Literature Review on the Depiction of A.I. Across US and UK Media

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INTRODUCTION

Artificial intelligence has exploded in popularity in recent history and is poised to revolutionize the way humans interact with the world. Inventions like ChatGPT have allowed people to witness a small fraction of the capabilities of AI, creating an increase in discussions regarding artificial intelligence. At the same time, many people don't know what AI is or what it is capable of since the technology is so complex. The coexistence of AI and the lack of understanding about it has created concerns among some that the technology could lead to the extinction of the human race. While that may be the more pessimistic view of AI, others think it has the capability to improve the standard of living for all. These opinions are also found among experts. Leading technology venture capitalist Marc Andreessen thinks that AI can save the world, while Sam Altman, OpenAI founder and CEO, believes AI could lead to the extinction of humanity (Andreessen, 2023; Bove, 2023). Given this polarization among experts, it is reasonable to believe that the public will look to create opinions of AI using more palatable information sources like the news. This is because only those who know how AI works can grasp what its current capabilities and dangers are. This makes media portrayal of AI, through news, articles, and even entertainment, paramount in the public opinion of artificial intelligence. Disagreements of the capabilities of AI exist among experts and the public, but do these disparities persist across regions? An effective approach to discerning this would be to examine AI legislation from different areas.

Laws regarding artificial intelligence can reveal established stances on AI because having legislation suggests that the technology's capabilities have been taken into consideration by lawmakers. Europe leads in AI regulation and already has laws to curb AI's negative effects,

such as the European AI Act, which passed in June of 2023 (European Parliament, 2023). It is the first piece of legislation of its kind and it aims to lessen the risk of AI on people's privacy and security. The United States also recently passed its first piece of legislation on AI. The executive order requires "new safety assessments, equity and civil rights guidance and research on AI's impact on the labor market" (Feiner, 2023). The United Kingdom has not put in place specific laws to regulate AI and is in the process of creating an "AI Whitepaper" to begin to create laws and a pro-innovative and context-specific AI regulation regime (Prinsley et al., 2023). Approaches to artificial intelligence regulation are part of the innovation and privacy balance that will allow for novel AI technology development, while also protecting consumers and creators from mishaps. AI already has its issues, occasionally generating responses riddled with misinformation and plagiarism and infringing on the privacy of some users (Bhuiyan & Robins-Early, 2023). The exposure of these hazards to the public through news and media outlets will likely alter people's opinions on AI which will eventually lead to regulations.The current approaches of the US, EU, and UK may be a result of the portrayal of AI in the media and news since public perception can affect policies and laws. The way countries approach regulation will largely reflect the tone of the discussion of AI's capabilities and risks, making media portrayal of AI an important metric to consider as the landscape changes.

In order to reveal the public's current view of AI, one must see what the general population thinks AI is, and how it already affects them today. Several studies show that adults in both the United States and the United Kingdom "have a broad but shallow understanding of the technology" (Nader et al., 2022). It is also apparent that younger people were better at identifying systems that actually used AI when given a list of different technologies (Nader et al., 2022). This could suggest that older people are more likely to be influenced by what they hear

about AI in the news because of their disconnect with the new technology. The study also found most respondents thought that AI would either replace human jobs or think logically and solve problems (Nader et al., 2022). Respondents were mostly optimistic about the future of AI as well, but other surveys show increasing worry about the capabilities of AI (Nader et al., 2022). The importance behind these responses lies in how people are forming their opinions about AI. For example, the increase in worry can be attributed to an increase in negative news or entertainment covering AI. Both entertainment media and traditional news played a big role in what people thought about AI, with the news edging out entertainment media when respondents were asked "Where do you get your information about AI?" (Nader et al., 2022). The general public's lack of knowledge surrounding AI and reliance on news and media to try and formulate opinions will have an effect on new laws and policies. Comparing how news and media in the US and UK approach the development of AI will shed light on their respective future policy propositions and laws. Examining both countries will also help gather more information on how different regions approach the issue and can allow the nations to learn from one another.

HYPOTHESES

As mentioned above, the UK and the US have historically taken different approaches to dealing with the potential threats from emerging technologies. The UK is heavily influenced by the EU and tends to be relatively strict when it comes to new technologies such as AI, whereas the US generally leaves regulation up to private tech companies. This historically laissez-faire approach, almost void of government involvement in the US suggests that politicians are less worried about the threats of AI than the UK. Only recently has the US decided to pass an executive order on AI (Feiner, 2023).

Recent actions and considerations by governments regarding AI likely come from public sentiment which is influenced by the news since, in a democratic system, politicians are expected to listen to the people and adjust legislation according to their constituents' beliefs. Additionally, both people and politicians form their beliefs based on the news they are exposed to. Thus, the news plays an important role in shaping the political landscape of a democracy surrounding current events such as AI. The past absence of legislation in the US implies a lack of concern among politicians regarding technology governance. This indifference raises a question about whether there are significant differences in media reporting between the US and UK to the point where the respective publics of the two countries have different levels of concern of AI. This is supported by research looking at data from 2009 to 2018, suggesting that AI coverage in the US largely consisted of hope rather than concern and had a dominant positive or mixed sentiment. Between 2015 and 2018, there was a growing trend of negative positions on AI, although overall the sentiment was still positive (Chuan et al., 2019). We predict that negative sentiment in the US has risen since 2018, and will be a much greater proportion of the coverage on AI. Considering the UK's history of tech governance, we predict that UK news will have had an even stronger increase in negative coverage, leading to a more notable sentiment gap between the two nation's media. This leads us to our first two hypotheses.

H1A : Negative sentiment regarding AI has risen in the US and UK since 2018

H1B : Negative sentiment towards AI is stronger in the UK than in the US

We aim to test these hypotheses by performing sentiment analysis on a selection of articles from newspapers in each of the two countries and evaluating its variation throughout time. This provides us with information to better understand the role the news has played–and continues to play– in shaping opinion on AI in each country.

Much of the literature about media coverage on AI focuses on US and UK media (Brause et al., 2023). The UK media highlights the benefits of AI, namely economic and financial, and has done so by covering corporate statements instead of employee concerns (Brennen et al., 2018). To that end, the majority of AI coverage is on new products or initiatives (Brennen et al., 2018). The US media similarly portrays AI as having the potential to boost the economy and its productivity (Chuan et al., 2019). AI technology and media articles have greatly increased since the publishing of these papers, warranting an updated analysis of a larger sample of articles. These reasons and evidence lead us to our second hypothesis.

H2: When reporting on different industries (such as education, transportation, healthcare, etc…), news articles in the US and the UK will mention economics more often than ethics.

We will test this by tagging AI-related articles from prominent US and UK newspapers for the presence of certain words, in order to organize them into Industry, Economics and Ethics features. For all articles in the Industry feature, we will find the number of articles that are also only in either the Economics or Ethics feature, and then compare the number of publications and proportions against each other. Additionally, we will then sort the articles by the publication's national origin to separate US and UK papers. Finally, we will compare the proportion of articles that either discuss economics or ethics through the lens of Industry against each other. This comparison will be done three times: with only US articles, with only UK articles, and with articles from both countries. Additional comparisons between the US and UK may also be conducted as part of a basis for future research. One such investigation is to determine whether industries in the US and UK are portraying AI in the same way. As an example, we could compare the proportion of US and UK articles mentioning healthcare, education, transportation, or other industries in the US that are in the Ethics feature against each other.

In addition to the benefits discussed in the media, many articles have been written about the consequences and potential harmful effects of AI. In regards to the ways in which AI threats are handled, we hypothesize that the US and UK media will cover different solutions to AI for two main reasons: technology companies' influence in the US and cultural differences in news reporting.

We don't live in a vacuum. The US is home to more than half of the 20 largest tech companies in the world (Ponciano, 2023), all of which have their own agenda. This huge private

presence among the political elite is a non-negligible incentive for politicians to support private solutions when it comes to controlling private companies. This industry also has an immense cultural influence, as it shapes our lives every day and decides what we see and don't see on our devices. It seems fair to assume that the tech industry also wields both hard and soft power influence over US news itself, biasing it towards having a more positive view of said companies.

Additionally, one can look at differences in reporting between the two cultures. In the medical domain, research has demonstrated that the UK media covers eating disorders in a more clinical fashion than the US. Furthermore, US news highlights recovery from eating disorders more often than the UK, which tends to be more pessimistic (Shepherd & Seale, 2010). In a similar manner, US news spends more time reporting on stories of bravery, recovery, and survivorship when it comes to battling cancer (Seale, 2002). These examples, although many steps removed from the domain of AI, are relevant to hypothesizing how UK reporting may differ from that of the US. Both medical disorders and AI are threats to our well-being, and the way they are described in the news is a reflection of how each culture aims to treat them. This leads us to believe that the UK will report more strongly on regulatory, expert-backed solutions, just as it did with stronger clinician-backed coverage of the medical field. To make a direct comparison with the examples above, AI could be viewed as a disease that we need to slow down and protect ourselves from, in which case the media may report more often on regulatory solutions (similar to clinical reporting in the UK). On the other hand, one could view it as a positive happening, in which case the solutions would be presented as stories about the perseverance of tech companies that manage to conquer and find solutions to the AI problem (similar to the culture of highlighting stories of bravery and survivorship when it comes to reporting on patients with cancer and eating disorders in the US).

In sum, we can assume that the US and UK will report on solutions to the AI threat differently for two main reasons. First, the large power of the private tech industry in the US pushes for private solutions and has a broad influence on politicians, culture, and news reporting. Secondly, there are distinct cultural nuances in news reporting between the two countries, suggesting that the UK is may more likely to emphasize expert and policy-backed solutions, whereas the US may mention stories of independent private companies' solutions. This leads us to our third hypothesis.

H3: US newspapers will feature mostly private-sector solutions to address AI-related threats, whereas the UK will focus more on policy and regulatory solutions.

We will test this by tagging AI-related articles from prominent US and UK newspapers for the presence of certain words that will categorize them into two features: Private Solutions and Policy/Regulatory Solutions. We will then compare the features against each other, analyzing the number of articles in each feature as a proportion and as a percentage of total articles.

As AI developments and regulations arise, the implications of AI have become an increasingly discussed topic in US and UK newspapers (Brause et al., 2023). However, there is a lack of literature discussing the frequency of the types of topics that individual newspapers cover. Despite different national regulations, some literature analyses on US and UK media coverage of AI find, as a whole, both nations' media's cover relatively similar AI subtopics (Brennen et al., 2018; Chuan et al., 2019) and adopt similar tones (Nguyen & Hekman, 2022). In the UK, varying AI subtopics are discussed relative to the political lean of the newspaper, thereby politically polarizing the topic of AI (Brennen et al., 2018). Right-leaning media covered topics such as economics, investment and national security; left-leaning media focused more on ethical issues, such as discrimination and privacy. A study on multiple US media outlets found a

similar result in media coverage about facial recognition technology, a form of AI (Shaikh & Moran, 2022). This leads us to question if the US and UK media outlets cover certain AI subtopics depending on their political leanings.

In all these studies, however, a major drawback is the number of media articles reviewed per research paper: while some analyzed almost 2500 articles, others used less than 800. Our analysis will encompass many thousands of articles, allowing us to look at far more articles in multiple national US and UK journals. This will help to better validate and generalize our findings to encompass all of AI, not just a specific technology. Additionally, half of the applicable literature found was published before 2020. Because AI's media presence has increased rapidly in the past few years, the media coverage may have shifted as a result, further encouraging a larger-scale review of AI articles.

Analyzing left- and right-leaning media outlets' AI subtopic coverage in the US will lead to an exploration of how the media may influence public perception of AI relative to the reader's political biases. These findings may contribute to explaining the ongoing political polarization in the US and could predict the politically polarizing elements of AI. Additionally, by contrasting this result against the UK's result, we may find a correlation between AI subtopic coverage, different national policies, and political bias. Therefore, we propose our final hypothesis.

H4: In the US and UK, The majority of left-wing media outlets' publications will cover AI's ethical concerns and implications, whereas the majority of right-wing media outlets' publications will cover industry developments and national security issues.

To test this, US articles will be sorted by their topics—such as economy, national security or privacy—by searching if various keywords are in the article's title and body. Then, we will note which media outlets published the most articles of the same category, relative to the total

number of articles published in that category and by that outlet. We will follow the same methodology for UK articles, and will then compare the results for each country against the other. There is good reason to expect outlets in the UK to publish proportionately fewer articles in these specified subtopics relative to the US due to the difference in governmental policy towards AI, as described earlier in the paper. There is not enough literature for certainty, so we will investigate this suspicion for future research.

CONCLUSION

AI will revolutionize the way people interact with the world around them, but only if people embrace it. The media has the ability to encourage or dissuade the public's thoughts, including their perspectives on AI. Therefore, the integration of AI into daily life could depend on the public's response to news and media representations of AI. Media in the US and the UK has largely covered positive, industry-related AI developments like potential AI-induced economic productivity increases. Unfortunately, AI also has the potential to inflict harmful consequences, which have been covered to a lesser extent by the media and to varying extents in the US and UK (Brennen et al., 2018; Chuan et al., 2019). These disparities could explain the different national policies and regulations targeting AI. Lastly, UK media has already started politically polarizing AI subtopics, yet there is no published literature on this issue in the US (Brennen et al., 2018). The media plays a notable role in public opinion, and the way articles cover AI can impact the technology's adoption, which has the potential to alter many people's lives.

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