Hannah Hayes

ENC 2135

12 June 2023

Professor Bridgette Sanders

Bias In Artificial Intelligence: Rhetorical Analysis

I. Introduction

Artificial intelligence systems have automated many processes that would take humans hours to complete. Things such as college applications, job applications, patient care, and many other processes are being simplified using these systems. Although this new innovative way of doing these tasks has made many individuals' jobs easier, it has taken a toll on those who are being evaluated by the systems. Being denied from colleges or job opportunities and receiving improper medical care are things individuals experience daily as a direct result of bias in artificial intelligence. For decades, businesses have been ignoring professionals speaking out about the unethical biases present in the systems they have been implementing. Many professionals have spoken out through articles and speeches to persuade the public to act against the injustices that not addressing the biases in artificial intelligence has caused. The article, “Bias in Data-Driven Artificial Intelligence Systems-An Introductory Survey,” by Eirini Ntoutsi, et al, and the Ted Talk, “How to Keep Bias Out of AI,” by Kriti Sharma are both multimodal, and use logos and ethos to persuade the audience to fight against bias in artificial intelligence systems.

II. Analysis of the Text Based Artifact

In the article, “Bias in Data-Driven Artificial Intelligence Systems-An Introductory Survey,” Eirini Ntoutsi and her colleagues are trying to convince readers that artificial intelligence has biases that need to be managed before society continues to use the systems. They split the article into the following three distinct categories: “understanding bias,” “mitigating bias,” and “accounting for bias” (Ntoutsi). As the authors introduce this idea, they use a multimodal approach that includes linguistically expressing their ideas and visually presenting them. The visual summarizes into bullet points everything that the article discusses. It is labeled the “Graphical Abstract,” and it outlines the three categories previously mentioned, and provides a summary of the “Legal Issues” section (Ntoutsi). Although the graphic is still reliant on words to express the points listed, it briefly describes the information in bullet points and is colorful, with the different sections being color coded. The graphic is more like an informational pamphlet or poster that allows anyone to quickly understand what the authors’ point is.

In addition to the multimodal presentation of information, the author also uses ethos. Ethos is when the author shares the credibility of their information so that the readers feel they are receiving information from a trusted source. As the reader reaches the end of the article, the authors have provided three sections that express credibility. The “Acknowledgement,” “Conflict of Interest,” and “Authors Contributions” may all contribute to the readers perspective on the reliability of the information. In the acknowledgement section, the authors wrote that the, “... work is supported by the project ‘NoBias - Artificial Intelligence without Bias,’ which has received funding from the European Union’s Horizon 2020 research and innovation programme, under the Maria Sklodowska-Curie (Innovative Training Network) grant agreement...” (Ntoutsi). This section allows the reader to see that this research has been supported by a large research program, and the contributions section allows them to see how each author perfected and

reviewed the information for accuracy. The article is also peer-reviewed, and each of the authors' experience is readily available for readers to access in the database. Additionally, the authors have cited over a dozen professionals in the field and highlighted their credibility. Although the authors do not blatantly state that the reader should trust them because of their qualifications, there are other characteristics that stress the credibility of their research.

The authors of this article excel in the usage of the rhetorical characteristic of logos to persuade the reader. When using logos, the author needs to appeal to the readers sense of logic as they connect their ideas. This article is not lacking in the usage of facts as the authors make their point. The authors use a logical progression of information that starts with establishing an understanding of bias in artificial intelligence and ends with accounting for the bias (Ntoutsi). By starting out providing information about how bias occurs in these systems and how it affects society, the authors are preparing the reader for the information that is going to follow. If the authors did not take a logical approach, and simply said "bias exists and this is how you solve it," the reader may not understand what bias in the systems looks like and how it functions. The authors provide facts from many studies, such as Buolamwini and Gebru who, "...found that commercial facial recognition services perform much better on lighter male subjects than darker female ones" (Ntoutsi). This is just one example of the handful of studies that have been evaluated in the article. When the reader sees all these examples of bias in artificial intelligence, it appeals to their logic because multiple studies have come to similar conclusions about the presence of bias in systems.

III. Analysis of the Non-Text Based Artifact

The goal of the Ted Talk, "How to Keep Human Bias Out of AI," presented by Kriti Sharma, is to persuade the listeners to acknowledge and fight against the biases in artificial

intelligence systems. Providing this argument through a Ted Talk speech was a prime opportunity to benefit from the usage of a multimodal outlet. Sharma can present her information to the viewer linguistically, visually, and auditorily. The viewers can read the transcript or listen to her speak, which provides options that appeal to different audiences. The opportunity to watch the speech offers Sharma the opportunity to create a more personalized experience for her viewers because they can see her expressions and body language as she expresses the importance of her claim. Overall, the multimodal characteristic of this artifact is extremely beneficial to Sharma because the reader may feel more connected to her and be more susceptible to her persuasion.

The effectiveness of the Ted Talk is also impacted by Kriti Sharma's effort to express her credibility to the audience. Sharma utilizes the concept of ethos in her speech to gain the audience's trust as she persuades them to implement solutions to mitigating bias. One of the first things that Sharma says in her opening statement is, "I build AI for a living" (Sharma). This statement alone is powerful in her efforts to characterize her point of view as trustworthy. The audience can assume that she knows the ins and outs of technology, and that she will not lead them astray as she shares information about the functions of artificial intelligence. She furthers her credibility as she discusses how she has been discriminated as a woman in the industry even though she has been building robots since the age of fifteen and has more than one degree in computer science (Sharma). It is hard to deny her credibility after hearing that she has been doing field related work since she was a young teen. Sharma effectively proves her trustworthiness to the audience multiple times and allows them to fully know her credibility despite the industry standards that reflect male individuals as being the dominating leaders.

The logical progression of this Ted Talk is strategically executed in a way the captivates the audience's attention. Sharma appeals to the audience's logic by using examples from everyday life that the everyday person may not have realized was bias or discrimination. For example, she discusses the sexism that is present in the following digital assistants: Alexa, Cortona, and Siri. Sharma explains that each of them have a woman's voice, are assistants, and are expected to do things like turn the lights on/off or create a grocery list (Sharma). Her explanation of how human bias is applied to artificial intelligence systems is excellently executed through the usage of logos because the audience is using their logic to connect these ideas. Sharma has made a logical connection that clearly connects the two ideas of artificial intelligence and human bias. In addition, she includes a statistic that shows the systemic biases that have influenced woman in her field. She explains that there is a study that has shown that when woman hide their gender before joining a coding forum, they are four percent more likely to have their code accepted than men (Sharma). She had made this point following a discussion about woman being denied from certain platforms because of their gender and argued that this was not simply because of talent. The statistic she provided proved that women are just as good as, if not better than, men in the field of technology but are being denied the same respect. Overall, Sharma makes clear connections between concepts and provides statistics that leave an impact on the audience. She has effectively used logos in her speech to persuade people to push for the mitigation of biases in artificial intelligence.

IV. Comparison of the Two Artifacts

Despite the different presentations of these artifacts, they both can effectively persuade their audiences to open their eyes to the effects bias in artificial intelligence has on society. Each of them is multimodal and uses ethos and logos in diverse ways to express their ideas. In this

case, it may be arguable that Kriti Sharma's Ted Talk, "How to Keep Human Bias Out of AI" has the upper hand in many aspects of these categories. The audience can hear her voice's tone and see her body language as she stresses the importance of this topic. She also explains her credibility in a more straightforward manner, while the authors of the article, "Bias in Data-Driven Artificial Intelligence Systems-An Introductory Survey," do not blatantly state their credentials. Eirini Ntoutsi and his colleagues do have their information readily available to readers in the contributor's section, but this may not be enough to say they effectively used ethos to persuade the reader. However, the article's logical representation of information was a strong suit for the authors in the category of logos because logical connections were made, and a plethora of facts from other professional studies were littered throughout the artifact. Despite the lack of statistics from Ntoutsi and his peers, the organization of facts expressed the characteristics of an effective usage of logos. It may be important to note that the Ted Talk did appeal to the readers emotions, a concept known as pathos. Sharma was consistently asking the audience how a certain scenario would make them feel, and expressed aggravation around the fact that women are being discriminated. Her presentation of fact easily left the audience feeling frustrated, especially females.

V. Conclusion

Each of the two artifacts effectively persuade the audience to fight against bias in artificial intelligence. They are multimodal, and use ethos and logos in separate ways to leave an impression on the opinions of the audience. The article was able to effectively integrate a visual in the form of a graphic to appeal to the reader in a multimodal manner, while the Ted Talk offered visual and auditory methods of information consumption. The authors prove their credibility to their audiences and gain individual's trust to persuade them. Finally, each of the

artifacts uses a logical progression of facts and statistics that clearly connect the ideas that the authors are trying to convey. Overall, both artifacts have rhetorical characteristics that leave an impression on the reader's opinion surrounding the topic being discussed.

Works Cited

Ntoutsi, Eirini, et al. “Bias in Data-driven Artificial Intelligence Systems—An Introductory Survey.” *WIREs: Data Mining & Knowledge Discovery*, vol. 10, no. 3, May 2020, pp. 1–14. *EBSCOhost*, https://doi.org/10.1002/widm.1356.

Sharma, Kriti, director. *How to Keep Bias Out of AI*. *Kriti Sharma: How to Keep Human Bias out of AI | TED Talk*, 12 Apr. 2019, https://www.ted.com/talks/kriti_sharma_how_to_keep_human_bias_out_of_ailanguage=en. Accessed 6 June 2023.