The Effect of Source Prestige and Author Gender on Perceived Article Credibility

Noa Karp and Eliza Liebowitz, Roslyn High School, Roslyn, NY

E-mail: nkarp26@roslynschools.org; eliebowitz26@roslynschools.org

Abstract

As internet usage increases, people are being bombarded with both factual and non-factual information. Many times, the readers' opinions related to the article's accuracy and perceived credibility change without fact-checking the data they read. Accordingly, it is important to understand what factors cause people to form or change their opinion with little or no supportive evidence. In prior research, several factors have been shown to influence how people will perceive the credibility of an article. Prestigious sources have been shown to increase perceived credibility, while gender of the author, in certain cases, can also impact perceived credibility; however, much more research is needed on this topic. For example, it is interesting to assess perceived source credibility among high school students, an age group less studied. Our experiment investigated the effects of source prestige and the gender of the researchers conducting a study on perceived credibility. Eighty-eight students (9th & 10th graders) from a midsized suburban high school were randomly assigned to read an excerpt from an article which discusses Oumuamua, the first interstellar object which passed through our solar system. In accordance with the stimulus, they were given the publisher (Harvard University/University of Eastern Minnesota), and gender of the researchers (male/female), which were indicated at the top of the article page. Participants were then asked questions regarding the article's perceived credibility. Compared to articles that were shown to have been published by the University of Eastern Minnesota, Harvard University-published articles received higher credibility ratings. Additionally, the perceived credibility of articles involving research conducted by male scientists was higher than that of articles involving research conducted by female scientists. The experiment suggests that elements of an article, specifically source prestige and gender, have an impact on the perceptions of article credibility.

The recent COVID-19 pandemic set the stage for one of the biggest spreads of misinformation in history. The pandemic was used to wage political battles, and opposing medical opinions were presented to the public through TV, the radio, and the internet. People around the globe were overwhelmed by the amount of political and medical information circulating through media sources. Aside from what seemed to be information originating from reliable sources, the public was bombarded with information from seemingly unreliable sources, leaving people to try and sort out what was true and what was false.

While the COVID-19 pandemic offered us a real-time glimpse into the dangers associated with the spread of false information, research has shown that there are different types of misinformation that can have a negative and dangerous effect on people and societies, especially in an era of global communication (Jia et al., 2022). For example, financial misinformation related to digital currencies and their true value can affect people's investment strategies, which could have devastating financial repercussions.

As people and societies encounter the continuous flow of misinformation, it is vital to understand how they judge and interpret information to be credible or not. What parameters do people use to make such a judgment? What influences their decisions? And more specifically, how do school-aged adolescents make such judgments? Our study aims to evaluate two potentially influencing factors, prestige of source and gender stereotypes. Understanding these, and other influencing factors, may offer ways to help individuals and societies to accurately differentiate between true and false information.

With the increasing use of social media outlets as news sources, the amount of information people are exposed to has increased. Much of this information is based on unverified reports, rumors, and intentionally misleading data (Rubin et al., 2016). With the Internet becoming the main source for seeking out information, the spread of such false information has skyrocketed (Nadarevic et al., 2020). The Internet also allows for the rapid spread of unsubstantiated rumors and conspiracy theories as it offers a direct and rapid path from

information producers to information consumers, thus changing the way users become informed and form an opinion (Del Vicario et al., 2016). In Del Vicario's research, bloggers (information producers) were able to convince many people (information consumers) that a false military exercise was actually a battle between two opposing U.S. forces and a beginning of a civil war in the U.S. Within the reality of widespread, rapid, multiple-source information, false information seems to spread significantly faster and more broadly than truthful information across a variety of informational categories. Furthermore, a study investigating the diffusion of verified true and false news stories distributed on Twitter from 2006 to 2017 concluded that false information diffused faster and more broadly than the truth in many categories of information, specifically information related to political news (Vosoughi et al., 2018).

With the increasing amount of false information people are exposed to, it is even more alarming to learn that many people have a hard time differentiating between true and false information. As false information is so widespread, it is important to understand the public's ability to differentiate between real and fake news. Recent polls indicate that a significant portion of Americans (47%) report having difficulty distinguishing between real and fake news (Pehlivanoglul et al., 2021). The increasing number of different opinions shared through social media makes the task of distinguishing between what is true and what is false more difficult (Shu et el., 2017).

With widespread and easy access to multiple information sources, people use various factors to try and distinguish between accurate and inaccurate information. Source prestige and perceived publisher credibility are some of the judgment cues that people use to evaluate the accuracy of information. Studies have shown that information was perceived as being more accurate when presented by and alleged expert or reliable source than by laypersons or dubious news sources. This is due to the fact that the credibility of a source and the trustworthiness of an institution has a direct and substantial effect on the perceived credibility of the article (Nadarevic et al., 2020). Source credibility is also believed to be affected by the perceptions of source trustworthiness as well as the expertise of the publisher. This, in turn, affects how people perceive, process, and judge the information presented by the source (Hocevar et al., 2017). When people have a negative attitude towards a source, mainly because of the publisher, then the believability of the source is lower (Hohenburg et al., 2022). In addition, information provided by credible sources has a larger impact on recipients' beliefs, attitudes, and follow-up behaviors than information provided by non-credible sources (Wilson et al., 1993). Experiments have shown that when an article is published by a more prestigious, well-respected, or well-known institution people tend to have a more positive attitude toward the article and find the information trustworthy (Tormala et al., 2006). Reliance on the prestige of a source can at times have a negative effect as it may mislead readers to believe information is factual and discourage them from fact-checking its content (Hocevar et al., 2017).

In addition to focusing on the effects and impact of source prestige on perceived credibility, our research also examined the influence and effect of gender on perceived credibility. When trying to assess this link, it's important to first examine data which shows that men, at times, are still perceived as intellectually superior to women (Cislaghi et al., 2019). Throughout history, men have been perceived as having a higher level of intellectual ability than women (Storage et al., 2020). This phenomenon may be due in part to a gender stereotype that portrays men as more brilliant than women (Storage et al., 2020). In addition, research has shown that at times, due to unbased gender stereotypes, men are considered to be more competent than women (Storage et al., 2020). A possible outcome of such perceptions could be found in research that has shown that men are more likely to get employed than women, especially for jobs involving scientific research (Cislaghi et al., 2022). These biased attitudes and their consequences can help understand the link between gender and perceived information credibility.

Previous research has found that the perceived credibility of published media is influenced by the gender and expertise of the publisher. This research also found that male authors are considered more credible than female authors among active information seekers. (Armstrong & McAdams, 2009). In addition, research has also found that women are perceived as less persuasive than men in general, regardless of their presentation style (Winkler et al., 2017).

Many studies have analyzed what parameters affect perceived information credibility, but high school students have not been the focus of many of these studies. Overall, high school students heavily rely on Internet resources; therefore, we believe that this study addresses a significant research gap in the field of information credibility research.

In order to determine which factors impact perceived article credibility, we hypothesized that compared to people reading an article published by a well-known academic institution, people reading an article published by a less known academic institution would find the article to be less credible. Additionally, we also hypothesized that compared to female scientists, male scientists would be perceived as more credible.

Method

Participants

The study consisted of 88 participants, 9th and 10th grade students in a mid-sized suburban high school. The survey was conducted within the school's English classrooms. Our demographic information showed that 48.9% of our sample identified as male, 43.2% identified as female, 5.7% identified as other, and 2.3% of our sample chose the "prefer not to say" option.

Experimental Stimuli

Experimental Stimuli

The study presented a short article, based on an article published in the Harvard Gazette, in which the excerpt discussed "Oumuamua," an interstellar object which passed through our solar system, and which some scientists proclaim may have originated from an alien culture (Harvard University Gazette). This article was chosen knowing that participants would have little prior knowledge about this topic and thus not be biased toward the article's content.

Participants were randomly assigned to one of four conditions conducted through a 2 x 2 design. All conditions were identical except for the publisher (source) and authors of the article. Some participants were assigned an article published by a prestigious source (Harvard University), and some participants were assigned an article published by a fictitious university (University of Eastern Minnesota). Gender was also a differentiating factor between conditions and was indicated by the name of the authors ("Kevin F. Barlowe, John Bialy" or "Charlotte F. Barlowe, Anna Bialy"). The authors' names were chosen at random, and it was ensured that potential names were not considered gender neutral. Last and middle names remained the same between conditions in order to reduce potential confounding variables.

Experimental Stimuli

Dependent Measures

After reading the article presented to them and having seen their assigned publisher (source) and authors, the participants were presented with a series of statements to determine "article credibility". On 7-point Likert-type scales, participants were posed with three statements and had to rate their agreement with them (1 = "strongly disagree", 7 = "strongly agree"). The credibility scale consisted of the following statements: "I believe this source," "The researchers are credible," and "I would use this source if I was doing research on the topic." These statements all represented the original scale of "article credibility" which was self-created.

Results

An ANOVA showed that our first hypothesis, that people reading an article published by a prestigious source will find the article to be more credible, was supported, $F(1, 87) = 5.83$, $p = .02$. Participants rated the Harvard sources as significantly more credible than the Eastern Minnesota source. This is shown in Figure 1.

Figure 1. Effect of Source on Perceived Article Credibility
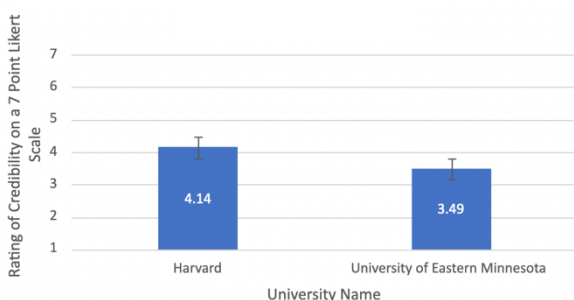
Note. Error bars show ± 1 standard error

The 2-way ANOVA also showed that people reading an article written by male authors found the article to be slightly more credible. This finding approached significance, $F(1, 87) = 3.24$, $p = .08$. This is shown in Figure 2. Finally, there was no significant interaction between perceived article credibility and gender.

Figure 2. Effect of Source on Perceived Article Credibility
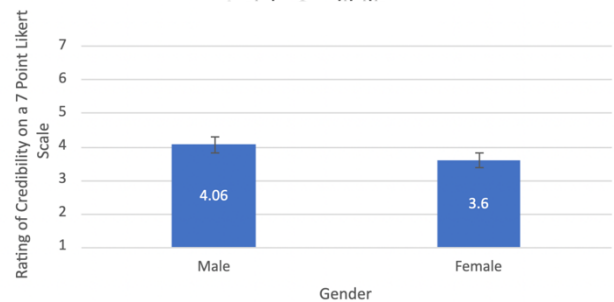
Note. Error bars show ± 1 standard error

Discussion

Source Prestige

Our results supported our hypothesis that articles published by prestigious institutions are indeed perceived as more credible. Some explanations for these results can be because the prestige of a source has a direct and substantial effect on perceived article credibility (Nadarevic et al., 2020). This factor was further sustained in research that showed that if an article is published by a more prestigious or well-known institution, people tend to have a more positive attitude towards the article (Tormala et al., 2006). Further support can be found in research which has shown that source credibility is believed to be impacted by both perceptions of source trustworthiness and expertise (Hocevar et al., 2017). On the other hand, previous research has shown that unknown institutions or sources may cause people to have a negative attitude, or a bias towards such a source thus making its content less believable and less reliable (Hohenburg et al., 2022).

Accordingly, when participants were reading an article published by the "University of Eastern Minnesota," an institution which they have never heard of, they may have regarded the information presented by this source to be unreliable.

Author Gender

Our research shows that the results related to our second hypothesis, that compared to female scientists, male scientists will be perceived as more credible, approached significance for the claim that male authors will be perceived as more credible. Some explanations for these results could arise from the fact that previous research has shown that throughout

history, men have been perceived as having a higher level of intellectual ability than women (Storage et al., 2020). Research has also shown that in certain cases, perceived male superiority leads to increased reliability and credibility of information published by males. For example, gender stereotypes impact perceived information credibility within certain categories of news (Haim & Maurus, 2021). Research published by a male author is likely to be trusted when compared to the work of a female author. The reason our results only approached significance can be due to our limited sample size combined with the fact that younger high school students are less susceptible to gender bias.

Limitations and Further Study

Some limitations we faced in our study include our relatively small sample size. Our sample consisted of 88 participants who were 9th and 10th graders in a mid-sized suburban high school, thus not fully representing the high school's population.

Our study can be further expanded to research the effect of prior opinions and biases on the credibility of articles. This would mean participants who had pre-existing knowledge about the article topic prior to completing the survey, would likely be less affected by the source of the article or gender of the scientist. We could also examine if there is a connection between the perceived credibility of the scientist, based on gender, and the gender of the participant completing the survey. A follow-up study could include elements such as school logos to reinforce who the article is published by and also include a photo of the researchers/author to reinforce who conducted the study. Additional age demographics should also be tested, and results relating to causes for perceived article credibility be compared between generations. As noted, this research should include more participants with a larger pool of age groups and demographics from which to choose from.

Conclusion

The recent COVID-19 pandemic set the stage for one of the biggest spreads of misinformation in history. The pandemic was used to wage political battles, and opposing medical opinions were presented to the public through TV, radio, and the Internet. People around the globe were overwhelmed by the amount of political and medical information circulating through multiple media sources. Aside from information originating from reliable sources, the public was bombarded with information from seemingly unreliable sources, leaving people to try and sort out what is true and what is false.

In the era of global communication, society and individuals are exposed, on a daily basis, to tremendous amounts of information, much of it being false. Such misinformation can have negative and dangerous effects, so it is important to understand which factors influence people to interpret information to be credible or not. Identifying and understanding these influencing factors may offer ways to help individuals to differentiate between what is true and false.

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