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Augmented Journalism: A Blended Approach to the Journalism and Artificial Intelligence

Mr. Intikhab Alam Shamsi

Research Scholar, Jaipur National University, Jaipur, Rajasthan, India

ABSTRACT

The advent of artificial intelligence (AI) and automated technology has significantly altered the journalistic profession, transforming the methods for capturing, processing, generating, and disseminating information; enhancing the work of journalists by modifying the routines and expertise required of information professionals. This study, which conceptualizes "augmented journalism" based on the impact of AI on the journalism industry. Documentary research supported by case studies and in-depth interviews suggests that AI is a source of innovation and personalization of journalistic content and that it can contribute to the improvement of professional practice, allowing the emergence of a type of "augmented journalist," a conceptual proposal that connects the capabilities of AI with the requirements of journalism's own productive routines. The result is an improvement in the journalist's abilities and the news product. The research focuses on conceptualizing a type of assistance and supplement for journalists in the performance of their duties based on the capabilities of artificial intelligence in the automatic generation of content and verification of data.

***Key Words**: Artificial intelligence; journalism; innovation; automation*

INTRODUCTION

The advent of artificial intelligence in the news business is producing a new technical media environment in which journalism is experiencing one of its most profound transformations. The new stories in digital society inspire a consideration of the support, forms, and development of these technologies (Tejedor-Calvo et al. 2020). In this perspective, AI is seen as the next technical progress vector in the media industry. In this context, the significance of this research, which over the past few years has examined the major projects and consulted various professional profiles, including journalists, researchers, and experts in artificial intelligence, is to propose the "augmented journalist" model as a proposal derived from the analysis of the challenges, transformations, and solutions that AI poses to journalism. Its impact on journalistic practice, dissemination, and social perception has revealed the need for additional research and academic analysis on the topic, a new informative modality that some researchers refer to as "automated journalism" (Caswell and Dorr, 2018), "computational journalism" (Vállez and Codr, 2018), or "robojournalism" (Carlson, 2015). The notion of "augmented journalism" goes beyond automation; it aims to empower the journalist by enhancing his or her profession to previously unattainable levels.

This junction between technology and the production of journalistic material is described by Garca and Vizoso (2021) as an area of experimentation where new and complicated automation systems, algorithms, and virtual reality coexist: a zone full of innovations, hybridization, and crossbreeding. In this context, the research portrays AI as a technology with the potential to significantly impact both the production and consumption of journalism (Beckett 2019). Thus, some of the proposed hypotheses pertain to information collection and selection procedures, journalist training, and the ethical and educational areas. According to Vállez and Codina (2018), the synergy between the two professions is an unavoidable reality, since trend studies demonstrate that technological growth influences not just distribution channels but also the production and conception of journalistic material. As Rivas-de-Roca (2021) notes, at this stage of redefinition, the roles of experts and machines in newsrooms confront the difficulty of automating journalistic and commercial information. Again, this is a technical revolution

whose core pillar is the never-ending quest to define what it means to do journalism (Salaverra and Garca, 2008). For some professionals, this horizon might present a hopeful perspective for innovative, high-quality journalism that would enable journalists to move away from the most repetitive and mundane jobs and create those that bring more value to journalistic output (Ufarte et al. 2020). Its incipient nature, and the degree of innovation, adaptation, and assimilation required by AI techniques, has led many in the media and journalists to question the degree of usefulness and assistance this tool provides, as well as the main challenges that will emerge in the exchange between communication, journalism, stories, technology, and the so-called intelligence demonstrated by machines (Tez and Tejedor 2019). Its usage has sparked disputes that begin with the replacement of the human by the machine and go to the realm of ethics and job loss (Villoro, 2017), the validity of materials, and the development of new domains of control over published information. This new journalistic practice presents a number of challenges, such as ensuring the privacy and intimacy of individuals, the contrast of information produced by emerging technology, the preparation of information professionals for its use and application, the detection and control of algorithmic biases, and the journalist's need for a sense of commitment and social responsibility.

AI provides several opportunities for improving, finishing, and enhancing their everyday jobs. This study attempts to conceptualize the notion of the "augmented journalist" as a partnership between journalism and artificial intelligence.

Framework:

Graefe (2016) refers to as "a marriage between journalists and computers" and which seems to be in the process of becoming comprehended; voices have arisen that warn of the hazards that the excessive use of artificial intelligence in journalism may entail: Can computers replace journalists by acquiring the cognitive aspects of their work? Can AI pose a danger to the health of the information system by decreasing an individual's ability to discern between beneficial and harmful information? Journalism could go through a crisis if it can't keep up with how quickly things change in just one generation. Despite the widespread usage of AI in newsrooms, the Associated Press article “How will artificial intelligence affect journalism?” (2017) identifies one of the primary goals as achieving enhanced journalism by maximizing the advantages automation may give. This same paper describes what AI might empower journalists to accomplish in general.

- Recognize patterns, trends, and ideas from various sources.
- See beyond what the human eye can see.
- Automatically convert data and words to text
- Convert text to audio and video automatically.
- Analyze and comprehend user behavior as well as scenery from objects.

The article is able to systematize a number of contributions or advantages gained from the use of AI in journalism as a result of an examination of the primary bibliographical references (books, journals, and reports) on the issue. These may be essentially summed up in the following points:

AI is capable of watching hundreds of sources (such as social networks and comments) or recognizing breaking news by keywords that are repeated in real time. Various commercial programmes, such as Dataminr, News Tracer from Reuters, NewsWhip from Associated Press, Bertie from Forbes, Quakebot from the Los Angeles Times, and Social Media Radar, have emerged in this arena.

Automatic production of journalistic texts: this is a reality for media outlets that have chosen to use artificial intelligence in order to enhance their information service and achieve higher performance. It permits the saving of time and resources, in addition to the production of serializable and adaptable content. Additionally, it allows the journalist to concentrate on more qualitative work. Sporting events, weather, economic information, and election outcomes are the areas where it is most readily applicable. Examples of text auto-mapping systems: Heliograf from The Washington Post, Cyborg from Bloomberg, Wordsmith from Automated Insights, Quill from story Science, Syllabs, and Editor from The New York Times are examples of text auto-mapping systems.

Personalization of information: Personalization has been an increasingly popular tactic for news publishers, who expect it will enhance interaction on their websites and allow them to collect data about readers, thus lessening their reliance on other information suppliers. As information consumption shifts toward a more selective form in which the user has greater decision-making power, the media are beginning to implement personalization in headlines, in the text itself, on front pages, in delivery time, or

through personalized recommendations in sections or push notifications. This use of AI permits the differentiation of items from competitors, improves reader retention of material, and increases customer loyalty.

Combating disinformation: The destructive use of AI enables the production of deepfakes, which undermine news credibility and lead to widespread uncertainty and societal scepticism (Vaccari and Chadwick 2020). This issue has highlighted the need of media literacy, which helps individuals to be educated, involved, and equipped to think critically when making choices (Muratova et al. 2019, p. 16). Factmata, Claimbuster, TweetDeck, Factstream, and Hoaxy are among the technologies used.

Virtual assistants and presenters created for journalism: this type of equipment is found in a context of unstoppable technological innovation and rising audiovisual content consumption, which explains why the evolution of the traditional radio or television broadcast to other platforms has taken hold. A growing number of media outlets in the U.S., Europe, and Latin America, such as the BBC, CNN, Reuters, Deutsche Welle (DW), Bio Bio Chile, Radio Programas del Per, and Noticias Colombia, are adding news apps to the virtual assistants Google Assistant, Alexa (Amazon), and Siri (Apple), whose portfolios are growing all the time.

In general, journalists could increase content production, identify newsworthy events for subsequent dissemination, combat misinformation, detect the management of profiles in social networks to adapt to user preferences, and obtain greater accuracy and objectivity with search and classification functions if they used artificial intelligence. Based on the topics and case studies that were looked at, the current trend is that there are already robots that make news on their own from data, machines that help cover unusual events like natural disasters, the use of fact-checking to make sure that facts are true, and audiovisual pieces that are made by recognizing images and emotions.

The documentary studies conducted throughout project, as well as the in-depth interviews and case studies conducted, led to the conclusion that combining this set of tools with other existing tools would allow for the configuration of a sort of support and supplement for the journalist's duties. This "layer" or support might be described using the term "augmented journalist." It's not so much about making journalism better as it is about giving journalists more skills and opportunities to do their jobs.

The idea of an "augmented journalist" would correspond to the following five-staged work dynamics

-Stage 1: News identification and information organization The journalist is informed of the procedure, consents to its initiation, and then verifies its continuance. This phase includes "Tracking information on social networks" and "Tracking information from agencies and media." On this basis, the text is assessed according to the following criteria: semantic comprehension or comprehending what is being said; identifying the where and when; distinguishing if it is an opinion or a fact; and determining whether it is set in the past, present, or future. In this step, an initial search for information is conducted using agency and media content. In addition, potential structures, ontology, and narratives are processed and access to structured databases (analysis) is provided. All of this leads to the confirmation of structured information about the news event in question.

-Phase 2: Confirmation of the information and its origin This phase involves validating the source, the author, and their reputation. Additionally, consistency with other information is evaluated. This allows access to structured information on a noteworthy fact that has already passed a preliminary degree of verification.

-Stage 3: Complementary information gathering, analysis, and proposal development. The journalist elaborates with the aid of the news's instruments and body language and provides his approval. During this stage, archive data (text, pictures, and sound) is accessible. In addition, automated news proposal writing is performed. The journalist works with the technical tools that help him or her to write the news story that comes out.

-Phase Four: Publication and customization. The publishing and customization process begins, with a dual focus on media and social networks and on distinct audiences. Publishing for the media and social networks is aided by a process of group-based customization.

Phase 5 is the collection and assessment of user input. The last phase focuses on gathering opinions collected via various means and media.

On the basis of the above, it is possible to assert that the idea of the "augmented journalist" has valuable elements for the advancement of journalistic activity. It is about materializing a series of possibilities that have already been highlighted by various works, such as the study of ethical and legal issues associated with AI in the press (2018), and that need conceptual methods and practical research that correspond to the "augmented journalist" proposition. They might be summed up in the following aspects that delimit the difficulties of this conceptual idea that links the capabilities of AI with journalistic production requirements:

The industry as a whole agrees that people who work in communication should start to learn more about this technology because it will have a big effect on how they do their jobs and what they need to know and be able to do.

The importance of openness: Who is accountable for the information created by algorithms? Should the criteria for producing and publishing automated news be transparent? The job of journalists might emphasise the contrast of autonomously generated material.

Guarantee of confidentiality: the use of artificial intelligence for content personalization necessitates and imposes the obligation to maintain confidentiality. This opens the door to the idea of building an ethical framework for AI and journalism, with rules for how programmers and journalists should act. Unbiased artificial intelligence is among the greatest problems. It has been shown that algorithmic biases may undermine public trust in the media. Because of this problem, there are now new types of journalists called fact-checkers or information verifiers.

Copyright: the creation of works by artificial intelligence may have far-reaching consequences. Countries such as China have previously determined that an artificial intelligence-generated work is protected by copyright. Given that AIs cannot write on their own and need human input, which should be safeguarded: the human input or the output? The journalist's duty might shift from producer to overseer of the algorithm-generated news.

The rapid evolution of AI systems and their gradual incorporation into newsrooms has caused academics to consider it necessary to adapt the Code of Ethics of the FAPE (Federation of Spanish Journalists' Associations) to journalism with AI, always picking up the UNESCO International Principles of Professional Ethics of Journalism, taking into account that, as emphasized by the Commission of the European Union, a high level of security, protection, and transparency are required.

Communication departments and journalism schools need to change their courses to meet the needs of a journalism industry that is changing because of AI.

Further Discussion:

The use of AI in journalism continues to expand perspectives and knowledge of the industry. Garca and Vizoso (2021) claim that the future of journalism is a discussion in continual creation and development, in which scholars and many sectors of society will seek solutions to make this synergy a sustainable connection, all within the framework of a global digital society. In this context of rapid change, research and academic dissemination become crucial. There are now multinational and national media outlets that have built their first prototypes and experiences based on artificial intelligence technologies.

Others define AI as a collection of rules that, when applied to adequate input data, solve a problem in a limited number of basic steps (Berlanga de Jess, 2016). The European Commission, which in 2020 created the White Paper on Artificial Intelligence, a regulation to promote excellence and safeguard the privacy and fundamental rights of European citizens, defines artificial intelligence as a set of software and hardware systems designed by humans that understand their environment by capturing data, reasoning and creating knowledge, and processing this data to determine the best actions to take in order to achieve the specified goal. In brief, we are discussing the potential of robots to be able to reason independently.

The commercialization and use of AI technologies in journalism is gaining pace. The studied data indicates the necessity to continue research activities in order to create a map as a foundation for current and future learning. These evaluations distinguish between two distinct elements of AI's beneficial and harmful applications. On the one hand, there are positions such as those of Whittaker (2018), who argue that the growing weight of technology in the news industry increases the value of commercial decisions at the expense of journalistic issues; on the other hand, there are positions such as those of Ufarte et al. (2020), who indicate the positive impact of AI based on the

discourse of objectivity and the search for new opportunities. There are journalists who would define an "augmented journalist" as one who is able to analyse data and cover several subjects simultaneously with the aid of artificial intelligence. In this area, there is also a need to expand scientific knowledge in order to offer new communication ideas.

In this summary of the link between journalism and artificial intelligence, computer engineering serves as the sector's leading agent. Journalistic organizations do not completely comprehend the potential of these technological advancements. Similarly, it is recognized that their deployment is more viable in major media with a substantial financial commitment and through seeking partnerships with educational and technological groups. This leads one to believe that the implementation of AI in local or proximity media and small enterprises will be slower and more indirect. The ability to invest in people and financial resources is essential for medium- and short-term innovation processes.

The future seems to consist of a hybrid formula combining the human role of data generation and content verification with the automated capabilities of AI technologies. On this horizon, it is possible that certain media will be required to make a swift transition from their current information transmission paradigm to a more tailored one. Transparency in the information-generating processes becomes essential for the transmission of accurate, high-quality, and diverse information in light of the hazards posed by such a transformation.

The media are faced with the daunting task of combating all the misinformation created on both their own material and social networks. Various programmes and organizations are increasing their efforts in this regard to combat deception. Depending on how the journalistic profession uses artificial intelligence, it might become either a danger or an opportunity for advancement. This highlights the need to establish a continual discussion between engineers, researchers, communication academics, and journalists in order to achieve mutual understanding and the proper development of technology. In this situation, media literacy is essential for ensuring that people understand the genuine role that AI may play and to avoid the preconceptions that have developed around these technological breakthroughs and their influence on journalism and other aspects of our communities.

The main goal of all of these operations has been to figure out what will happen in the industry in the future and spot changes that are coming through development and training techniques. From a methodological standpoint, the original goal of this study was to dissect an abstract topic into distinct spheres of activity in which artificial intelligence may provide very particular tools and solutions that can assist and supplement the work of journalists in the new digital society. Aspects such as pre-alert systems for journalists, assistance with the preparation of non-news, automatic text writing systems, tools for the personalization of the offer and content, tools to aid in the detection of fake news, automatic metadata systems, sentiment analysis in social networks, and virtual presenters have been studied.

For each of these references, a common working methodology was designed and implemented, consisting of studying the scientific and journalistic foundations of these methods, understanding the technologies on which the solutions currently available on the market are based, becoming familiar with the companies that are commercializing these products, and analyzing the success stories and potential failures of audiovisual communication companies that have already adopted them.

Conclusions

The work visualizes a substantial number of successful examples, some of which were also related to global reference businesses in the audiovisual communication industry. In the media, AI usage is already a reality. The Los Angeles Times was the first to deploy artificial intelligence when, in March 2014, it published an article on an earthquake generated by Quakebot software. Since then, other U.S. publications, such as The Washington Post or Reuters, which also utilize sophisticated automated writing tools, have followed suit. Recently the Xinhua news agency in China was the first to utilize virtual news anchors, while The Guardian just published the first opinion article wholly authored by artificial intelligence. The UK Press Association, in conjunction with URBS Media and with financing from the Google Digital News Initiative, has created RADAR (Reporters and Data and Robots), the first automated local news agency in the world. The Finnish public broadcaster Yleisradio has developed the world's first virtual news assistant, Voitto, which offers intelligent news suggestions. Several media outlets in Spain, like El Pas and El Confidencial, have

previously used AI via the employment of bots. El Periódico de Catalunya and Diario Sport are also cooperating with the business Narrativa to generate robotic texts. RTVE, for its part, is striving to verify stories with its VerificaRTVE platform. Its innovation division, in partnership with the technology firm Monoceros Labs, which is responsible for the virtual assistant project's development, is also making progress in this area.

As was said in earlier sections, the audiovisual and journalism industries are making tools to find news using artificial intelligence, automatic generation of journalistic texts, personalization of content in audiovisual media, systems to fight misinformation, and the creation of virtual assistants and presenters in journalism.

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