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Exploring AI Amid the Hype: A Critical Reflection Around the Applications and Implications of AI in Journalism

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Abstract: Over the last decade, AI has increasingly been adopted by newsrooms in the form of different tools aiming to support journalists and augment the capabilities of the profession. The main idea behind the adoption of AI is that it can make journalists' work more efficient, freeing them up from some repetitive or routine tasks while enhancing their research and storytelling techniques. Against this idea, and drawing on the concept of "hype", we employ a critical reflection on the lens often used to talk about journalism and AI. We suggest that the severe sustainability crisis of journalism, rooted in growing pressure from platforms and major corporate competitors, changing news consumption habits and rituals and the growing technologization of news media, leads to the obsessive pursuit of technology in the absence of clear and research-informed strategies which cater to journalism's civic role. As AI is changing and (re)shaping norms and practices associated with news making, many questions and debates are raised pertaining to the quality and plurality of outputs created by AI. Given the disproportionate attention paid to technological innovation with little interpretation, the present article explores how AI is impacting journalism. Additionally, using the political economy framework, we analyze the fundamental issues and challenges journalism is faced with in terms of both practices and professional sustainability. In the process, we untangle the AI hype and attempt to shed light on how AI can help journalism regain its civic role. We argue that despite the advantages AI provides to journalism, we should avoid the "shiny things perspective", which tends to emphasize productivity and profitability, and rather focus on the constructive synergy of humans and machines to achieve the six or seven things journalism can do for democracy. Otherwise, we are heading toward "alien intelligence" which is agnostic to the core normative values of journalism.

Keywords: artificial intelligence (AI); journalism; AI hype; AI responsibility; platformization; human-machine synergy

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1. Introduction

Over the last decade, AI has been increasingly adopted by newsrooms in the form of different tools aiming to support journalists and augment the capabilities of the profession [1]. In January 2024, *The New York Times* announced the creation of new positions for "engineers and editors" tasked with leading the organization's efforts to embed generative AI in its newsroom. Today, the arrival of generative AI has popularized AI tools in newsrooms, making previously skeptical newsrooms seriously start thinking about AI. As a result, an impressive list of cases exists, indicating AI use from multinational media giants to small independent companies. Studies suggest that by 2027, AI technologies will lead to

major transformations in news media industries, influencing their working mechanisms and the structure of their institutions [2]. Against this background, dialogues about AI use in journalism have blossomed in media forums. For example, while "trust in the media" was the central theme at the international incubator for Media, Education and Development (iMEdDs) which took place in Athens in 2023, the relationship between journalism and AI became one of the major themes of the specific forum, with the participants wondering about the future of journalism.

Recent media studies exploring the multifaceted landscape of AI in journalism have pointed out the important role of AI in terms of facilitating the detection of informative trends [3], the collection and analysis of information [4], the development of news recommendation systems [5], the (automated) generation of content (both text and visual) [6], the contextualization of content through linking to relevant background stories and data sources [7] and the verification of misinformation and disinformation [8]. The main idea behind the adoption of AI is that it can make journalists' work more efficient, freeing them up from some repetitive or routine tasks [9] and thus allowing them to focus on research and explanation. Scholars studying the usage of AI in journalism have also highlighted its ability to deliver real-time updates, create new job opportunities [10], analyze vast datasets with impressive speed and efficiency [11] and create new functions for investigative journalism [12].

While these advancements are said to be changing journalists' tasks and daily practices, AI adoption is raising concerns about its liability not exclusively against newsrooms but often around the profession of journalism. The scholarly literature has pointed out a number of ethical dilemmas and questions [13,14] pointing to the erosion of public trust in journalism. According to Helberger et al. [10], AI adoption in journalism raises concerns about accuracy, bias and a lack of human oversight. Others argue that the routine and mundane nature of many journalistic tasks potentially being replaced by AI in the (near) future challenges the profession's claim to expertise [15]. Deuze and Beckett [16] argued that AI can be also considered a distinct influence on journalism. Moreover, the lack of dedicated resources within the news industry, along with the general absence of sophisticated AI literacy, raises serious concerns regarding the media's capacity to shape the development of AI in ways which support journalism's civic role. After all, what is at stake is the content and quality of news production and the further marginalization of journalism as a means for knowing and understanding the world accurately and impartially [17].

Following the argument of Mink and Fink [18] when examining the relationship of journalism and technology, we posit that a structural-causal perspective is necessary to comprehend the technological transformation of journalism. To this end, it is important to stress that the conversation about AI and journalism takes place along three interrelated phenomena: (1) a severe sustainability crisis of journalism rooted in growing pressures from platforms and major corporate competitors [19] as well as from fragmented audiences, whose attention and interests no longer converge around the traditional tenets of news making [20], (2) the growing technologization of news media [21,22] manifested in "shiny things syndrome", referring to the obsessive pursuit of technology in the absence of clear and research-informed strategies [23], and finally (3) the increasing questioning of the value and place of journalists and media institutions in political and public life [24,25], raising questions about the social functions of journalism and its political power and influence within and across societies [10]. As the global digital ecosystem is changing, reshaping norms and practices associated with news making, AI comprises another milestone in the configuration of journalism, bringing up various concerns and debates associated with the quality and plurality of outputs created by AI [26,27].

Given the disproportionate attention paid to technological innovation with little interpretation, the present article interrogates how AI is impacting journalism through the following questions. First, how is AI reshaping the newsroom and impacting the journalism profession? Second, what challenges and risks can be anticipated due to the growing adoption of AI in journalism? Drawing on the concept of "hype", referring to the gap between AI's possibilities and realities, meaning that perceptions of AI's potentials may be quite detached from the reality of the technology and still influence how it is developed, deployed and regulated [4,28], we employ a critical reflection on the lens often used to talk about journalism and AI. Additionally, with reference to the political economy of the media, and by analyzing the power relations, material circumstances and professional challenges, we untangle the AI hype and attempt to shed light on how AI can help journalism regain its civic role. We argue that despite the advantages AI provides to journalism, we should avoid the "shiny things perspective", which tends to emphasize productivity and profitability, and rather focus on the constructive synergy of humans and machines to achieve the six or seven things journalism can do for democracy [29].

This article is divided into three main parts. First, we offer a brief overview of the increasing penetration of AI in newsrooms, leading to the emergence of new concepts in journalism studies. Then, we provide a critical reflection pertaining to how AI can assist with various tasks in journalism. In doing so, we untangle the negative ramifications of AI in journalism. Finally, we conclude with a map for the road ahead summarizing the necessary logic and moves to be made in order to achieve the constructive use of AI in journalism.

2. Artificial Intelligence in Journalism: Friend or Foe?

The basic idea behind artificial intelligence is that machines will have some level of intelligence which allows them to mimic human cognition and behaviors. However, the complexity associated with the conceptual definition of AI is reflected in the variety of terms used to address this technology in many different areas of social, political and economic life, addressing both the opportunities and challenges which accompany the specific technological advancement. In recent years, scholars have begun to speak of a new technological revolution [30], as AI-powered technologies have started to penetrate aspects of life (e.g., healthcare and education) and different businesses, with the media industry not to be excluded from this trend. In fact, AI is considered one of the most prominent technologies in today's news industry and is regarded to be among the 20 most important developments of the decade for several media companies based in different European countries [31].

While AI seems omnipresent in the news media industry at the moment, media scholarship indicates four generations which have shaped its uses. The first is attributed directly to Alan Turing, but the term was coined by John McCarthy, Marvin Minsky, Claude Shannon and Nathan Rochester in the 1950s [32]. At that time, AI was defined by scholars as the science of making a machine behave "in ways that would be called intelligent if a human were so behaving" [33]. The second took place in the 1980s, when scholars started exploring the dynamic interaction of humans and machines with the aim to provide a sociocultural approach rather than a technological one [34]. The third became obvious between the mid-2000s and 2010s, specifically when machine learning algorithms became integral parts of several industries, including journalism [13]. The final one is associated with the development of generative AI. The arrival on the scene of OpenAI's ChatGPT has opened the door for many previously skeptical newsrooms to start thinking about computational journalism and start experimenting with different tools [7,35].

Currently, AI is applied in journalism, with algorithms, robots and multiple AI-driven tools becoming integral parts of today's media ecosystem. Due to the presence of AI in the media industry, scholars have begun to introduce new media concepts, exemplifying noteworthy advancements in performing journalism. Scholars have used the terms "robot journalism" [36], "algorithmic journalism" [37], "automated journalism" [38] or "computational journalism" [39] to signify the automation of several journalistic tasks and the increasing mediation of journalism practice by technological actants [40]. The irruption of AI in all stages of news production has also given rise to renewed professional profiles and routines. Tejedor and Vila [41] introduced the term "exo journalist" to conceptualize AI's deepening impact on the profession. More specifically, the term is one of the recent conceptual approaches which links AI's capabilities to the demands of journalists' own productive routines and needs. The main idea is that the possibilities of AI enhance and improve journalists' skills and consequently improve the final news product.

Despite growing interest in the intersection of journalism and AI, the effects of AI on the news industry remain poorly understood [42]. To this end, many theoretical and empirical studies recommend searching for common patterns of study to gain a better understanding on the changes AI brings forth in the news industry [43]. In this paper, we attempt a critical reflection about AI in journalism. Our approach is rooted in the political economy of the emerging media landscape and emphasizes the need to avoid technological utopianism and rather untangle the realistic and constructive potential of AI in journalism.

3. AI and Journalism: A Reality Check

AI in journalism has been heralded with the usual technological optimism of other technological advancements in the past (see, for instance, convergence [44], interactivity or participatory journalism [45] and social media [36,46]), bringing along excitement for innovation and ground-breaking opportunities and practices. Coddington [47] described computational journalism as practices or services built around computational tools in the service of journalistic ends.

Recent empirical and theoretical work has focused on how artificial intelligence can assist and enhance journalistic tasks in all stages of news production. One of the most prominent benefits of AI in journalism has to do with the automation of routine tasks such as data collection and sorting through large volumes of information [48]. By taking over these time-consuming tasks, AI enables journalists to devote more quality time and energy to the nuanced aspects of storytelling [49]. This shift is not merely a matter of convenience but a significant step in the quality of journalism, coined as human-crafted journalism (ibid). In the case of investigative journalism, a complicated and laborious genre, algorithms can play an important role in analyzing large datasets, identifying patterns as well as predicting trends, thus proving particularly useful in investigative stories [12]. From this perspective, journalists are now able to engage more deeply with complex stories, leveraging their human insight, empathy and investigative skills in ways that were not possible before [50]. Moreover, in fast-paced conditions like breaking news or live reporting, AI tools become precious in providing instant data analysis and content suggestions [10,51]. AI-powered tools therefore enable the delivery of news, ensuring that audiences receive timely and relevant information [52]. Simultaneously, as the usage of AI in journalism becomes increasingly evident, the media industry could remain ahead of the rapidly evolving market landscape by leveraging new forms of participation and offering products which could increase news media consumption [53].

On the other hand, AI's takeover in journalism raises many questions about the quality of the outputs created by AI [54]. Concerns about transparency, bias and the potential displacement of the human journalist have become prominent issues for scholars exploring

AI's usage and its impact on journalism [55]. AI use in journalism can erode the ethical principles and core values of journalism [56]. AI systems are said to be devoid of the ethical discernment and sophisticated comprehension of context which human journalists possess. Following the often quoted "garbage in, garbage out" principle, partial or deceptive data can lead to low-quality outcomes produced by algorithms, which in turn could impact the fairness and balance of reporting [57]. Thus, if algorithms are not carefully built and maintained, this weakness might lead to the distribution of biased perspectives, stereotypes or misleading information [9]. Moreover, despite the high expectations of using AI to combat misinformation, recent evidence [58] suggests that automated fact checking faces significant hurdles associated with the elusive nature of truth claims, the rigidity of so-called binary epistemology (ascribing true and false values to information claims), data scarcity, algorithmic deficiencies, issues with the transparency of results and industry-tool compatibility. Even worse, algorithms can be source of misinformation themselves, from distributing inaccurate information to being used to produce false content and deepfakes. Fake news tends to increase people's uncertainty and distrust toward news media.

According to Diakopoulos [13], AI algorithms are trained on historical data, which might contain one-sided narratives and therefore prioritize specific perspectives. This in turn contributes to polarization and a lack of exposure to diverse perspectives and voices within the industry [59] as well as hinder editorial independency and human decision making [60]. In this regard, while some critics highlight how AI generates "artificial hallucinations" [61], a well-known problem which refers to the generation of fact-like claims which contradict real-world facts, other scholars focus on AI's possibilities to undermine democratic outcomes and fail to provide people with significant information about public affairs [62]. Additionally, the extended use of AI technologies in today's news industry has presented numerous challenges regarding violation of the right to privacy and data protection. The huge amounts of data required to train AI systems frequently contain sensitive and personal information, therefore augmenting worries about source protection and the consequences of data breaches [63]. Finally, the impact of AI on employment within the journalism industry is another critical area of scholarly focus. According to Salamon [64], AI can streamline workflows but may also lead to job displacement in journalism. As Simon [65] argued, AI is adequately developed to enable the replacement of at least some journalism jobs, either directly or because fewer workers will be needed.

4. Journalism and AI: A Critical Political Economy Perspective

In the book chapter with the title "A manifesto of failure for digital journalism", Wahl-Jorgensen [66] posits that the adaptation to technological change does not occur in a vacuum but is rather strongly shaped by material circumstances, including the crisis in the business model of journalism. In other words, the focus of discussions about AI's impact on journalism needs to center on cyclical and technological challenges as well as trends appearing in the "business of journalism" which underpin several changes brought forth in the material character of information itself, alterations to the everyday work and practices of human journalists as well as the connection of the news industry with platform companies [67].

Political economy perspectives on news examine the ways journalism is produced, distributed and consumed, emphasizing the power mechanisms, the material conditions, the business imperatives as well as the forms of control and support established by laws, regulations and other governance mechanisms and the implications these have for the production, distribution and consumption of news content [68]. A key parameter of the critical political economy tradition in the news industry is the balance struck between market and public provision and the considerations of serving the public good [69]. For

the latter, professional autonomy is a key boundary marker of journalism against market pressures and commercial influences [49]. The varying levels of dependence on advertising revenue and other commercial pressures tend to influence corporate and editorial decisions inside news organisations, as well as the extent of competition, plurality of ownership and diversity of voices within markets [70]. Historically, scholars like Herman and Chomsky argued that corporate ownership and advertising pressures compromise the media's independence, reducing its capacity to function as a public good.

In the digital era, the media's economic landscape has transformed significantly, affecting how news is produced, distributed and consumed. The journalism in crisis thesis, albeit not new [71], is a recurring theme in journalism studies used to highlight that many media organizations are faced with viability issues, journalism's authority is evaporating, and journalism is either unable or unwilling to perform its informative role, especially in regard to its watchdog role. The proliferation of news sources and the emergence of new consumption habits and rituals allowed in the digital landscape have wrecked advertising revenue by increasing competition and lowering advertising value [72]. Within the digital landscape, the business of news operates in an attention economy, where attention is a scarce resource when information is abundant [73]. Power over attention is, in political-economic terms, power over distribution and consumption [74].

In trying to compensate for lost attention and dwindling revenues, news media saw social media as a "partner" [75] which would help them consolidate news distribution and gain attention. However, despite years of pushing their content to platforms, publishers saw no significant revenue return [47] while platforms increasingly shaped editorial decisions, influenced production norms and controlled distribution [76]. In this context, several media studies have emerged to explore the "platformization of journalism", with an attempt to make sense of how news organizations align their business models, marketing strategies, distribution infrastructures and production practices with platforms [68,77]. Scholarly work illustrates that platforms penetrate journalistic practices, influence news work and fundamentally transform journalism in the direction of further commodification at the expense of "good journalism" [78,79].

What is common when examining the infrastructure transformation of journalism in the age of platformization and AI is that journalism's model must adjust to AI's driven platform economy and business standards for its sustainability in the long run [80]. This development illustrates that the whole industry of journalism has become more autonomous from political forces and civil society forces and more reliant on market logics. From the perspective of market logics, journalism is a business where technology enables "smarter" and more "efficient work", "liberating" journalists [81]. The financial motivations of adopting AI in newsrooms have been highlighted, suggesting a critical political economy perspective on the way journalism is disrupted by the use of AI, bringing to the fore questions about power, control, dependence and autonomy [82]. Within this framework, AI's commercial imperatives and economic interests drive priorities in the news industry and reshape the daily practices of its core actors (journalists) in relation to AI's driven logics. The news industry therefore shifts its priorities toward adapted profit models to maximize its sustainability and revenue rather than enhance journalistic content [65,83].

Despite the relevant hype, Simon [65] found that many of the most beneficial applications of AI in news are relatively mundane. Drawing on over four years of research and 170 interviews with industry experts, Simon argued that for now, we are witnessing more of a retooling of the news through AI rather than a fundamental change in the needs and goals of news organizations. Moreover, it is argued that AI is causing a further rationalization of news work which limits creativity and criticality, two core elements of journalism [22].

The much-anticipated revolutionizing of journalism by AI cannot reverse precarious employment, which is viewed as one of the main factors rendering journalists vulnerable to pressures and self-censorship [84]. On the contrary, the drive for profits and increasing automation is said to be contributing to rapid changes within the industry and leading to an increase in precarious employment, deskilling and the undervaluation of human journalists [85]. This means that the adoption of AI in newsrooms poses a threat to journalists' employment as well as to the inherent value of human journalists' skills and insights, which could indeed be diminished in the face of automated processes [86]. Moreover, the academic discussion on how AI will affect jobs has thus far largely adopted a quantitative approach, trying to estimate the number of workers which could be put out of a job as a consequence of technologic breakthroughs [87]. Yan et al. [88] found that for every one percentage point rise in robots, labor force jobs fell by 4.6 percentage points. At the same time, a number of conceptual papers and qualitative studies which focused on the in-depth nature of journalists' stories about job automation determined that the adoption of AI in newsrooms is inimical to the legitimacy and credibility of the profession. Specifically, it has been noted that the appropriation of AI into everyday workplace practices led journalists to question the future viability of their jobs, while machines increasingly take over and disrupt the process of news production [89]. In addition, focusing on the media leaders' side, Biswal and Gouda [90] observed that the main reason news organizations are adopting AI is to cut human resource costs as opposed to making the newsroom process faster and more efficient. Even though reducing costs is the main reason for laying off employees in various industries, De-Lima-Santos and Ceron [91] highlighted that AI is cost-intensive itself, requiring significant resources to be used for its development. Others noted [1] that new job positions and roles emerge in the AI era (e.g., data journalists and AI trainers), thus making the industry invest more in building technological infrastructure and hire highly qualified personnel to develop such codes.

Despite the hype of the cost-effectiveness of using AI-driven tools in journalism, evidence suggests that high-impact computational journalism is a costly endeavor [4]. *The New York Times* may have the tech and financial capacity to support an algorithmic shift while sustaining journalistic standards, but most AI news projects rely on funds from tech companies such as Google, thus limiting AI's potential to a small number of players in the news industry [91]. This condition is most likely to reinforce existing inequalities among news organizations [65] and amplify big media's power in the public sphere [92].

Finally, as computational journalism is becoming increasingly pervasive, the question of who the author of this automated generated news is and who should get paid for it remains pressing. Kuai [93] found that in the United States, the European Union and China, albeit for different reasons, the current regulatory frameworks have led to a weakening of the institution of copyright, which in turn has contributed to the deinstitutionalization of journalism and the institutionalization of algorithms.

5. From AI Hype to Responsible AI

In an attempt to mitigate or even remedy AI's effects on journalism, scholars focus on the idea of "responsible AI". The term is used here with the aim to provide insights as to whether the democratic and societal role of journalism is changing (for better or worse) in an era of perpetual digital transformation and technological innovation. Specifically, Lin and Lewis [27] drew on a normative framework by following other scholars' efforts in this regard [94,95] and suggested that "[t]he one thing journalistic AI might do for democracy" is contribute by providing people with accurate, accessible, diverse, relevant and timely information. The work of Helberger et al. [5] can also be an important starting point for understanding how journalism's democratic and societal role is changing as a

result of the widespread usage of AI-powered technologies. Following their work, to build a normative perspective on journalistic AI and therefore define the responsibility in AI journalism, scholars should emphasize the analysis of the following four main themes: (1) the values which journalistic AI should realize (both in the sense of a normative vision and the need to reconcile this vision with the empirical reality of AI on the ground); (2) the people and power structures that determine which values AI impacts and how; (3) AI's role in the digital information infrastructure; and (4) the importance of (and lack of attention to) AI governance and regulation in this debate (ibid). Research on the latter looks into the ways AI technology should be controlled, governed and shaped [96]. With that said, AI governance can be defined as the way "humanity can best navigate the transition to advanced AI systems, focusing on the political, economic, military, governance, and ethical dimensions" (ibid). Overall, research indicates that further investigation is necessary in order to fully comprehend the impact of AI on various aspects of news making, in different media landscapes and within diverse political systems. When it comes to current or potential risks related to AI and journalism, scholars mainly refer to changes associated with the role of journalists in the production of texts, their substitution in carrying out certain activities and their interaction with and perception of the audience [97].

6. AI and the Normative Role of Journalism

Today, it is hard to disentangle journalism from digital technology. The linkage between technology and journalism is as deep and complex as ever, creating new *logics* and *forms* indicating that important aspects of news production are becoming defined by and dependent upon new technological actants [98]. Professional judgment and decision making over the news agenda and professional norms and values are increasingly shaped and determined by technological actants, marginalizing the role of journalists in news making [22]. Against this development, we argue that it is important to rethink the role of journalism by looking back to normative theorizations, operating as a useful yardstick between reality and a well-performing media system. News should provide the vital resources for the processes of information gathering, deliberation and analysis which enable citizens to participate in political life and democracy to function [99]. This perspective emphasizes the democratic function of journalism, rooted in the principle of an informed citizenry. The latter reminds us of journalism's fundamental norms and components (e.g., accountability, transparency and integrity), which play a significant role in maintaining healthy societies. However, the question of how journalism can best serve democracy has been the subject of broad agreement for over a century. Scholars writing in this tradition have perceived the role of journalism in society as important in terms of protecting civil society, fostering an inclusive culture and facilitating public wellbeing [100]. At an earlier time, Carey [101] presented a normative perspective of journalism and its relationship with democracy, defining journalism as inherently democratic and stating that it does not exist if democracy is in trouble. His views on democracy and around the profession of journalism range from the strains on democracy and drawbacks of technology to the critique of journalism and the politics of academe. As he observed, "when democracy falters, journalism falters, and when journalism goes awry, democracy goes awry" (ibid).

In this context, conceptions of journalists' roles and duties fluctuate between being a neutral gatekeeper by means of evaluating the distribution of important information for the public to an interpreter of publicly relevant events and to an activist who advocates for social change and justice [102]. These role perceptions highlight the essential "normative ideal" of journalism, which consists of being a watchdog of societal fields such as politics, business and the economy, aiming to reduce corruption and thereby improve society [103]. Schudson's [29] perspectives also contribute to this understanding by viewing journalists

as important actors for collecting and disseminating essential news to a representative democracy. In his latest collection of essays, he suggested six or seven things news [journalism] can do for democracy. His perspective in this regard indicates the core values of journalism, which typically include principles that guide the profession in maintaining ethical standards and serving the public interest. Specifically, he perceives journalism's main functions as being situated around the following principles: (1) informing the public, (2) investigating and exposing corruption, (3) fostering a culture of inclusiveness and diversity, (4) stimulating social empathy and representation and (5) inspiring people to mobilize (ibid). Likewise, Christian et al. [104] noted that several scholars and academics tend to clarify the relationship of journalism and democracy with emphasis on the following four elements: observation and information, participation in public life through commentary, advice and advocacy and provision of access for diversity of voices. These ideas illuminate the democratic role of journalism and its civic duty, yet the challenges posed by AI seem to contradict them.

According to Thomas's [100] observations, scholars' oversight of the journalism/democracy framework is largely attributable to the little attention paid to the importance of "normativity" in journalism studies. Scholars in this tradition believe that journalism itself is "a normative domain" where questions of "is" cannot easily be extricated from questions of "ought" [105]. In this context, Thomas [100] argued that digital journalism studies offer a shallowly theorized and technocentric conception of journalism's social and democratic objectives (driven by "shiny new things" syndrome). Emphasis on the practical changes in journalism results in providing a thin conception of journalistic normativity. Likewise, others have noted that in the AI era, considerable attention is given to providing a technocentric understanding of journalism's social objectives rather than offering a human-centric or sociocultural framework [5].

Despite the blind spot found in the literature regarding AI's impact on journalism's democratic function and values, Jungherr' s [106] recent work presented four areas of AI impact at different analytical levels. First, at the individual level, AI tools are said to be influencing the conditions of self-rule and people's opportunities to exercise it. Second, at the group level, AI impacts equality of rights among different groups in society. Third, at the institutional level, AI influences electoral processes and the democratic perception of it. And forth, at the system level, AI impacts competition between democratic and autocratic systems of government (ibid). Without having a clear vision of whether AI is re-shaping journalism's democratic values, routines and professional norms, the only thing that appears to be true is that AI's impact on journalism varies across different political environments and media organizations. This becomes quite evident as most of the research work focusing on AI's impact on journalism is being carried out in large economies such as the United States, European Union, Scandinavia and China. In authoritarian environments, newsrooms ought to deal with a number of sociopolitical issues such as self-censorship, illiteracy, inequalities, civil rights violations and corruption [107].

7. Alien Intelligence: Concept and Systemization

In short, the hype around artificial intelligence is partially short-sighted and ignores some fundamental conditions of news making, sometimes by virtue of technological optimism and sometimes due to an underestimation of the complex interplay of the material conditions, power relations, labor conditions and regulatory framework shaping how AI is developed and implemented within newsrooms of different sizes and impacts. Political economy theorists argue that the interplay between journalism, material conditions and power relations diminishes professional autonomy and agency [108].

Moreover, the AI hype in journalism is based on the twin beliefs that human subjectivity is inherently suspect and in need of replacement, while algorithms are inherently objective and in need of implementation [109]. Nevertheless, not only do these beliefs nurture fallacious hype over AI, but they ignore the necessity of journalism professionals and media organizations having a sense of agency and the power to develop and implement technology according to normative ideals, clear set editorial missions and professional values [5]. As Zelizer [110] succinctly noted, journalism should be more than technology. "It should be journalism that gives technology purpose, shape, perspective, meaning and significance, not the other way around". However, being able to exercise agency also requires having a real choice and the autonomy to act according to one's convictions. In contrast, many (if not most) accounts of normative theories of AI are surprisingly agnostic of the complex ecology of judgment and decision making [5]. Professional judgment and decision making comprise the cornerstone of how journalism represents events, information and ultimately the truth. Journalism is always confronted with the task to decide what information is useful or irrelevant, what stories should be included or excluded, what framing should be implemented or avoided and how stories should be emphasized or deemphasized. These judgments produce news texts which, as a form of knowledge, represent the world to audiences [109].

In this respect, we propose the idea of "*alien intelligence*[1]" to refer to decision-making processes in journalism which are designed by non-journalism professionals and cannot adequately relate to journalistic judgment based on the values of relevance, impartiality, accountability, transparency, analysis, social empathy and advocacy [29]. AI is the first tool in human history capable of generating ideas and making decisions independently [111]. As such, journalistic AI-driven tools are more than simple tools. They are part of a structural transformation of making news and engaging with the audience [5]. Thus, unless media organizations work together with tech companies and carefully design and incorporate AI tools in newsrooms, the quest for accurate, accessible, diverse, relevant and timely information will be further jeopardized. Figure 1 describes the notion of "alien intelligence" for journalism.

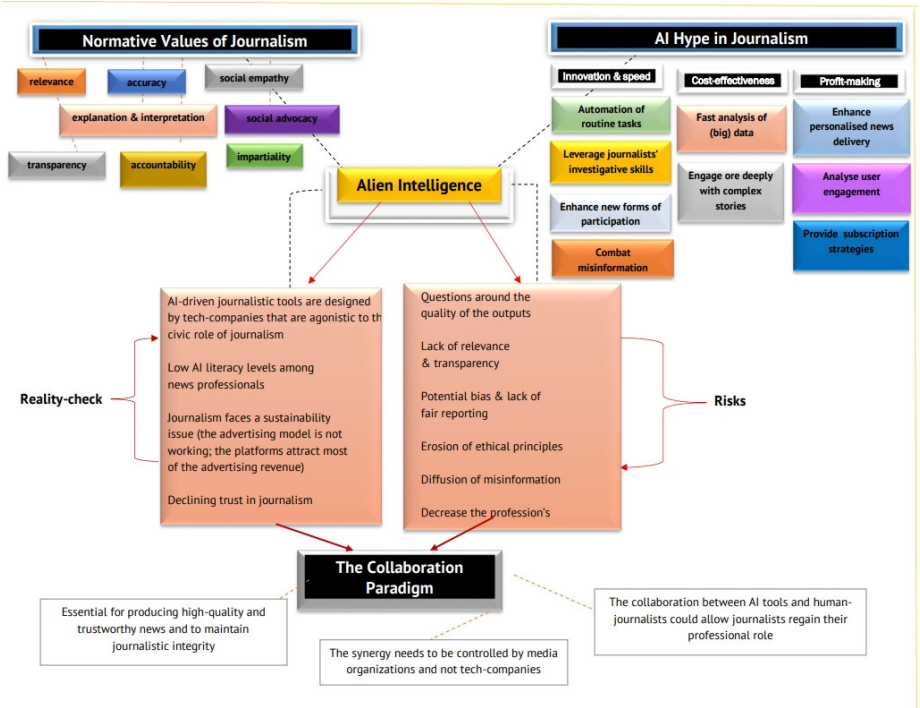


Figure 1. Conceptual diagram (original contribution by the authors).

8. Artificial Intelligence and Journalism: The Road Ahead

Technology is not neutral because it is always embedded into and shaped by the structures of society. The same applies to journalism [112]. The current hype surrounding AI in journalism tends to emphasize innovation, speed, cost-effectiveness and profit-making. Thus far, both scholarly work and professional discussions have been pervaded by an infatuation with the possibilities of technological advancements brought about by computational journalism. We argue that the debate over AI's implications necessitates a structural causal perspective which takes into consideration the material conditions, power relations, labor conditions and regulatory framework shaping how AI is developed and implemented within newsrooms of different sizes and impacts.

In attempting to synthesize the tensions, risks and opportunities associated with the increasing adoption of AI-powered tools in journalism, a strand of scholarly work focuses on the potential benefits of AI adoption in the news media industry under preconditions. Starting from the vantage point that technological innovation is inevitable and can prove useful when used constructively, scholars emphasize five preconditions. First, it is important to achieve sophisticated AI literacy within newsrooms, as most professionals are not capable of understanding the possibilities and limitations of AI [16]. Researchers have underscored the need for the industry to invest more in specialized training for journalists in order to develop new skills and work with AI tools effectively and in an appropriate and ethical way [9,113]. Second, journalism needs to have a say in how AI tools are developed and implemented. As explained by Simon [65], the complexity of AI increases platform companies' control over news organizations, creating lock-in effects which risk keeping news organizations tethered to technology companies. As a result, the autonomy of news organizations shrinks while becoming vulnerable to price hikes or the shifting priorities of technology companies which may not align with their own. Third, when integrating artificial intelligence into journalistic work, news media need to reinforce and reclaim journalism's normative and professional ideals [15]. AI processes need "to be grounded in a sense of agency and responsibility for developing a forward-looking vision on the role of journalistic AI and the values and goals it shall serve" [5]. Such a vision should take into consideration the editorial mission, the fundamental rights (e.g., freedom of the press) and democratic theories of the role of the media. "It should be able to look beyond short-term KPIs and see the broader picture and also the different competing values that must be balanced when deploying journalistic AI" (ibid). Finally, the regulatory framework around AI and journalism should regulate tech companies' privileges and protect the institution of journalism [65,114]. Porlezza [115] argued that the European AI Act tends to focus on the algorithms of platforms as the main players but rarely includes the media.

These suggestions point to a human-AI collaboration paradigm which recognizes that AI and human journalists have complementary strengths and rights, and thus the synergy between humans and machines must be reinforced. According to Friday and Soroaye [51], collaboration between AI-powered tools and human journalists is essential for producing high-quality and trustworthy news as well as to maintain journalistic integrity in a media landscape characterized by drastic changes. Correspondingly, in Graefe's [116] guide to automated journalism, it is suggested that human and automated journalism are more likely to be studied together, as both form a "man-machine marriage". Following the same logic, other scholars have coined the term human-AI collaboration [1] to explain the importance of the synergy between humans and machines in a way which links back to earlier concepts such as "computer-assisted creativity" [117] and "augmented journalism" [118]. Scholars in this tradition therefore reject the reductionist theory, which assumes that society and the media industry could progress by following technology's own internal logic (in line with technological determinism) and rather focus on the collaboration paradigm which

holds the promise of revolutionizing traditional work structures and augmenting human capabilities [98].

Beyond the general idea of human-machine collaboration, it is necessary that this be a top-down process, as evidence suggests that decisions about AI implementation are often made exclusively by editors, funders and managers [119]. The internal synergy will help human journalists perceive AI as a "collaborative partner" and not an opposer. In this way, journalists could focus on their civic role and their duties as professionals while also leveraging the technology to improve journalistic routines, reach the general public, gain audiences' trust and engagement, ensure journalistic quality and contribute to a more transparent and democratic society. Algorithms are often described as black boxes, with their complexity and technical opacity hiding and obfuscating their inner workings [9]. And although inputs can be partially observable, they are not controllable [120]. Therefore, the synergy between media organizations, journalists and AI producers should revolve around close collaboration. As code increasingly mediates knowledge production, Weber and Borges-Ray [121] argued that the journalism community must develop both technical understanding and critical perspectives to navigate and challenge these black boxes. Otherwise, it is likely that artificial intelligence in journalism will become "alien intelligence", pushing journalism to a corporate path where rigid dual conceptions of yes or no can redirect journalism to a superficial institution unable to truly cater to an informed citizenry.

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Notes

[1] Yuval Noah Harari first coined the term "alien intelligence" in his book *NEXUS: A Brief History of Information Networks from the Stone Age to AI* (2024) to emphasize the idea that AI's way of thinking is entirely different from humans. As AI learns and makes new decisions autonomously, it is no longer fully under human control.

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