>
<td>1.02</td>
<td>.294*</td>
<td>.342*</td>
<td>.131*</td>
<td>-.100</td>
<td>.187*</td>
<td>-.202*</td>
<td>-</td>
</tr>
</tbody>
</table>

Note 1. *p < .01. Note 2. Author and Character Ratings and Caffeine Attitude all range from 10 to 100; Narrative Transportation ranges from 0 to 7. Higher numbers indicate more positive attitudes.

Participants also reported their attitudes toward the nutritional program described in the narrative and their attitudes toward food deserts as a serious issue worth learning about. There was a moderate negative relationship between these two attitudes, which makes sense given their opposing positions ($r = -.326, p < .001$), and there was a weak positive relationship between Narrative Transportation and attitudes toward the nutritional program ($r = .131, p = .011$), as well as between attitudes toward the program and Trust ($r = .152, p = .003$).

Across conditions of ego involvement and character credibility, participants did not differ in their attitudes toward the nutritional program (see Table 13).
Table 13. Analysis of Variance for Post-Reading Attitudes Toward Nutritional Program

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Character Expertise</td>
<td>1</td>
<td>47.03</td>
<td>.154</td>
<td>.695</td>
<td>.000</td>
</tr>
<tr>
<td>Ego Involvement</td>
<td>1</td>
<td>333.62</td>
<td>1.093</td>
<td>.269</td>
<td>.003</td>
</tr>
<tr>
<td>Expertise X Involvement</td>
<td>1</td>
<td>791.09</td>
<td>2.591</td>
<td>.108</td>
<td>.007</td>
</tr>
<tr>
<td>Error</td>
<td>392</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

However, participants did differ in their post-reading attitudes toward food deserts (see Table 13), with participants who saw the Low Expertise character in the High Ego Involvement narrative rating food deserts as most serious, followed by participants in the other conditions (see Table 14).

Table 14. Analysis of Variance for Post-Reading Attitudes Toward Food Deserts

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Character Expertise</td>
<td>1</td>
<td>342.82</td>
<td>.782</td>
<td>.377</td>
<td>.002</td>
</tr>
<tr>
<td>Ego Involvement</td>
<td>1</td>
<td>742.41</td>
<td>1.740</td>
<td>.188</td>
<td>.004</td>
</tr>
<tr>
<td>Expertise X Involvement</td>
<td>1</td>
<td>1366.37</td>
<td>3.614</td>
<td>.008</td>
<td>.009</td>
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<tr>
<td>Error</td>
<td>389</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Post-Reading Measures**

After completing the dependent variables, participants also reported their Trust in Authority on two sub-scales, Trust in Mass Media ($M = 3.53, SD = .66$) and Trust in Government ($M = 2.71, SD = .78$); overall, participants reported quite low trust in both types of authority.

Trust in Government was higher among Liberal participants ($M = 2.84, SD = .85$ than
Conservative participants \((M = 2.50, SD = .66), t(239) = 3.372, p = .001, 95\% \text{ CI: } [.142, .542] \)\(^2\). However, Trust in Mass Media was higher among Conservative participants \((M = 3.74, SD = .62)\) than Liberal participants \((M = 3.39, SD = .72), t(239) = -4.023, p < .001, 95\% \text{ CI: } [-.533, -.183]\). Study 2.2 additionally included two measures of participants’ attitudes and motivations beyond the information included in Study 2.1: their Social Dominance Orientation (SDO), and their Religious Motivation. First, participants completed the Social Dominance Orientation scale, and overall reported moderate SDO \((M = 5.39, SD = .88)\) on a scale from 0 to 7, with higher scores indicating greater SDO. Social Dominance Orientation, contrary to the findings of Pratto et al. (1997), was higher among nonreligious participants \((M = 5.61, SD = 1.09)\) than Christian participants \((M = 5.38, SD = .88), t(378) = -2.11, p = .036, 95\% \text{CI: } [-.422, -.015]\).

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Dominance Orientation</td>
<td>5.39</td>
<td>.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Extrinsic Religiosity</td>
<td>4.50</td>
<td>1.16</td>
<td>.141*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Intrinsic Religiosity</td>
<td>2.77</td>
<td>1.26</td>
<td>.082</td>
<td>.088</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Trust in Government</td>
<td>2.62</td>
<td>.68</td>
<td>.068</td>
<td>.044</td>
<td>.160*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Trust in Mass Media</td>
<td>3.50</td>
<td>.67</td>
<td>.010</td>
<td>.055</td>
<td>-.132*</td>
<td>.314*</td>
<td></td>
</tr>
</tbody>
</table>

*Note 1. *\(p < .05\). *Note 2. SDO ranges from 0 to 7. Both religiosity measures range from 0 to 7. Both Trust measures range from 0 to 5. Higher scores indicate higher levels of the construct.*

The most common religious affiliations reported by participants were Christian sects such as Catholicism or Mormonism \((n = 252; \text{ see Table 15})\) and non-religious beliefs such as Agnosticism or Atheism \((n = 128)\). Participants who endorsed any religious affiliation at all \((n =

\(^2\) Degrees of freedom reflect the fact that not all participants reported Liberal or Conservative political affiliation, and not all participants reported Christian or Nonreligious religious affiliation. I used a Bonferroni correction for multiple comparisons.
were then directed to the Religious Motivations scale, where they completed the intrinsic and extrinsic religiosity subscales. Given that this measure would be meaningless for nonreligious participants, they were not directed to complete the measure. Among the participants who completed the Religious Motivations scale, extrinsic religiosity was positively associated with SDO, while intrinsic religiosity did not correlate (see Table 15), consistent with Allport and Ross’s (1967) findings that extrinsic but not intrinsic religiosity predicts prejudicial beliefs.

**Discussion**

This study found that individuals report lower trust of a news story, less attitude change, less trust of the main character, and lower post-reading attitude change when they see a news story that features a high-expertise but low-similarity protagonist and a low-involvement issue. Individuals did not otherwise differ in their post-reading attitudes and trust across conditions of ego involvement and protagonist expertise. These findings suggest that individuals experience trust in news stories and subsequent attitude change to the extent that they perceive similarity or likeability with the main character, or closeness to the issue in a news story. However, when they do not have deep involvement with the issue (because it does not directly affect them) and also do not have a minimum degree of connection with the main character (because the individual, although high in expertise, is low in similarity), they do not engage with the news story and do not change their trust levels or attitudes as a result.

One explanation for these findings comes from the Extended Transportation-Imagery model of narrative persuasion (van Laer et al., 2013), which holds that individuals experience attitude change as a result of reading stories if their experience meets the necessary preconditions for narrative transportation, or deep immersion into the story. There are multiple possible
pathways whereby individuals can experience narrative transportation and thus narrative persuasion, two of which are feelings of personal connection to the narrative (e.g. Escalas, 2007) and feelings of identification between oneself and the main character (e.g. Iguarta, 2010). If individuals cross that minimum threshold of narrative transportation, then they are motivated to remain immersed in the story and agree with its main arguments, even if those arguments would normally be counter-attitudinal (Dahlström & Rosenthal, 2018). However, if the individual has no means to make a personal connection to the narrative, either through the personal connection of high ego involvement in the issue or through character identification with a similar protagonist, then the individual does not experience narrative persuasion. Thus, the participants who saw the high-expertise but low-similarity character in the story with low ego involvement had no means of making a personal connection and did not experience narrative transportation or persuasion.

It is also worth noting that this particular sample shows unique characteristics, possibly associated with college students or residents of Iowa: individuals who reported Conservative ideology or Christian affiliation also reported lower Social Dominance Orientation, in contrast to findings from other parts of the country and other populations (e.g. Hoge, 1972; Jost et al., 2003; Wilson & Sibley, 2013). This finding may also account for the weak relationship between political affiliation and engagement with fake news in this particular sample, again in contrast to prior research in this area (e.g. Pennycook & Rand, 2017; Stroud, 2008). Given the discrepancy between this pattern and other research on student and community populations, mostly on the East Coast of the United States, this finding warrants further exploration in future studies.
Limitations

This study encountered its most key limitation in its failure of randomization during the first administration of Study 2 materials in Study 2.1. Although there is close alignment between the findings of Study 2.1 and Study 2.2 (see Appendix C), the disjointed nature of data collection means that Study 2.2 has technically been over-powered and might be subject to Type II error. Nevertheless, it would appear that this pattern of findings is — although not what I had predicted — robust to slight variations in random error across samples.

Other limitations to Study 2.2 are relatively less concerning. Again, there is potential that some participants were disengaged during key portions of the pre-testing and post-testing procedure, a known threat to data quality that can inflate scores on relatively rare and low-desirability constructs such as Social Dominance Orientation (see McKibben & Silvia, 2015, for a review). However, the presence of multiple attention checks built into the study successfully removed 32 individuals who showed signs of careless responding, and likely eliminated the worst offenders. There is also once again a lack of clarity in the News Sources Questionnaire due to individuals’ low insight into the sources of their own news (a known factor contributing to the spread of misinformation), which has been treated with the same partial deviation from the data analysis plan as in Study 1.

The only other finding of potential concern for the quality of the data is the positive correlation between endorsement of fake items and real items on the Overclaiming questionnaire (see Table 7), indicating that this sample is relatively high in acquiescence bias, or else relatively low in ability to detect real from fake materials as they relate to these topics (media and nutrition). These findings imply that this sample might have contained relatively unskilled judges, compared to other populations that have used the Overclaiming questionnaire and
compared to the sample from Study 1. This pattern also indicates that the measures intended to capture Media Knowledge and Nutrition Knowledge may only capture acquiescence bias, which would explain the non-significant correlations between both of these constructs and Trust in the News Story, while Overclaiming is a significant positive predictor of Trust. Adding Overclaiming as a covariate with Trust does not change the structure of results (see Table 11), but if participants are unskilled in recognizing real from fake media concepts on this scale, such that anyone who endorsed a real item was more likely to have also endorsed one or more fake items as well, then their judgments of the fake news story might have been highly unsophisticated to the point of under-utilizing cues such as the lack of authority from a low-expertise high-similarity protagonist. Future studies should explore the extent to which populations with greater skill in this area (for instance, journalism majors vs. psychology majors) can form more accurate or at least more sophisticated judgments of news veracity.

**Implications**

This study provided evidence that individuals experience greater narrative persuasion after reading narratively-structured news stories to the extent that they can form a personal connection to the news stories, whether through similarity between themselves and the main character of a news story or through personal stakes (ego involvement) in the outcome. Concerningly, it suggests that many individuals do not find expertise in a relevant area as persuasive as similarity to themselves, even though expertise is a more valid cue as to the trustworthiness of a piece of information. This sample of individuals overall showed relatively low sophistication in their political opinions or media literacy, likely at least partially due to their young age, and suggests that similarity and personal connections play an outsized role in the persuasiveness of fake news content.
CHAPTER 4. GENERAL DISCUSSION

Two studies examined the role of protagonist credibility in individuals’ judgments of the veracity of news stories, and their attitude change after reading those stories. Although I did not find full support for either of my hypotheses, I did find evidence that characteristics of the protagonist of a narrative do play a role in the way that individuals judge news stories. Study 1 found evidence that characters’ as well as authors’ expertise can act as cues as to the credibility of news stories, especially to the extent that there is close alignment between the character and the author in readers’ minds. Study 2 found that, while character expertise in and of itself is an important cue for judgment, it is less important to individuals than character similarity. Individuals in Study 2 regarded news stories as more trustworthy and persuasive if they contained either an issue important to the individuals’ own concerns or a protagonist similar to the individuals in general life circumstances, at the expense of more distant characters or issues.

These findings offer an important new perspective on the ongoing problem of web-based misinformation: that fake news acts as a form of narrative persuasion, and does so through automatically directing readers’ focus toward salient but non-diagnostic characteristics of the information (protagonist characteristics) and away from diagnostic cues such as the author of the news story. These results align with research indicating that main characters in stories act as persuasive agents (e.g. Appel & Mara, 2013) but that narrative readers tend to neglect paratextual information about the actual sources of narratives (e.g. Appel & Malečkar, 2012). These results suggest that fake news interventions and other counter-persuasive measures should go beyond advice simply to “consider the source” (Smith et al., 2013, p. 193) in order to refute misinformation, to specify which source individuals should consider in the context of fake news stories and other narratives. Currently, it would appear that individuals have a bias toward
focusing on characteristics of the news story rather than characteristics of the author or media organization that might be more revelatory. This pattern is consistent with theories of narrative persuasion (because of the role of character identification in narrative transportation) but has thus far gone under-examined in the context of persuasive misinformation.

**Theoretical Implications**

These findings provide some preliminary support for the proposed model of narrative frame effects on perceptions of source credibility, and some potential revisions to the model. Contrary to the model’s predictions, Study 1 found evidence that attention to authors persisted in a narrative context, and influenced readers’ perceptions of the credibility of a narrative and subsequent trust ratings. This finding suggests that this sample of individuals judged the narrative with a fair amount of sophistication and paid attention to this important cue of source quality, more so than initially predicted.

There is also evidence from Study 2 that character similarity is an important cue to source credibility and trust in news stories, more so than character expertise, especially in conditions of low ego involvement (see Figure 8). Again, this runs counter to my predictions about the relative importance of similarity and expertise across conditions of ego involvement, but it suggests that character similarity remains an important signal of source credibility in narrative contexts. This finding aligns with the Narrative Transportation theory finding that character identification mediates the link between Transportation and attitude change (e.g. Iguarta, 2010) and suggests that the narrative frame specifically predisposes individuals to find a message more persuasive to the extent that it contains characters that one perceives as likeable and similar to oneself.

These studies have only begun to test the predictions of this model, however. There is still research to be done on the ways that narrative and non-narrative frames, as in different
forms of journalism, can affect these cues. These effects should be replicated, and examined across both specific issues and sets of materials in order to determine the extent to which narrative characteristics and specific characteristics of these stimuli drive the observed pattern of results. These links should be tested further in more studies going forward.

**Future Directions**

However, the picture is not unequivocal. The relative roles of author and character expertise in Study 1 are difficult to disentangle, given the strong alignment between the two outcomes in most participants’ minds. Therefore, future studies must explore the role of protagonist expertise and author expertise when the two are disconnected or misaligned, as for instance when participants see only a protagonist with no author information or vice versa. In these circumstances, it may emerge that individuals’ perceptions of protagonists color their perceptions of authors (suggesting that a news story’s source becomes more credible to the extent that its subjects are perceived as credible) or that perceptions of authors color those of protagonists (suggesting that a news story’s source lends a weight of credibility to its content to the extent that the source is trustworthy).

In order to explore the findings of Study 2 further, future studies should examine the role of specific protagonist characteristics in judgments of news stories. The language within news stories is an important diagnostic characteristic that is nevertheless salient, and there is a great deal of value in trying to identify the characteristics of language that individuals use to judge protagonists. For instance, a news story about a protagonist who uses informal language might be more persuasive to the extent that readers perceive the protagonist as more honest and plain-spoken, while the same protagonist may be less persuasive if they use more formal language and readers perceive the protagonist as more distant and untrustworthy. However, it is possible that
the same manipulation could produce lower trust for the informal protagonist, if readers perceive
the informality as a sign that the news story has been written unprofessionally and therefore does
not originate with a mainstream media organization that uses rigorous fact-checking procedures.

It is also worth noting that these studies both used deliberately apoloitical materials. Both
news stories discussed issues of nutrition and eating behaviors, meaning that individuals were
unlikely to divide along political lines in their trust in the news story. However, the
overwhelming majority of fake news content in the U.S. is political (Lazer et al., 2018), and
many of the most lasting fake news stories have involved political topics such as the behavior of
Presidents Trump and Obama. Therefore, it is quite possible that there would be a different
divide in perceptions of the protagonist and trust in the news story if these effects were examined
with a topic that has greater political underpinnings, such as the issue of legalized abortion or
gun control. In these circumstances, it is possible that conservative participants would show
greater mistrust in specifically academic- or government-based sources, while liberal participants
would show greater mistrust in specifically religious- or corporate-based sources. Future studies
can explore the role of different effects of expertise typology across political convictions through
deliberately selecting participants who have registered with the Democratic or Republican parties
in the U.S. and then examining how they differ in response to different qualities of protagonist
credibility.

Implications

Based on these findings, future interventions should focus on directing participants’
attention toward key diagnostic cues within a news story and away from salient but less useful
characteristics of the story. A simple warning at the beginning of a news-judgment task, for
instance “Please remember to pay close attention to the news source and overall quality of the
reporting when judging the quality of news stories,” could potentially suffice to remind individual social media users the importance of distinguishing real from fake news through checking their own informal judgment of how professional or mainstream a source appears to be. These interventions would not necessarily be able to reach individuals who use strong motivated reasoning to defend an irrational worldview (e.g. those individuals who endorse many conspiracy theories or hold extremely low trust for mainstream media), but it could reach the many individuals who inadvertently share fake news because they struggle to judge real from fake news or else do not regard veracity as being the most important quality of a news story.

The issue of fake news and other forms of internet misinformation is proving to be more tenacious and complex than originally anticipated by many early interventions. Fake news arises from deliberate actions on the part of malicious agents, and from simple carelessness on the part of social media users more motivated by profit or popularity contests than veracity. It spreads through motivated reasoning that causes individuals to dig in their heels when their beliefs are threatened, and through a lack of reasoning when individuals judge any information they do not fully understand as more likely to be profound. Attempted interventions such as warnings on contested stories or crowdsourced judgments of “truthiness” have thus far failed or even backfired. Companies such as Facebook and YouTube remain garbage in, garbage out systems, no better as sources of news than their lowest-quality content and unable to approach the problem in greater detail for fear of accusations of censorship. Therefore, research and attempted interventions must continue to approach the problem.

Casting fake news as a form of narrative persuasion is not the only possible angle. However, it does explain the role of protagonists’ credibility in perceptions of the quality of sources, and it provides a way forward. Future studies can continue to examine how fake news
stories function as stories, and how the unique characteristics of narrative persuasion — not just
a neglect of paratext in favor of narrative transportation, but a focus on vividness and Need for
Affect, a tendency to value coherence, and an emphasis on the particular over the general — can
inform our understanding of the continuing influence of online misinformation.
REFERENCES


consumers’ narrative transportation. *Journal of Consumer Research, 40.* https://doi.org/10.1086/673383


APPENDIX A: MATERIALS FROM PRETESTING

Author And Protagonist Perception Measures

Taylor is a journalist with the New York Times who has over 30 years of experience writing about a variety of topics, including nutrition and food science. Taylor writes predominantly about Americans' experiences with healthy eating.

All items have answer options that range from “strongly disagree” to “strongly agree.”

1. This person seems trustworthy.
2. This person seems knowledgeable.
3. This person seems competent.
4. This person seems likeable.
5. Do you have any other impressions of this person?

Dakota is a self-described lover of all things fresh and healthy. Most people find Dakota to be warm and personable, especially when Dakota talks about enjoying good food.

All items have answer options that range from “strongly disagree” to “strongly agree.”

6. This person seems trustworthy.
7. This person seems knowledgeable.
8. This person seems competent.
9. This person seems likeable.
10. Do you have any other impressions of this person?
Lee is a blogger who runs a "foodie" blog describing individual choices about food and how to find good eating. Lee is just starting out in acquiring information about food, but is nevertheless eager to learn everything there is to know about nutrition.

All items have answer options that range from “strongly disagree” to “strongly agree.”

11. This person seems trustworthy.
12. This person seems knowledgeable.
13. This person seems competent.
14. This person seems likeable.
15. Do you have any other impressions of this person?

Dr. Harley is a professor of Nutritional Science at Stanford University who has written multiple books on the subject of personal food decisions. Dr. Harley researched extensively while preparing to write about personal nutrition.

All items have answer options that range from “strongly disagree” to “strongly agree.”

1. This person seems trustworthy.
2. This person seems knowledgeable.
3. This person seems competent.
4. This person seems likeable.
5. Do you have any other impressions of this person?
Ego Involvement Measures

All items have answer options that range from “strongly disagree” to “strongly agree.”

1. I would be interested in learning more about the issue of fresh food on college campuses and in college dining halls.
2. I would be interested in learning more about the issue of fresh food on business campuses and in professional settings.
3. The issue of fresh food on college campuses is relevant to my own life.
4. The issue of fresh food on business campuses is relevant to my own life.

Social Dominance Orientation

All items have answer options that range from “strongly disagree” to “strongly agree.”

1. Some groups of people are simply inferior to others.
2. No one group should dominate in society.
3. In getting what you want, it is sometimes necessary to use force against other groups.
4. We should strive to make incomes as equal as possible.*
5. It’s okay if some groups have more of a chance in life than others.
6. We would have fewer problems if we treated people more equally.*
7. I support increased social equality.*
8. To get ahead in life, sometimes it is necessary to step on other groups.
9. If certain groups stayed in their place, we would have fewer problems.
10. We should do what we can to equalize conditions for different groups.*
11. It’s probably a good thing that certain groups are at the top and other groups are at the bottom.

12. All groups should be given an equal choice in life.*

13. Inferior groups should stay in their place.

14. Group equality should be our ideal.*

15. It would be good if groups could be equal.*

16. Sometimes other groups must be kept in their place.
APPENDIX B: STUDY MATERIALS

Study 1

Please complete the following materials in the order in which they appear. Please be sure to read all instructions carefully, and be sure that you understand them before you begin.

Important note: If you use any external websites (Google, Wikipedia, or other sites) to search for information at any point in this study, your data will be useless to us. There are no right or wrong answers for any of these questions. Therefore, it is extremely important to be honest in reporting your impressions of each news story and how you made those impressions.

I commit to form judgments based solely on the materials in this study, and not to use external websites.

1. I agree
2. I disagree

News Sources Questionnaire

Please indicate all of the following news sources that you regularly use:

- CNN
- Brietbart
- InfoWars
- Mother Jones
- The Atlantic
- New York Times
- The New Yorker
- The Economist
- BBC
- NBC
- Washington Post
- local news
- Reddit
- Associated Press
- Wall Street Journal
- BuzzFeed
- Slate Magazine
- National Geographic
- Daily Mail
- Newsweek
- Google News
- The Hill
- Huffington Post
- ESPN
<table>
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<tr>
<th>CBS</th>
<th>ABC</th>
<th>NPR</th>
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<tbody>
<tr>
<td>Fortune</td>
<td>Fox News</td>
<td>USA Today</td>
</tr>
<tr>
<td>People Magazine</td>
<td>The Verge</td>
<td>The Guardian</td>
</tr>
<tr>
<td>Reuters</td>
<td>Fiscal Times</td>
<td>Occupy Democrats</td>
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<tr>
<td>Vox</td>
<td>Natural News</td>
<td>Daily Caller</td>
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<tr>
<td>The Blaze</td>
<td>David Wolfe</td>
<td>Natural News</td>
</tr>
<tr>
<td>Ames Tribune</td>
<td>The Boston Globe</td>
<td>Bloomberg News</td>
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<tr>
<td>Christian Science Monitor</td>
<td></td>
<td>Vanity Fair</td>
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<tr>
<td>Us Weekly</td>
<td>Chicago Tribune</td>
<td>KCCI Des Moines</td>
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<tr>
<td>Iowa State Daily</td>
<td>The Independent</td>
<td>Los Angeles Times</td>
</tr>
<tr>
<td>Salon Magazine</td>
<td>Frontline</td>
<td>National Review</td>
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<tr>
<td>The Weekly Standard</td>
<td>Financial Times</td>
<td>Time Magazine</td>
</tr>
<tr>
<td>Star Tribune</td>
<td>Snopes</td>
<td>Vulture</td>
</tr>
<tr>
<td>Empire News</td>
<td>Before It’s News</td>
<td>Denver Guardian</td>
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I am not sure where most of my news comes from (e.g. it is shared with me by way of friends, family, or social media).

I do not regularly consume news.

I use these other source(s):

__________________________

__________________________

__________________________
Overclaiming Questionnaire

Please rate your familiarity with the following topics. All items will have answer options ranging from “never heard of it” to “highly familiar.”

1. National sovereignty
2. Thomas Hobbes
3. Barrel-item veto*
4. Direct democracy
5. Enumerated powers
6. WDM policy*
7. Ryan Zinke
8. Gerrymandering
9. 28th Amendment*
10. Department of the Interior
11. Calvin Coolidge
12. Appropriations
13. Calendar Wednesday
14. PAC
15. Filibuster

Please rate your familiarity with the following topics. All items will have answer options ranging from “never heard of it” to “highly familiar.”

1. Investigative reporting
2. Narrowcasting
3. MSNBC
4. Aberrant decoding
5. Pulitzer prize
6. Soft sketch effect*
7. SMCR model
8. Reader response theory
9. Zone bias*
10. Fair Use media
11. Media imperialism
12. Blanket coverage
13. Consumer sovereignty
14. BBC
15. Magic target model*
Please rate your familiarity with the following topics. All items will have answer options ranging from “never heard of it” to “highly familiar.”

1. Pluralistic ignorance
2. Confirmation bias
3. Selective exposure
4. MRK investigation*
5. Dissonant affect*
6. Process loss
7. Eleutheroophobia*
8. ELM persuasion
9. Biased processing
10. Situation model
11. Ethos-pathos-logos
12. Dispositional attribution style
13. Attitude inoculation
14. Outgroup derogation
15. False consensus effect

Please rate your familiarity with the following topics. All items will have answer options ranging from “never heard of it” to “highly familiar.”

1. Phosphates
2. Tryptophan
3. Vitamin B14 deficiency*
4. Phospholipids
5. Polysaturation*
6. Hyponatremia
7. Nutrient intake
8. Food desert
9. Macronutrients
10. Ultracleanser*
11. Hepatology
12. FDA
13. Palatability
14. Hyperlipidemia
15. Nutritional literacy

*Item refers not to a real concept but to a distractor designed to test over-claiming
Stimulus Materials

**Commitment item**

You are one of the only participants who will see these materials. Please read them carefully and give us your honest, thoughtful judgment after doing so.

I commit to read and examine these materials carefully.

1. Yes
2. No

**High credibility author, low credibility protagonist**

Please read the following piece, by Dakota Harley. Dakota Harley is a *New York Times* journalist who has over 30 years of experience writing about a variety of topics, including nutrition and food science. Harley writes predominantly about Americans’ experiences with healthy eating.

Lin Arlo used to sleep less than three hours a night. He would go to bed around 2:00 AM, only to give up on sleep around 5:00 AM. The entire time he would be unable to fall deeply asleep, and rarely ever dreamed.

He’s a self-described lover of all things fresh and healthy, so it ran counter to his desire to treat himself right. Lin doesn't know much about the way that caffeine affects the body, and has little expertise about sleep and energy. However, Lin deeply enjoys coffee, whether that’s a warm mocha or a quick shot of espresso. It took him a long time to learn to cut back on his caffeine intake.
Most people find Lin to be warm and personable, especially when Lin talks about enjoying good beverages. Lin enjoys making the point that he’s been eating his entire life, and he has strong opinions about what is good for the body and good for the soul.

“I used to be in this stressful job, and my caffeine intake crept upward,” he said. “It started out with a cup of coffee in the morning, but gradually I was drinking three cups of coffee just to wake myself up, an energy drink with lunch and one in midafternoon. I’d get home and be too exhausted for dinner unless I had black tea or cola.”

Lin started feeling tired all the time, except when he was jittery from caffeine. He’d try to cut back, only to have his caffeine intake creep upward again.

Is caffeine good for one’s body? Coverage of the issue is often mixed, with some individuals holding it up as a miracle cure for migraines while others worry about the dangers of addiction.

Lin talks about how he became trapped in a cycle of caffeine use: he would be exhausted, so he would drink caffeine, which would prevent him from sleeping and exhaust him again. Not only that, but he was drinking caffeinated beverages—which can be dehydrating—instead of water, which his body needed more.

“Those dehydrating effects build on themselves—just think about how often we’re thirsty and so reach for a nice cold cola or energy drink.” Lin is a tall, gregarious man, with an easy smile and a clear interest in the subject. However, he looks tired just thinking about how much coffee he was drinking at the time. “It just never felt like the right time to cut back on caffeine use. Every time I intended to do so, I would have another major project coming up at work or even just want to have more energy to enjoy the weekend.”
So he would drink more caffeine, and then some more. Eventually he realized just how bad things had gotten when he was unable to fall asleep at all for two nights in a row—and unable to get up the next day without three full cups of coffee.

He told himself that enough was enough. It wasn’t enough to keep putting off the annoying process of caffeine withdrawal indefinitely, just until a major work project was done, or just until the weekend. He had to cut back. He decided to go “cold turkey,” eliminating caffeine from his diet entirely. It meant a few days of headaches and low energy, but he says that it was well worth the annoyance.

“Suddenly I found myself better able to maintain energy at work,” he said. “I was sleeping much better, and I could focus even without relying on coffee. It turns out that a lot of the time I was just drinking caffeine to get rid of caffeine withdrawal symptoms—headache, tiredness, sore eyes—rather than because it was actually helping.”

Lin still loves coffee. But he says that these days he uses it as an occasional treat for himself rather than a daily occurrence. He’s probably benefitting from the drop in blood pressure and stomach acid already.

“Most importantly,” he says, “now I get to enjoy my coffee again. It’s something nice to have in moderation, now that I don’t need it to get through the day.”

Low credibility author, low credibility protagonist

Please read the following piece, by Dakota Harley.

Dakota Harley is a blogger who runs a “foodie” blog. The blog, Fun Food for All, describes Dakota’s individual choices about finding food and how to take good care of one’s
body. Dakota is just starting out learning about caffeine and other substances, but is nevertheless eager to know everything there is about nutrition.

Lin Arlo used to sleep less than three hours a night. He would go to bed around 2:00 AM, only to give up on sleep around 5:00 AM. The entire time he would be unable to fall deeply asleep, and rarely ever dreamed.

He’s a self-described lover of all things fresh and healthy, so it ran counter to his desire to treat himself right. However, Lin deeply enjoys coffee, whether that’s a warm mocha or a quick shot of espresso. It took him a long time to learn to cut back on his caffeine intake.

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only that, but he was drinking caffeinated beverages—which can be dehydrating—instead of water, which his body needed more.

“Those dehydrating effects build on themselves—just think about how often we’re thirsty and so reach for a nice cold cola or energy drink.” Lin is a tall, gregarious man, with an easy smile and a clear interest in the subject. However, he looks tired just thinking about how much coffee he was drinking at the time. “It just never felt like the right time to cut back on caffeine use. Every time I intended to do so, I would have another major project coming up at work or even just want to have more energy to enjoy the weekend.”

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“Most importantly,” he says, “now I get to enjoy my coffee again. It’s something nice to have in moderation, now that I don’t need it to get through the day.”

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Lin Arlo used to sleep less than three hours a night. He would go to bed around 2:00 AM, only to give up on sleep around 5:00 AM. The entire time he would be unable to fall deeply asleep, and rarely ever dreamed.

Dr. Lin Arlo is a professor of Nutritional Science at Stanford University. He has written multiple books on the subject of personal food and beverage decisions. Dr. Arlo has extensively researched the issue of the ways that energy sources such as caffeine affect the body, and he has strong opinions on the importance of cutting back on one’s caffeine intake.

Most people find Dr. Arlo to be warm and personable, especially when he talks about his genuine enthusiasm for his research. Dr. Arlo enjoys making the point that everyone needs to eat and drink, and that he wants to help people make informed decisions.

“I used to be in this stressful job, and my caffeine intake crept upward,” he said. “It started out with a cup of coffee in the morning, but gradually I was drinking three cups of coffee just to wake myself up, an energy drink with lunch and one in midafternoon. I’d get home and be too exhausted for dinner unless I had black tea or cola.”
Dr. Arlo started feeling tired all the time, except when he was jittery from caffeine. He’d try to cut back, only to have his caffeine intake creep upward again.

Is caffeine good for one’s body? Coverage of the issue is often mixed, with some individuals holding it up as a miracle cure for migraines while others worry about the dangers of addiction.

Dr. Arlo talks about how he became trapped in a cycle of caffeine use: he would be exhausted, so he would drink caffeine, which would prevent him from sleeping and exhaust him again. Not only that, but he was drinking caffeinated beverages—which can be dehydrating—instead of water, which his body needed more.

“Those dehydrating effects build on themselves—just think about how often we’re thirsty and so reach for a nice cold cola or energy drink.” Dr. Arlo is a tall, gregarious man, with an easy smile and a clear passion for his research. However, he looks exhausted when considering the impact of that much caffeine on his body. “It just never felt like the right time to cut back on caffeine use. Every time I intended to do so, I would have another major conference presentation coming up, or even just want to have more energy to enjoy the weekend.”

So he would drink more caffeine, and then some more. Eventually he realized just how bad things had gotten when he was unable to fall asleep at all for two nights in a row—and unable to get up the next day without three full cups of coffee.

He told himself that enough was enough. Although there were still classes for him to teach and research he needed to analyze, he understood the negative impact on his pituitary gland and liver if he continued to use caffeine so heavily. He decided to go “cold turkey,” eliminating caffeine from his diet entirely. It meant a few days of headaches and low energy, but he says that it was well worth the annoyance.
“Suddenly I found myself better able to maintain energy at work,” he said. “I was sleeping much better, and I could focus even without relying on coffee. It turns out that a lot of the time I was just drinking caffeine to get rid of caffeine withdrawal symptoms—headache, tiredness, sore eyes—rather than because it was actually helping.”

Dr. Arlo still loves coffee. But he says that these days he uses it as an occasional treat for himself rather than a daily occurrence. He’s probably benefitting from the drop in blood pressure and stomach acid already.

“Most importantly,” he says, “now I get to enjoy my coffee again. It’s something nice to have in moderation, now that I don’t need it to get through the day.”

High credibility author, high credibility protagonist

Please read the following piece, by Dakota Harley. Dakota Harley is a New York Times journalist who has over 30 years of experience writing about a variety of topics, including nutrition and food science. Harley writes predominantly about Americans’ experiences with healthy eating.

Lin Arlo used to sleep less than three hours a night. He would go to bed around 2:00 AM, only to give up on sleep around 5:00 AM. The entire time he would be unable to fall deeply asleep, and rarely ever dreamed.

Dr. Lin Arlo is a professor of Nutritional Science at Stanford University. He has written multiple books on the subject of personal food and beverage decisions. Dr. Arlo has extensively researched the issue of the ways that energy sources such as caffeine affect the body, and he has strong opinions on the importance of cutting back on one’s caffeine intake.
Most people find Dr. Arlo to be warm and personable, especially when he talks about his genuine enthusiasm for his research. Dr. Arlo enjoys making the point that everyone needs to eat and drink, and that he wants to help people make informed decisions.

“I used to be in this stressful job, and my caffeine intake crept upward,” he said. “It started out with a cup of coffee in the morning, but gradually I was drinking three cups of coffee just to wake myself up, an energy drink with lunch and one in midafternoon. I’d get home and be too exhausted for dinner unless I had black tea or cola.”

Dr. Arlo started feeling tired all the time, except when he was jittery from caffeine. He’d try to cut back, only to have his caffeine intake creep upward again.

Is caffeine good for one’s body? Coverage of the issue is often mixed, with some individuals holding it up as a miracle cure for migraines while others worry about the dangers of addiction.

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“Those dehydrating effects build on themselves—just think about how often we’re thirsty and so reach for a nice cold cola or energy drink.” Dr. Arlo is a tall, gregarious man, with an easy smile and a clear passion for his research. However, he looks exhausted when considering the impact of that much caffeine on his body. “It just never felt like the right time to cut back on caffeine use. Every time I intended to do so, I would have another major conference presentation coming up, or even just want to have more energy to enjoy the weekend.”
So he would drink more caffeine, and then some more. Eventually he realized just how bad things had gotten when he was unable to fall asleep at all for two nights in a row—and unable to get up the next day without three full cups of coffee.

He told himself that enough was enough. Although there were still classes for him to teach and research he needed to analyze, he understood the negative impact on his pituitary gland and liver if he continued to use caffeine so heavily. He decided to go “cold turkey,” eliminating caffeine from his diet entirely. It meant a few days of headaches and low energy, but he says that it was well worth the annoyance.

“Suddenly I found myself better able to maintain energy at work,” he said. “I was sleeping much better, and I could focus even without relying on coffee. It turns out that a lot of the time I was just drinking caffeine to get rid of caffeine withdrawal symptoms—headache, tiredness, sore eyes—rather than because it was actually helping.”

Dr. Arlo still loves coffee. But he says that these days he uses it as an occasional treat for himself rather than a daily occurrence. He’s probably benefitting from the drop in blood pressure and stomach acid already.

“Most importantly,” he says, “now I get to enjoy my coffee again. It’s something nice to have in moderation, now that I don’t need it to get through the day.”

Post-reading items
This news story is…

<table>
<thead>
<tr>
<th>Almost certainly false</th>
<th>Ambiguous</th>
<th>Almost certainly true</th>
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My judgment of this story is…

<table>
<thead>
<tr>
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What qualities of the story form the basis for this opinion?

_________________________________________________

Who wrote this news story?

a) A psychology student at a large university
b) A blogger who runs a “foodie” blog
c) A journalist who has researched food science
d) A nutritionist from Stanford University
e) An intern for a coffee company

Who does this news story focus on?

a) A university professor of Nutritional Science
b) A “foodie” who enjoys learning about nutrition
c) A barista who is developing new coffee blends
d) A microbiologist who studies genetic engineering
e) A fitness trainer who doesn’t need sleep
What is the main argument of this news story?

a) That caffeine should never be consumed under any circumstances
b) That caffeine is more dangerous than marijuana, and marijuana should therefore be legalized
c) That missing too many nights of sleep in a row can lead to dangerous accidents
d) That caffeine should ideally be consumed in moderation
e) That the health benefits of caffeine are often obscured by fearmongering about its risks

What caused the central figure of this news story to change his caffeine consumption?

a) He married the head researcher of a coffee company
b) He realized that coffee and tea are healthier than energy drinks or cola
c) He developed heart disease from drinking too much coffee
d) He started a job where he was offered as much coffee as he wanted
e) He was consistently getting less than two hours of sleep a night

Please rate the writer/author (Dakota Harley) of this news story on each of the following qualities:

Expert 1 2 3 4 5 6 7 Inexpert
Unreliable 1 2 3 4 5 6 7 Reliable
Meek 1 2 3 4 5 6 7 Assertive
Skillful 1 2 3 4 5 6 7 Unskilled
Bold 1 2 3 4 5 6 7 Timid
Biased 1 2 3 4 5 6 7 Unbiased
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Please rate the central figure (Lin Arlo) of this news story on each of the following qualities:

<table>
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<th>Quality</th>
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</tbody>
</table>
Please list any other thoughts you had about the news story while reading:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

_Post-reading attitudes measure_

All items have answer options that range from “strongly disagree” to “strongly agree.”

1. Caffeine can be harmful in large doses.
2. Caffeine can cause sleep disruptions.
3. I am paying close attention to these items and will therefore choose option d.
4. It is not possible to drink caffeine in moderation.
5. Caffeine has only benefits and no harms associated with it.
6. Caffeine has only harmful effects and no benefits associated with it.

- Caffeine consumption is

<table>
<thead>
<tr>
<th>Foolish</th>
<th>Moderate</th>
<th>Wise</th>
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<td>80</td>
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<tr>
<td>90</td>
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</table>
- Caffeine consumption is unhealthy, moderate, or healthy.

<table>
<thead>
<tr>
<th>Unhealthy</th>
<th>Moderate</th>
<th>Healthy</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
<td></td>
<td></td>
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</tbody>
</table>

- Caffeine consumption is harmless, moderate, or harmful.

<table>
<thead>
<tr>
<th>Harmless</th>
<th>Moderate</th>
<th>Harmful</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
<td></td>
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</tbody>
</table>

- Caffeine consumption is useless, moderate, or useful.

<table>
<thead>
<tr>
<th>Useless</th>
<th>Moderate</th>
<th>Useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
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</tbody>
</table>

- Caffeine consumption is good, moderate, or bad.

<table>
<thead>
<tr>
<th>Good</th>
<th>Moderate</th>
<th>Bad</th>
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<tbody>
<tr>
<td>0 10 20 30 40 50 60 70 80 90 100</td>
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</tbody>
</table>

**Narrative transportation – short form**

All items have answer options that range from “strongly disagree” to “strongly agree.”

1. I could picture myself in the scene of the events described in the narrative.
2. I was mentally involved in the narrative while reading it.
3. I wanted to learn how the narrative ended.
4. The narrative affected me emotionally.
5. While reading the narrative I had a vivid mental image of the main character.

6. While reading the narrative I had a vivid mental image of its events.

**Debrief**

The news item “Caffeine: A Fresh Perspective” which you just read is false, misleading, or otherwise untrue. Please indicate that you understand that the information contained in this news story is NOT TRUE by completing the item below.

The news item “Caffeine: A Fresh Perspective” is…

a. True

b. False

c. Not sure

Warning Message (Will display for incorrect answers.)

Actually, the news item “Caffeine: A Fresh Perspective” is NOT TRUE. Please go back and read the feedback carefully, and indicate that you understand, before continuing with the study. It is extremely important that you understand that this information is false, misleading, or otherwise untrue, so we cannot allow you to continue with the study until we are sure that you understand the truth value of the news item “Caffeine: A Fresh Perspective.” Thank you!

**Demographic items**

What is your highest level of educational achievement?

- Less than high school
- Some high school
- High school diploma or equivalent (GED)
• Some college
• Associate’s degree
• Bachelor’s degree
• Graduate degree
• Other:

What is your gender?
• Male
• Female
• Other:

What is your age in years? _______

What is your ethnicity? (Please choose all that apply)
• Black/African American
• White/European American
• Asian American
• Native American
• Hispanic/Latinx
• Indigenous or Pacific Islander
• Other:
What is your current political party affiliation?

- Democrat
- Republican
- Independent
- None
- Other:

Study 2

Please complete the following materials in the order in which they appear. Please be sure to read all instructions carefully, and be sure that you understand them before you begin.

Commitment Item

Important note: If you use any external websites (Google, Wikipedia, or other sites) to search for information at any point in this study, your data will be useless to us. There are no right or wrong answers for any of these questions. Therefore, it is extremely important to be honest in reporting your impressions of each news story and how you made those impressions.

I commit to form judgments based solely on the materials in this study, and not to use external websites.

1. I agree
2. I disagree

News Sources Questionnaire

[See Study 1 materials]
Overclaiming Questionnaire

[See Study 1 materials]

Trust in Mass Media

1. In general, how much trust and confidence do you have in the mass media (such as newspapers, TV, and radio) when it comes to reporting the news fully?
   a) A great deal
   b) A fair amount
   c) Not very much
   d) None at all

2. How much trust do you have in the mass media when it comes to reporting the news accurately?
   a) A great deal
   b) A fair amount
   c) Not very much
   d) None at all

3. How much trust do you have in the mass media when it comes to reporting the news fairly and without bias?
   a) A great deal
   b) A fair amount
   c) Not very much
   d) None at all
Trust in Authority

1. The U.S. government takes good care of its citizens.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree
   h. Not sure

2. Most government officials want the best for the U.S.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree
   h. Not sure

3. Experts and intellectuals generally help this country.
   a. Strongly agree
b. Agree

c. Somewhat agree

d. Neither agree nor disagree

e. Somewhat disagree

f. Disagree

g. Strongly disagree

h. Not sure

4. Most experts and intellectuals are motivated by a desire to help humanity.

a. Strongly agree

b. Agree

c. Somewhat agree

d. Neither agree nor disagree

e. Somewhat disagree

f. Disagree

g. Strongly disagree

h. Not sure

5. Researchers generally help this country.

a. Strongly agree

b. Agree

c. Somewhat agree

d. Neither agree nor disagree

e. Somewhat disagree

f. Disagree
g. Strongly disagree
h. Not sure

6. Most researchers are motivated by a desire to help humanity.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neither agree nor disagree
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree
   h. Not sure

Stimulus Materials

High ego involvement, low source expertise

Lee Park is the kind of guy who easily persuades people to help him out. He is thoughtful and personable, with a clear consideration behind every word he says. It will come as little surprise that he has some unique ideas about the accessibility of fresh foods on college campuses.

After all, Lee has attended a large Midwestern university for the last two years, and knows better than anyone how difficult it can be to get good information about food—much less good food—when relying on a university dining plan. Specifically, he views certain college campuses as being food deserts.
“When I first got to college, I didn’t know what a food desert was,” Lee says. “But I came to learn that it’s the term for a setting where fresh and healthy food is extremely difficult to secure. For instance, there are areas of many cities where the only food purchasing options are convenience stores or fast food restaurants. Under those conditions, residents struggle to get enough food to eat, and generally have to rely on high-sugar or high-fat options because they don’t have access to fresh food.

“I started to realize that many college students exist under similar conditions. Although some of us have cars, or else the option to walk to a grocery store with fresh options, many of the rest of us have to rely on highly processed foods available in the dining halls or in on-campus stores. Within the dining halls, information about food can be hard to come by, so it’s nearly impossible to make healthy informed choices the way it is when one has the option to go to a grocery store. I realized I was eating pizza and drinking soda for almost every meal, because those were among the few options that interested me in the selection from the dining hall.

“And then there’s the issue of kitchen space.” Lee smiled, conspiratorial. “Have you ever attempted to cook in a dorm kitchen? It’s nearly impossible. One time I nearly burned the kitchen down trying to make myself pasta. My friends in dorms ran into similar problems. Some of us would buy groceries, only to have them stolen out of the communal refrigerator. We often didn’t have time to cook, even if we did manage to put together ingredients for a fresh meal that could be prepared in our limited space.

“That’s when I got the idea for College Kitchen. It started out as an informal gathering, a handful of friends working together to produce meals that were safe and healthy for all of us to eat. But it’s become a lot more formal. It’s a fun way to connect with people, because we all take turns cooking big meals with healthy, affordable ingredients and then taking home the leftovers.
It prevents all of us from relying on the university meal plans with their unhealthy food, and it’s exposed me to a lot of new foods I never would’ve tried before, like tofu or kielbasa.”

Lee has since gone on to get over thirty students from his university involved in the College Kitchen project, but he says there’s still a long way for college campuses to go. “We need more fresh and healthy options, right there in the dining halls,” he insists. “Until then, we’ll continue to rely on each other.”

Low ego involvement, low source expertise

Lee Park is the kind of guy who easily persuades people to help him out. He is thoughtful and personable, with a clear consideration behind every word he says. It will come as little surprise that he has some unique ideas about the accessibility of fresh foods on business campuses.

After all, Lee has attended a large Midwestern university for the last two years, and knows better than anyone how difficult it can be to get good information about food—much less good food—when relying on a university dining plan. Specifically, he views certain college campuses as being food deserts.

“When I first got to college, I didn’t know what a food desert was,” Lee says. “But I came to learn that it’s the term for a setting where fresh and healthy food is extremely difficult to secure. For instance, there are areas of many cities where the only food purchasing options are convenience stores or fast food restaurants. Under those conditions, residents struggle to get enough food to eat, and generally have to rely on high-sugar or high-fat options because they don’t have access to fresh food.
“I started to realize that many professional workers exist under similar conditions. Although some employees have cars, or else the option to walk to a grocery store with fresh options, many of the rest of us have to rely on highly processed foods available in the business cafeteria or in nearby stores. Within the dining halls, information about food can be hard to come by, so it’s nearly impossible to make healthy informed choices the way it is when one has the option to go to a grocery store. I would see hassled workers eating pizza and drinking soda for almost every meal, because those are among the few options available from the business’s cafeteria.

“And then there’s the issue of kitchen space.” Lee smiled, conspiratorial. “Have you ever attempted to cook in a company-owned studio apartment? It’s nearly impossible. Many of these workers don’t have the chance to cook properly, because they lack the skills and equipment. Theft is also an issue if you are relying on the communal refrigerator. Some people don’t even have time to cook, provided they did manage to put together ingredients for a fresh meal that could be prepared in such limited space.

“That’s why I love ideas like Professional Kitchen. It started out as an informal gathering, a handful of businesspeople working together to produce meals that were safe and healthy for all of them to eat. But it’s become a structured activity outside of work for many businesses. It can provide workers a way to connect with people, because participants all take turns cooking big meals with healthy, affordable ingredients and then taking home the leftovers. It prevents all involved from relying on the processed and unhealthy foods available in the cafeteria, and it has exposed professionals to several foods they never would’ve tried before, like tofu or kielbasa.”

Lee has since gone on to get over thirty workers from local businesses involved for the Professional Kitchen project, but he says there’s still a long way for business campuses to go.
“We need more fresh and healthy options, right there in the dining halls,” he insists. “Until then, our employees will continue to rely on each other.”

*High ego involvement, high source expertise*

Lee Park is the kind of guy who easily persuades people to help him out. He is thoughtful and personable, with a clear consideration behind every word he says. It will come as little surprise that he has some unique ideas about the accessibility of fresh foods on college campuses.

After all, Dr. Park is a microbiologist who has extensively studied the importance of individuals’ gut health and overall nutrition for their well-being. Although a few decades removed from current trends in health and dieting, Dr. Park has also spent most of that time developing expertise in the molecular structure of food, and knows better than anyone how difficult it can be to get good food when relying on the university dining plan. Specifically, he views certain college campuses as being food deserts.

“I’ve only recently come to appreciate what a food desert is,” Dr. Park says. “It’s the term for a setting where fresh and healthy food is extremely difficult to secure. For instance, there are areas of many cities where the only food purchasing options are convenience stores or fast food restaurants. Under those conditions, residents struggle to get enough food to eat, and generally have to rely on high-sugar or high-fat options because they don’t have access to fresh food.

“I started to realize that many college students exist under similar conditions. Although some of them have cars, or else the option to walk to a grocery store with fresh options, many of them have to rely on highly processed foods available in the dining halls or in on-campus
stores. Within the dining halls, information about food can be hard to come by, so it’s nearly impossible to make healthy informed choices the way it is when one has the option to go to a grocery store. You see students eating pizza and drinking soda for almost every meal, because those are among the few options available from the dining hall.

“And then there’s the issue of kitchen space.” Dr. Park smiled, paternal. “Have you ever attempted to cook in a dorm kitchen? It’s nearly impossible. Many of these students don’t have the chance to cook properly, because they lack the skills and equipment. Theft is also an issue for students relying on the communal refrigerator. Some don’t even have time to cook, provided they did manage to put together ingredients for a fresh meal that could be prepared in limited space.

“That’s why I love the ideas like College Kitchen. It started out as an informal gathering, a handful of students working together to produce meals that were safe and healthy for all of them to eat. But it’s become a lot structured extra-curricular activity. It can provide students a way to connect with people, because participants all take turns cooking big meals with healthy, affordable ingredients and then taking home the leftovers. It prevents all involved from relying on the university meal plans with their unhealthy food, and it has exposed students to several foods they never would’ve tried before, like tofu or kielbasa.”

Dr. Park has recruited over thirty students from his university involved in the College Kitchen project, but he says there’s still a long way for college campuses to go. “We need more fresh and healthy options, right there in the dining halls,” he insists. “Until then, students will continue to rely on programs such as these.”
Low ego involvement, high source expertise

Lee Park is the kind of guy who easily persuades people to help him out. He is thoughtful and personable, with a clear consideration behind every word he says. It will come as little surprise that he has some unique ideas about the accessibility of fresh foods on business campuses.

After all, Dr. Park is a microbiologist who has extensively studied the importance of individuals’ gut health and overall nutrition for their well-being. Although a few decades removed from current trends in health and dieting, Dr. Park has also spent most of that time developing expertise in the molecular structure of food, and knows better than anyone how difficult it can be to get good food when relying on the cafeteria associated with their business.

Specifically, he views certain business campuses as being food deserts.

“I’ve only recently come to appreciate what a food desert is,” Dr. Park says. “It’s the term for a setting where fresh and healthy food is extremely difficult to secure. For instance, there are areas of many cities where the only food purchasing options are convenience stores or fast food restaurants. Under those conditions, residents struggle to get enough food to eat, and generally have to rely on high-sugar or high-fat options because they don’t have access to fresh food.

“I started to realize that many professional workers exist under similar conditions. Although some employees have cars, or else the option to walk to a grocery store with fresh options, many of the rest of us have to rely on highly processed foods available in the business cafeteria or in nearby stores. Within the dining halls, information about food can be hard to come by, so it’s nearly impossible to make healthy informed choices the way it is when one has the
option to go to a grocery store. One sees hassled workers eating pizza and drinking soda for almost every meal, because those are among the few options available from the business’s cafeteria.

“And then there’s the issue of kitchen space.” Dr. Park smiled, paternal. “Have you ever attempted to cook in a company-owned studio apartment? It’s nearly impossible. Many of these professionals don’t have the chance to cook properly, because they lack the skills and equipment. Theft is also an issue for workers relying on the communal refrigerator. Some don’t even have time to cook, provided they did manage to put together ingredients for a fresh meal that could be prepared in such limited space.

“That’s why I love ideas like Professional Kitchen. It started out as an informal gathering, a handful of businesspeople working together to produce meals that were safe and healthy for all of them to eat. But it’s become a structured activity outside of work for many businesses. It can provide workers a way to connect with people, because participants all take turns cooking big meals with healthy, affordable ingredients and then taking home the leftovers. It prevents all involved from relying on the processed and unhealthy foods available in the cafeteria, and it has exposed professionals to several foods they never would’ve tried before, like tofu or kielbasa.”

Dr. Park has recruited over thirty workers from his own business involved for the Professional Kitchen project, but he says there’s still a long way for business campuses to go. “We need more fresh and healthy options, right there in the dining halls,” he insists. “Until then, our employees will continue to rely on programs such as these.”


Low ego involvement, low source expertise

Lee Park is the kind of guy who easily persuades people to help him out. He is thoughtful and personable, with a clear consideration behind every word he says. It will come as little surprise that he has some unique ideas about the accessibility of fresh foods for assisted living facilities, or nursing homes.

After all, Lee has attended a large Midwestern university for the last two years, and knows better than anyone how difficult it can be to get good information about food—much less good food—when relying on any kind of dining plan. Specifically, he views many assisted living facilities for older adults as being food deserts.

“When I first got to college, I didn’t know what a food desert was,” Lee says. “But I came to learn that it’s the term for a setting where fresh and healthy food is extremely difficult to secure. For instance, there are areas of many cities where the only food purchasing options are convenience stores or fast food restaurants. Under those conditions, residents struggle to get enough food to eat, and generally have to rely on high-sugar or high-fat options because they don’t have access to fresh food.

“I started to realize that many older adults in assisted living exist under similar conditions. Although some of them have cars, or else the option to walk to a grocery store with fresh options, many of them have to rely on highly processed foods available in the cafeterias or in facility-affiliated stores. Within the facility cafeterias, information about food can be hard to come by, so it’s nearly impossible to make healthy informed choices the way it is when one has the option to go to a grocery store. You'll see many individuals eating pizza and drinking soda for almost every meal, because those are among the few options that actually taste good in the selection from the cafeteria.
“And then there’s the issue of kitchen space.” Lee smiled, conspiratorial. “Have you ever attempted to cook in a shared kitchen in an assisted living facility? It’s nearly impossible. One risks burning the kitchen down trying to make oneself pasta. There is also the issue of theft. Some assisted living residents will buy groceries only to have them stolen out of the communal refrigerator. These individuals often lack time to cook, even if they did manage to put together ingredients for a fresh meal that can be prepared in limited space.

“That’s when I got the idea for Grandma's Kitchen. It started out as an informal gathering, a handful of friends working together to produce meals that were safe and healthy for everyone. But it has become a lot more formal. It can be a fun way to connect people, because they all take turns cooking big meals with healthy, affordable ingredients and then taking home the leftovers. It prevents them from relying on the assisted living campus's meal plans with their unhealthy food, and it can expose people to a lot of new foods they might not otherwise try, like tofu or kielbasa.”

Lee has recruited over thirty residents from the local assisted living facility for the Grandma's Kitchen project, but he says there’s still a long way for assisted living campuses to go. “Everyone needs more fresh and healthy options, right there in the dining halls,” he insists. “Until then, we’ll continue to help out.”

**Post-Reading Items**

[See Study 1 materials]

Who does this news story focus on?

a) A college student

b) A microbiology researcher
c) A human resources manager

d) A professional chef

e) A pizza delivery driver

What is the main argument of this news story?

a) That kitchens need to have higher standards of professionalism

b) That most college students don’t have enough job skills

c) That campuses need more fresh food options

d) That Americans don’t understand how to find fresh food

e) That weight gain can be prevented through changes in diet

According to this news story, what is the definition of a food desert?

a) A place that has a lot of desert-based food options, such as cacti and antelope

b) An arid place with abundant sources of food

c) A type of campus that requires survival training in case of desert travels

d) Any space devoid of food, such as an empty refrigerator or unused kitchen

e) An area where food options are limited and fresh, healthy food is difficult to find

What is the mission of the program covered in this news story?

a) To force Congress to pass a law that requires survival training for desert travelers

b) To provide more fresh food options to individuals who might not otherwise have them

c) To encourage more colleges to have the option to let students major in food science
d) To raise awareness about the life stresses that can lead people to consume too much sodium

e) To train restaurant employees to be more respectful toward customers

**Author Rating and Character Rating**

[See Study 1 materials]

**Thought Listing**

[See Study 1 materials]

**Attitude Measure**

- The food program described in this story is

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<td>80</td>
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- The food program described in this story is

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<td>90</td>
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- The food program described in this story is

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</table>
• The food program described in this story is

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<th>Useful</th>
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<tbody>
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<td>1</td>
<td>10 20 30 40 50 60 70 80 90 100</td>
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</table>

• The food program described in this story is

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<th>Moderate</th>
<th>Bad</th>
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<td>10 20 30 40 50 60 70 80 90 100</td>
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</tbody>
</table>

Debrief

[See Study 1 materials]

Demographic Items

[See Study 1 materials]

Social Dominance Orientation

All items have answer options that range from “strongly disagree” to “strongly agree.”

1. Some groups of people are simply inferior to others.

2. No one group should dominate in society.

3. In getting what you want, it is sometimes necessary to use force against other groups.

4. We should strive to make incomes as equal as possible.*

5. It’s okay if some groups have more of a chance in life than others.

6. We would have fewer problems if we treated people more equally.*

7. I support increased social equality.*
8. To get ahead in life, sometimes it is necessary to step on other groups.

9. If certain groups stayed in their place, we would have fewer problems.

1. We should do what we can to equalize conditions for different groups.*

11. It’s probably a good thing that certain groups are at the top and other groups are at the bottom.

12. All groups should be given an equal choice in life.*

13. Inferior groups should stay in their place.

14. Group equality should be our ideal.*

15. It would be good if groups could be equal.*

16. Sometimes other groups must be kept in their place.

**Religious Motivations**

All items have answer options that range from “strongly disagree” to “strongly agree.”

**Intrinsic motivation subscale**

1. I pray because I enjoy it.

2. I turn to God because it is satisfying.

3. I turn to God because I enjoy spending time with God.

4. I share my faith because my God is important to me and I’d like others to know my God too.

5. I pray because I find it satisfying.

6. I attend religious services because by going I learn new things.
Extrinsic motivation subscale

1. I share my faith because I want other members of my religion to approve of me.
2. I attend religious services because others would disapprove if I didn’t.
3. I turn to God because I’d feel guilty if I didn’t.
4. I pray because God will disapprove if I don’t.
5. I attend religious services because one is supposed to go.
6. I participate in my faith because I’d feel bad about myself if I didn’t.
APPENDIX C: STUDY 2.1 RESULTS

Table 16. Demographic Information for Participants

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
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<td>46.9</td>
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<tr>
<td>Male</td>
<td>180</td>
<td>52.9</td>
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<td>Other/None</td>
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<td>.3</td>
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<table>
<thead>
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<th>Ethnicity</th>
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</thead>
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<td>European-American</td>
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<tr>
<td>Asian American</td>
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<tr>
<td>African-American</td>
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<tr>
<td>Latinx</td>
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<td>5.5</td>
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<td>Multi-Racial</td>
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<table>
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<tr>
<th>Political Affiliation</th>
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<td>Conservative</td>
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<td>22.4</td>
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<tr>
<td>Independent</td>
<td>79</td>
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<tr>
<td>None</td>
<td>85</td>
<td>22.1</td>
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Table 17. Most Common News Source Type Reported by Each Participant

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<thead>
<tr>
<th>Source Type</th>
<th>Frequency</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Mainstream News</td>
<td>110</td>
<td>28.6</td>
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<tr>
<td>Tabloid News</td>
<td>54</td>
<td>14.1</td>
</tr>
<tr>
<td>Fake News</td>
<td>20</td>
<td>5.2</td>
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<tr>
<td>Social Media</td>
<td>105</td>
<td>27.3</td>
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<tr>
<td>None</td>
<td>95</td>
<td>24.9*</td>
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<tr>
<td>Total</td>
<td>384</td>
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Note 1. *Participants who put down “none” for this data set did not have their data further explored by research assistants; it is possible that a subset of these participants belong in a different category after further analysis.
Table 18. Correlations Between Overclaiming, Actual Knowledge, Fake News Consumption, and Rating of News Story

<table>
<thead>
<tr>
<th>Variable</th>
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<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>1. Total Overclaiming</td>
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<td>2. Media Knowledge</td>
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<td></td>
<td></td>
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<td>3. Nutrition Knowledge</td>
<td>1.96</td>
<td>.74</td>
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<td>.450*</td>
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<tr>
<td>5. Trust in News Story</td>
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<td>- .022</td>
<td>.069</td>
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<tr>
<td>6. Confidence in Rating</td>
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<td>24.03</td>
<td>.118*</td>
<td>.109*</td>
<td>.155*</td>
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*Note 1.*p<.05.

Table 19. Correlations between Author Rating, Character Rating, Caffeine Attitude, Trust, and Confidence

<table>
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<th>Variable</th>
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<td>2. Character Rating</td>
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<td>3. Nutrition Attitude</td>
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<tr>
<td>4. Food Desert Attitude</td>
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<td>.116*</td>
<td>.249*</td>
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<td>5. Trust in News Story</td>
<td>40.00</td>
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<td>.194*</td>
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<td>6. Confidence in Rating</td>
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<td>7. Narrative Transportation</td>
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<td>.088</td>
<td>.145*</td>
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*Note 1.*p<.05.
Table 20. Mean Comparison Between Condition 2 (Version 1) and Condition 2 (Version 2)

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Note 1. *p<.05 for ANOVA comparison between means, after Bonferroni correction for multiple comparisons.
### Study Details

**Study**: 17-539  
**Sponsor(s)**:  
**Committee**: IRB #1  
**Sponsor Id**:  
**Category**:  
**Department**: Psychology  
**Agent Types**: SBER  
**CRO**:  
**Title**: Can You Spot the Fake News?  
**Year**: 2017  
**2018 Common Rule Date**: 3/6/2019  
**HIPAA**: No  
**Number of Participants**: 2800  
**Exempt Categories**: 2018 - 2 (i): Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) when the information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects., 2018 - 3 (i.A): Research involving benign behavioral interventions in conjunction with the collection of information from an adult subject through verbal or written responses or audiovisual recording when the subject prospectively agrees to the intervention and information collection and the information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects. - 3 (ii) If research involves deception, it is prospectively authorized by the subject.

**FDA Study**: No  
**Greater Than Minimal Risk**: No  
**Comments**:  

### Study-Site

**Site(s)**: 01 - Specified and others  
**PI**: Kane, Kelly  
**Status**: Active  
**Approval**: April 7, 2020  
**Expiration**: Exempt  
**Initial Approval**: January 25, 2018  
**Other Expirations**: Exempt Determination Expiration - 04/06/2023
Tags: Exempt

Comments:

#### Study-Site Contacts (1)

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<td>Blankenship, Kevin PhD</td>
<td>Supervising Investigator</td>
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#### Reference xForms (1)

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