

---

Theses and Dissertations

Student Publications

---

11-17-2022

## Exploring Misinformation Campaigns And How To Defend Against Them

Michelle S. Kuralt

Follow this and additional works at: [https://csuepress.columbusstate.edu/theses\\_dissertations](https://csuepress.columbusstate.edu/theses_dissertations)



Part of the Education Commons

---

COLUMBUS STATE UNIVERSITY

EXPLORING MISINFORMATION CAMPAIGNS AND HOW TO DEFEND AGAINST  
THEM

A THESIS SUBMITTED TO

THE TURNER COLLEGE OF BUSINESS

IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF CYBERSECURITY MANAGEMENT

TSYS SCHOOL OF COMPUTER SCIENCE

BY

MICHELLE S. KURALT

COLUMBUS, GEORGIA

2022

Copyright © 2022 Michelle S. Kuralt  
All Rights Reserved.

# Exploring Misinformation Campaigns and Ways to Defend Against Them

By

Michelle S. Kuralt

Committee Chair:

Dr. Lydia Ray

Committee Members

Dr. Yeşem Kurt Peker

Dr. Stephanie da Silva

Columbus State University

December 2022

## ABSTRACT

Misinformation campaigns can have very real and lasting effects. Misinformation has been known to impact elections, create vaccine hesitancy, and increase polarization within societies. This paper reviewed existing literature regarding misinformation research, collected information from research participants to discern factors which may contribute to an increased susceptibility to misinformation, and examined Rule Based Training and a training program which utilized both rules and mindfulness to ascertain if these training programs might be effective in reducing participant susceptibility to misinformation.

INDEX WORDS: Manipulation, epistemology, misinformation, psychology, trust, psychology, polarization, trolling, national security, policy, social cybersecurity, disinformation, mindfulness, training, media literacy.

## TABLE OF CONTENTS

Abstract .....	iv
LIST OF TABLES .....	vii
LIST OF FIGURES .....	viii
1. INTRODUCTION .....	1
2. PROBLEM STATEMENT .....	1
3. LITERATURE REVIEW .....	2
3.1 The Problem of Misinformation .....	2
3.2 Research in Ways to Combat Misinformation .....	8
3.3 Media Literacy .....	10
3.4 Mindfulness Articles .....	11
3.5 Discussion of Literature Review .....	11
4. RESEARCH QUESTION .....	13
5. RESEARCH DESIGN STUDY .....	13
6. STUDY RESULTS .....	16
6.1 Rule Based Training Group .....	16
a. Demographics .....	16
b. Verified Accurate Alexa Article .....	16
c. Verified Covid Article Containing False Information .....	18
d. Personality/Philosophical Attributes .....	19
6.2 Combined Training Group .....	20
a. Demographics .....	20
b. Verified Accurate Alexa Article .....	21
c. Verified Covid Article Containing False Information .....	22
d. Personality/Philosophical Attributes .....	23
6.3 Control .....	24
a. Demographics .....	24
b. Verified Accurate Alexa Article .....	24
c. Verified Covid Article Containing False Information .....	26
d. Personality/Philosophical Attributes .....	27
6.4 Comparison of Participants Who Would and Would Not Share the Misinformation Article .....	28
a. Demographics .....	29
b. Political Identification .....	29
c. Familiarity with the Publication .....	30
d. Emotions from Misinformation .....	31
e. Trust in the Publication .....	32
f. Belief in Statements .....	34
g. Trust .....	35
h. Trust in Articles on the Internet .....	37
i. Conspiracy Theories .....	40
j. Fact-checking .....	41
k. Primary News Sources .....	44
l. Summary of Comparison Between Those Who Would and Would Not Spread Misinformation .....	45

7. DISCUSSION OF SURVEY RESULTS .....	46
7.1. Likelihood of Sharing the Disinformation Article .....	46
7.2 Sharing of Verified Accurate Article .....	48
7.3 Fact-checking of Articles .....	48
7.4 Purpose of the Misinformation Article .....	50
7.5 Recognizing the Inflammatory Nature of the Misinformation Article .....	52
7.6 Training Comparison Summary .....	54
8. SUGGESTED FURTHER WORK .....	56
9. CONCLUSION .....	57
10. REFERENCES .....	59
11. APPENDICES .....	62

## LIST OF TABLES

Table 1.1 Summary of Comparison Between Participants Who Would Spread the Misinformation Article and Those Who Would Did Not .....	45
Table 1.2. Comparing Effectiveness of Trainings .....	55

## LIST OF FIGURES

Figure 1 Rule Based Group Belief in Verified Article.....	17
Figure 2 Rule Based Group Familiarity with Verified Publication .....	17
Figure 3 Rule Based Group Verified Article Likely to Be Shared.....	18
Figure 4 Rule Based Group Familiarity with Misinformation Publication.....	18
Figure 5 Rule Based Group Misinformation Article Likely to Be Shared.....	19
Figure 6 Rule Based Group Belief in Statements from Misinformation Article.....	19
Figure 7 Rule Based Group Belief in Ability to Identify False Information .....	20
Figure 8 Combined Training Group Belief in Verified Article .....	21
Figure 9 Combined Training Group Familiarity with Verified Publication .....	21
Figure 10 Combined Training Group Verified Article Likely to Be Shared .....	22
Figure 11 Combined Training Group Familiarity with Misinformation Publication .....	22
Figure 12 Combined Training Group Misinformation Article Likely to Be Shared .....	23
Figure 13 Combined Training Group Belief in Statements from Misinformation Article .....	23
Figure 14 Combined Training Group Belief in Ability to Identify False Information .....	24
Figure 15 Control Group Belief in Verified Article .....	25
Figure 16 Control Group Familiarity with Verified Publication .....	25
Figure 17 Control Group Verified Article Likely to Be Shared .....	26
Figure 18 Control Group Familiarity with Misinformation Publication .....	26
Figure 19 Control Group Misinformation Article Likely to Be Shared .....	27
Figure 20 Control Group Belief in Statements from Misinformation Article .....	27
Figure 21 Control Group Belief in Ability to Identify False Information .....	28
Figure 22 Political Affiliation of Those Who Would Share the Misinformation Article .....	30
Figure 23 Familiarity with Misinformation Publication Among Those Who Would Share It....	31
Figure 24 Familiarity with Misinformation Publication Among Those Who Would Not Share It .....	31
Figure 25 Emotional Impact of Misinformation Article on Those Who Would Share It .....	32
Figure 26 Emotional Impact of Misinformation Article on Those Who Would Not Share It....	32
Figure 27 Trust in Misinformation Publication Among Those Who Would Share the Article... 33	

Figure 28 Trust in Misinformation Publication Among Those Who Would Not Share the Article .....	33
Figure 29 Belief in the Misinformation Statements Among Those Who Would Share the Article .....	34
Figure 30 Belief in the Misinformation Statements Among Those Who Would Not Share the Article.....	34
Figure 31 General Trust in People Among Those Who Would Share the Misinformation.....	35
Figure 32 General Trust in People Among Those Who Would Not Share the Misinformation .	36
Figure 33 Trust in the Government Among Those Who Would Share the Misinformation .....	36
Figure 34 Trust in the Government Among Those Who Would Not Share the Misinformation	37
Figure 35 Trust in Articles on the Internet Among Those Who Would Share the Misinformation .....	38
Figure 36 Trust in Articles on the Internet Among Those Who Would Not Share the Misinformation .....	38
Figure 37 Belief in the Statements from the Verified Article Among Those Who Would Not Share the Misinformation Article .....	39
Figure 38 Belief in the Statements from the Verified Article Among Those Who Would Share the Misinformation Article .....	40
Figure 39 Belief in Conspiracy Theories Among Those Who Would Share the Misinformation .....	40
Figure 40 Belief in Conspiracy Theories Among Those Who Would Not Share the Misinformation .....	41
Figure 41 Fact-checking in General Among Those Who Would Not Share the Misinformation	42
Figure 42 Fact-checking in General Among Those Who Would Share the Misinformation .....	42
Figure 43 Fact-checking of the Articles Among Those Who Would Not Share the Misinformation .....	43
Figure 44 Fact-checking of the Articles Among Those Who Would Share the Misinformation	43
Figure 45 News Sources Among Those Who Would Not Share the Misinformation Article ....	44
Figure 46 News Sources Among Those Who Would Share the Misinformation Article .....	45
Figure 47 Training Participants Likelihood of Sharing the Misinformation Article.....	47
Figure 48 Training Participants Who Engaged in Fact-checking of Articles .....	49
Figure 49 Control Group Participants Who Engaged in Fact-checking of Articles .....	49

Figure 50 Rule Based Participants Who Engaged in Fact-checking of Articles .....	50
Figure 51 Combined Training Participants Who Engaged in Fact-checking of Articles .....	50
Figure 52 Training Participants Identifying Purpose of Misinformation Article .....	51
Figure 53 Control Group Participants Identifying Purpose of Misinformation Article .....	51
Figure 54 Rule Based Training Participants Identifying Purpose of Misinformation Article ....	52
Figure 55 Combined Training Participants Identifying Purpose of Misinformation Article .....	52
Figure 56 Training Participants Identifying Statements in the Misinformation Article as Deliberately Inflammatory .....	53
Figure 57 Control Group Participants Identifying Statements in the Misinformation Article as Deliberately Inflammatory .....	53
Figure 58 Rules Based Group Participants Identifying Statements in the Misinformation Article as Deliberately Inflammatory .....	54
Figure 59 Combined Training Group Participants Identifying Statements in the Misinformation Article as Deliberately Inflammatory .....	54

EXPLORING MISINFORMATION CAMPAIGNS AND WAYS TO DEFEND AGAINST  
THEM

A thesis submitted to the Turner School of Business in partial fulfillment of the requirements for  
the degree of

MASTER OF CYBERSECURITY MANAGEMENT

TSYS OF COMPUTER SCIENCE

By

Michelle S. Kuralt

2022

---

Dr. Lydia Ray, Chair Date

---

Dr. Yeşem Kurt Peker, Member Date

---

Dr. Stephanie da Silva Member Date

## **1. Introduction**

Social cybersecurity is an emerging field of study which examines information warfare and the “hacking” of humans (Beskow & Carley, 2019). One significant tool used in information warfare is misinformation (Beskow & Carley, 2019). Misinformation campaigns leave society vulnerable to whomever wishes to manipulate it. Indeed, the US Military views misinformation campaigns as a threat to national security (Beskow & Carley, 2019). Misinformation is a broad, catch-all term, which covers things ranging from trolling, to spam, to urban legends, to rumors, to false news, to purposeful disinformation (Wu, Morstatter, Carley, & Liu, 2019). Disinformation refers to the purposeful spread of information known to be false, while misinformation is the spread of false information in which the sharer may be unaware of the falsehoods within the story (Wu, Morstatter, Carley, & Liu, 2019). For the purposes of this paper, while the intentional spread of disinformation may be the most important to protect against, the techniques explored may be helpful against all types of misinformation.

## **2. Problem Statement**

Disinformation campaigns are a growing threat in our increasingly interconnected society. It is easy for disinformation campaigns to reach their target audience through online social media such as through Facebook. Indeed, the problem is so widespread that it threatens democracy itself, as has been seen with the disinformation attacks conducted by Russian troll farms related to the 2016 and 2020 elections (O'Sullivan, 2020). The Russian government is especially adept at utilizing disinformation and has launched a disinformation campaign related to the war in

Ukraine that many experts agree that the United States is wholly unprepared to fight against (Contreras & Lee, 2022).

There are six major psychological techniques which can be used to manipulate people during disinformation campaigns: “impersonation, conspiracy, emotion, polarization, discrediting, and trolling” (Abrams, 2021). A society remains vulnerable to exploitation unless it comes up with ways to mitigate against these techniques and increase the psychological resiliency of people.

### **3. Literature Review**

#### **3.1 The Problem of Misinformation**

In “Misinformation in Social Media: Definition, Manipulation, and Detection”, the authors used misinformation as a broad, catch-all term, and discussed the different types of misinformation, as well as their causes. Further distinctions were made between intentionally spreading and unintentionally spreading misinformation. The authors suggested using things such as fact-checking websites to decrease the spread of misinformation (Wu, Morstatter, Carley, & Liu, 2019).

In “Social Cybersecurity: An Emerging National Security Requirement”, Lt. Col. David Beskow and Kathleen Carley examined the concept of social cybersecurity as a multi-disciplinary field of study which included both computer science as well as various types of social science. They defined it as information warfare which can have an impact on human behavior. Humans can be “hacked” and can be manipulated to accomplish the goals of the hacker (Beskow & Carley, 2019). This form of warfare is especially dangerous because it is decentralized and does not require the hacker to be physically present given how easily accessible people are through the Internet. The researchers described techniques such as misdirection, and creating a false

generalized sense of the “other” to influence people. They ultimately concluded that it was important to teach people about this threat to defend against it (Beskow & Carley, 2019).

In “New Zealand’s 23-day Parliament siege”, the authors described the increase in misinformation leading up to, and during the 23-day siege on New Zealand’s Parliament in 2022. They cited the Disinformation Project as reporting that on at least one day during the siege, sites known to proliferate misinformation received more traffic than mainstream media sites. The situation began as anti-vaccine protests but also involved a variety of other conspiracy theories, including those related to “Q.” Politicians received death threats, and many people living in the surrounding area felt unsafe, with protestors blocking roads and setting fires. The siege showed the offline effects that online misinformation can cause (Robie, 2022).

In “Effect of Disinformation Propagation on Opinion Dynamics: A Game Theoretic Approach”, the authors created a game simulating social media behavior and studied the spread of misinformation. The authors noted that people with similar views may form echo chambers. False information can spread more rapidly if it is shared by people with similar views as those expressed in the misinformation. The authors found that allowing users to flag suspicious content to administrators did decrease the spread of disinformation. The study noted that if participants felt more uncertainty concerning their opinions at the start, then they were less influenced by disinformation than were people who had strong views who were in groups with like-minded individuals (Guo, 2022).

In “Why do people spread false information online? The effects of message and viewer characteristics on self-reported likelihood of sharing social media disinformation”, the author conducted four studies across social media platforms to ascertain what factors may influence the

spread of misinformation. The author found that one of the strongest factors in spreading misinformation was consistency with one's current beliefs. Other strong factors included belief that the information was true, and having seen the information previously. While a high number of likes/shares of the information was not shown to be significant in spreading misinformation, it might increase the likelihood of participants having seen the information previously which was a factor in spreading misinformation. This finding was especially significant given the prevalence of botnets on social media to boost sharing information, the existence of a black market for social media account boosting, and the fact that many social media algorithms boost posts which were already popular (Buchanan, 2020).

In "Disinformation and Echo Chambers: How Disinformation Circulates on Social Media Through Identity-Driven Controversies", the authors discussed the role of echo chambers online in the spread of misinformation. The authors examined in depth the social media presence of people who believed in the conspiracy theory of the earth being flat. The authors suggested that in some cases, people willingly spread information they knew to be false because they wanted to believe it to be true, and they were sharing their fantasy with others. The authors argued that teaching people rhetoric may help them recognize disinformation. Some of the primary techniques used within flat-earther arguments were creating an us versus them mentality, pointing to larger conspiracy theories, and discrediting any sources that were not consistent with their beliefs. One especially relevant quotation from the article was, "one can fact-check news but not beliefs" (Ruiz, 2022).

They described disinformation as a two-step process of "seeding" false information into the public sphere, and then "echoing" by trying to get people to accept it as part of their preferred echo chamber where people like "us" believed in it, and all non-believers were classified as

“them” (Ruiz, 2022). The authors made the argument that disinformation worked on two levels of not only sharing misleading information, but also persuading people to accept these false narratives as part of their identity. They suggested some potential ways to mitigate against seeding as: 1. allowing users to flag disinformation, 2. altering social media algorithms which promote popular items even if they contain disinformation, 3. increasing fact checking, and 4. demonetizing the aspects of social media which encourage disinformation to proliferate (Ruiz, 2022). They also addressed how difficult it can be to mitigate against disinformation once people have accepted facts as part of their identity. They suggested trying to give people a way to walk away from their false beliefs without feeling embarrassment (Ruiz, 2022).

In ““Imitation (In)Security” And the Polysemy of Russian Disinformation: A Case Study in How IRA Trolls Targeted U.S. Military Veterans”, the authors analyzed the efforts of the Internet Research Agency (IRA), an entity backed by the Russian government, and how the group amplified divisive messages to troll and polarize Americans leading up to and after the 2016 election. The authors discussed a concept they coined of imitation (in)security where the influence of foreign actors was not necessarily by spreading false information, but rather was through imitating and stirring up domestic resentments and concealing the origin of the original post. Approximately 150 million Americans were exposed to Russian disinformation on social media leading up to the 2016 election. The authors noted that since 2016, Americans have co-opted many of the IRA’s techniques to spread disinformation about their political opponents. The article pointed out how many of these social media postings were not of obvious foreign origin, and they imitated the types of things Americans might say. The IRA strategy seemed to be to lure people into their groups with innocuous posts, and they would later deliver a “payload,”

trying to get people to take action such as voting a particular way or protesting (Bean, 2022). Against these imitation attacks, media literacy efforts alone may not be enough (Bean, 2022).

In “Assembling the Networks and Audiences of Disinformation: How Successful Russian IRA Twitter Accounts Built Their Followings, 2015–2017”, the authors analyzed how four of the most popular IRA accounts acquired so many followers. The authors found that these accounts became popular by producing content which was retweeted often, or by gaining as followers popular, verified people. The accounts created a “propaganda feedback loop” where they amplified the messages of whatever community the account was trying to imitate. There were accounts at both extremes of the political spectrum, with the ultimate goal being to create more discord and polarization. Ultimately, these accounts would not have been as popular as they were if they didn’t tap into the pre-existing rifts within American society. Fact checking and increasing media literacy will not address the underlying divides in the nation that were vulnerable for exploitation (Zhang, 2021).

In “A Proposed Method for Predicting User Disinformation Forwarding Behavior”, the authors analyzed the factors which impacted whether or not people will share disinformation on social media. Key factors included appeals to emotion, and how similar the disinformation was to the user’s beliefs. Once one person accepted the misleading post, it was spread among the people who trusted that person and kept going down the chain of trust. The authors also discovered that as people’s distrust of traditional news media increased, the more they trusted disinformation sources instead. The more in line with a person’s beliefs the disinformation was, the more likely they were to spread it. People with whom the disinformation did not resonate, did not spread the disinformation either through lack of belief in the disinformation, or lack of interest in it. The

authors created an algorithm that they believe could be used to target people who are more susceptible to disinformation and persuade them to not spread it (Fang, 2022).

In “When Truthiness Trumps Truth: Epistemic Beliefs Predict the Accurate Discernment of Fake News”, the authors examined the ways people justify how they know the things they believe they know. These factors included intuition, evidence, and the idea of truth as an assertion of power with the choice of what to believe as being a decision reflective of one’s political beliefs. They found that post-truth beliefs, such as a low need for evidence, strong beliefs in intuition and seeing truth as a subjective choice related to power, led to a heightened susceptibility to disinformation. The authors also found that people with high scores in psychopathy, narcissism and Machiavellianism were more likely to possess post-truth beliefs. The authors recommended that people receive training, preferably starting at a young age, in requiring more evidence to support their beliefs, rather than just relying on intuition or seeing truth as something to be decided by the authority figures they trust in (Rudloff, 2022).

In “Vulnerability in Social Epistemic Networks”, the authors argued for the importance of not only taking into account multiple sources in determining if a fact was true, but also ensuring that these sources were truly diverse and independent from one another rather than just amplifying each other’s messages. This article discussed a methodology to measure the extent to which a user was in an echo chamber or information silo online (Sullivan, 2020).

In “State disinformation: emotions at the service of a cause”, the authors examined state-sponsored disinformation. They noted that state-sponsored disinformation can serve many different purposes whether it was to sow discord within foreign adversaries, or to generate support for a cause. The authors examined the rise of alternatives to traditional journalism which

offer information packaged in a more riveting way without being subject to the same legal standards as journalists. This put pressure on journalists to dilute their quality to compete, which decreased fact-checking and increased the spread of misinformation. Information which had the most emotional appeal tended to be more popular than something well-researched but presented in a drier fashion. There were no real legal consequences in most cases of spreading disinformation, and passing new laws could inhibit free speech, unless carefully crafted. Disinformation was especially common in countries without a strong local media presence, where foreign actors sought to fill the void with propaganda (Manifredi, 2022).

In “Introduction: epistemic contestations in the hybrid media environment”, the authors discussed how traditional media and social media have blurred into one another at times, changing traditional journalism. Social media was an alternative to traditional media for news consumption. Many people attacked traditional media as being part of the elites and attacked it along with other traditional institutions. This was unfortunate since institutions like universities, and traditional media have been sources of knowledge and must uphold rigorous standards of integrity. Social media was seen as being more of a populist institution of the people, rather than of the elites. While there indeed has been a history of those in authority abusing that authority to suppress minority voices, to no longer trust in these institutions at all makes it far more difficult to ascertain the truth given the lack of rigorous fact-checking standards for social media. When people no longer trusted in knowledge-based institutions, they were more vulnerable to believing in conspiracy theories. Within some of these conspiracy theory communities, people sought to further undermine belief in traditional institutions by claiming anyone arguing beliefs other than what were accepted within the community must be “gaslighting” them (Valaskivi, 2022).

### **3.2 Research in Ways to Combat Misinformation**

In “Controlling the spread of information”, Zara Abrams argued that there were “Six ‘degrees of manipulation’- impersonation, conspiracy, emotion, polarization, discrediting, and trolling are used to spread misinformation and disinformation” (Abrams, 2021). Abrams examined the research surrounding the “Bad News” and “Go Viral” apps to see how effective these apps were at inoculating people against misinformation. These apps are located at <https://www.goviralgame.com/en> and <https://www.getbadnews.com/#intro>. Abrams also examined media literacy efforts (Abrams, 2021).

In “Towards psychological herd immunity: Cross-cultural evidence for two prebunking interventions against COVID-19 misinformation”, Basol et. al posited the theory of “preemptively debunking (‘prebunking’) misinformation as a promising step towards building attitudinal resistance against misinformation” (Basol, 2021). The authors tested their theory using the *Go Viral!* app. They ultimately concluded that while using the *Go Viral!* app did increase awareness of misinformation for participants, the effects tended to dissipate after a week (Basol, 2021).

In the “European Commission’s report, A multi-dimensional approach to disinformation”, the High Level Group made several recommendations to protect against disinformation. Among their recommendations were to demonetize the spreading of disinformation, encourage the usage of fact-checking sites to help differentiate truths from untruths, and increase media literacy among citizens. One key quotation from the commission was that “highly polarized societies with low levels of trust provide a fertile ground for the production and circulation of ideologically motivated disinformation” (European Commission, 2018). The commission asserted that disinformation was a threat to democracy itself by undermining faith in the election process and increasing polarization among citizens (European Commission, 2018).

### 3.3 Media Literacy

In “Can News Literacy Be Taught?”, author John Dyer examined efforts to teach news literacy, and the cognitive biases and confirmation biases which get in the way of news literacy. The article also described a study where participants underwent 12 weeks of mindfulness training and practiced meditation as a way to become more aware of one’s own cognitive biases. The study showed some promise but was not able to conclusively prove it could increase news literacy (Dyer, 2017).

In “Tackling online disinformation through media literacy in Spain: The project ‘Que no te la cuelen’”, the authors described a media literacy program taught to children between 14 and 16 years old. The ‘Que no te la cuelen’ (QNTLC) project taught students what disinformation was and how to engage in fact checking (Carrillo, 2021). Students were given this checklist to help them decide if information might be disinformation: “suspect, read/listen/watch carefully, check the source, look for other reliable sources, check the data/location, be self-conscious of your bias and decide whether to share the information or not” (Carrillo, 2021). The program also taught participants to be wary of content which evoked a strong emotional response. The program designers emphasized the importance of participant engagement through games and/or practical application of the theories taught (Carrillo, 2021).

In “Fake News, Alternative Facts, and Disinformation: The Importance of Teaching Media Literacy to Law Students”, the author argued for the importance of teaching media literacy in schools, including in law schools. Being able to separate truth from untruth was important for anyone to do but was especially vital in keeping the Justice System well-functioning. The article described the lucrative market for creating disinformation given that sensational headlines were

something people were more likely to click on, and ad revenue was based on clicks rather than the veracity of the information. The article warned of the dangers to society when people can no longer agree on what facts are, and it pointed out the importance of authority figures not succumbing to spreading misinformation because of the heightened weight given to their opinions (Dell, 2019).

### **3.4 Mindfulness Articles**

In “Training to Mitigate Phishing Attacks Using Mindfulness Techniques”, Jensen et. al conducted research at a U.S. university which included students, faculty, and staff. The research consisted of sending a phishing email to see who was susceptible to it, conducting mindfulness training, and then later sending another phishing email to ascertain if anyone was less susceptible to the attack after undergoing the training. The study also examined the demographics of those who were most susceptible to phishing attacks to see what types of individuals might benefit the most from mindfulness training. The study also compared the effectiveness of mindfulness training with that of a more traditional rules-based training. The research showed that mindfulness training did seem to be helpful for some demographics to get people to think about what was happening and not instantly fall for the appeals to emotion which phishing campaigns tended to employ (Jenson, 2017).

In “Mindfulness and Critical Thinking: Why Should Mindfulness Be the Foundation of the Educational Process?”, Eva Skobalj described how the concepts of mindfulness and critical thinking overlap and can create a better awareness of oneself and the world. The article described the rich history of self-questioning throughout history starting with the ancient Greeks onward. The article argued that mindfulness was useful in critical reflection (Skobalj, 2018).

### 3.5 Discussion of Literature Review

The problem of disinformation is a multi-faceted and complex one. While lies are certainly nothing new, what makes this a uniquely modern problem is the unprecedented access people have to other people given the existence of the Internet and social media. Technology has outpaced people's ability to successfully sort through fact and fiction and all the gray areas in between. State sponsored disinformation exists with the goal of advancing political agendas and sowing discord among adversaries.

In many ways, the rapid spread of disinformation is symptomatic of the increasing amount of distrust that people have in one another and in traditional repositories of knowledge and facts (Valaskivi, 2022). To analyze the rise of disinformation is to ask the fundamental questions of who do people trust and why, and from where do people obtain knowledge. Asking the epistemological question of "why do people believe they know the things they claim to know" also touches upon questions of identity.

Since there are so many areas implicated by disinformation, there is no one solution to the problem. Media literacy and fact checking can help against the "seeding" stage of disinformation, but once people have accepted the disinformation as part of their identity, disinformation is far more difficult to root out (Ruiz, 2022). The research conducted in this study seeks to address the initial spread of disinformation before people have accepted it as part of who they are.

This study analyzes media literacy training which incorporates psychology as part of the training to ascertain the effectiveness of the training. The study also analyzes mindfulness training as a potential way to mitigate against the manipulative effects of disinformation.

#### **4. Research Questions**

1. Can we gather information to ascertain what factors may make one more likely to share misinformation?
2. Can we design Rule Based and Combined training of rules and mindfulness that raise awareness about misinformation?
3. Can the Rule Based or the Combined training of rules and mindfulness decrease the susceptibility of participants to misinformation?

These are important questions to answer given the prevalence of misinformation in our society. If the trainings are effective, then it is possible the methods could be adapted on a broader scale to help protect people against this scourge.

#### **5. Research Study Design**

After receiving IRB approval for the study, participants were recruited through requests for participants sent through university listservs and through recruitment by various professors. The thirty-nine research study participants who were recruited were divided into three groups: a group which received Rule Based Training, a group which received training that included both rules and mindfulness elements (Combined Training), and a Control group which did not receive any training at all.

Participants in the Rule Based Training group watched a seven-minute PowerPoint presentation (see Appendix A for the slides) which explained the manipulation techniques that disinformation employs, and ways to avoid being manipulated. The Rule Based Training listed a series of considerations for readers to take into account when reading articles with a more critical eye. The Rule Based Training examined each of the psychological factors which leave people susceptible

to disinformation and sought to increase reader awareness by having people ask questions to determine if the article was trying to influence them in this manner. The Rule Based Training relied on the research conducted by Zara Abrams and described to participants how to identify the manipulation techniques of “impersonation, conspiracy, emotion, polarization, discrediting, and trolling” (Abrams, 2021).

Participants in the Combined Training group watched a seventeen-minute PowerPoint presentation which included the same slides as from the Rule Based Training, but also included information related to mindfulness. The Combined Training also had a guided reading in which the mindfulness techniques were demonstrated. The guided reading related to an article identified by Snopes.com as containing misinformation. The mindfulness training relied upon some concepts from Jensen, et. al, but was ultimately designed by this thesis-writer (Jenson, 2017). The mindfulness training was meant to increase the reader’s self-awareness of how they were feeling in response to the stimulus of the article. The goal of the mindfulness training was to stop the emotional response that the article sought to evoke, and have the reader look at the article with a more detached perspective.

To increase the probability that all training participants paid attention during the training, the participants were informed they would be required to complete a short survey regarding the content of the training. There was not a minimum passing score for the survey.

One week after the training was completed, participants were sent information regarding the second half of the study. They were given two weeks in which to complete the rest of the study. The week-long delay was meant to determine if lessons learned during the training had made it

into people's long-term memory, rather than dissipate after a week as was the case in some of the studies mentioned in the literature review (Basol, 2021).

The main part of the study included two articles that all participants were required to read. Both articles were fact-checked via Snopes.com. One article was from CNBC and was verified as containing accurate information (Liles, 2021). The article was entitled, "Amazon's Alexa assistant told a child to do a potentially lethal challenge" and can be found at this web address <https://www.cnn.com/2021/12/29/amazons-alexa-told-a-child-to-do-a-potentially-lethal-challenge.html> (Shead, 2021). This article served as the control article to ascertain if students can recognize articles which contain accurate information.

The other article was verified by Snopes.com as containing false information and was from the National File (MacGuill, 2021). The article was entitled, "Australian Government To Seize 24,000 Children, Vaccinate Them Without Parents Present in Massive Stadium" and can be found at this web address <https://nationalfile.com/australian-government-to-seize-24000-children-vaccinate-them-without-parents-present-in-massive-stadium/> (National File, 2021).

This article was purposefully chosen as being a source outside the United States with which participants would be less likely to have heard of or to have formed an opinion concerning. This article will be referred to throughout the paper as the misinformation or disinformation article.

Participants were required to answer survey questions related to the articles and provide general demographic information. Study participants were all assigned random participant numbers, so that indirect coding could be utilized. Students utilized this number at all stages of the process. All participants received \$10 gift cards upon completion of the study regardless of the results.

Given that the difference between survey results was often just one person, all statistics listed in the study results section listed the number of participants who responded in a particular way. To list the results using more traditional statistical analysis seemed like it could mislead readers by overstating or understating the significance of results.

## **6. STUDY RESULTS**

Initially, the raw results will be listed per group. The results will be compared, contrasted, and analyzed more fully in sections 6.4 and in section 7.

### **6.1 Rule Based Training Group**

#### **a. Demographics**

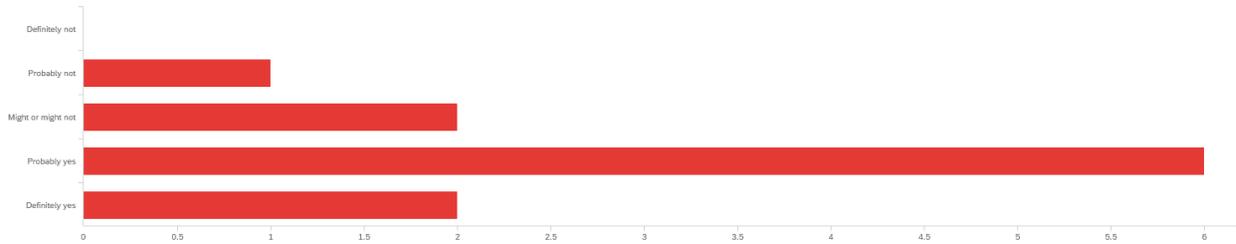
There were eleven participants in the Rule Based Training Group. Five participants were between the ages of eighteen and twenty-four, one was between the ages of twenty-five and thirty-four, three were between the ages of thirty-five and forty-four, and two were between the ages of forty-five and fifty-four. Three students identified as male, and eight identified as female. There was one Information Technology major, two cybersecurity management majors, one education/computer science-cybersecurity major, one psychology major, three computer science majors, one business administration major, one sociology major, and one communications major. Five participants were undergraduate students, and six were in graduate studies.

#### **b. Verified Accurate Alexa Article**

When asked if members of the Rule Based Training group believed most of the statements in the verified to be accurate Alexa article, one person responded probably not, two people responded

that they might or might not, six people responded that they probably would, and two people responded that they definitely would.

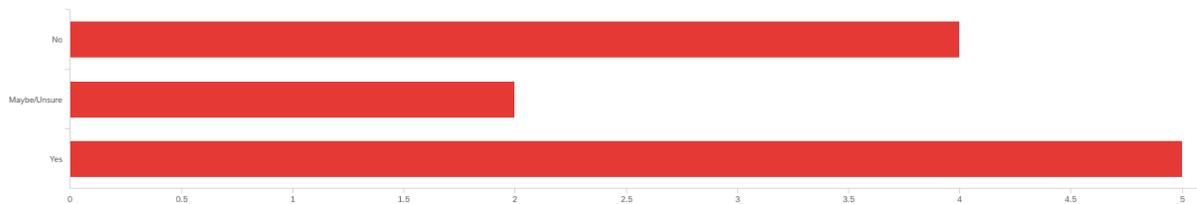
Q17 - Do you believe most of the statements from the first article about Alexa?



*Figure 1: Rule Based Group Belief in Verified Article*

When asked if they were familiar with the publication behind the verified article (CNBC), four people responded they were not, two people were unsure if they were, and five people responded that they were.

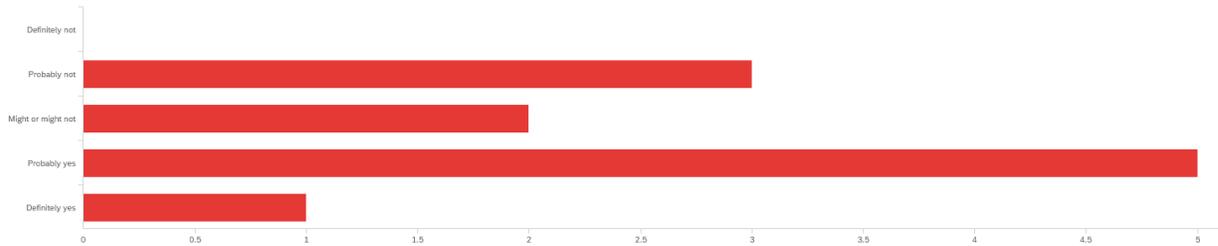
Q12 - Are you familiar with the publication that printed the first article about Alexa?



*Figure 2: Rule Based Group Familiarity with Verified Publication*

When asked if this article was something they were likely to share with others, three people responded that they probably would not, two people responded that they might or might not, five people responded that they probably would, and one person responded that they definitely would.

Q13 - Is the first article about Alexa something you are likely to share with others?

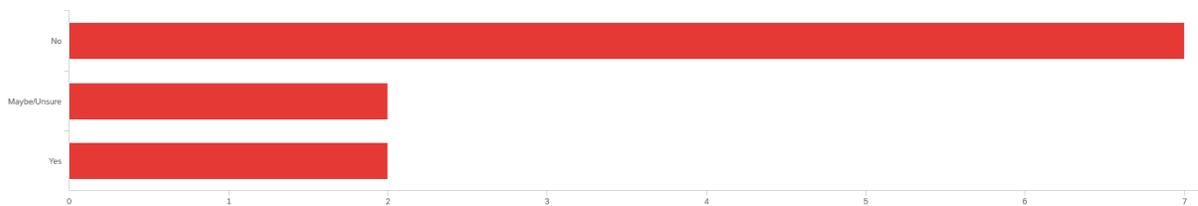


*Figure 3: Rule Based Group Verified Article Likely to Be Shared*

### **c. Verified Covid Article Contained False Information**

Seven of the participants stated they were unfamiliar with the National File publication that printed the article verified to contain disinformation, two were unsure if they were familiar with it, and two people stated they were familiar with the organization.

Q21 - Are you familiar with the publication that printed the second article about Covid vaccinations?



*Figure 4: Rule Based Group Familiarity with Misinformation Publication*

When asked if the article containing the false information was one that they were likely to share with others, one person responded definitely not, four people responded probably not, four people responded that they might or they might not, and two people responded that they probably would.

Q22 - Is the second article about Covid vaccinations one that you are likely to share with others?

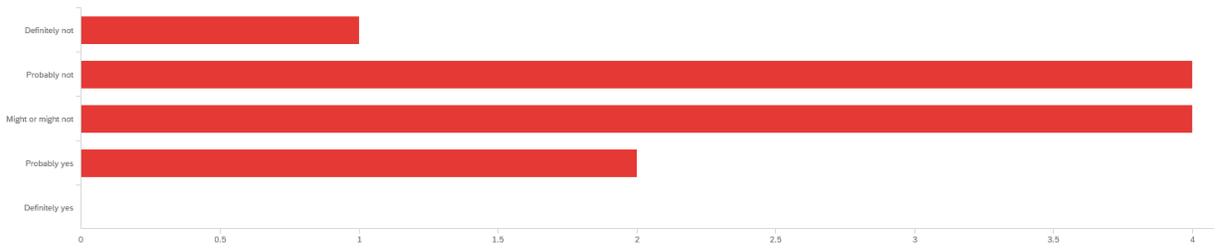


Figure 5: Rule Based Group Misinformation Article Likely to Be Shared

Participants were asked if they believed most of the statements from the misinformation article, with one person replying definitely not, five people replying probably not, one person replying that they might or they might not, three people replying that they probably do, and one person responding that they definitely did.

Q26 - Do you believe most of the statements from the second article about Covid vaccinations?

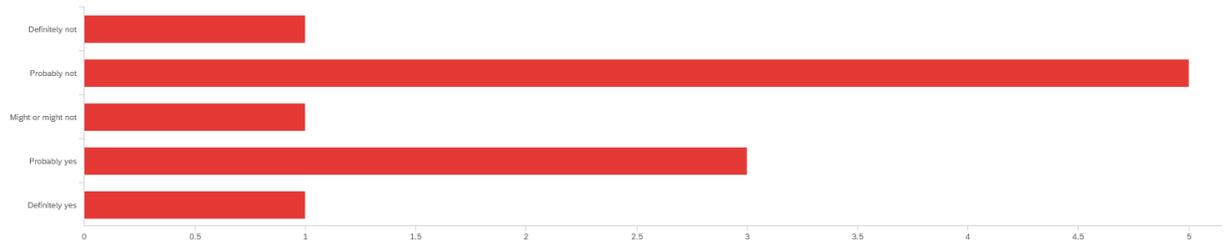
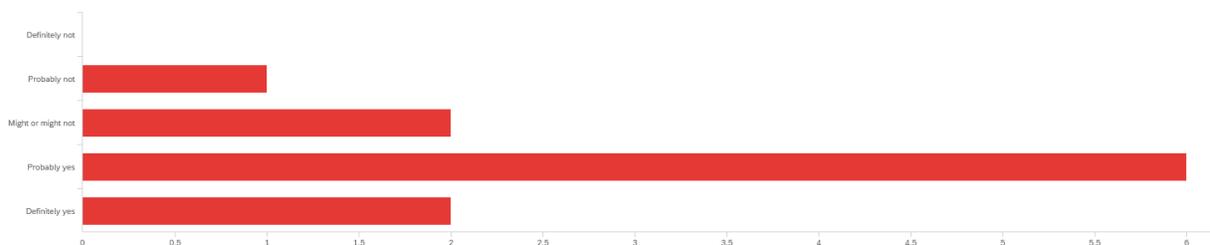


Figure 6: Rule Based Group Belief in Statements from Misinformation Article

**d. Personality/Philosophical Attributes**

When asked if they would recognize if an article contained false information, one respondent said probably not, two respondents thought they might or might not, six people thought they probably would, and two people thought they definitely would.

Q36 - Do you believe you could recognize when an article contains false information?



*Figure 7: Rule Based Group Belief in Ability to Identify False Information*

Of the three people who believed that most of the statements in the article were probably true, two of them believed they might or might not recognize false information, and one person admitted they probably would not. The one person who believed the article was definitely true believed they might or might not recognize false information.

## 6.2 Combined Training Group

### a. Demographics

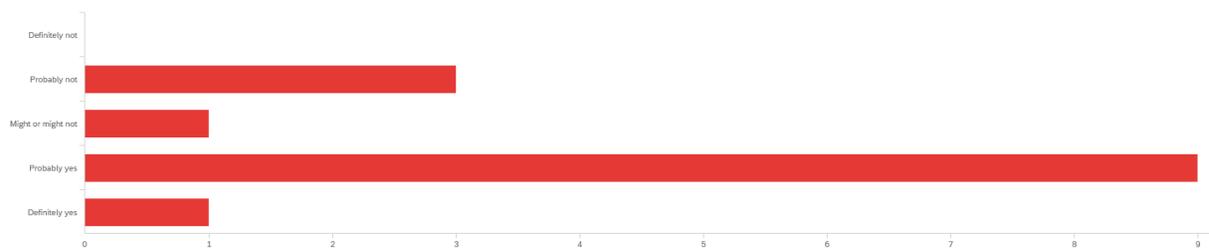
Members of the Combined Training group received the Rule Based Training plus training on mindfulness. There were fourteen members of the Combined Training group. Eight students were between ages eighteen and twenty-four, three were between ages twenty-five and thirty-four, two were between ages thirty-five and forty-four, and one was between ages sixty-five and seventy-four. Seven participants identified as male, six as female, and one student identified as non-binary/third gender. Seven were undergraduate students, and seven were graduate students. One student was an accounting major, one was a mathematics major, one was an IT major, four were Cybersecurity Management majors, one was a criminal justice major, one was a business

major, one was a communications/film production major, and four were computer science majors.

### b. Verified Accurate Alexa Article

When asked if they believed most of the statements from the first article about Alexa, three students responded probably not, one said they might or might not, nine said they probably would, and one said definitely yes.

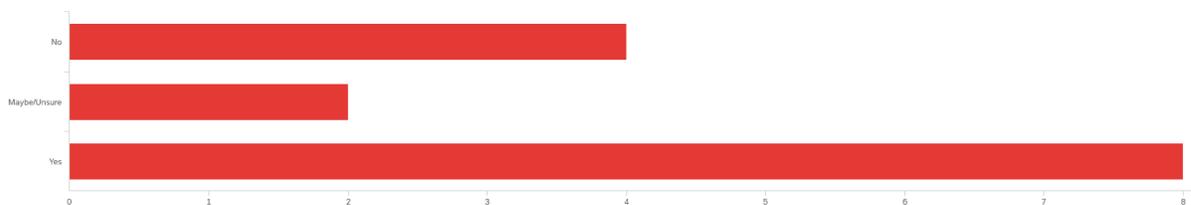
Q17 - Do you believe most of the statements from the first article about Alexa?



*Figure 8: Combined Training Group Belief in Verified Article*

Eight students reported being familiar with the publication that printed the Alexa article, two were unsure, and four students reported being unfamiliar with it.

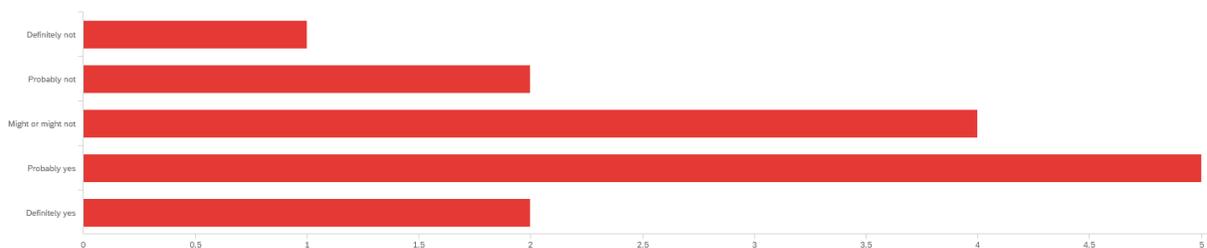
Q12 - Are you familiar with the publication that printed the first article about Alexa?



*Figure 9: Combined Training Group Familiarity with Verified Publication*

When asked if the first article about Alexa was something they were likely to share with others, one person said definitely not, two people said probably not, four people said they might or might not, five people said probably yes, and two people said definitely yes.

Q13 - Is the first article about Alexa something you are likely to share with others?

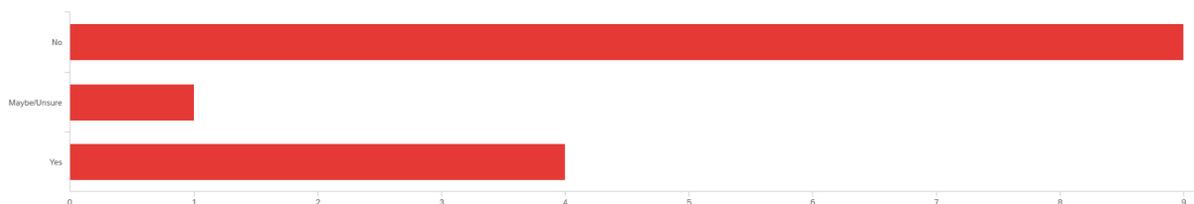


*Figure 10: Combined Training Group Verified Article Likely to Be Shared*

### c. Verified Covid Article Contained False Information

In response to the question of if participants were familiar with the article containing misinformation about Covid vaccinations, nine responded that they were not, one said they were unsure, and four stated that they were.

Q21 - Are you familiar with the publication that printed the second article about Covid vaccinations?



*Figure 11: Combined Training Group Familiarity with Misinformation Publication*

When asked if the misinformation article was one they were likely to share with others, five said definitely not, four responded probably not, one said they would, and four people responded that they definitely would.

Q22 - Is the second article about Covid vaccinations one that you are likely to share with others?



*Figure 12: Combined Training Group Misinformation Article Likely to Be Shared*

When asked if they believed most of the statements from the misinformation article which contained false information, four participants said definitely not, three responded probably not, three responded that they might or might not, and four responded that they probably would.

Q26 - Do you believe most of the statements from the second article about Covid vaccinations?

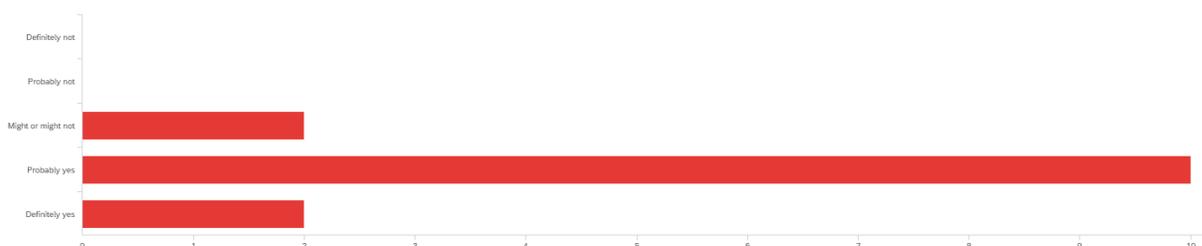


*Figure 13: Combined Training Group Belief in Statements from Misinformation Article*

#### **d. Personality/Philosophical Attributes**

Participants in the Combined Training group were asked if they believed they could recognize an article which contained false information. Two people responded that they might or might not, ten people responded that they probably could, and two people responded that they definitely could.

Q36 - Do you believe you could recognize when an article contains false information?



*Figure 14: Combined Training Group Belief in Ability to Identify False Information*

Interestingly enough, of the four people who responded that they would probably share the article containing misinformation, all four participants believed they could probably identify an article containing false information.

## **6.3 Control**

### **a. Demographics**

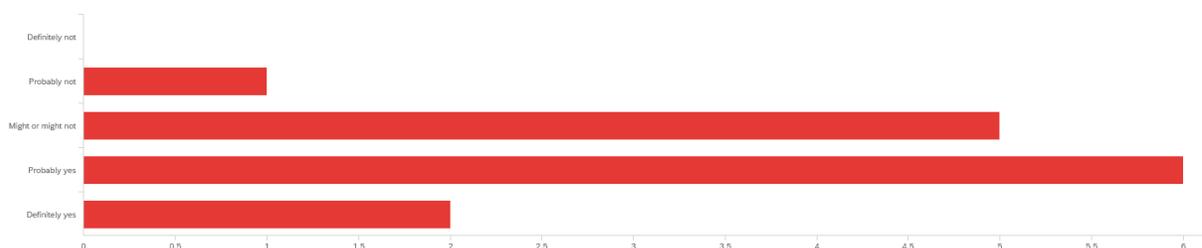
Members of the Control group received no training. There were fourteen participants in the Control group. Eleven respondents were between the ages of eighteen and twenty-four, two were between the ages of twenty-five and thirty-four, and one participant was between the ages of thirty-five and forty-four. One respondent was male, twelve were female, and one identified as non-binary/third gender. Ten students were psychology majors, one was a nursing major, one was an applied computer science major, and one was a cybersecurity management major. Twelve participants were in undergraduate programs, and two were in graduate programs.

### **b. Verified Accurate Alexa Article**

In response to the verified accurate article, two participants said they definitely believed most of the statements from the article, six participants said they probably believed most of the

statements from the article, five participants said they might or might not believe the statements from the article, and one participant said they probably did not believe most of the statements from the article.

Q17 - Do you believe most of the statements from the first article about Alexa?



*Figure 15: Control Group Belief in Verified Article*

Eight participants reported being familiar with CNBC, three were unsure if they were familiar with CNBC, and three reported being unfamiliar with CNBC.

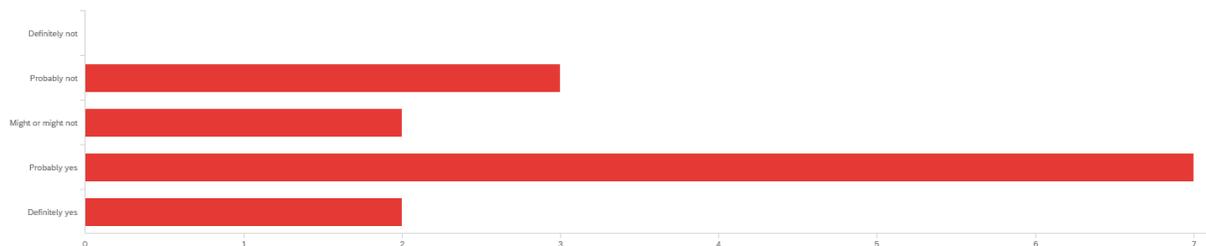
Q12 - Are you familiar with the publication that printed the first article about Alexa?



*Figure 16: Control Group Familiarity with Verified Publication*

In regard to the verified accurate article, two participants said they would definitely share the article, seven said they would probably share the article, two participants said they might or might not share the article, and three participants said they probably would not share the article.

Q13 - Is the first article about Alexa something you are likely to share with others?

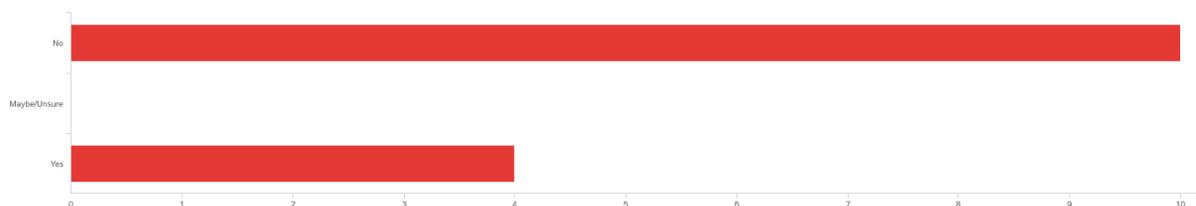


*Figure 17: Control Group Verified Article Likely to Be Shared*

### **c. Verified Covid Article Contained False Information**

Ten participants were unfamiliar with the National File website, and four people reported being familiar with the organization.

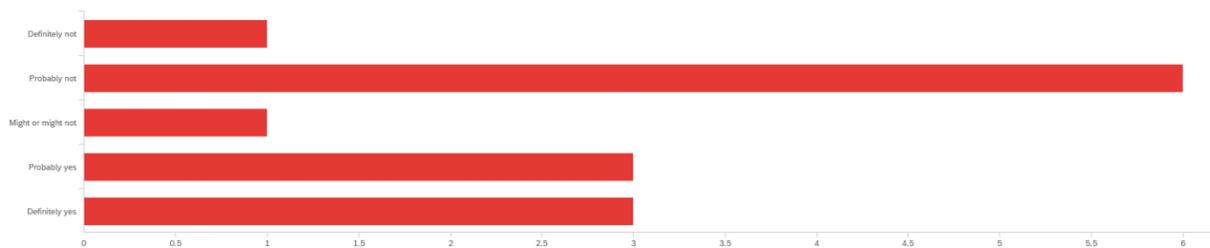
Q21 - Are you familiar with the publication that printed the second article about Covid vaccinations?



*Figure 18: Control Group Familiarity with Misinformation Publication*

Three people reported they would definitely share the article, three people said they would probably share the article, one person said they might or might not share the article, six people said they probably would not share the article, and one person said they definitely would not share the article.

Q22 - Is the second article about Covid vaccinations one that you are likely to share with others?



*Figure 19: Control Group Misinformation Article Likely to Be Shared*

When participants were asked if they believed most of the statements from the article containing misinformation, two said definitely yes, three said probably yes, four said they might or might not, three said probably not, and two said definitely not.

Q26 - Do you believe most of the statements from the second article about Covid vaccinations?



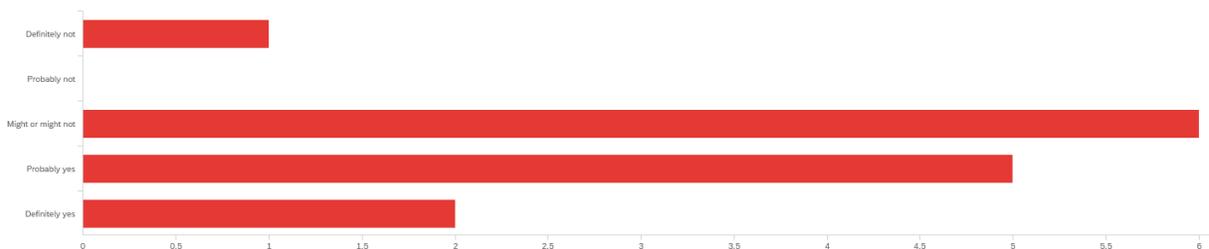
*Figure 20: Control Group Belief in Statements from Misinformation Article*

#### **d. Personality/Philosophical Attributes**

When asked if they believed they could recognize an article which contains false information, two people said definitely yes, five people said probably yes, six people said they might or might

not be able to identify false information, and one person said they definitely could not identify an article containing false information.

Q36 - Do you believe you could recognize when an article contains false information?



*Figure 21: Control Group Belief in Ability to Identify False Information*

Interestingly enough, of the two people who reported that they definitely believed most of the statements in the article containing the misinformation, one reported they probably could identify an article containing false information, and the other person said they definitely could not. Of the three people who said they probably believed most of the statements from the article containing the false information, one person reported they could probably identify an article containing false information, while the other two individuals said they might or might not be able to identify false information.

#### **6.4 Comparison of Participants Who Would and Would Not Share the Misinformation Article**

This section only compared students who definitely or probably would share the misinformation article against those students who definitely or probably would not share the article containing the misinformation. The six students who responded that they were unsure if they would share the misinformation article were excluded from the following data analysis.

### **a. Demographics**

Ten out of the twelve participants who said they would probably or definitely would share the article containing misinformation were between the ages of eighteen and twenty-four; however, it should be noted that twenty-four of the thirty-nine total participants were in that age range, so that age group was disproportionately represented in the sample. Eight participants identified as female, and four as male; however, there were twenty-six females, twelve men, and two non-binary/third gender total students in the study, so it cannot conclusively be said if gender is a factor. Eight students were in undergraduate studies and four were in graduate studies; however there were twenty-four out of thirty-nine participants who were in undergraduate studies, so level of schooling cannot conclusively be said to be a factor given the disproportionate number of undergraduate students represented. There were three psychology majors, one accounting, one nursing, two cybersecurity management, one business administration, two computer science, one sociology, and one communications/film major.

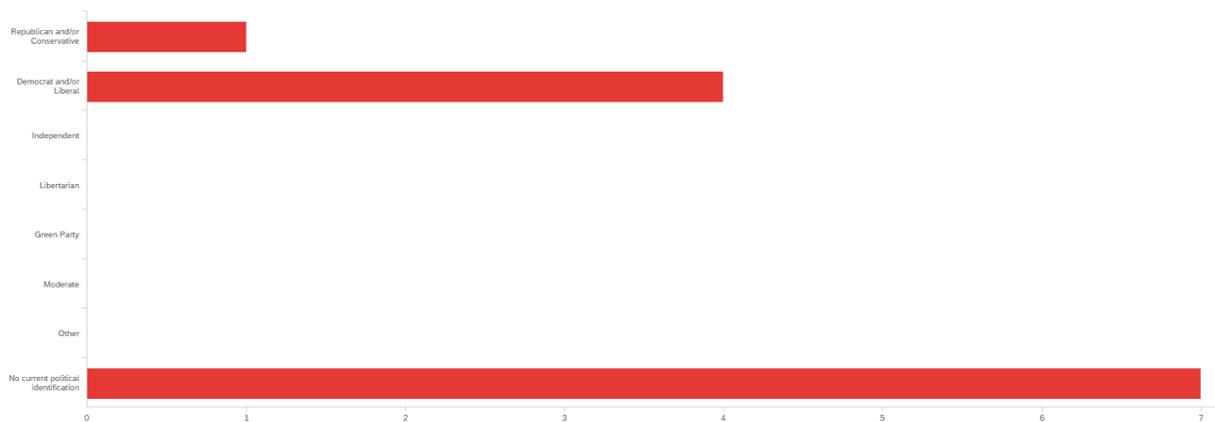
### **b. Political Identification**

The study also collected demographic information related to the political affiliation of students to see if that had an impact on if people believed the false information contained in one of the articles. Other studies have suggested that the closer the false information is to one's own beliefs, the more likely one is to believe in it given a confirmation bias (Fang, 2022).

Of the students who said they would share the false information, one student responded that they identified as a Republican and/or conservative, four responded they identified as a Democrat and/or liberal, and seven students had no current political affiliation. This result was surprising given that the article in question was more in line with Republican/conservative beliefs, and

other research studies seemed to indicate that articles in line with one's beliefs were more likely to be shared than those which were not, regardless of the veracity of the article (Fang, 2022). It was possible that the Republican/conservative students have pro-vaccine views, so political affiliation alone cannot conclusively be said to rule out the possibility of a confirmation bias among students who would share the article.

Q8 - Political Identification



*Figure 22: Political Affiliation of Those Who Would Share the Misinformation Article*

### **c. Familiarity with the Publication**

Of the students who said they would share the article containing misinformation, six students said they were familiar with the publication, five said they were not, and one stated they were unsure if they were unfamiliar with it.

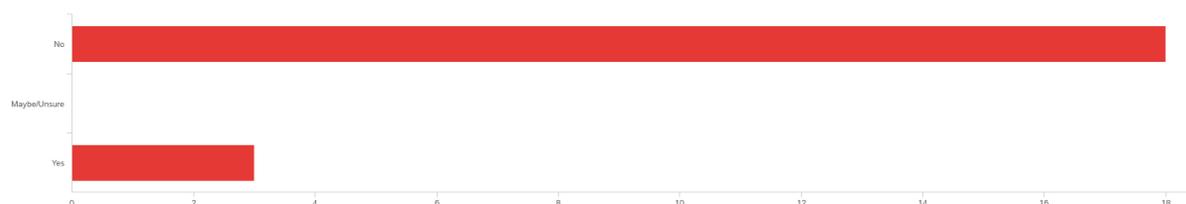
Q21 - Are you familiar with the publication that printed the second article about Covid vaccinations?



*Figure 23: Familiarity with Misinformation Publication Among Those Who Would Share It*

These results contrasted with the students who said they would not share the article where eighteen said they were not familiar with the publication and only three said they were familiar with it. This finding suggested that prior familiarity with a source may increase the chances of sharing information from it.

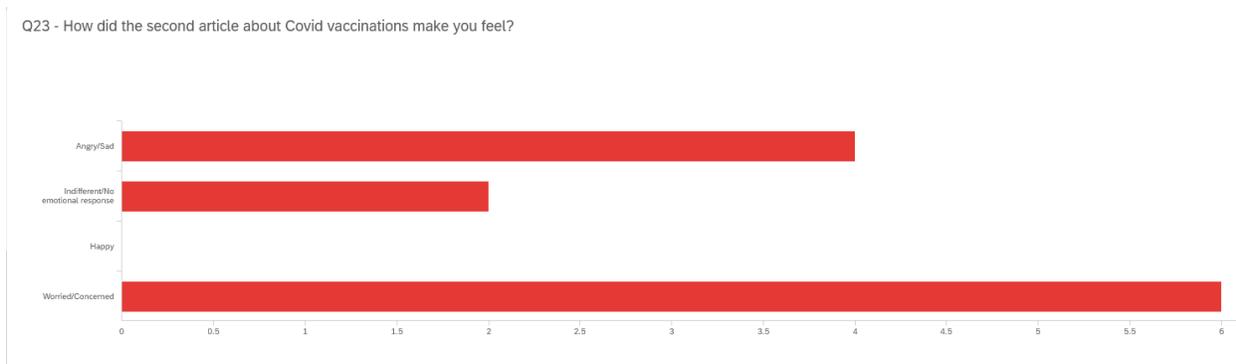
Q21 - Are you familiar with the publication that printed the second article about Covid vaccinations?



*Figure 24: Familiarity with Misinformation Publication Among Those Who Would Not Share It*

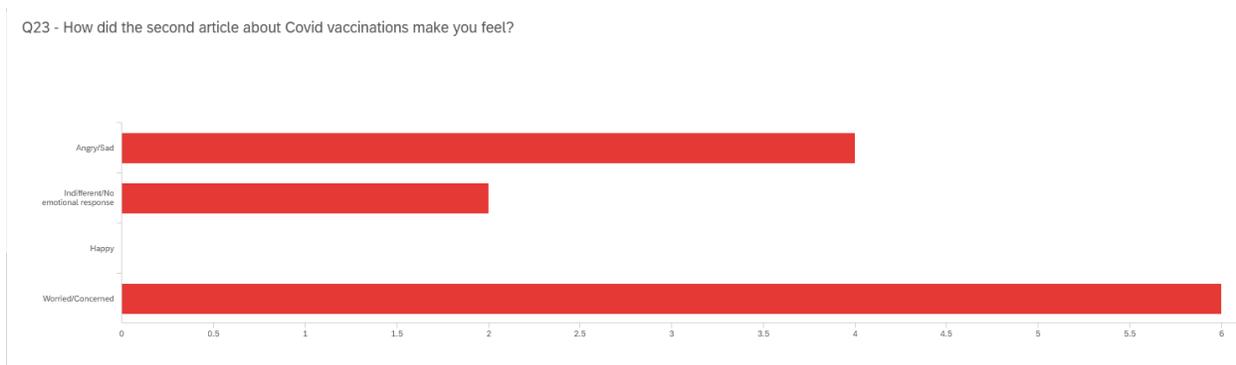
#### **d. Emotions from Misinformation**

When asked how the second article made the participant feel, of the respondents who said they would share the article, four responded they felt angry/sad, six responded worried/concerned, two were indifferent.



*Figure 25: Emotional Impact of Misinformation Article on Those Who Would Share It*

These results contrasted sharply with the twenty-one students who responded that they definitely or probably would not share the article where ten responded they were indifferent to the article, four were angry/sad, and seven were worried/concerned. This finding suggested that the lack of emotional response was a strong factor in many of the students not having an interest in sharing the article, which supported other studies in listing emotional response as a strong factor which can increase the odds someone will share disinformation.



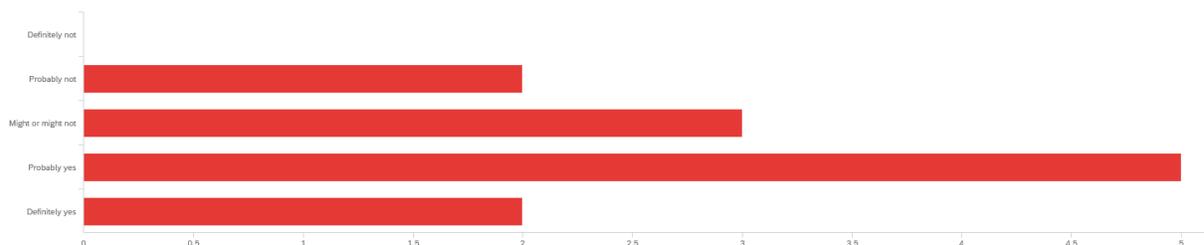
*Figure 26: Emotional Impact of Misinformation Article on Those Who Would Not Share It*

### **e. Trust in Publication**

When asked if they trusted the publication which published the false information, of the students who said they would share the article, two responded they probably did not trust the publication,

three responded that they might or might not trust the publication, five said they probably would trust the publication, and two said they definitely would trust the publication.

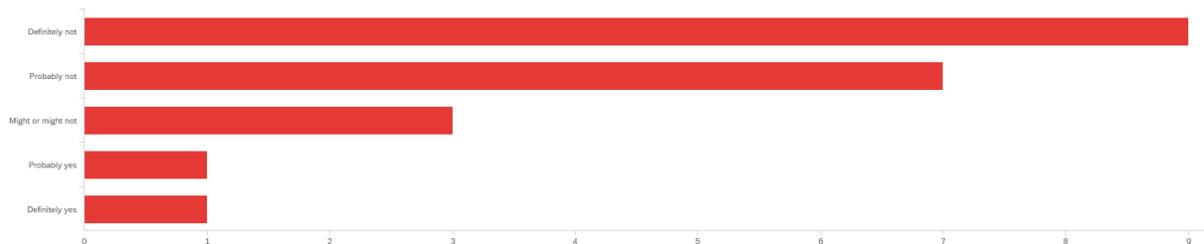
Q25 - Do you trust the second publication about Covid vaccinations in general?



*Figure 27: Trust in Misinformation Publication Among Those Who Would Share the Article*

When asked if they trusted the publication which published the false information, of the students who said they would not share the article, nine responded they definitely did not, seven said they probably would not, three said they might or might not, one said they probably would, and one definitely would trust it.

Q25 - Do you trust the second publication about Covid vaccinations in general?



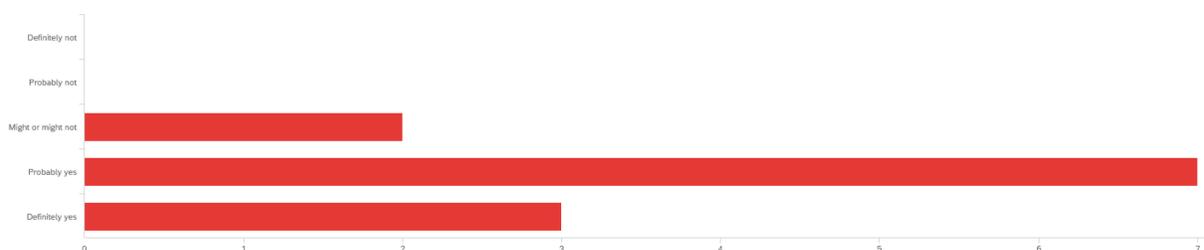
*Figure 28: Trust in Misinformation Publication Among Those Who Would Not Share the Article*

These results suggest that trust in a source is indeed a factor in whether or not people will share information from it.

## f. Belief in Statements

From the group of people who would share the article, two said they might or might not believe in most of the statements in the article, seven said they probably believed in most of the statements from the article, and three people said they definitely believed most of the statements from the article.

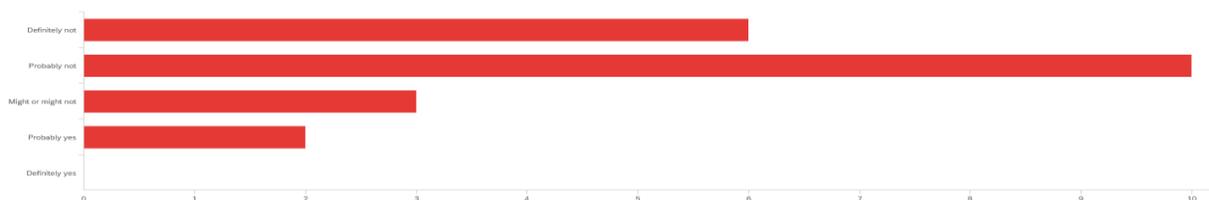
Q26 - Do you believe most of the statements from the second article about Covid vaccinations?



*Figure 29: Belief in the Misinformation Statements Among Those Who Would Share the Article*

These results contrasted with the individuals who responded that they would not share the article where six definitely did not believe most of the statements from the article, ten said they probably did not believe most of the statements from the article, three said they might or might not believe most of the statements from the article, and two said they probably would believe the statements from the article.

Q26 - Do you believe most of the statements from the second article about Covid vaccinations?



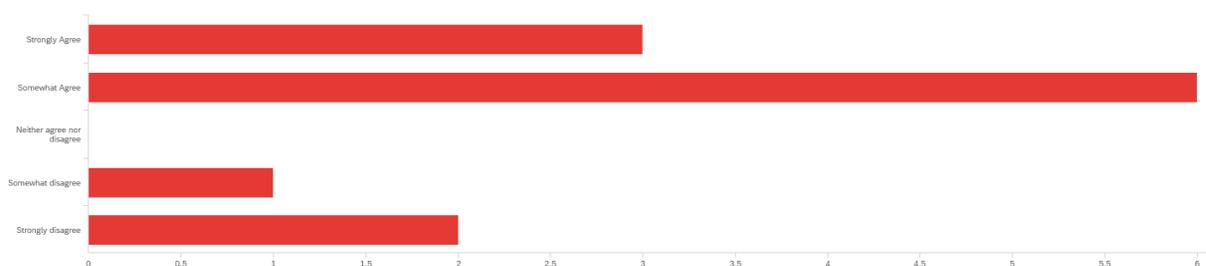
*Figure 30: Belief in the Misinformation Statements Among Those Who Would Not Share the Article*

## g. Trust

So much about knowledge and information revolves around who people trust and why. This study collected information about participants' attitudes towards the government and towards other people in general to ascertain how much of an effect, if any, these attitudes may have on people's susceptibility to misinformation.

When asked if the respondent typically trusts people unless they give them a reason not to trust them, of the respondents who said they would share the misinformation article, three said they strongly agree with that statement, six said they somewhat agreed, one somewhat disagreed with that statement, and two strongly disagreed with that statement.

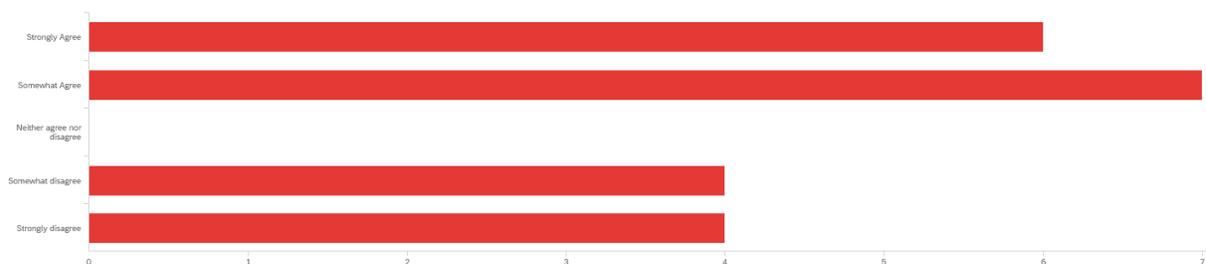
Q30 - I generally trust people until they give me a reason not to trust them.



*Figure 31: General Trust in People Among Those Who Would Share the Misinformation*

When asked if the respondent typically trusts people unless they give them a reason not to trust them, of the participants who said they would not share the article, six responded they strongly agree with that statement, seven said they somewhat agree, four said they somewhat agree, and four said they strongly agree.

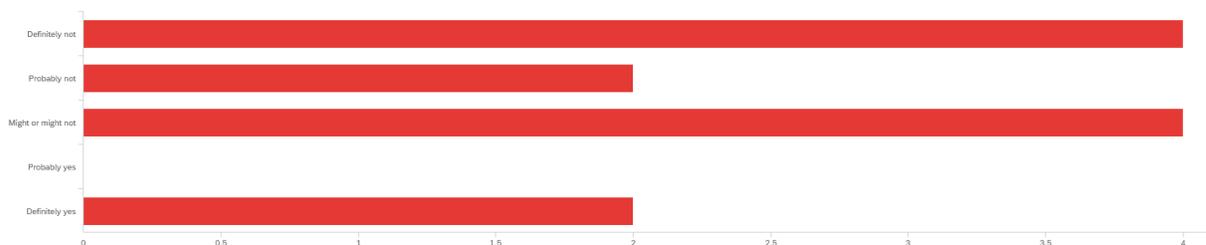
Q30 - I generally trust people until they give me a reason not to trust them.



*Figure 32: General Trust in People Among Those Who Would Not Share the Misinformation*

Of the respondents who said they would share the article containing false information, only two stated they definitely trust the government. Of the rest, four responded they definitely did not trust the government, two responded they probably do not trust the government and four responded they might or might not trust the government.

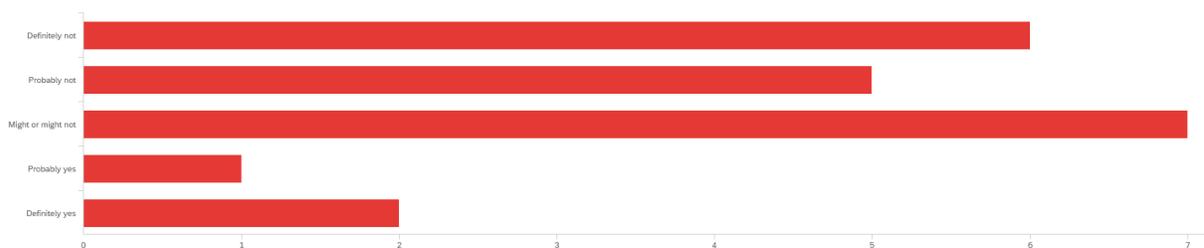
Q33 - Do you generally trust the government?



*Figure 33: Trust in the Government Among Those Who Would Share the Misinformation*

Of the respondents who said they would not share the disinformation article, two responded they definitely trust the government, one probably does, seven might or might not, give probably do not, and six definitely do not.

Q33 - Do you generally trust the government?



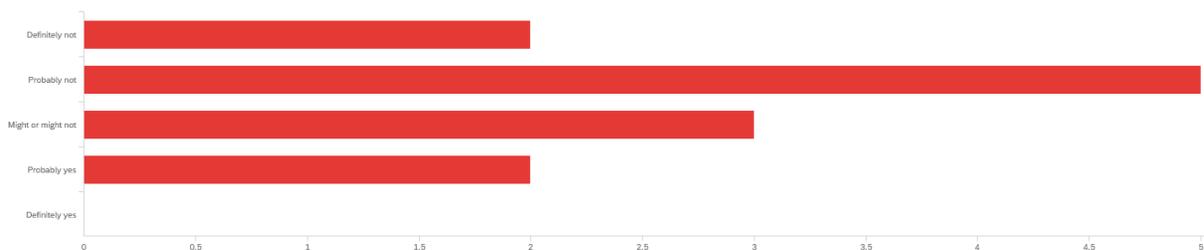
*Figure 34: Trust in the Government Among Those Who Would Not Share the Misinformation*

Since the vast majority of respondents in either group did not trust the government, that does not appear to be a strong factor in the sharing of the misinformation. This was surprising since other articles found that the undermining of trust in institutions seemed to correlate with an increased susceptibility to misinformation (Valaskivi, 2022). Also, the misinformation article in question discussed actions taken by the Australian government, so trust in governments in general seemed like it might have been a significant factor.

#### **h. Trust in Articles on the Internet**

Of the respondents who would share the disinformation article, two said they definitely did not believe most articles on the Internet were trustworthy, five said they probably did not believe they were trustworthy, three said they might or might not believe articles were trustworthy, and two people believed that most articles on the Internet were definitely trustworthy.

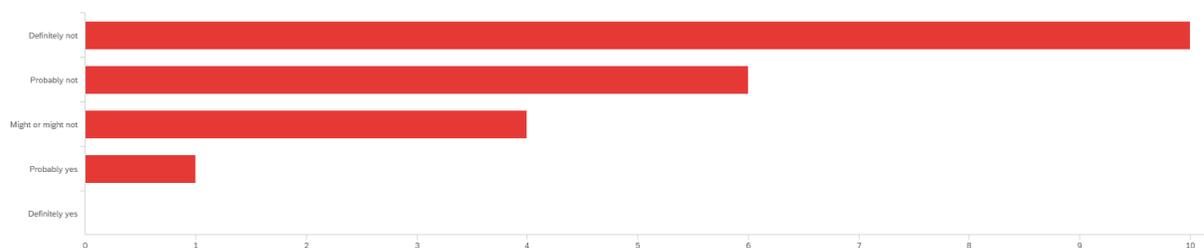
Q34 - Do you believe that most articles on the Internet are trustworthy?



*Figure 35: Trust in Articles on the Internet Among Those Who Would Share the Misinformation*

Of the respondents who would not share the disinformation article, ten said they definitely did not believe most articles on the Internet are trustworthy, six said they probably did not believe most articles are trustworthy, four people said they might or might not believe most articles were trustworthy, and one person said they probably believed most articles on the Internet were trustworthy.

Q34 - Do you believe that most articles on the Internet are trustworthy?

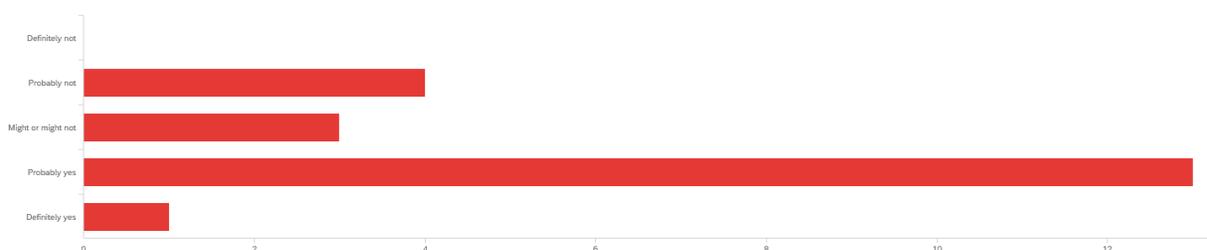


*Figure 36: Trust in Articles on the Internet Among Those Who Would Not Share the Misinformation*

To ascertain if respondents would carry their mistrust too far and would misidentify the true article as false, the question was asked if respondents believed most of the statements from the article about Alexa which were verified as true.

Of the respondents who would not spread the false information article, four believed that most of the statements from the Alexa article were probably not true, three said they might or might not believe the statements from the article, thirteen people correctly identified that the statements were probably true, and one person responded the statements were definitely true.

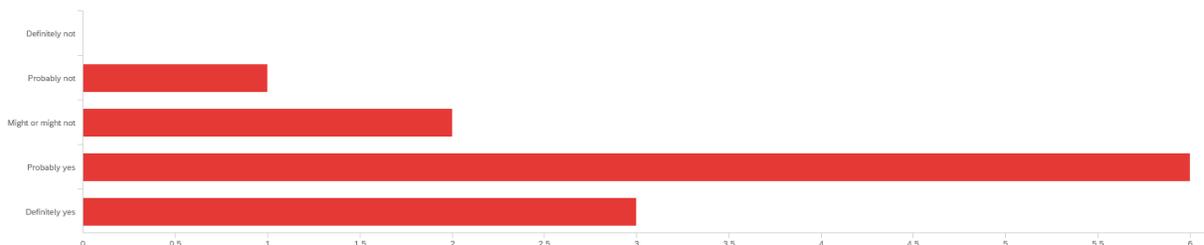
Q17 - Do you believe most of the statements from the first article about Alexa?



*Figure 37: Belief in the Statements from the Verified Article Among Those Who Would Not Share the Misinformation Article*

Of the people who said they would share the misinformation article, one person said they probably did not believe most of the statements from the true Alexa article, two said they might or might not believe most of the statements, six said they probably believed most of the statements, and three said they definitely believed most of the statements.

Q17 - Do you believe most of the statements from the first article about Alexa?



*Figure 38: Belief in the Statements from the Verified Article Among Those Who Would Share the Misinformation Article*

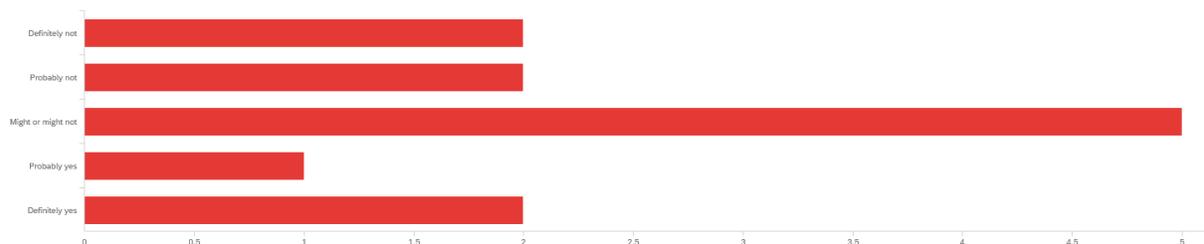
These results suggest that some students have difficulty correctly identifying accurate information, but most did not.

### **i. Conspiracy Theories**

Respondents were asked if they commonly believe in conspiracy theories.

Of the respondents who would share the misinformation article, two people said they definitely believe in conspiracy theories, one person said they probably do, five people said they might or might not, two said they probably do not, and two people said they definitely do not.

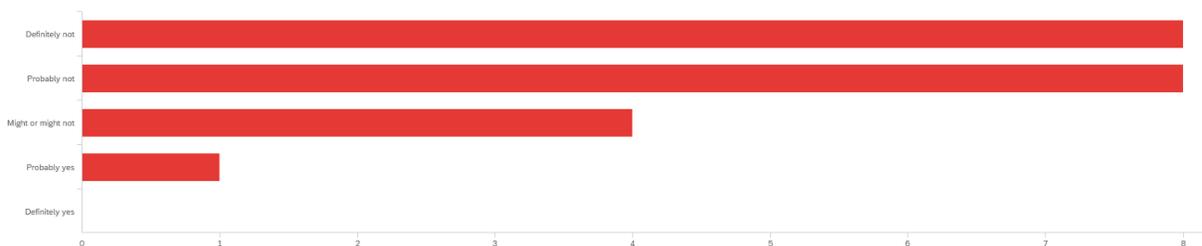
Q37 - Do you commonly believe in conspiracy theories?



*Figure 39: Belief in Conspiracy Theories Among Those Who Would Share the Misinformation*

Of the respondents who would not share the disinformation article, only one person said they probably do. Sixteen respondents said they definitely or probably did not, and four said they might or might not.

Q37 - Do you commonly believe in conspiracy theories?



*Figure 40: Belief in Conspiracy Theories Among Those Who Would Not Share the Misinformation*

These results suggested that a greater openness to conspiracy theories may correlate to an increased probability that respondents will spread disinformation. It should be noted that these were the self-reported results of how students classified themselves. It is possible more respondents may believe in conspiracy theories but may have been unwilling to admit to doing so.

#### **j. Fact-checking**

In response to the question of if students ever engaged in fact-checking of any articles they read, of the group that would not share the disinformation article, two said they definitely do not, one person said they probably would not, one person said they might or might not, eight people said they probably would, and nine people said they definitely would.

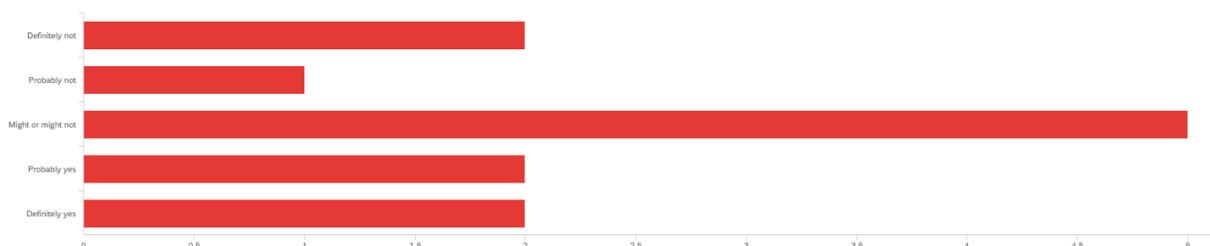
Q38 - Do you ever engage in fact-checking of any articles that you read?



*Figure 41: Fact-checking in General Among Those Who Would Not Share the Misinformation*

When asked if students ever engaged in fact-checking, of the group that would spread the disinformation article, two responded they definitely would not, one said they probably would not, five said they might or might not, two said they probably would, and two said they definitely do.

Q38 - Do you ever engage in fact-checking of any articles that you read?



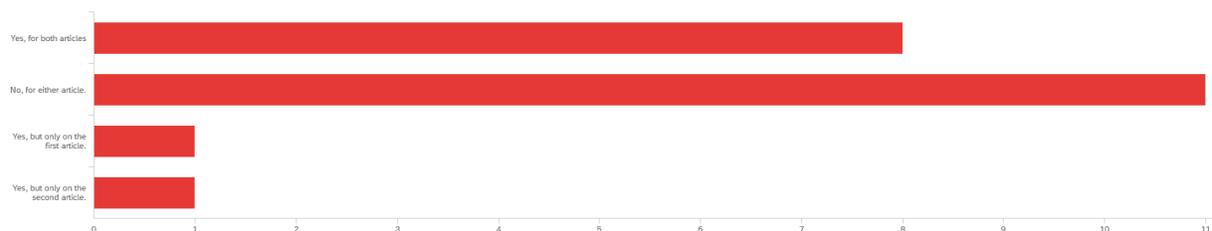
*Figure 42: Fact-checking in General Among Those Who Would Share the Misinformation*

The results showed that the students who are less likely to spread misinformation were media savvy enough to be far more likely to engage in fact-checking.

Indeed, when asked if students did any fact-checking of the two articles they were asked to read, of the students who would not spread the misinformation article, eight fact-checked both articles,

one fact-checked the first article, one person fact-checked the second article, and eleven people did not engage in fact-checking of either article.

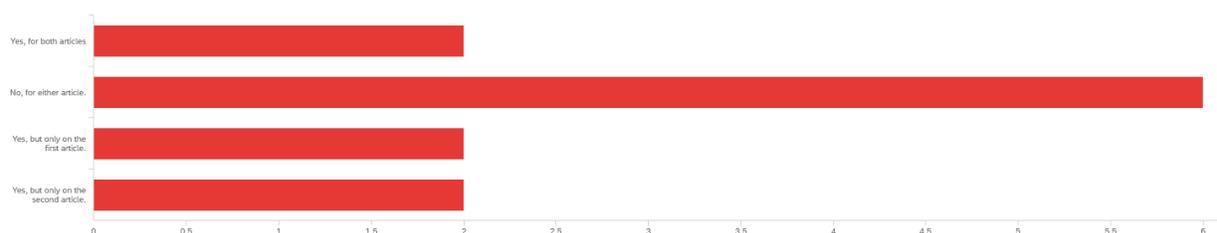
Q39 - Did you engage in any fact-checking for either of the articles you read today?



*Figure 43: Fact-checking of the Articles Among Those Who Would Not Share the Misinformation*

Of the people who would spread the misinformation article, two claimed they fact-checked both articles, one claimed they fact-checked the misinformation article, one person said they fact-checked the first article, and six people admitted to fact-checking neither article.

Q39 - Did you engage in any fact-checking for either of the articles you read today?



*Figure 44 Fact-checking of the Articles Among Those Who Would Share the Misinformation*

The three people who claimed to have engaged in fact-checking but would have spread the misinformation article are interesting to contemplate. Perhaps they needed further training on

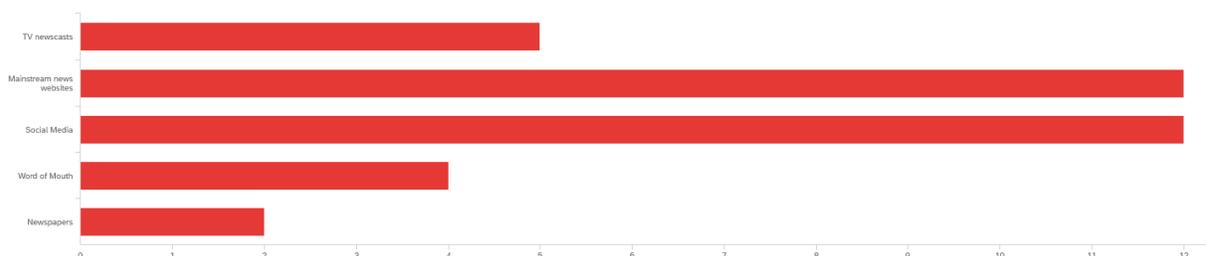
how to better engage in fact-checking, or perhaps they thought they should claim they engaged in fact-checking when they did not.

Overall, it appeared that fact-checking overwhelmingly helped respondents correctly identify the misinformation article. More ways should be found to encourage respondents to engage in fact-checking since it helps so much.

### **k. Primary News Sources**

Participants were asked where they primarily obtain news from, and were asked to select all sources which applied. In the group which did not spread the disinformation article, social media, and mainstream news websites were tied for being the top sources of information, with TV newscasts, word of mouth and newspapers trailing behind in that order.

Q9 - I primarily obtain my news from: (Select all that Apply)

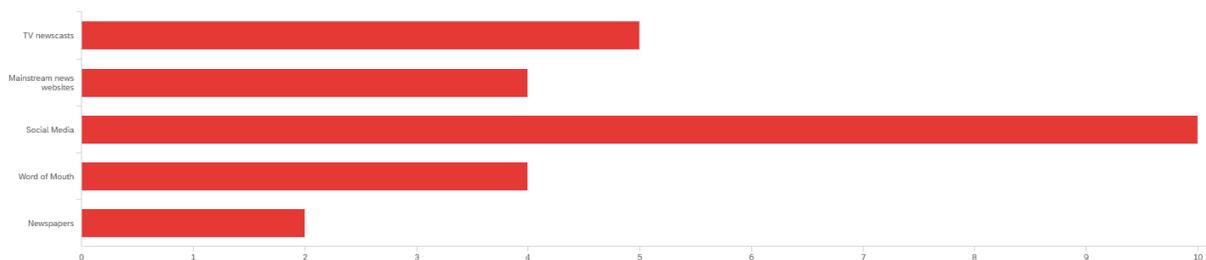


*Figure 45: News Sources Among Those Who Would Not Share the Misinformation Article*

Among the respondents who would share the misinformation article, social media was overwhelmingly their top source of news. TV newscasts received half as many votes.

Mainstream media news websites and word of mouth were tied, with newspapers coming in last.

Q9 - I primarily obtain my news from: (Select all that Apply)



*Figure 46 News Sources Among Those Who Would Share the Misinformation Article*

These results seemed especially significant. Exposure to news from more reputable sources appeared to help participants in discerning accurate information from false information. These participants seemed less likely to operate in an information silo or echo chamber, which some other studies have warned can increase one's susceptibility to misinformation (Fang, 2022).

### **I. Summary of Comparison Between Participants Who Would Spread the Misinformation Article and Those Who Would Did Not**

The following is a table summarizing the differences between participants who would spread the misinformation article, and those who would not. The six participants who were unsure if they would share the article were not included in this table.

*Table 1.1 Comparison Between Participants Who Would Share Misinformation Article and Those Who Would Not*

	Would Share Misinformation Article (12 participants)	Would Not Share Misinformation Article (21 participants)
Familiarity with Publication	50% (6/12)	14% (3/21)

Definitely or Probably Do Not Trust the Publication	17% (2/12)	76% (16/21)
Indifferent Emotional Reaction to Article	17% (2/12)	48% (10/21)
Definitely or Probably Believe in Statements in Article	83% (10/12)	10% (2/21)
Definitely or Probably Believe in Conspiracy Theories	25% (3/12)	5% (1/21)
Definitely or Probably Engage in Fact-checking in General	33% (4/12)	81% (17/21)
Mainstream News as a Top News Source	33% (4/12)	57% (12/21)

People who responded that they definitely or probably would share the article containing the misinformation were more likely to be familiar with the publication, trusted the publication more, reacted with stronger emotions to the article, believed the statements in the article, were more likely to believe in conspiracy theories, were less likely to engage in fact-checking in general, and were less likely to obtain their news from the mainstream news or sources other than social media.

## **7. Discussion of Results of Training**

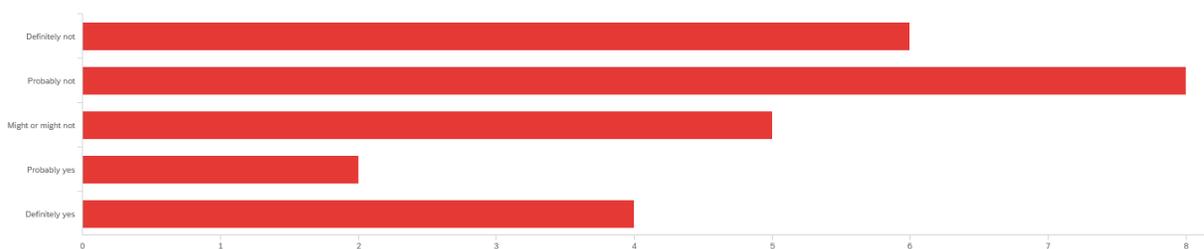
### **7.1. Likelihood of Sharing the Misinformation Article**

In Figure 19, the Control Group was shown to have six people who definitely or probably would share the disinformation article, seven people who definitely or probably would not share the disinformation article, and one person who might or might not share the disinformation article.

Ultimately, out of the fourteen people who received no training, 43% of them would have shared the article containing disinformation.

Of the twenty-five people who went through some type of training, six would have shared the article, fourteen would not have shared the article, and five might or might not have shared the article. Ultimately, only 24% of the participants would have potentially shared the article containing the disinformation. These results showed a statistically significant reduction in the spreading of the misinformation article, which suggested that the training may be effective in helping reduce the spread of misinformation.

Q22 - Is the second article about Covid vaccinations one that you are likely to share with others?



*Figure 47: Training Participants Likelihood of Sharing the Misinformation Article*

Of the participants who were in the Rule Based Training group, only two out of eleven participants were likely to share the article, or 18%. See Figure 5 for a more in-depth breakdown of the statistics.

Of the participants who were in the Combined Training group, four out of fourteen were likely to share the article, or 29%. See Figure 12 for a more in-depth breakdown of the statistics.

The Rule Based Training may have been more effective than the Combined Training given that it was ten minutes shorter in duration, and attention spans may have wavered with the extended time.

It should also be noted that while students were required to answer a short survey after completing the training, there was no minimum score requirement set. The two members of the Rule Based Training Group who would spread the false information article answered 80% of the questions correctly on the survey testing their knowledge of what they learned from the training. Of the members of the Combined Training group who would share the article containing the false information, two answered 80% of the questions correctly, one answered 60% of the questions correctly, and one only answered 40% of the questions correctly. Had there been more stringent requirements that students retake the training if they answered any questions incorrectly, perhaps they would have learned the information better and retained it.

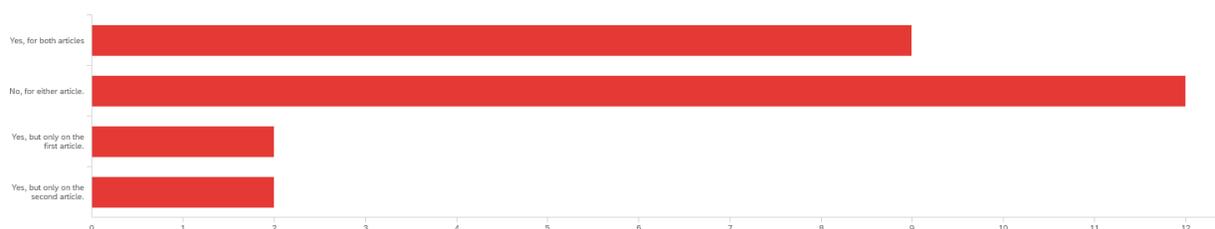
## **7.2 Sharing of Verified Accurate Article**

The sharing of the verified accurate article should be examined to ascertain the habits of students in sharing articles in general. In Figure 3, it can be seen that six of the eleven members of the Rule Based group would definitely or probably share the verified accurate article. In Figure 10, it can be seen that seven out of the fourteen participants in the Combined Training Group would share the verified accurate article. In Figure 17, it can be seen that nine members of the fourteen members of the control group would share the verified accurate article. Across all groups, students were far more likely to share the article containing the accurate information than the misinformation. At least half of all participants would share the article containing the verified accurate information, showing that students do have a tendency to share articles in general.

### 7.3 Fact-checking of Articles

In response to the question of if participants engaged in any fact-checking for either of the articles, of the individuals who received some type of training, thirteen out of twenty-five participants fact-checked at least one of the articles, or 52%.

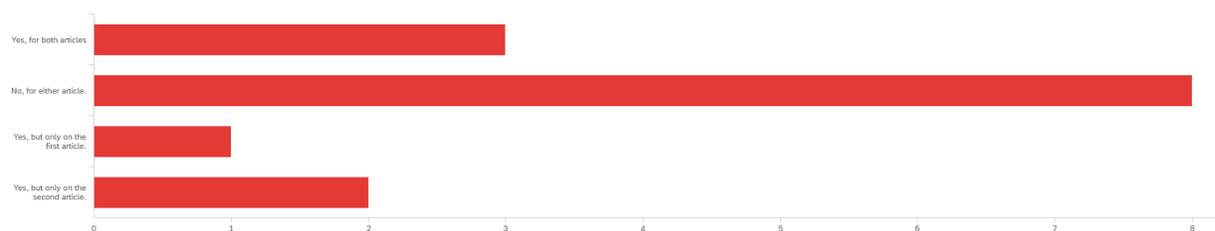
Q39 - Did you engage in any fact-checking for either of the articles you read today?



*Figure 48: Training Participants Who Engaged in Fact-checking of Articles*

These results contrasted with the six out of the fourteen people who did not receive training who only engaged in fact-checking of at least one of the articles, or 43%.

Q39 - Did you engage in any fact-checking for either of the articles you read today?

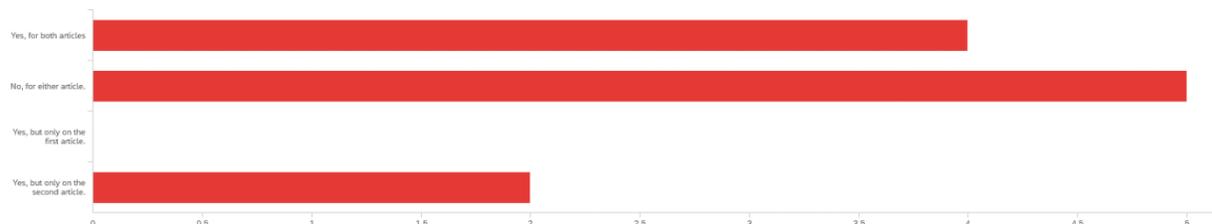


*Figure 49: Control Group Participants Who Engaged in Fact-checking of Articles*

Both training programs encouraged participants to engage in fact checking.

In the Rule Based Training group, six out of eleven participants engaged in fact-checking of at least one article, or 55%.

Q39 - Did you engage in any fact-checking for either of the articles you read today?



*Figure 50: Rule Based Participants Who Engaged in Fact-checking of Articles*

In the Combined Training group, seven out of fourteen participants engaged in fact-checking of at least one article, or 50%.

Q39 - Did you engage in any fact-checking for either of the articles you read today?



*Figure 51: Combined Training Participants Who Engaged in Fact-checking of Articles*

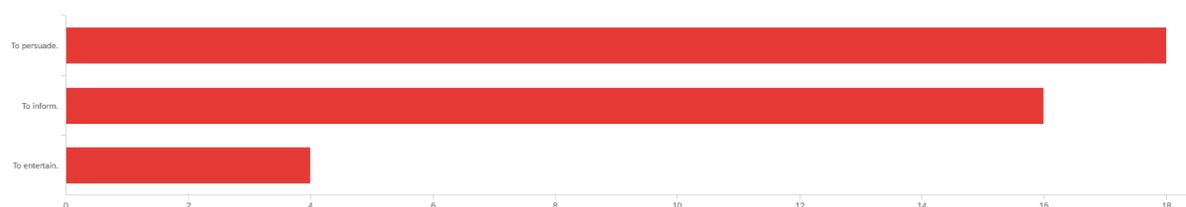
The Rule Based Training may have been slightly more effective in promoting fact-checking among participants.

#### **7.4 Purpose of the Misinformation Article**

Participants were asked to identify the purpose behind the misinformation article and were given the option to select all that applied from the options of to persuade, to inform, and to entertain.

Of the participants who received some type of training, eighteen out of the twenty-five participants (72%) identified that the article was trying to persuade them of something.

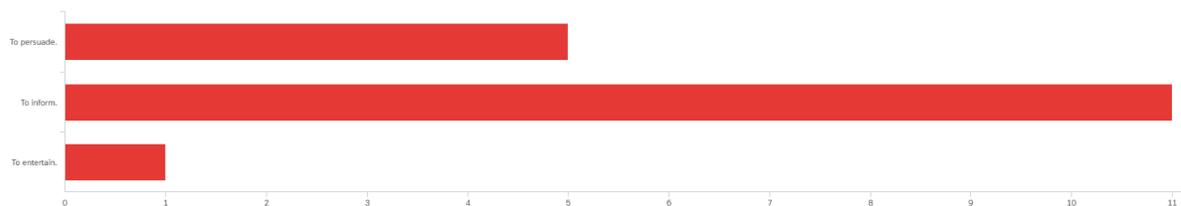
Q24 - What was the purpose of the second article about Covid vaccinations? (Select all that apply)



*Figure 52: Training Participants Identifying Purpose of Misinformation Article*

Of the participants who did not receive any training, only five out of the fourteen participants (35%) identified that the misinformation article was seeking to persuade them of anything.

Q24 - What was the purpose of the second article about Covid vaccinations? (Select all that apply)



*Figure 53: Control Group Participants Identifying Purpose of Misinformation Article*

Seven out of eleven participants receiving Rule Based Training (64%), identified persuasion as a purpose of the article.

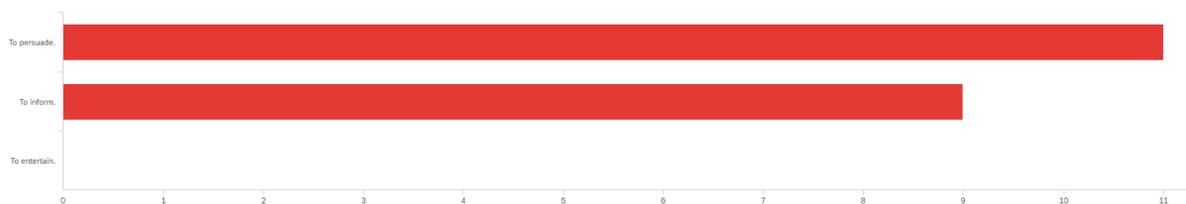
Q24 - What was the purpose of the second article about Covid vaccinations? (Select all that apply)



*Figure 54: Rule Based Training Participants Identifying Purpose of Misinformation Article*

Eleven out of the fourteen participants in the Combined Training group (79%) identified that persuasion was one of the purposes of the misinformation article.

Q24 - What was the purpose of the second article about Covid vaccinations? (Select all that apply)



*Figure 55: Combined Training Participants Identifying Purpose of Misinformation Article*

The Combined Training was more effective at helping participants recognize when an article sought to persuade them, but both trainings seemed to dramatically increase the critical thinking of participants in evaluating the purpose of the article.

### **7.5 Recognizing the Inflammatory Nature of the Misinformation Article**

Participants were asked if they believed any of the statements in the misinformation article were deliberately inflammatory. Of the individuals who received any type of training, seventeen out of twenty-five (68%) believed that some statements probably or definitely were inflammatory.

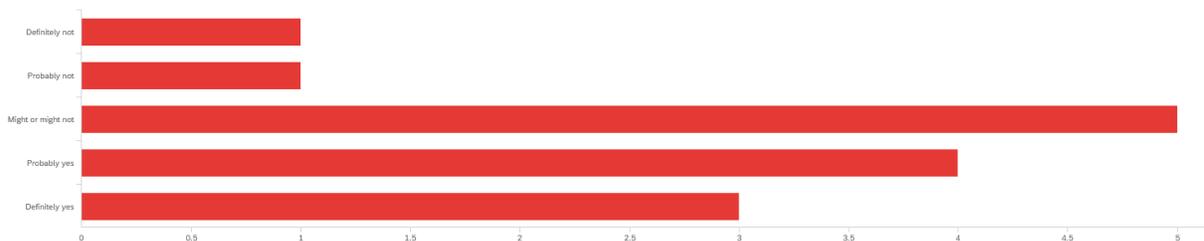
Q29 - Do you believe any of the statements in the second article about Covid vaccinations were deliberately inflammatory?



*Figure 56: Training Participants Identifying Statements in the Misinformation Article as Deliberately Inflammatory*

Of the participants in the Control group, only seven out of fourteen participants (50%) believed any statements were probably or definitely inflammatory.

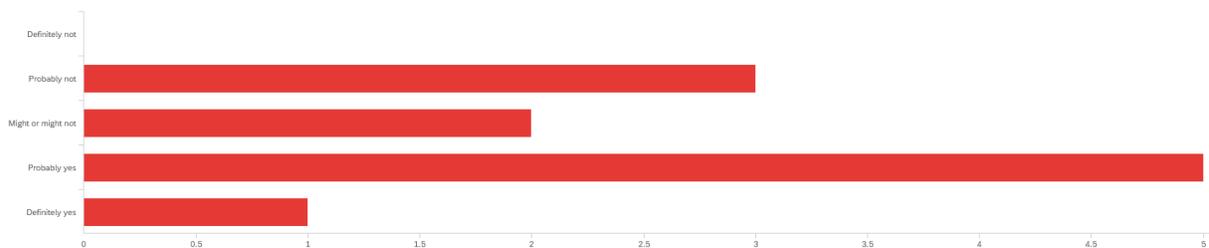
Q29 - Do you believe any of the statements in the second article about Covid vaccinations were deliberately inflammatory?



*Figure 57: Control Group Participants Identifying Statements in the Misinformation Article as Deliberately Inflammatory*

Of the participants in the Rule Based Training group, six out of eleven (55%) believed any statements were probably or definitely inflammatory.

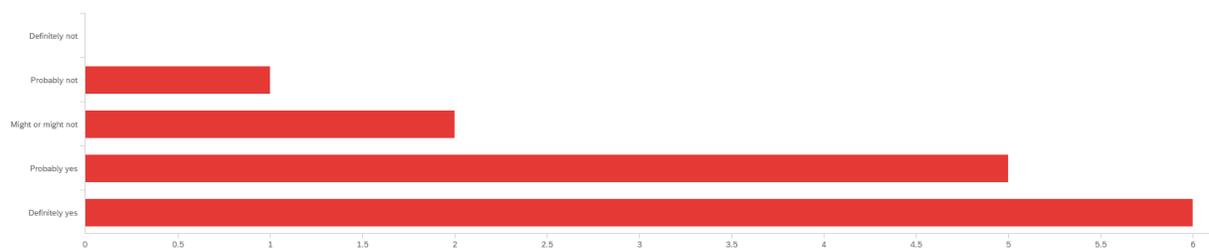
Q29 - Do you believe any of the statements in the second article about Covid vaccinations were deliberately inflammatory?



*Figure 58: Rule Based Group Participants Identifying Statements in the Misinformation Article as Deliberately Inflammatory*

Of the participants in the Combined Training group, eleven out of fourteen participants (79%) believed that statements in the misinformation article were probably or definitely inflammatory.

Q29 - Do you believe any of the statements in the second article about Covid vaccinations were deliberately inflammatory?



*Figure 59: Combined Training Group Participants Identifying Statements in the Misinformation Article as Deliberately Inflammatory*

The Combined Training appeared to have been more effective at helping participants identify when deliberately inflammatory statements were in an article.

## 7.6 Training Comparison Summary

The major results from the trainings were illustrated in the table below:

*Table 1.2 Comparing Effectiveness of Trainings*

	No training (14 participants)	Rule Based training (11 participants)	Combined training (14 participants)
Shared the article containing misinformation	43% (6/14)	18% (2/11)	29% (4/14)
Shared article containing accurate information	64% (9/14)	55% (6/11)	50% (7/14)
Fact-checked at least one article	43% (6/14)	55% (6/11)	50% (7/14)
Identified Misinformation Article's Attempt to Persuade	35% (5/14)	64% (7/11)	79% (11/14)
Recognized Inflammatory Statements in Misinformation	50% (7/14)	55% (6/11)	79% (11/14)

Article			
---------	--	--	--

While both trainings were effective at reducing the number of participants who spread the misinformation article, the Rule Based Training showed a greater reduction in the sharing of the article. Both trainings had a greater number of participants of fact-checked at least one article, with the Combined Training having slightly more participants fact-checking. The Combined Training was more effective than the Rule Based Training at helping participants recognize that the misinformation article was seeking to persuade them, and that some of the statements in the misinformation article were inflammatory; however, both trainings did help participants in recognizing these things.

### **8. Suggested Further Work**

This study examined the effectiveness of Rule Based Training and Combined Training which incorporated both the Rule Based Training and mindfulness training after merely one training session. Further research related to repeated exposure to trainings may show increased identification of misinformation. Researchers may find it worth expanding the training to include other elements of media literacy, such as when the program taught in Spain included the step of checking for one's own biases (Carrillo, 2021). It may also be worth studying if training which is more interactive in nature and incorporates games may be more effective in helping participants retain the knowledge they learn.

This study addressed helping people identify misinformation. It did not address when people correctly recognized misinformation and sought to spread it anyway. The study also did not

delve into helping people ascertain if they were in echo chambers online, as one study suggested may help (Sullivan, 2020).

This study also did not address people who have a low need for evidence, strong beliefs in their own intuition, and who believe “truth” is more of an assertion of power than a statement of accurate facts (Rudloff, 2022).

The research did not ask participants about their pre-existing beliefs regarding vaccines. This information should be ascertained in future studies to more conclusively determine if people who would share the misinformation article have a confirmation bias.

The study also did not address the underlying polarization within society which makes it vulnerable to exploitation through misinformation, or explore ways to create more unity within a nation (Zhang, 2021).

## **9. Conclusion**

Disinformation is a problem plaguing the world over. It is a threat to democracy, and steps should be taken to mitigate against it (European Commission, 2018). More research should be conducted to ascertain the efficacy of the various training programs that governments and other entities have proposed as potential solutions.

The two training programs which were the subject of this research study showed promise and should be studied further and added to as more results become available as to the effectiveness of various elements of other media literacy programs.

Training which included a fact-checking component seemed to have been particularly helpful, as was training which helped students identify emotional manipulation in articles and otherwise.

As many of the articles in the literature review pointed out, media literacy alone will not solve the problem of disinformation. Efforts need to be made to demonetize the spreading of disinformation, and to address the underlying polarization within society which disinformation exploits. Efforts should be made to increase the trust people have in news sources which have journalistic integrity. The problem of disinformation is a difficult one, but it is not insurmountable.

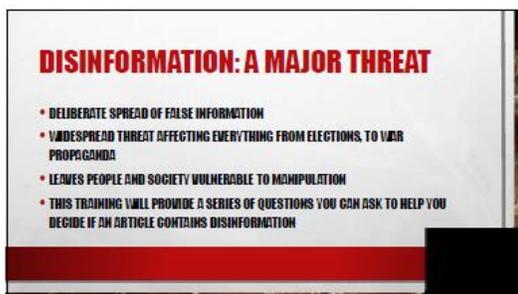
## 10. References

- Abrams, Z. (2021, March 1). *Controlling the spread of misinformation*. Retrieved from American Psychological Association: <https://www.apa.org/monitor/2021/03/controlling-misinformation>
- Basol, M. R. (2021). Towards psychological herd immunity: Cross-cultural evidence for two prebunking interventions against COVID-19 misinformation. *Big Data & Society*, 1-18.
- Bean, H., Hartnett, S. B.-K., Haadi, J., & and Koutsoukos, A. (2022). "Imitation (In)Security" and the Polysemy of Russian Disinformation: A Case Study in How IRA Trolls Targeted U.S. Military Veterans. *Rhetoric & Public Affairs*, 61-92.
- Beskow, D., & Carley, K. (2019). Social Cybersecurity An Emerging National Security Requirement. *English Military Review*, 117-127.
- Buchanon, T. (2020). Why do people spread false information online? The effects of message and viewer characteristics on self-reported likelihood of sharing social media disinformation. *PLoS ONE*, 1-33.
- Carrillo, N., & Montagut, M. (2021). Tackling online disinformation through media literacy in Spain: The project 'Que no te la cuelen'. *Catalan Journal of Communication & Cultural Studies*, 149-157.
- Contreras, B., & Lee, W. (2022, February 22). *The other front in Putin's Ukraine invasion: online disinformation*. Retrieved from Los Angeles Times: <https://www.latimes.com/business/technology/story/2022-02-25/heres-what-putins-disinformation-war-looks-like-on-the-internet>
- Dell, M. (2019). Fake News, Alternative Facts, and Disinformation: The Importance of Teaching Media Literacy to Law Students. *Touro Law Review*, Vol. 35, No. 2, Art.3, 619-648.
- Dyer, J. (2017). Can News Literacy Be Taught? *Nieman Reports*, 8-12.
- European Commission. (2018). *A multi-dimensional approach to disinformation*. Luxembourg: European Union. Retrieved from <https://www.ecsite.eu/sites/default/files/amulti-dimensionalapproachtodisinformation-reportoftheindependenthighlevelgrouponfakenewsandonlinedisinformation.pdf>
- Fang, B., Zhang, F., Hou, L., Hu, E., Zhang, J. S., & Chen, Y. (2022). A Proposed Method for Predicting User Disinformation Forwarding Behavior. *Scientific Programming*, 1-23.
- Guo, Z., & Valinejad, J. (2022). Effect of Disinformation Propagation on Opinion Dynamics: A Game Theory Approach. *IEEE Transactions on Network Science and Engineering*, 3775-3790.
- Jenson, M. D. (2017). Training to Mitigate Phishing Attacks Using Mindfulness Techniques. *Journal of Management Information Systems*, 597-626.

- Liles, J. (2021, Dec 29). *Did Alexa Challenge a Girl to Touch a Penny to an Electrical Socket?* Retrieved from Snopes: <https://www.snopes.com/fact-check/alexa-girl-penny-electrical-socket/>
- MacGuill, D. (2021, Aug 20). *No, Australian Officials Did Not Say They Would 'Seize' and Forcibly Vaccinate 24k Kids* . Retrieved from Snopes.com: <https://www.snopes.com/fact-check/australia-forced-vaccination-stadium/>
- Manfredi, J. L., Amado, A., & Gomez-Inesta, P. (2022). State disinformation: emotions at the service of the cause. *Communication & Society*, 35 (2), 205-221.
- National File. (2021, August 18). *Australian Government To Seize 24,000 Children, Vaccinate Them Without Parents Present in Massive Stadium*. Retrieved from National File: <https://nationalfile.com/australian-government-to-seize-24000-children-vaccinate-them-without-parents-present-in-massive-stadium/>
- O'Sullivan, D. (2020, September 1). *After FBI tip, Facebook says it uncovered Russian meddling*. Retrieved from CNN: <https://www.cnn.com/2020/09/01/tech/russian-troll-group-facebook-campaign/index.html>
- Robie, D. (2022). New Zealand's 23-day Parliament siege. *Pacific Journalism Review* 28 (1&2), 105-113.
- Rudloff, J. P. (2022). When Truthiness Trumps Truth: Epistemic Beliefs Predict the Accurate Discernment of Fake News. *Journal of Applied Research in Memory and Cognition*, 1-9.
- Ruiz, C. D., & Nilsson, T. (2022). Disinformation and Echo Chambers: How Disinformation Circulates on Social Media Through Identity-Driven Controversies. *Journal of Public Policy & Marketing*, 1-18.
- Shed, S. (2021, December 29). *Amazon's Alexa assistant told a child to do a potentially lethal challenge*. Retrieved from CNBC: <https://www.cnbc.com/2021/12/29/amazons-alexa-told-a-child-to-do-a-potentially-lethal-challenge.html>
- Skobalj, E. (2018). Mindfulness and Critical Thinking: Why Should Mindfulness Be the Foundation of the Educational Process? *Universal Journal of Educational Research*, 1365-1372.
- Sullivan, E., Sondag, M., Rutter, I., Meulemans, W., Cunningham, S., Speckman, B., & Alfano, M. (2020). Vulnerability in Social Epistemic Networks. *International Journal of Philosophical Studies*, 731-753.
- Valaskivi, K., & Robertson, D. (2022). Introduction: epistemic contestations in the hybrid media environment. *The International Journal of Media and Culture*, 153-161.
- Wu, L., Morstatter, F., Carley, K., & Liu, H. (2019, November 26). *Misinformation in Social Media: Definition, Manipulation, and Detection*. Retrieved from ACM SIGKDD Explorations Newsletter: <https://dl.acm.org/doi/pdf/10.1145/3373464.3373475>

Zhang, Y., Lukito, J., Su, M., Suk, J., Xia, Y., Kim, S. J., . . . Wells, C. (2021). Assembling the Networks and Audiences of Disinformation: How Successful Russian IRA Twitter Accounts Built Their Followings, 2015-2017. *Journal of Communication*, 305-331.

## APPENDIX A DISINFORMATION RULE BASED TRAINING SLIDES



## POLARIZATION

1. DOES THE ARTICLE CREATE AN US-VERSUS-THEM MENTALITY OF PEOPLE ARE EITHER WITH "US" OR AGAINST "US"?
2. DOES THE ARTICLE VILLAINIZE ANYONE WITH ANY OTHER VIEWPOINT BUT THE AUTHOR'S VIEWPOINT?
3. DOES THE ARTICLE FAIL TO RECOGNIZE THAT A REASONABLE PERSON MIGHT HOLD LESS EXTREME OF BELIEFS?
4. DOES THE ARTICLE DEHUMANIZE PEOPLE WITH OPPOSING VIEWPOINTS?

## THANK YOU

- THANK YOU FOR PARTICIPATING IN THIS TRAINING!

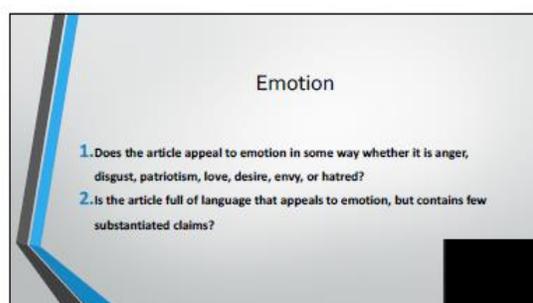
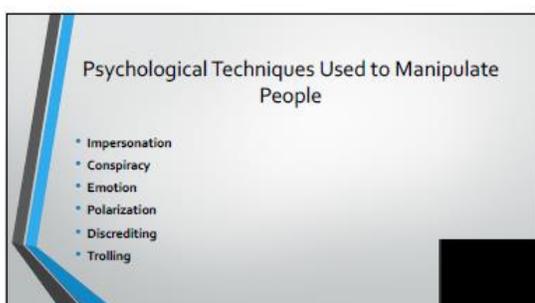
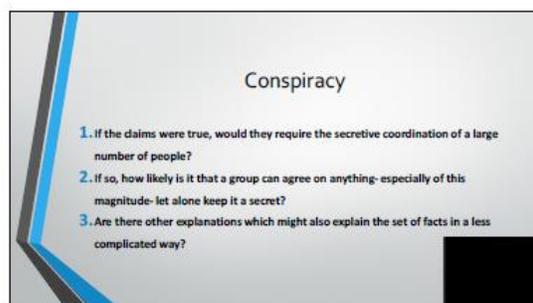
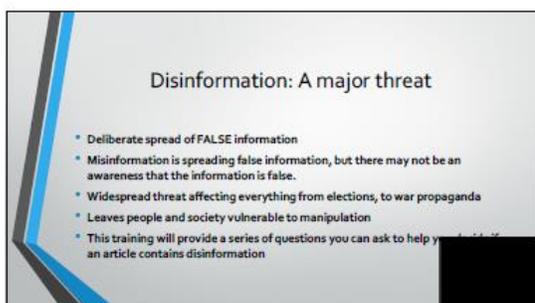
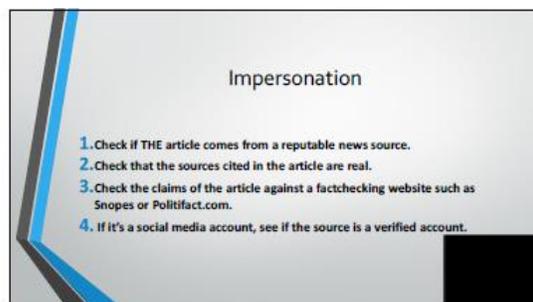
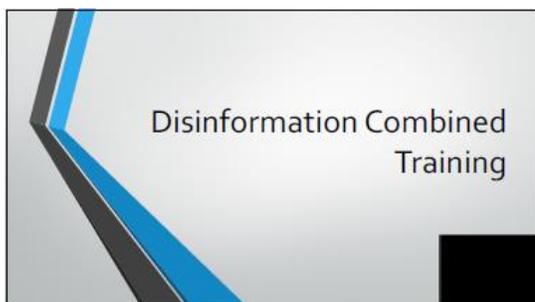
## DISCREDITING

1. DOES THE ARTICLE SEEK TO UNDERMINE TRADITIONALLY TRUSTED INSTITUTIONS SUCH AS THE GOVERNMENT, MEDIA, PUBLIC HEALTH OFFICIALS, COMMUNITY LEADERS, ETC.?
2. DOES THE ATTACK UPON THE DISCREDITED ENTITY HAVE ANYTHING DIRECTLY TO DO WITH SUBJECT OF THE ARTICLE?
3. INSTEAD OF RESPONDING TO THE POINTS THE OPPOSITION PARTY RAISES, DOES THE ARTICLE TURN TO PERSONAL ATTACKS AGAINST THE OPPOSITION PARTY?

## TROLLING

1. ARE THERE INFLAMMATORY STATEMENTS WHICH WERE MADE?
2. DO THE INFLAMMATORY STATEMENTS APPEAR TO BE SOLELY FOR THE PURPOSE OF UPSETTING THE OTHER PARTY AND NOT AS PART OF A CONSTRUCTIVE DEBATE?
3. ARE THE INFLAMMATORY STATEMENTS APPEALING TO EMOTION AND/OR SEEKING TO DISCREDIT PEOPLE WITH OPPOSING VIEWPOINTS?

## APPENDIX B DISINFORMATION COMBINED TRAINING



### Polarization

1. Does the article create an us-versus-them mentality of people are either with "us" or against "us"?
2. Does the article villainize anyone with any other viewpoint but the author's viewpoint?
3. Does the article fail to recognize that a reasonable person might hold less extreme of beliefs?
4. Does the article dehumanize people with opposing viewpoints?

### Mindfulness Training

- \* Increases awareness of one's own thoughts and emotions.

### Discrediting

1. Does the article seek to undermine traditionally trusted institutions such as the government, media, public health officials, community leaders, etc.?
2. Does the attack upon the discredited entity have anything directly to do with subject of the article?
3. Instead of responding to the points the opposition party raises, does the article turn to personal attacks against the opposition party?

### Mindfulness Training

1. Stop
2. Think
  - a. How does this article make me feel?
  - b. Is the author trying to get me to respond in a particular way based off of these emotions?
  - c. Does the author's claim make sense?
  - d. Why did the author write this article?
3. Check the claims of the article that seem to be getting people to respond in a particular way.

### Trolling

1. Are there inflammatory statements which were made?
2. Do the inflammatory statements appear to be solely for the purpose of upsetting the other party and not as part of a constructive debate?
3. Are the inflammatory statements appealing to emotion and/or seeking to discredit people with opposing viewpoints?

### Article Reading

The screenshot shows the website for Congressman Markwayne Mullin. At the top, there is a navigation bar with links for HOME, ABOUT, DISTRICT, SERVICES, ISSUES, MEDIA, CONTACT, and LAW. Below the navigation bar, there is a header for 'Mullin: It Over Column Blank Check for Socialism' with a date of November 10, 2017, and a 'READ MORE' link. The URL at the bottom of the screenshot is <https://mullin.house.gov/news/documentsingle.aspx?DocumentID=4949>.

### Analyzing Article

By now, you have probably heard about President Biden's \$3.5 billion "Build Back Better" bill and all the misinformation it is. The truth is that it will do nothing to build our country up. Instead, this is a blank check to take our country into socialism.

The bill will change public services's way of life. It's filled with bad policy changes that will raise costs on everyone, put the federal government in charge of educating your kids, prioritize climate policy over national security, breach every American's privacy, and enable future generations with debt.

It is strong to eliminate fossil fuels. The legislation would impose a "fee" on all methane emissions, including in the agriculture industry. Who know that a fee is paid a fee and that consumers are the ones who will pay for it. The fee is estimated to cost \$1.00 per dairy cow, \$1,000 per head of cattle, and \$500 per acre each year. That is more than what the average cow worth \$100 per head is worth. 1 | 1

### Summary

- In this training you were informed of the 6 major psychological techniques that Disinformation uses.
- You learned what questions you can ask yourself to protect against these techniques.
- You learned about mindfulness as a potential technique to protect yourself.
- We went through a Guided Reading to demonstrate these techniques.

### Article Claims FALSE

- Snopes fact checked the article.
- The claims are false.
- <https://www.snopes.com/fact-check/methane-tax-cattle-pigs/>



### Thank you!

- Thank you for your participation in this training!

### Snopes Cites Sources

- Snopes CITES ITS SOURCES!



**APPENDIX C SURVEY QUESTIONS****Age**

- Under 18
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 - 74
- 75 - 84
- 85 or older

**Gender**

- Male
- Female
- Non-binary / third gender
- Prefer not to say

**Education Level**

- Undergraduate Student
- Graduate Student

**College Major****Employment Status**

- Currently Employed
- Currently Unemployed

**Political Identification**

- Republican and/or Conservative
- Democrat and/or Liberal
- Independent
- Libertarian
- Green Party
- Moderate
- Other

- No current political identification

**I primarily obtain my news from: (Select all that Apply)**

- TV newscasts
- Mainstream news websites
- Social Media
- Word of Mouth
- Newspapers

**I have social media accounts on: (Select all that apply)**

- Facebook
- Twitter
- Other
- I do not have social media accounts.

**Are you familiar with the publication that printed the first article about Alexa?**

- No
- Yes

**Are you familiar with the publication that printed the first article about Alexa?**

- No
- Maybe/Unsure
- Yes

**Is the first article about Alexa something you are likely to share with others?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**How did the first article about Alexa make you feel?**

- Angry/Sad
- Indifferent/No emotional reaction
- Happy
- Worried/Concerned

**What was the primary purpose of the first article about Alexa? (Select all that apply)**

- To persuade.
- To inform.

- To entertain.

**Do you trust the publication in general which published the first article about Alexa?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you believe most of the statements from the first article about Alexa?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you believe a reasonable person could support the opposing viewpoint mentioned in the first article about Alexa?**

- Definitely not.
- Probably not
- Might or might not.
- Probably yes.
- Definitely yes.

**Do you believe any of the claims in the first article about Alexa were exaggerated?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you believe any of the statements in the first article about Alexa were deliberately inflammatory?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Are you familiar with the publication that printed the second article about Covid vaccinations?**

- No
- Maybe/Unsure
- Yes

**Is the second article about Covid vaccinations one that you are likely to share with others?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**How did the second article about Covid vaccinations make you feel?**

- Angry/Sad
- Indifferent/No emotional response
- Happy
- Worried/Concerned

**What was the purpose of the second article about Covid vaccinations? (Select all that apply)**

- To persuade.
- To inform.
- To entertain.

**Do you trust the second publication about Covid vaccinations in general?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you believe any of the claims in the second article about Covid vaccinations were exaggerated?**

- Definitely not
- Probably not
- Might or might not
- Probably yes

- Definitely yes

**Do you believe most of the statements from the second article about Covid vaccinations?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you believe a reasonable person could support the opposite viewpoint mentioned in the second article about Covid vaccinations?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you believe any of the statements in the second article about Covid vaccinations were deliberately inflammatory?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**I generally trust people until they give me a reason not to trust them.**

- Strongly Agree
- Somewhat Agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

**I generally give people the benefit of the doubt when I first meet them.**

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

**My typical approach is to trust new acquaintances until they prove I should not trust them.**

- Strongly Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

**Do you generally trust the government?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you believe that most articles on the Internet are trustworthy?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you believe there are people who are actively trying to spread false information online?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you believe you could recognize when an article contains false information?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you commonly believe in conspiracy theories?**

- Definitely not

- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Do you ever engage in fact-checking of any articles that you read?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes

**Did you engage in any fact-checking for either of the articles you read today?**

- Yes, for both articles
- No, for either article.
- Yes, but only on the first article.
- Yes, but only on the second article.

**Have you ever believed an article contained accurate information, and then had new information change your mind?**

- Definitely not
- Probably not
- Might or might not
- Probably yes
- Definitely yes