AI and the Journalism Curriculum

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We Are Not Robots: Pedagogies of Teaching about AI Technologies

Could this report have been written by robots? Yes – it would have been perfectly feasible if the aim had been to collect information that is currently available on the topic of artificial intelligence. A writing robot would have saved us a lot of time. What the robot would not have been able to do, at least not very successfully, is identify the relevance of topics in the context of journalism and journalism education. The robot would not have been capable of synthesizing journalistic and pedagogical experience and verbalizing the lessons learned. We can thus be happy that the author of expert report, the editor of the upcoming "Reporting Artificial Intelligence" UNESCO handbook and the contributors to this publication are pure humans. More generally, with regard to both journalism and other fields of content production, the purpose of artificial intelligence is not the erasure of the human touch in meaning-making; it may make production processes and information delivery more efficient and possibly help gain a depth of analysis that would not be possible without machine intervention, but the importance of human actors remains.

In the same fashion, educating journalists to report on and discuss such topics requires the synthetization of human experience and knowledge. Our understandings of artificial intelligence (AI) have grown along with technological advancement and its implementation into our everyday lives.

Hence, providing guidelines for future journalists on the topic of AI as a societal and, therefore, journalistic issue implies facing a major and complex work in progress. Even though AI-related technologies have existed for a while, it is not until now that many of the futuristic ideas of previous centuries are beginning to take shape. The AI-zation of society is a long, slow process that penetrates all sectors of life. When it comes to collecting advice and best practices for covering the topic in journalism, there are thus open questions and insecurities at stake that need to be taken into consideration.

Many of the aspects we talk about when referring to AI will possibly occur in the future, but we are not there yet. The technological development required to achieve "superintelligence" and "singularity" is a future process related to the development of computing – what it means exactly and how it can affect different sectors of life are questions that cannot be fully and straightforwardly foreseen. The related public discussion and policy development have

become more intense during recent years, but societies still have no shared, established and profoundly tested frameworks with regard to how to approach AI from democratic, or citizen and consumer, perspectives. Policies and the successive best practices are still very much in the making, not least in terms of using AI technologies in and for journalism. Simultaneously, more research in the fields of social sciences and the humanities is trying to find out how AI could be related to the existing strains of research, and new studies are constantly being published. Overarching works, such as *The Routledge Social Science Handbook on AI* (Elliott, 2021), were not published until very recently, and a number of them are still under preparation. Consequently, we are to some extent lacking vocabulary to address the ontology and epistemology, and the implications and consequences, of AI as a societal phenomenon. What are the right questions for journalists to ask?

What is clear is that AI is an outcome of a socio-technological process that poses a number of challenges for journalism and journalistic practice – both as a topic of coverage and a method, technique and approach in journalism itself. Journalism should deliver valid, fact-based information to citizens in its role as a public good that works as a resource for knowing things. This also applies to technologies, and the concept of AI, a buzzword that has become commonly used in everyday language, seems elusive to many. The term "intelligence" may evoke associations and visions that are far from our everyday practices, while, paradoxically enough, AI to a great extent is a profoundly practical phenomenon that is increasingly affecting our daily lives. Between intimidating dystopias and celebratory hype, it may be difficult to equip oneself with reasonable expectations.

Experts have suggested several tasks for journalists to undertake in the public sphere (see, e.g. Hansen et al., 2017, p. 7). It has been said that journalists have to find needles in haystacks. They should also be alert to identifying trends, as well as departures from the major trends. They should commit to examining an application of AI or computation as the subject of the story itself. Some scholars have even argued that journalists should be actively involved in the design of new technologies, integrate the journalistic perspective into such structures and partner with policymakers who shape the ethical frameworks for future AI. While many may disagree with the industry-active role of journalists, perhaps the most important task for journalism all around the world is to be involved in making sense of the (technology-driven phenomenon) and actively relate it to different contexts to be able to create, inform, balance and renew public discourses. With regard to journalism education, the earlier journalism educators can be part of discussions and take on an engaged role in shaping future journalistic thinking, the better the chances are that future journalists will be equipped with in-depth understandings of the characteristics of future societies.

To slightly exaggerate, there is no such thing as "reporting on AI". Very seldom do journalists report on the technology itself, as a pure isolated entity, and very seldom do journalists thus need to know about the technical operations of neural networks or deep learning. Instead, more often journalists report on democratic processes, people's behaviour or, for example, structural injustices, AI integrated in all these, and all these influenced by-or influencing AI technologies. Because of the increasing centrality of AI to societal processes, journalists need to know about the central ethics, ethical discussions and regulations around AI, and realize the fears and hopes that AI may evoke in the popular imagination. Journalists need to reflect upon AI in their own field as well, and be prepared to approach AI-driven techniques and methods in an accountable way to build a sustainable relationship with their audiences and the relationship that lies to the core of journalism: trust.

Before discussing AI as a curriculum topic, I would like to highlight two central observations that are relevant to journalistic thinking and practice resulting in the coverage of AI. First, AI is to some extent influenced by the very idea of a future projection, and the reporting of it needs to be balanced against the extremes of apocalypse and utopia. Second, AI is an umbrella term, and the information concerning it always needs to be synthetized from different sources representing different fields. These points explain why there is no consensus upon whether, to what extent and, above all, how, subjects such as AI should be integrated into formal journalism curricula. What is clear is that facing a new phenomenon entrenched with ethical challenges, such as human-computer interaction and human-like machine behaviour, brings us to the very core of journalism: journalism needs to remain journalism by sticking to its core values, which make it distinct from policymaking, lobbying and advocacy, marketing and influencing. Next, I will address the aspects of future orientation and interdisciplinarity, respectively.

> *"Singularity will soon be here, and the machines will take over!"*
> *"Intelligent machines will save the world!"*
> *"Our everyday life will be similar to science fiction!"*
> **AI needs balanced coverage.**

The public AI discourse is shaped, like discourses on all emerging technologies, by uncertainty related to the realization of future projections. As discussed in **Error! Reference source not found.** of the upcoming handbook, this idea has been accompanied by a large body of literature, films, television programmes and other cultural products depicting the "robot race". Such an approach arouses interest in the topic and increases its value as a public matter because threats and alarms are always an entry point into the public's attention. At the same time, hybrids, like werewolves and vampires, have universally fascinated the human mind, arousing excitement filled with identification and otherness.

What may be forgotten in the emphasized novelty of AI, however, is that it is not a new topic. In 1987, when Brian B. Bloomfield published his seminal book *The Question of Artificial Intelligence*, intelligent machines were hotly debated at the onset of the revolution of information technology. The increased penetration of information and communication technology (ICT) in society has resulted in the concept of an information society (Hofkirchner & Burgin, 2017) and, further, derivatives, such as a virtual society (Woolgar, 2003), a data-driven or data society and an automated society (Bloomfield, 1995). Individuals and organizations are expected to encounter massive amounts of data and ever-more complex data structures, eventually resulting in computer systems that operate independently, to which the term AI refers. To achieve an "AI society" – or as scholars and policymakers often qualify as a "*good* AI society" to highlight how it can be used for social good (Cath et al., 2018) – journalists would be expected to mediate knowledge about these processes while for their own work they themselves are also increasingly required to become data analysts and curators with at least a basic understanding of computation as an essential tool for reporting.

Like many of the modern-day challenges that journalists need to face as topics in their reporting, such as climate change, the planetary resource crisis and pandemics, AI constitutes an abstract object with global implications. Yet journalistic inquiry is more inclined to report on concrete occurrences that can be clearly limited and identified. ICT is ubiquitous, yet it may be difficult to identify; it renders diverse implications that may be hard to foresee. AI

itself requires expert knowledge to be profoundly understood, and developing full comprehension often demands triangulation, that is, integrating and balancing different perspectives. Last but not least, the very phenomenon of AI raises the question of whether journalism should seek to be a mirror reflecting the ongoing processes and the entire project in the making, or take on a more interventionist, solution-seeking position by exploring alternatives and suggesting answers instead of only formulating questions or exposing problems.

Journalists also need to understand that contemporary narratives concerning AI are pervasive and imagination-captivating, being very closely related to science fiction and fantasy. Both theorists and practitioners of AI continue arguing that the narrative of machines taking over is too dominant. But in many cases, the more subtle, down-to-earth everyday questions regarding machine learning and ubiquitous computing are overshadowed by the fascination with the fantasy of machines taking over humanity, while the algorithmic cultures shaping our everyday lives are dismissed as boring and uninteresting. Journalists should not be misled by the science-fiction fantasies, even though possessing an understanding of them is crucial. Journalists should be more curious about asking how intelligent systems can affect us in various ways and look for alternatives.

At the point of writing the WJEC-UNESCO handbook, there are still many unanswered questions and a lot of space for speculation when it comes to the uses and possibilities, risks, harms and threats of AI. This means that journalists face a specific situation where they need to combine different fields of knowledge and be able to deal with insecurities, while, at the same time, not evoke futile expectations or hopes or unnecessary fears or dystopias. This handbook, as well as our discussion at the 2022 WJEC online conference intends to prepare educators for getting to grips with the society that we live in, which is increasingly penetrated and affected by technologies. Specifically, we want to answer the following questions: What kind of relationship should journalists, as public gatekeepers and opinion makers, establish with AI? When participating in the journalistic coverage of AI-related topics, what kinds of things should be taken into consideration? Which sources should be drawn on?

Teaching about AI as part of journalism education means adapting a flexible position with regard to both the society that is being covered and journalism. When covering AI, and perhaps with the help of such technology, journalists need to ask wide-reaching questions about the past, the present and the future. The ways in which things work now may not be how they will work in the future, and journalists may also be in the influential position of being able to impact the future. Typically, journalism education is about achieving a balance between the academia and industry (see e.g. Zelizer, 2004); a recurring question is whether journalists' training should be based on the status quo of the industry or reinvent ways of reporting, thus providing a horizon beyond the current state of affairs. In the coverage of AI, this challenge becomes especially pertinent.

Traditionally, the relationship between journalism education and industry is ambivalent; while it is important to follow and reflect developments and match competences taught within journalism education with the outside world, journalism education should always be a step ahead, even regarding systems that cannot formulate objectives by themselves because these aims will be formulated by the humans who make these systems.

Our understanding of AI depends on an interdisciplinary infrastructure, where expert sources need to be identified across different fields of knowledge. Academic research that can deliver

an in-depth understanding of the phenomena involves theoretical development using very specific concepts to capture such aspects. Insight into technological development that leans upon the innovative application of these technologies is not always very easy to access. The task of journalism is to balance these knowledge fields, bridging different aspects to gain insights into what is of public concern. In order to perform such a balancing act, a journalist needs to gain knowledge about these fields and be able to filter and synthetize information that may sometimes be contradictory and complicated. Nevertheless, the challenge of creating a public discourse and understanding of the phenomena that are increasingly powerful in our lives is a task for journalists in service of the public good. We need pedagogies to support this.

"Will machines take our jobs?"
"Can all the consequences of AI be anticipated?"
"When will ideas become reality?"
AI reporting needs to face and communicate uncertainties.

AI constitutes an interdisciplinary field of inquiry, or a "trans-domain field" (Zhang & Peréz Tornero, 2021), where different areas of knowledge need to be monitored and drawn together to create a proper understanding of the technological, ethical, economic, societal and cultural aspects of AI systems in society. As a research field, AI draws on computer sciences, social sciences and also many areas of academic research that are interdisciplinary, such as human-computer interaction (design), game studies and policy inquiry. All these fields and subfields prioritize different aspects, placing, for example, the role of technology at the forefront in terms of the costs of examining the social effects. To address AI in public discourse in a lucid, understandable and sometimes didactic way is thus not always a simple task, and the journalists covering such topics need to consider how best to do it. Many of the concepts, such as machine learning, the internet of things, robotics and deep learning – or the very concept of AI – may not be familiar to general audiences. The everyday experiences of laypersons and ordinary users are often not based on knowledge of these infrastructures and infrastructural development, as users do not really know how things work; they just happen to work. Our ways of talking about AI are based on circulated discourses.

Because of the interdisciplinarity of the topic, AI constitutes a societal area of collaboration. Even researchers and policymakers may interpret the results of machine learning and other automatic processes in contradictory ways. Computer systems, even if they are said to be "intellectual" and capable of imitating human behaviour and adopting human-like characteristics, do not operate on the basis of values and ethics, and they are unable to make related decisions that require the balancing of ideologies and cultures and may even need negotiation and compromise that may seem irrational in terms of logic. Even if "the computer says no", humans need to interpret, contextualize and problematize the answer, and this responsibility should not be left to "intelligent" non-humans. In the extensive brain work related to this contextualization, journalists can be partners of other actors governing AI technologies' future directions.

For journalists, there is – so far – no established genre or professional niche known as "AI journalism". Journalists of any specialisation may need to be able to question why and how disruptive technologies matter and how to deal with questions without falling into technological determinism. To some, AI might appear to be a topic that is covered by

specialized forms of journalism, such as science journalism, health journalism or service journalism. But as society becomes more and more digitalized, automatized, datafied and mediatized, the need to understand the technologies at work across all fields becomes more urgent. Journalists, ranging from those involved in political journalism to arts and cultural journalism, and involved in coverage spanning the international to the local level, regardless of the medium they are working in (newspapers, magazines, online news outlets, radio, television), need to understand how AI-powered technologies affect and penetrate all sectors of society.

One solution at such an early stage is to invite specialists in AI to visit journalism classes. In today's digital environment, video lectures are relatively easy to arrange, and organizing an international lineup of speakers is not an impossible task. Information is widely available online, and, for example, the European Union is monitoring the rapidly developing policies at the international level. Much of the 'translation' work from the scientific and technical domains into the social domain and the democratic public sphere that journalism helps generate still needs to be carried out by journalism educators in collaboration with their students. Therefore, we can assume that if this handbook were to be written or revised ten years in the future, the guidelines would be different. Some aspects may develop into more complex sets of questions, while others may gain precision.

In the process of making external connections, universities should remain independent, even though industry organizations, to a large extent, hold the most recent insights into and information about technological development. Bearing in mind that such institutions will typically lobby their own aims, critical distances regarding what AI should be, and in which directions it should be developed, need to be established.

"How should the involvement of AI be reported in journalistic products?"
"To what extent should audiences know about the AI processes in journalism?"
"How should the non-preferred effects of AI reporting be mitigated? Are there unethical aspects of AI that should not be covered in journalism?"
Journalists have to reflect upon and be transparent about AI in their own reporting as well.