



ROADMAP ON AI TECHNOLOGIES & APPLICATIONS FOR THE MEDIA INDUSTRY

SECTION: “AI FOR CITIZEN PARTICIPATION AND DEMOCRACY”



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AI for citizen participation and democracy

Current status

During the last couple of decades, political and social communication has been transformed by digital technologies, and particularly, social media. Massively populated online platforms have changed the dissemination landscape, enabling huge audiences of anonymous citizens, and reciprocally, offering unlimited and unverified sources of information to all. While this is a huge step in the democratisation of information, opinion and public attention, it entails novel challenges that must be dealt with.

Among the challenges of modern communication is the economy of attention. Citizens have a limited capacity for consuming information, creating a coveted (both by producers and consumers) market of audiences. Citizens wish to make a more efficient, productive and controlled use of their attention capacity, being increasingly aware of the limits of their own attention. Meanwhile content producers wish to gather as much public attention as possible, often with little regard for ethical, reliability and quality issues.

The rise of the attention economy plays a big role in current democracies, and the participation of citizens in it. People are more informed (in terms of volume, but not necessarily in terms of quality) and empowered than ever, having powerful tools at their disposal for defining and disseminating their opinion. However, citizens are also subject to an unprecedented amount of information bombardment, often of poor quality, designed mainly for the purpose of gathering attention. Figure 1 shows a broad categorisation of the threats individuals face through misinformation, echo chambers, filter bubbles and others. This is our target for the protection of democracy and social trust.

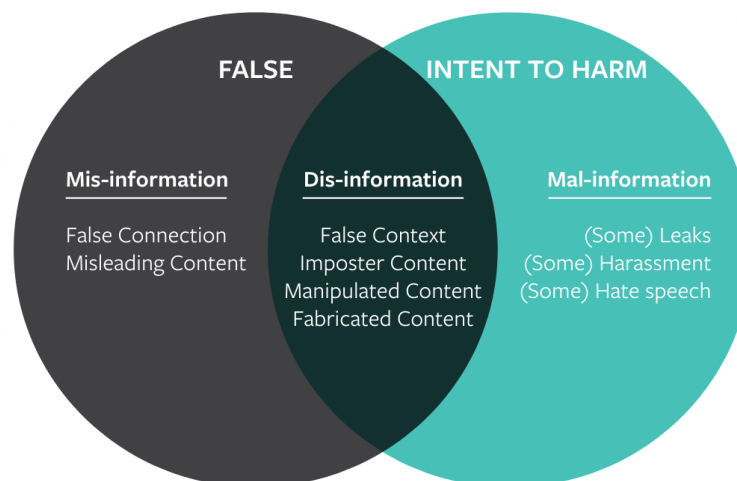


Figure 1: Categorisation of information disorders.¹

¹ Image source: Wardle C, Derakhshan H. Thinking about 'information disorder': formats of misinformation, disinformation, and mal-information. Ireton, Cherilyn; Posetti, Julie. Journalism, 'fake news' & disinformation. Paris: Unesco. 2018:43-54.

Research challenges

A tricky balance in current democratic and participatory policies has to be maintained between fundamental rights, like free speech and freedom of opinion, and the use of tools which allow users to navigate the sea of information (reliable or not) that we live in. This entails many different aspects regarding quality (is information of good quality?), content (is content adequate for the audience?), means (is information presented in an acceptable way?), and variety (is available information representative of the whole spectrum?). There are many possible dimensions for this assessment, as shown in Table 1. To cover them all, that is, to provide a comprehensive view of the problem, we must consider it from many different perspectives, including:

- **Sentiment analysis:** In which direction is this content pushing?
- **Polarity:** How polarised is this content?
- **Offensiveness:** Does the content contain abusing or degrading statements?
- **Botness:** Is this content produced by a human in a non-automated manner?
- **Propaganda:** Is the purpose of the content to push an underlying agenda?
- **Ephemerality:** Is the content produced in a prolonged discussion or in a burst of one way information?
- **Fallacious argumentation:** Is the content using mechanisms of misdirection?
- **Synthetic manipulation:** Has the content been tampered with or altered in undisclosed ways?

Table 1: Dimensions of disinformation²

Dimensions/ measurement	Motive			
	Profit	Ideological	Psychological	Unclear
Clickbait	✓		✓	
Conspiracy theories		✓	✓	
Fabrication	✓			
Misleading connection	✓			
Hoax	✓			
Biased or one-sided	✓			
Imposter	✓			
Pseudoscience	✓		✓	
Rumors	✓			
Fake news	✓			
Trolling	✓			

Considering all these topics at the same time is a considerable challenge, as is integrating them. However, this is a necessary effort, given the relevance of the underlying purpose (enabling a stronger and more reliable participation of citizens in democracy, and strengthening democracy's foundations). Coherently, each of these topics must be addressed, first separately, and then in conjunction. The behaviour of all these discussion characteristics may be correlated (some indicators may most frequently go together) and may be complementary, providing a

² Table adapted from: Kapantai E, Christopoulou A, Berberidis C, Peristeras V. A systematic literature review on disinformation: Toward a unified taxonomical framework. *New media & society*. 2021 May; 23(5):1301-26.



holistic view of the nature of information. All these relations must be explored, analysed and exploited in the next few years, for the sake of citizens, their interactions with the digital world, and democracy itself.

Societal and media industry drivers

Vignette: Analysis and validation of information from online debates for journalistic reporting

Camila is a journalist that reports on social hot topics, using online discussions as a guideline of what is generating more interest and controversy. In her search for what is going on, Camila reviews social network activity (both content and users) and annotates what seems most relevant. Then, for each topic selected, Camila performs an in depth search on social media, looking for interesting information sources, online profiles of reference, and general argumentative points used around the issue.

Before transforming all that into a news piece that will be shared through official channels, Camila verifies several aspects of the gathered data. She uses automated tools to identify properties such as the polarity, offensiveness, botness, ephemerality and others, related both with the content and users participating and generating it. Based on this analysis, she decides to put aside all content, arguments and interactions produced by potentially malicious agents (e.g., detecting bots, synthetic manipulation), as these have to go through a specific double verification channel. Then, she explores how representative of society is the content she has gathered (e.g., measuring the polarity, sentiment analysis), and identifies sides of the story which are not found in the available narrative. Camila is a very thorough journalist, who wants to be as objective as possible. For this, she looks for agents with economic interests in the topics of argumentation (e.g., identifying propaganda), as this will allow her to add disclaimers and labels on her report regarding potential conflicts of interest. Camila also makes an effort to make sure that all content is appropriate for all audiences (e.g., measuring offensiveness), and writes her work focusing on those parts of the conversation which exhibit a higher overall quality (e.g., tracking ephemerality and fallacious argumentation).

Once she is finished, Camila is proud of her work, and assured that it will contribute to produce better informed citizens, reducing the amount of information noise being shared in current society.

Future trends for the media sector

The role of journalists is shifting. From the investigation, content generation and creation of opinion duties typical of the 20th century, to assuming duties on information curation, summarisation, and point of view weighting. Developing and assessing tools to support these new responsibilities is a priority. As is the familiarisation of all actors (media creators, professional or not, and media consumers) with the existing risks and the tools available to handle them.

Future trends in opinion mining, propaganda identification, fallacious argumentation detection, etc. are likely to focus on the means instead of the contents. Given the complexity of objectively measuring the degree of truthness in a given discourse, the field is pivoting towards



characterising the processes, means and practices that most easily result in unreliable, misleading or manipulated content.

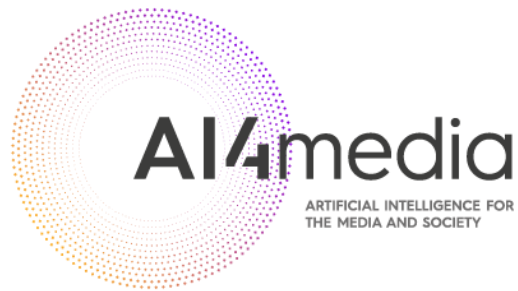
While these tools are being designed with novel communication means in mind (mostly online), they are also applicable to traditional media. Polarisation in written media, propaganda in films and TV shows, fallacies in cartoons and strips, offensive content in videogames, among others. We expect these other applications to be prioritised as tools become more proficient, and their benefits more obvious.

Goals for next 10 or 20 years

In the medium to long term, we expect AI tools to be fully integrated into all social media sites. Citizens and journalists will consume information through them, and the access to raw data feeds will be rare and discouraged. For doing so, a high level of transparency, understanding and trust between AI methods and users will be necessary.

These tools will provide warning signs, information of reliability, suggestions for a deeper and/or wider understanding of the domain, and other functionalities that empower citizens, and reduce their vulnerability in front of the big data.





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