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Opinions, Intentions, Freedom of Expression, ... , and Other Human Aspects of Misinformation Online

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Opinions, Intentions, Freedom of Expression, ... , and Other Human Aspects of Misinformation Online

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ABSTRACT

As a wicked problem, limiting the harm caused by misinformation requires merging multiple perspectives to the design of digital interventions, including an understanding of human behaviour and motivations in judging and promoting false information, as well as strategies to detect and stop its propagation without unduly infringing on rights or freedoms of expression. Tools and online services are continuously being developed to support different stakeholders in this battle, such as social media users, journalists, and policymakers. As our studies have demonstrated, the expected impact of online solutions is hampered by limitations associated with lack of explainability, complex user interface, limited datasets, restricted accessibility, biased algorithms, among others factors that can confuse, overwhelm, or mislead users in their own ways. These ethical implications are typically neglected when new digital solutions to tackle misinformation are conceived. This hands-on workshop proposes to unpack the state-of-the-art on social, societal and political studies and socio-technical solutions to stop mis-information, challenging the participants to first critically reflect upon limitations of existing approaches, to then co-create a future with integrating perspectives focusing on ethical aspects and societal impact.

KEYWORDS

misinformation, disinformation, information literacy, information disorder

1 BACKGROUND

False or manipulated information circulating online is an acknowledged societal problem, influencing opinions, beliefs, attitudes and behaviours, (e.g. [2, 5, 11]). During COVID-19 pandemic, the spread of misinformation[1] online has reached unprecedented levels, and at a global scale, being referred to in the literature as an *infodemic* [18].

Social and political sciences offer a critical lens on the extent to which technology can solve the challenge of a burgeoning *infodemic* [4]. Research has explored the limits of human cognition for dealing with and spreading misinformation [17, 22], understanding the persistence of misinformation [3, 12, 16], exploring approaches to nudge [15, 19], fact-checking more effectively [7], automating detection and correction [10], and barriers and limitations of corrections [9, 14, 21, 24]. As *multilayered societal problem*, a single and comprehensive solution cannot be adequate in slowing and even more stopping misinformation.

Existing approaches are all limited for different reasons: the way end-users are (or not) engaged in the development process, limited data sources, subjectivity associated to the judgment, etc. [8]. Another limitation is the fact that most tools are dedicated to fact checking, i.e. indicating whether a piece of information is 'true' or 'false' thus, becoming effective only after the misinformation has already been spread. Also, such tools are not capturing a key danger of misinformation, the partial true claims that can be very misleading and very difficult to detect.

Among other social transformations, responses to the COVID-19 pandemic have modified the workflow adopted by major social platforms to assess misinformation, shifting from a human judgement to an approach heavily relying on automated detection through a machine learning-based approach [13]. If on the one hand, this shift copes better with the volume and speed of information propagation online, on the other hand it exposes the fragility and limitations of existing technical solutions, even as they include humans at multiple places in the loop [1]. Conversely, some social platforms have also started challenging power structures, for example by promptly and intrepidly deleting posts by world leaders violating their policies on disinformation regarding to COVID-19, as examples, [20]

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[1] *Misinformation* refers to the false information that is unintentionally propagated, while *disinformation* is deliberately propagated false information and includes what is commonly understood as 'fake news' [25]. As a simplification, we refer to **misinformation** to represent the complexity of the problem of information disorder.
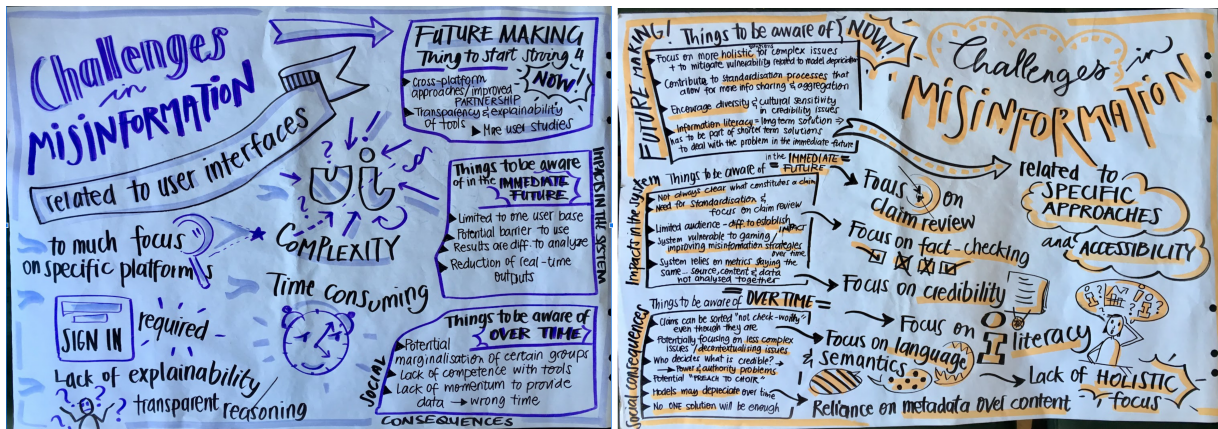
Figure 1: Two graphical illustration representing the discussions during the workshop at INTERACT'19

and [26]. These ad-hoc solutions to regulating speech may have unintended consequences on the overall trust to the governance of any kind of media and authority.

This recent global scenario clearly evidences that purely technical solutions that disregard the social structures that lead to the spread of misinformation, or the different ways societal groups are affected, for instance, according to digital skills, and provide information assessment without promoting digital literacy are not only limited, they can also be harmful by obfuscating the problem.

More comprehensive answers to the problem can only emerge through an articulation of diverse perspectives and ideas, requiring an interdisciplinary approach that includes social scientists, computer scientists and technology designers in the co-creation of features and delivery methods considering both local and global contexts. The collective and individual behaviour of users, as well as the variety of cognitive biases, have to be taken into account. For example, research has shown that people continue to rely (at least partially) on information they are aware is false, even when being corrected, and despite acknowledging the correction [6]. This phenomenon, the *continued-influence effect* [6, 16], has been observed across various materials and modes of testing (e.g., immediate vs. delayed corrections), persisting even when participants are warned at the outset that they may be misinformed. This underlines the importance of developing tools that support and enable end-users to identify and assess misinformation combating the root of misinformation.

1.1 Workshop goals

The goal of this workshop is to propose an agenda for interdisciplinary research that incorporates robust knowledge of societal, political and psychological models, which can help not only explain reactions to the tools that we build, but to design them to be useful and ethical. To this end, the workshop will engage the participants in:

– Discussing challenges and obstacles related to misinformation from the human and socio-technical perspectives;
– Challenging existing approaches to tackle misinformation and identifying their limitations in socio-technical terms,

including underlying assumptions, goals (e.g., preventing vs. correcting misinformation) and targeted users;
– Co-creating innovative future scenarios with socio-technical solutions.

Aiming for a small and diverse group of participants from different disciplines to foster interaction and exchange of ideas, the agenda proposes engaging activities that challenge the status-quo and promote creative-thinking towards effectively advancing the state-of-the-art. Participants will be encouraged to experience the workshop as an opportunity to initiate synergies.

1.2 History

Shedding lights on ethical aspects and the impact (desired or not) of socio-technical solutions, this workshop proposal builds on two previous editions with complementary perspectives.

The first edition of this workshop was held at INTERACT'19 in Cyprus in September of 2019 [23]. The one-day workshop had nine participants and five accepted papers that discussed innovative solutions in misinformation detection and management. Beyond presenting their perspective on solutions, participants and organisers generated a list of socio-technical problems related to containing misinformation spread. They actively explored a list of 13 online tools and services, and discussed their potentials and weaknesses. Using a fictional future scenario proposed by the organisers, participants discussed the impact of existing tools and their particular limitations, focusing mainly on aspects of the interaction by end-users. A visual facilitator then recorded these discussions and organised participant contributions into the various themes that emerged. Figure 1 illustrates some the graphical representations generated from the discussions. These examples focus on issues related to the user interfaces and the accessibility of misinformation detection tools, divided into issues that are most pressing and issues that will need further reflection.

A second edition of this workshop was held in October 2020 at SOCINFO 2020[2], an interdisciplinary venue for researchers from Computer Science, Informatics, Social Sciences and Management

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[2]https://kdd.isti.cnr.it/socinfo2020/workshops.html

Sciences studying the interplay between socially-centric platforms and social phenomena.

Complementing the INTERACT edition, the presentations and discussions focused on aspects of credibility assessment, data availability, human behaviour and participation in information assessment and spreading. The workshop took place online, gathering 14 participants plus the four organisers. Four position papers were presented addressing COVID-19 conspiracy theories, fact-checking integrity on public trust, polarisation in public opinion across different topics of misinformation and affordances across different platforms that facilitates the spread of misinformation. As a hands-on activity, participants reflected upon the best tools they know of for dealing with misinformation and discussed where even those "best" solutions fall short. Participants used the graphic recording from the first workshop as inspiration to consider how we have moved toward resolving some issues previously identified (and others not).

The knowledge co-created during both workshops are currently being edited as a journal publication and some contributions will be submitted to a book edited by some of the organisers.

In this third workshop, we want to take this subject further addressing topics like explainability, fostering or tracking behaviour change, censorship, freedom of speech, values, ethics, impact, trust and transparency.

2 ORGANISERS

With similar socio-technical approach but distinct perspectives, the four organisers share the common challenge of building technology to support credibility assessment, foster critical thinking and media information literacy for a better-informed and resilient society. Together, the organisers represent three European research and innovation projects developing new solutions for tackling misinformation online: Co-inform[3], EUNOMIA[4] and HERoS[5].

Lara Piccolo (main contact) is a Research Fellow that investigates interaction design with a socio-technical and inclusive perspective, considering how technology can trigger a positive impact on people's lives. For Co-Inform, she is studying the role of human values of misinformation spreading and promoting information literacy based on the communication of credibility signals and explanations.

Diotima Bertel is a Researcher and Project Coordinator with a background in social sciences and philosophy. In her work, she focuses on the individual, social and societal impacts of technology. In EUNOMIA, she is responsible for analysing user behaviour, as well as pilot evaluations.

Tracie Farrell is a a Research Associate with a background in social science. In the HERoS project, she is studying sociological features involved in the spread of both misinformation and corrective information about COVID-19. Her focus is on cultural identity and human values in communication on social media.

Pinelopi Troullinou is a Research Analyst with an interdisciplinary background in social sciences. Her work focuses on the intersection of technology and society aiming to explore and foster

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[3]www.coinform.eu
[4]www.eunomia.social
[5]www.heros-project.eu

awareness on socio-technical issues such as privacy. For EUNOMIA, she leads the privacy, social and ethical impact assessment, user engagement and liaison with stakeholders.

3 WEBSITE

The workshop website will be extensively used for promoting the event and to host accepted papers. To be able to compare our paper submissions across the different workshops, giving us a progression of topics over the course of nearly two years, we will keep our website similar to previous events introducing the workshop rationale, the organisers, instructions for submission, programme and the accepted papers. The is available at: https://events.kmi.open.ac.uk/misinformation/.

4 PRE-WORKSHOP PLANS

The workshop Call for Papers and Participation will be distributed via:

- Mailing lists (e.g., ACM SIGCHI, ACM Multimedia).
- Authors of related papers found at ACM Computing Library.
- The network of the consortium of the projects Co-Inform, HERoS and EUNOMIA, which includes besides researchers of a variety of disciplines also policymakers, journalists and fact-checkers.
- Social media, including Twitter, Facebook and LinkedIn of the projects and their respective collaborators.

We will invite potential participants to submit a 2-4 pages position paper format, addressing the workshop themes. All accepted papers will be published on the workshop website. As a workshop centred on co-creation activities, we expect to host up to 20 participants and 10 accepted papers.

5 WORKSHOP STRUCTURE

This online workshop will last 4 hours with a 45 min break, plus 2 short coffee-breaks. The activities will be split into 2 main parts: participants will first debate and critically analyse existing approaches and solutions to tackle misinformation; in the second part, activities will include short presentations by the participants to inspire target future scenarios where digital innovations will support misinformation resilience:

Part I

- **Personal stories and Introductions - 1st round (15 min):** Participants share personal experience of misinformation that they feel particularly tricky. They can consult their social media to find concrete examples if necessary.

- **Setting the stage (15 min):** A short inspirational talk given by a keynote speaker that undercuts the discussions of the day.

- **Personal stories and Introductions - 2nd round (15 min)**

- **Limits of existing tools (25 min):** Group activity in which we will experiment with some existing tools to support credibility assessment of information by social media users and fact-checkers. We will share our perceptions on the limitations of the existing solutions in terms of accuracy and

accessibility, but also in terms of their general approach, underlying assumptions, platform specifics etc.

– **Limits of behavioral studies (25 min):** Debate on existing approaches and data-based investigations to understand human behavior on misinformation spreading.

Part II

– **Lightning Talks (50 min) with a break:** Author of accepted papers will be invited to present a 5 min lightning talks on their area of research, providing inspirational content for building future scenarios.

– **Future Making (40 min):** Within a scenario of global emergency (pandemic, climate change, etc.), in which citizens need to understand the new reality and how daily choices impact the society, the need for reliable information is urgent and constant. Participants will discuss how to move forward with the existing solutions from technical and social perspectives, addressing challenges and limitations previously identified, as well as ethical aspects and societal impact. To allow groups to work effectively in teams in the context of a digital conference, we will make use of an online collaborative white board tool to create visualisations of structured discourse.

– **Wrap up and Next Steps (10 min):** The organisers summarise the discussions and insights and weave a red thread around the narrative. They will open up the discussion on next steps and future research, thereby paving the way for efforts that will take place collectively to publish and further research in this area.

The programme can be adjusted to best fit the number of participants and timezones.

6 POST-WORKSHOP PLANS

The website will be updated with the accepted publications and a summary of the workshop outcomes. Furthermore, the main workshop results will be further disseminated to a wider audience submitted as an article to *ACM Interactions*, aiming at reaching out a global community of academic and practitioners. The possibility of a special journal issue (e.g. AI & Society, Social Media + Society, New Media and Society, Information Communication and Society) will be discussed with the participants as a way to consolidate the community. The blogs and newsletter of related project will also disseminate the workshops and its highlights.

7 CALL FOR PARTICIPATION

We invite researchers and practitioners aiming at *actively engaging with social, societal and ethical problems* of current socio-technical solutions to tackle misinformation to join us at the CHI 2021 Workshop - **"Opinions, Intentions, Freedom of Expression, ... , and Other Human Aspects of Misinformation Online**.

Information disorder online is a multilayered problem; there is not a single and comprehensive solution capable of stopping misinformation, and existing approaches are all limited for different reasons such as end-user engagement, inadequate interaction design, lack of explainability, etc.

Purely technical solutions that disregard the social structures that lead to the spread of misinformation can be harmful by obfuscating

the problem. More comprehensive, ethical and impacting answers to the problem can only emerge through an interdisciplinary approach that includes computer scientists, social scientists and technology designers in the co-creation of features and delivery methods.

Topics of interest include, but are not limited to:

– Censorship and freedom of speech
– Social and political polarisation, partisanship
– Disinformation campaigns and propaganda
– Conspiracy theories and rumours
– (Limitations of) Automated tools for misinformation detection and notifications
– Nudging strategies and persuasion
– Social network analysis
– Impact on communities or social groups
– Fact-checking
– Explainable AI
– Credibility of online content
– Behavioural studies
– Human values
– Legal and ethical aspects of socio-technical solutions

Participants will actively engage in activities for:

– Identifying challenges and obstacles related to misinformation from human and socio-technical perspectives;
– Challenging existing approaches and identifying their limitations in socio-technical terms, including underlying assumptions, goals, and targeted users;
– Co-creating innovative future scenarios with socio-technical solutions addressing impact and ethical aspects.

Important dates:

– Submission: 21-February-2021
– Notification: 01-March-2021
– Workshop: 07-May-2021

Submission:

Submit a motivation statement describing your approach towards fighting misinformation, acknowledged limits, or an envisioned future in which the societies are resilient to mis/disinformation supported by socio-technical solutions. It should follow the ACM Master Article Submission Template. Send your submission to workshop_misinfo21-group@groups.open.ac.uk.

Submissions will be reviewed by the organisers according to their relevance to the problem and motivations to address ethical aspects and societal impact. Accepted papers will be published on the workshop website.

For more information:

• http://events.kmi.open.ac.uk/misinformation/
• Contact us at workshop_misinfo21-group@groups.open.ac.uk

Who we are:

The team of organisers merges three EU-funded projects, Co-inform and EUNOMIA, which are co-creating technology to support credibility assessment, foster critical thinking and information literacy, and HERoS, addressing the COVID-19 infodemic.

– Lara Piccolo - KMi, The Open University
– Diotima Bertel - SYNYO GmbH
– Tracie Farrell - KMi, The Open University
– Pinelopi Troullinou - Trilateral Research

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