House of Lords Communications and Digital Select Committee Inquiry
On
The Future of News: Impartiality, Trust, and Technology

Written Evidence

Submitted by: ***Dr Akshi Kumar,*** Senior Lecturer in Computer Science, Director-Post Graduate Research (PGR), Department of Computing, Goldsmiths, University of London, United Kingdom

"Media in Transition: Assessing the Impact of Technology and AI on News Integrity and Trust"

Executive Summary:

I.   **Technology's Dual Impact on News:** Technology and AI democratize information access and innovate news delivery, but also bring challenges like major platform dominance and misinformation, necessitating a balance for a diverse news environment.

II. **Influence of Major Platforms**: The large technology platforms are the key shapers of public opinion and news visibility, these platforms enhance information access yet can overshadow smaller outlets, significantly impacting news dynamics play a key role in shaping public opinion and determining the visibility of news content.

III. **Generative AI's Role in Media Business:** Generative AI's integration into newsrooms facilitates automated content creation and enhances user-specific content delivery, reshaping journalism's traditional models. However, it also presents challenges like ensuring authenticity and managing AI-generated misinformation, necessitating a balance between technological innovation and ethical journalistic practices.

IV. **Evolving Perceptions of Impartiality**: A growing complexity in maintaining impartiality amidst societal polarization; news outlets must balance unbiased reporting with diverse audience expectations. Media and AI literacy is key to ensuring a well-informed public capable of critically engaging with news in the digital age.

V.   **Effectiveness of Regulatory Oversight:** As the media environment becomes increasingly complex with the advent of digital platforms, the role of regulators like Ofcom is crucial but also challenged. This situation calls for a potential reassessment and adaptation of regulatory approaches to address the nuances of modern media consumption and distribution more effectively.

VI. **Government's Intervention in Media:** Government intervention in media can play a pivotal role in ensuring news impartiality and trust, dealing with challenges like the influence of major tech platforms, media plurality, and misinformation. While being vital for a balanced media environment, it is important to preserve journalistic independence and prevent excessive governmental influence, ensuring a healthy, diverse, and independent media landscape.

VII. **Rumour Control and Influential Nodes:** AI literacy and efficient rumour control are key to maintaining news integrity and building trust while addressing impartiality issues. This involves using AI-driven models for rumour management and techniques to identify influential individuals and nodes within social networks that can maximize news virality or trust. These strategies are fundamental in navigating the complexities of information dissemination and control in the digital media landscape.

Key Terminology:

- *Large Technology Platforms:* Corporations that dominate the digital landscape, influencing content distribution and public discourse.
- *Misinformation:* False or inaccurate information spread, often unintentionally, that can mislead audiences.
- *Echo Chambers and Filter Bubbles:* Environments where individuals are exposed only to opinions and information that reinforce their existing beliefs.
- *Generative AI:* AI technology capable of creating content or data that appears realistic but is artificially generated. This new data can include text (such as Google's Bard, Meta's LLaMa, or OpenAI's ChatGPT), visuals (such as Stable Diffusion or OpenAI's DALL-E), or audio (such as Microsoft's VALL-E).
- *Polarization and Partisanship:* Increasing division in society or among groups, often along political or ideological lines, leading to a lack of consensus.
- *AI Literacy:* The understanding and skill set required to effectively comprehend, interact with, and ethically use AI technologies and their applications.
- *Rumour Control:* The practice of monitoring, identifying, and countering the spread of rumours, typically using tools and strategies to distinguish between factual and misleading information.
- *Influence Maximizing Nodes:* Individuals or entities within social networks that have significant sway in shaping public opinion or spreading information, often due to their large number of connections or high engagement levels.

Question 1. What impacts (positive and negative) do large technology platforms and online news aggregators have on the UK's news environment, including media plurality? And how might this change? [Trends over the next 12 months and 5 years]

1. **Key large technology platforms:** In the landscape of online news and information, several key platforms stand out for their significant role and influence. Facebook (Meta)[1] serves as a major hub for sharing and discovering news, where users engage with news content through posts, groups, and shared links. Google, primarily through Google News[2] and its search engine, plays a pivotal role in directing users to various news websites, shaping the visibility and accessibility of news sources. Twitter[3] has established itself as a central platform for real-time news and updates, frequently used by journalists, public figures, and organizations for disseminating breaking news. YouTube[4], another influential platform, offers a diverse range of news-related videos and channels, catering to a wide spectrum of interests and viewpoints. Lastly, Apple News[5] emerges as a key player in news curation, aggregating content from a variety of sources and presenting it to users across Apple's ecosystem of devices, thereby influencing how news is consumed on mobile and desktop environments.

2. **News Shaping Dynamics:** These platforms not only dictate the flow of information but also define user engagement with current events and issues, significantly influencing public opinion and discourse. For instance, during the UK's Brexit campaign[6], platforms like Facebook and Twitter played crucial roles in how information was disseminated and discussed among the public. Their algorithms and content policies influenced the visibility of different viewpoints on Brexit, shaping the narrative and possibly affecting public sentiment. Similarly, during the COVID-19 pandemic, these platforms were central in circulating news about government policies, health guidelines, and vaccine information in the UK[7]. However, they also had to grapple with the spread of

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[1] www.facebook.com
[2] news.google.com
[3] twitter.com
[4] www.youtube.com
[5] https://www.apple.com/apple-news/
[6] Social media, sentiment and public opinions: Evidence from #Brexit and #USElection
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misinformation and conspiracy theories. This highlights the substantial power these platforms hold in shaping the modern news landscape.

3. **Positive Effects:**
    3.1. ***Increased Access to Information***[8, 9]***:*** These platforms have democratized access to a vast array of news sources, providing users with a wide range of perspectives and stories.
    3.2. ***Support for New Media Outlets***[10]***:*** They offer opportunities for new and smaller media outlets to reach a broader audience, potentially increasing the diversity of voices in the news landscape.
    3.3. ***Innovations in News Delivery***[11]***:*** Technological advancements enable innovative ways of storytelling and news reporting, such as augmented reality, interactive articles, and personalized news feeds.
    3.4. ***Engagement and Community Building***[12]***:*** Social media platforms, in particular, foster community engagement and discussions around news topics, leading to a more participatory news culture.

4. **Negative Effects:**
    4.1. ***Dominance of Major Players***[13]***:*** Large platforms can have a disproportionate influence on what news gets seen, potentially sidelining smaller or independent news sources.
    4.2. ***Economic Challenges for Traditional Media***[14]***:*** The advertising revenue model of many tech platforms has drained resources from traditional news outlets, threatening their financial sustainability.
    4.3. ***Spread of Misinformation***[15]***:*** The rapid spread of news on these platforms can lead to the dissemination of misinformation and fake news, which is a significant challenge to public trust and informed decision-making.
    4.4. ***Echo Chambers and Filter Bubbles***[16, 17]***:*** Algorithm-driven content curation can result in users being exposed primarily to viewpoints that reinforce their existing beliefs, limiting exposure to a diverse range of perspectives.
    4.5. ***Use of Generative AI:*** The emergence of advanced AI technologies poses new challenges. AI can generate convincing but false content (deepfakes, synthetic articles) that may be difficult to distinguish from real news. This could exacerbate the misinformation problem and erode trust in online news sources[18, 19].

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5. **Trends Over the Next 12 Months:**

   5.1. *Regulatory Developments:* Expect increased regulatory scrutiny and potential legislation aimed at curbing negative impacts, particularly regarding misinformation, market dominance, and the challenges posed by generative AI. This might include regulations specifically addressing the use and dissemination of AI-generated content.[20, 21]

   5.2. *Evolving Business Models:* Tech platforms and news organizations might experiment with new revenue models, such as subscription services or microtransactions, to address economic challenges. The integration of AI in content creation and curation could also influence these models. [22, 23]

   5.3. *Technological Advancements:* Continued innovation in AI and machine learning is anticipated, which could lead to more sophisticated news curation and delivery methods. This might include AI-driven algorithms for personalized news feeds and automated content generation, raising concerns about authenticity and trust.[24]

6. **Trends Over the Next 5 Years:**

   6.1. *Increased Personalization:* Advancements in AI are likely to lead to highly personalized news experiences[25, 26]. While this can provide more tailored content, it also raises the risk of exacerbating filter bubbles. The challenge will be to balance personalization with exposure to a diverse range of viewpoints.

   6.2. *Greater Emphasis on Credibility:* As generative AI becomes more prevalent, there may be a stronger focus on verifying news sources and combating misinformation. Enhanced fact-checking, credibility rating systems, and AI detection tools could become essential in ensuring the authenticity of news content[27].

   6.3. *Shift in Media Consumption Habits:* The way people consume news might shift significantly, with an increased reliance on mobile and voice-assisted devices[28], and perhaps virtual reality experiences[29]. The integration of generative AI in creating immersive and interactive news experiences could also play a role.

   6.4. *Potential for New Entrants and Innovations:* The news landscape might see the entry of new tech players offering novel ways of news distribution and consumption, potentially altering the balance of power in the news ecosystem. This could include startups specializing in AI-driven news generation and curation[30].

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https://techcrunch.com/2023/12/01/capsules-new-app-combines-ai-and-human-editors-to-curate-the-news/

Question 2. How is generative AI affecting news media business models and how might this evolve?

Generative AI is making a profound impact on news media business models, significantly altering the landscape in the UK and across the globe[31]. Its influence on content creation, personalization, and the battle against misinformation is shaping the future of journalism[32].

7. **Current Impact:** Generative AI's current impact on news media is marked by its role in automating content creation, personalizing user experiences, and enhancing the efficiency and reach of news dissemination[33].

8. **Automated Content Creation**: Leveraging generative AI, news organizations are revolutionizing their content production processes, enabling faster and more efficient generation of news articles, particularly in standardized reporting areas such as sports, finance, and weather.
    8.1. UK Example: The Press Association has utilized AI for generating news content, especially in sports and finance, streamlining production and reducing costs[34].
    8.2. Global Example: Bloomberg News employs AI to produce quick financial reports, enhancing the speed and volume of content delivery[35].

9. **Personalization**: AI algorithms are increasingly used to tailor news feeds to individual preferences, improving user engagement and creating more targeted advertising and subscription opportunities.
    10.1. India Example: Platforms like Dailyhunt use AI to curate news for a diverse linguistic audience, offering personalized content in multiple regional languages[36].

10. **Deepfakes and Misinformation**: The emergence of deepfake technology raises significant concerns about the spread of fake news, challenging public trust and necessitating robust verification systems[37].

11. **Examples of Generative AI Tools in News Media:** The following examples of generative AI tools illustrate the diverse ways in which AI technology is being integrated into the news media sector. From automated content creation and personalization to language translation and fake news detection, AI is revolutionizing the way news is produced, distributed, and verified. As these technologies continue to evolve, they are likely to further transform the news media landscape, both in terms of operational efficiency and the ethical challenges.
    11.1. Automated Writing and Reporting Tools:
    a) *Wordsmith by Automated Insights:* Used by organizations like the Associated Press for generating automated news stories, particularly in sports and finance[38].

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     b) Heliograf by The Washington Post: This AI tool automates reporting on topics like elections and sports, increasing coverage efficiency[39, 40, 41].

11.2. AI for Personalization and Content Curation:
     a) SmartNews[42]*:* An app that leverages AI to curate news from multiple sources, providing a balanced and personalized newsfeed based on user behaviour and preferences.
     b) Wibbitz[43]*:* Provides AI-powered video creation for publishers, enabling them to quickly turn text articles into engaging video content.

11.3. Language Processing and Translation:
     a) Google's BERT[44]*:* This neural network-based technique for natural language processing is used in Google Search, helping to better understand the context of search queries and enhance the discovery of news content.

11.4. Deepfake Detection and Verification:
     a) Deepware Scanner[45]*:* A tool specifically designed to detect deepfakes and manipulated media, increasingly vital in newsrooms for verifying the authenticity of content.
     b) Factmata[46]*:* An AI tool that assists in detecting fake news and harmful content online, used by publishers to ensure the credibility of their content.

11.5. Content Optimization and SEO:
     a) MarketMuse[47]*:* Uses AI to help content creators optimize their articles for search engines, ensuring better visibility and reach for news articles.

11.6. AI News Anchors and Virtual Presenters:
     a) Xinhua's AI News Anchors[48]*:* China's state-run news agency, Xinhua, introduced AI news anchors, using AI to create lifelike virtual presenters for delivering news content.

12. Future Evolution: In the future evolution of news media, generative AI is expected to further streamline content production, enabling more personalized and immersive news experiences, while posing new challenges in ethics and misinformation management[49].

    12.1. Enhanced Content Production: AI advancements will transform news media, enabling sophisticated multimedia content creation with less human input, streamlining routine tasks, and enriching news diversity and depth.

    12.2. New Revenue Streams: AI-driven personalized news services might emerge as premium offerings which create exclusive, personalized content packages as a subscription service[50].

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12.3. ***Ethical and Legal Challenges***[51, 52]*:* The proliferation of AI in content creation will likely lead to new ethical dilemmas and regulatory needs[53], including copyright and authenticity concerns. There will be a heightened focus on developing regulatory frameworks to manage these challenges.

12.4. ***Combating AI-generated Misinformation****:* The development of sophisticated AI tools for detecting fake news will be crucial, possibly leading to collaborations between news organizations and tech companies[54].

12.5. ***Shift in Job Roles****:* Journalists' roles may evolve towards more analytical and investigative responsibilities, focusing on oversight of AI-generated content and stories requiring human insight[55, 56].

Question 3. How are perceptions of due impartiality evolving and what challenges do news organisations face around impartial reporting?

Perceptions of due impartiality in news reporting are evolving in today's media landscape, influenced by several key factors, and presenting distinct challenges for news organizations.

13. **Increasing Polarization and Partisanship**: In many societies, political and ideological polarization is intensifying[57, 58]. This climate can skew perceptions of impartiality, where audiences may view news that contradicts their beliefs as biased, even when it adheres to objective reporting standards. News organizations face the challenge of maintaining impartiality in an environment where audiences are often divided and may prefer news sources that align with their viewpoints[59].

14. **Impact of social media and Online Platforms**: Social media platforms have changed how news is consumed and shared, often amplifying sensational or partisan content[60]. This environment can make it difficult for news organizations to maintain perceived impartiality, as they compete for attention in spaces that reward more extreme or polarizing content.

15. **Audience Expectations and Media Literacy**: The evolving media literacy of audiences also affects perceptions of impartiality. As consumers become more aware of media bias and the mechanics of news production, they scrutinize the impartiality of reporting more closely[61]. News organizations must navigate these informed audiences and the skepticism they may bring.

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16. **Commercial Pressures**: The need to attract viewership and clicks can pressure news organizations to produce content that resonates with specific audience segments[62]. Balancing commercial success with impartial reporting is a growing challenge, as sensational or biased content can often attract more immediate engagement.

17. **Globalization and Diverse Audiences**: In an increasingly interconnected world, news organizations serve diverse, global audiences with varied cultural and political backgrounds. This diversity makes maintaining a universally accepted standard of impartiality more complex, as different audiences may have different expectations and interpretations of what constitutes fair reporting.

18. **Regulatory and Ethical Frameworks**: Navigating the evolving regulatory and ethical frameworks around impartiality is another challenge. Regulations regarding media impartiality vary by country and are subject to change, requiring news organizations to continually adapt to ensure compliance while upholding journalistic standards.

19. **Impartiality Challenges in Media**[63]**:** The evolution of due impartiality in news reporting is a multifaceted issue. News organizations are tasked with upholding impartiality in an environment that is increasingly complex, both in terms of audience expectations and the broader socio-political context. Balancing these factors while maintaining trust and credibility is a key challenge facing the news industry today.

Question 4. What factors affect trust in news and how might this evolve?

20. **Factors Influencing News Trust:** Trust in news is fundamentally shaped by factors such as the credibility of the source, accuracy and rigorous fact-checking, the perceived impartiality of reporting, transparency in the journalistic process, and active engagement with the audience[64]. However, the growing prevalence of misinformation and the spread of fake news also significantly impact trust levels.[65]

21. **Influential Nodes in Social Networks**: Identifying and understanding the role of key influencers or nodes that shape public opinion and news virality is increasingly important in trust dynamics. Research like "Finding Identifying Influential Nodes for Smart Enterprises"[66] and "Opinion Leader Detection in Asian Social Networks"[67] provides insights into how certain nodes or individuals in social networks can significantly impact information virality and trust dynamics. These approaches and methodologies are instrumental in navigating the complexities of digital information dissemination and control.

22. **Future Evolution:** Trust in news may evolve with technological advancements, particularly with AI tools aiding in fact-checking and detecting false information. Additionally, as audiences become more media literate, their ability to discern reliable news sources is likely to improve. Regulatory changes, enforcing stricter standards for accuracy and impartiality, could also play a crucial role in shaping the future landscape of trust in news media.

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23. **Media and AI literacy**[68, 69]**:** As audiences grow more knowledgeable about how news is sourced, produced, and disseminated, especially in the context of advancing AI technologies, their capacity to evaluate the credibility of information improves. This enhanced literacy enables consumers to better navigate the complex media landscape, discerning between trustworthy journalism and misleading content.

Question 4 a) To what extent is trust linked to perceptions of impartiality, or to other trends in online news?
Trust in news is closely linked to perceptions of impartiality, as well as to several other trends in online news.

24. **Impartiality**[70]: When news organizations are perceived as impartial and unbiased, trust is generally higher. Audiences tend to trust news sources that present information fairly and cover all sides of a story. Conversely, perceived bias or partisanship can significantly erode trust. The BBC, known for its editorial guidelines that emphasize impartiality, generally enjoys high trust ratings in the UK. However, any perceived bias or partisanship in its reporting, as debated during the Brexit coverage, can impact its trust among certain audience segments[71].

25. **Transparency, Accuracy and Fact-checking**: Transparency in reporting, such as disclosing sources and explaining the news-gathering process, also builds trust. When audiences understand how information is obtained and reported, they are more likely to trust the content. The commitment to accuracy and rigorous fact-checking is crucial. Inaccuracies, even if unintentional, can harm the credibility of a news source. Regular corrections and updates to stories also contribute to trust. The Guardian operates a transparent approach to corrections and clarifications[72], with an openly accessible Corrections and Clarifications column, enhancing trust among its readers.

26. **Quality of Content**: High-quality, well-researched, and insightful journalism tends to be trusted more than sensationalist or superficial reporting. The depth and quality of content can influence how audiences perceive and trust online news[73].

27. **Consistency**: Consistent reporting without frequent contradictions also helps in building and maintaining trust[74]. Reuters UK, known for consistent and reliable reporting, helps in maintaining trust, especially among audiences seeking unbiased news content.

28. **Response to Feedback**: How news organizations engage with and respond to audience feedback, including criticisms and corrections, can affect trust. The Independent's practice of addressing readers' feedback and concerns openly contributes to building and maintaining trust. Similarly, the Guardian's Reader's Editor column[75], where it addresses readers' concerns and corrections, exemplifies how engaging with audience feedback can build trust.

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https://www.ofcom.org.uk/__data/assets/pdf_file/0027/239175/4-Drivers-of-perceptions-of-due-impartiality-the-BBC-and-the-wider-news-landscape.pdf
[71] The BBC is under scrutiny. Here's what research tells about its role in the UK
https://reutersinstitute.politics.ox.ac.uk/news/bbc-under-scrutiny-heres-what-research-tells-about-its-role-uk
[72] https://www.theguardian.com/theguardian/series/correctionsandclarifications
[73] The role of quality and trust on using website news
https://growingscience.com/ijds/Vol6/ijdns_2022_43.pdf
[74] 6 ways to increase the public's trust in journalism
https://digitalcontentnext.org/blog/2018/08/15/6-ways-to-increase-the-publics-trust-in-journalism/
[75] I'm the Guardian's new readers' editor, and I welcome your views
https://www.theguardian.com/commentisfree/2020/feb/02/guardian-new-readers-editor-journalism-fairness-accountability

29. **Presence of Misinformation**: In the online environment, the widespread presence of misinformation and fake news can tarnish the overall trust in media, even impacting credible news sources. The proliferation of fake news on platforms like Facebook during events like the 2016 US Presidential Election demonstrates how misinformation can significantly erode trust in the media landscape[76].

30. **Echo Chambers and Filter Bubbles**: Online platforms often show users content that aligns with their existing beliefs. This can create echo chambers that reinforce users' viewpoints but can also lead to mistrust in news that contradicts these beliefs. Social media platforms like Twitter and Facebook often create echo chambers by showing users content that aligns with their existing beliefs, which can foster mistrust in contrasting news sources[77].

Question 4 b) What impact do concerns around disinformation have on trust in the information environment? (And to what extent does this differ between difference sections of society?)

Disinformation significantly impacts trust in the information environment, with its effects varying across different societal groups based on factors like digital literacy, media consumption habits, and pre-existing beliefs.

31. **Erosion of Overall Trust**: The prevalence of disinformation leads to a general erosion of trust in the media. When audiences are frequently exposed to false or misleading information, their ability to trust even credible news sources can be compromised. For instance, the spread of false information about COVID-19 on social media platforms significantly undermined public trust in both the media and health information sources across various UK demographics[78].

32. **Increased Skepticism**: Disinformation breeds skepticism among audiences[79]. People become more cautious and critical of the news they consume, which, while beneficial for critical thinking, can also lead to the dismissal of information. The rise of "fake news" allegations, especially in political contexts, has led to increased public skepticism[80]. A notable example is the skepticism surrounding the Brexit campaign, where accusations of misleading information made people more distrustful of political news.

33. **Polarization**: Different societal segments react differently to disinformation, often influenced by their pre-existing beliefs and biases. This can deepen societal divisions, as people may choose to believe information that aligns with their views, regardless of its veracity. The 2019 UK General Election saw disinformation campaigns that exacerbated political divisions, with different societal groups aligning with the narratives that supported their political preferences.

34. **Trust in Authorities**: Disinformation can also affect public trust in institutions and authorities. False narratives about governmental or scientific bodies can lead to skepticism about their pronouncements or actions. Disinformation about 5G technology being linked to the spread of COVID-19 resulted in mistrust towards scientific authorities and led to real-world consequences like the vandalizing of 5G towers in the UK[81].

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[76] Fake news and the spread of misinformation: A research roundup
https://journalistsresource.org/politics-and-government/fake-news-conspiracy-theories-journalism-research/
[77] Echo chambers, filter bubbles, and polarisation: a literature review
https://reutersinstitute.politics.ox.ac.uk/echo-chambers-filter-bubbles-and-polarisation-literature-review
[78] Perceptions of fake news, misinformation, and disinformation amid the COVID-19 pandemic: A qualitative exploration
https://irep.ntu.ac.uk/id/eprint/45416/1/1509953_Hadlington.pdf
[79] The Liar's Dividend: The Impact of Deepfakes and Fake News on Trust in Political Discourse.
https://ideas.repec.org/p/osf/socarx/x43ph.html
[80] From Bad to Worse? The Media and the 2019 Election Campaign
https://doi.org/10.1093/pa/gsaa033
[81] COVID-19 and the 5G Conspiracy Theory: Social Network Analysis of Twitter Data
10.2196/19458

35. **Differences in Generational Impact**: There's a generational difference in how disinformation affects trust. Younger generations, typically more digitally savvy, may be better at identifying false information but also more exposed to it due to higher social media use[82]. Older generations might be less exposed but also potentially more susceptible to believing disinformation. A study by Ofcom reported that younger people, while more digitally literate, are often exposed to and can perpetuate false information on platforms like TikTok or Instagram, compared to older generations who might encounter misinformation through emails or Facebook[83].

36. **Government Actions for Impartiality, Trust, and Technology Influence**: The government should consider proactive measures to support media plurality, ensure the reliability of news sources, and mitigate the influence of major technology platforms on news dissemination.

    36.1. *Media Bill Changes*: The Media Bill[84] may require amendments to better address the challenges of the digital age, including regulations for online content, platform accountability, and protection of journalistic freedom. Moreover, the Media Bill and the Online Safety Bill[85], while distinct, can intersect in regulating the UK's media and digital spaces, potentially combining to form a comprehensive framework addressing both traditional and online content concerns, ensuring a safer and more responsible media environment in the UK.

    36.2. *Government Approach to Mis- and Dis-information*: The government's strategy against misinformation should involve collaborative efforts with technology platforms, enhanced public education campaigns for media literacy, and support for independent fact-checking organizations.

x--x

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[82] Gen Z And Millennials More Likely To Fall For Fake News Than Older People, Test Finds
https://www.forbes.com/sites/conormurray/2023/06/28/gen-z-and-millennials-more-likely-to-fall-for-fake-news-than-older-people-test-finds/
[83] Older people more likely to share fake news on Facebook, study finds
 https://www.theguardian.com/technology/2019/jan/10/older-people-more-likely-to-share-fake-news-on-facebook
[84] Draft Media Bill
https://www.gov.uk/government/publications/draft-media-bill
[85] A guide to the Online Safety Bill
 https://www.gov.uk/guidance/a-guide-to-the-online-safety-bill

Credentials and the foundation for the evidence submission concerning the future of news: impartiality, trust and technology

Greetings,

I am Dr. Akshi Kumar, a Senior Lecturer in Computer Science at Goldsmiths, University of London. My expertise lies in Natural Language Processing (NLP), social media analysis, and network modelling, with a particular focus on areas such as rumour, fake news, influence maximization, network science, and sentiment analysis. These areas are crucial in understanding the complexities of news media in the digital age, especially regarding issues of impartiality, trust, and technology.

Working collaboratively with a diverse network of researchers and experts has dedicated significant efforts to explore these domains, contributing to a deeper understanding of digital misinformation and its impact on the news landscape. Key publications and contributions include (Appendix A):

- **In-depth Exploration of Rumour Dynamics**: Conducted extensive research on rumour detection, focusing on understanding the spread of fake news in digital media and its implications.
- **Investigation of Influence in Social Networks**: Analysed influence maximization within social networks to assess its impact on public opinion and news dissemination.
- **Sentiment Analysis in News Media**: Engaged in advanced sentiment analysis, examining public emotional responses to news content to understand its emotional influence.
- **Research on Media Hyper-partisanship**: Conducted a study titled "Fighting Media Hyper-partisanship with Modern Language Representation Models," utilizing modern NLP techniques to address and counteract partisanship in media.

The written evidence titled *"Media in Transition: Assessing the Impact of Technology and AI on News Integrity and Trust"* synthesizes these insights, offering a comprehensive view of the challenges and opportunities in the current news media environment. It underscores the importance of balancing the benefits of digital advancements with the need to maintain credible and trustworthy news. The driving force behind my submission of evidence on this subject is twofold:

- a) ***Evolving Large Platform Landscape***: Large technology platforms are rapidly evolving, introducing challenges in discerning authentic from AI-generated or manipulated media, necessitating heightened awareness and vigilance in media consumption.
- b) ***Need for AI Literacy***: The shift towards AI integration in daily life, including news media, underscores the growing importance of AI literacy for understanding AI's functionality, biases, and ethical implications in information dissemination.

As we navigate this evolving landscape, I am committed to contributing valuable research and perspectives to support the integrity and trustworthiness of news media in our digital society.

Warm regards,
Akshi

Dr. Akshi Kumar (*She/Her)*
Senior Lecturer (Associate Professor)-Computer Science,
Director of Post-Graduate Research (PGR),
Member of Research Ethics Committee,
Department of Computing,
Goldsmiths, University of London
New Cross, London SE14 6NW

Endorsed by *Royal Academy of Engineering*, UK: Exceptional promise in the field of AI/Data Science, 2022
"Top 2% scientist of the world", Stanford University List, USA in 2023, 2022 and 2021
Member, Turing Natural Language Processing Interest Group, UK
Member, British Computer Society (BCS) and ACM
https://www.gold.ac.uk/computing/people/kumar-akshi/
Google Scholar: https://scholar.google.com/citations?hl=en&user=b90f64MAAAAJ

Appendix A: Relevant Research Publications

The depth and breadth of investigations are evidenced by the following published works:

Fake news/ Rumour

i. Kumar, S., **Kumar, A.,** Mallik, A., Singh, R.R. (2023) *"OptNet-Fake: Fake News Detection in Socio-cyber platforms using Grasshopper Optimization and Deep Neural Network"* IEEE Transactions on Computational Social Systems- https://doi.org/ 10.1109/TCSS.2023.3246479

ii. **Kumar, A.,** Kumar, S.*, Aggarwal, N. (2022). *"SIRA: A Model for Propagation and Rumor Control with Epidemic Spreading and Immunization for Healthcare 5.0"*, Soft Computing, A Fusion of Foundations, Methodologies and Applications, Springer, https://doi.org/10.1007/s00500-022-07397-x

iii. Jain, DK, **Kumar, A.***, Shrivastava, A. (2022). *"CanarDeep: A Hybrid Deep Neural Model with Mixed Fusion for Rumour Detection in Social Data Streams",* Neural Computing and Applications, Springer 10.1007/s00521-021-06743-8

iv. **Kumar, A.,** Bhatia MPS, Sangwan, SR*. (2021). *"Rumour Detection using Deep Learning and Filter-Wrapper Feature Selection in Benchmark Twitter dataset",* Multimedia Tools and Applications,

v. **Kumar A.,** Sangwan S R, Nayyar A (2019). *"Rumour Veracity Detection on Twitter using Particle Swarm Optimized Shallow Classifiers".* Multimedia Tools and Applications, 10.1007/s11042-019-7398-6

vi. **Kumar, A.,** Singh, V., Ali, T., Singh, J. (2020). *"Empirical Evaluation of Shallow and Deep Architecture Classifiers on Rumour Detection",* In Advances in Computing and Intelligent Systems, Springer.

vii. **Kumar, A.,** Sharma, H. (2020). *"PROD: A Potential Rumour Origin Detection Model using Supervised Machine Learning,"* In International Conference on Intelligent Computing and Smart Communication 2019, Springer.

viii. **Kumar, A.** & Sangwan, S R. (2018). *"Information Virality Prediction using Emotion Quotient of Tweets",* International Journal of Computer Sciences and Engineering, https://doi.org/10.26438/ijcse/v6i6.642651.

ix. **Kumar, A.,** Sangwan, SR. (2018). *"Rumour Detection using Machine Learning Techniques on Social Media",* International Conference on Innovative Computing and Communication, Lecture Notes in Networks and Systems, Springer

Influence Maximization/Opinion Leader

x. Kumar, S., **Kumar, A**. *, Panda B.S. (2022) *"Identifying Influential Nodes for Smart Enterprises using Community structure with Integrated Feature Ranking"* IEEE Transactions on Industrial Informatics, https://doi.org/10.1109/TII.2022.3203059

xi. Kumar, S., **Kumar, A**. *, Mallik, A., Dhall, S. (2022) *"Opinion Leader Detection in Asian Social Networks using Modified Spider Monkey Optimization"* ACM Transactions on Asian and Low-Resource Language Information Processing (ACM TALLIP), https://doi.org/10.1145/3555311

Sentiment Analysis:

i. **Kumar, A.***, Srinivasan K., Cheng WH, Zomaya AY. (2020). *"Hybrid Context Enriched Deep Learning Model for Fine-grained Sentiment Analysis in Textual and Visual Semiotic Modality Social Data",* Information Processing and Management, Elsevier, Vol. 57, No. 1, 102141 10.1016/j.ipm.2019.102141. ISSN: 0306-4573.

ii. **Kumar, A**.* and Jaiswal, A. (2019*). "Swarm Intelligence Based Optimal Feature Selection for Enhanced Predictive Sentiment Accuracy on Twitter."* Multimedia Tools and Applications, Vol. 78, pp. 29529–29553. https://doi.org/10.1007/s11042-019-7278-0. ISSN: 1380-7501.

iii. **Kumar A.***, Garg G, (2019). *"Sentiment Analysis of Multimodal Twitter Data",* Vol. 78, pp. 24103–24119, 10.1007/s11042-019-7390-1. ISSN: 1380-7501.

iv. **Kumar A.,** Sebastian, TM. (2012). *"Sentiment Analysis: A Perspective on its Past, Present and Future",* International Journal of Intelligent Systems and Applications (IJISA), MECS Press, Vol. 4, No. 10, pp.1-14, 10.5815/ijisa.2012.10.01. [Google Scholar], ISSN: 2074-9058

v. **Kumar A.,** Sebastian, TM. (2012). *"Sentiment Analysis on Twitter",* International Journal on Computer Science Issues (IJCSI), Vol. 9, No. 4, pp. 372-378, 10.14569/IJACSA.2012.030610., ISSN: 1694-0814.

Hyper-partisanship:

i. **Kumar, A.,** Tyagi, U., Grover, T., & Ghosh, A. (2022*). Fighting Media Hyper-partisanship with Modern Language Representation Models*. In Proceedings of Data Analytics and Management: ICDAM 2021*, Volume 1 (pp. 57-64). Singapore: Springer Nature Singapore.