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When Robots take over Journalism: systemic Considerations for Artificial Intelligence and Practical Realities in Nigerian Television Newsroom

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Abstract

In the digital and post-digital era, newsrooms worldwide, undergo transformation with the adoption and implementation of Artificial Intelligence (AI) tools. News production and dissemination take a machine forms, were algorithms or robots take over human journalists. This study aims at discussing the context of robot journalism, the consequences of the future of journalistic labour from the perspective of media professionals, the changing context especially within the newsroom in Nigeria that incorporated emotions and creativity. This study explore what robot journalism is and its technological effects on the production of journalism. It also attempts to ex-ray technical and ethical challenges emerging on the horizon of journalism especially within newsroom in Nigeria. Anchored on technological determinism theory, this survey research used five purposively selected television newsrooms in Nigeria with Key informant interview as data gathering instrument, the study found that robot newscast are yet to acquire human feeling of emotion, reactions, sympathy and response. Transformational creativity peculiar to human journalist in newsroom are underdeveloped in automated AI robotic journalism. The study concludes that robotic journalism has divided journalism into two camps, those that advocate and those that oppose. Because of the limitations of using robot journalism of AI here in Nigeria, AI could be responsible for replacing some journalistic tasks. Ethical and professional measures for using robot in the newsroom was recommended to guide the adoption and implementation of AI in newsroom.

Key words: Robots Journalism, Artificial Intelligence (AI) and Newsroom

Background to the Study

Globally, Artificial Intelligence (AI) is transforming all aspects of communication and journalism, as robot automated processes are being introduced into all facets of modern journalism: investigation, content production, and dissemination. Traditional human roles in all of these fields are being disrupted by automatic processes and robots. Media organizations are increasingly "employing" robot journalists to discover hidden trends and insights by analyzing huge data bases, and write narratives without human involvement. The great economic efficiency of these robots can be expected to have great appeals to the stakeholders of the media industries.

Notably, the adoption and implementation AI robots into traditional functions of the journalists, such as investigative journalism and storytelling, poses a serious threat to the professional future of human journalism and its primary mission (Pate, 2021). Although, Artificial Intelligence (AI) has certain limitations especially in developing countries of Sub-Saharan African, and these are creating new opportunities for human journalists to thrive and compete with their robot journalists of the Western origin. In fact, if understood by journalists, these limitations can empower rather than replace them and other human content creators.

The study focus on a discussion of AI, the new emerging field of robot journalism, and the context of robot journalism, the consequences of the future of journalistic labour from the perspective of media professionals, the preexistence of robot journalism, and its changing content especially within the newsroom in Nigeria.. The second other part of the paper offers empirical examples of AI coping with newsroom abnormalities in Nigerian Television industries the new journalism storytelling that empower human journalists through the use of new technologies, new applications, and AI tools.For example incorporating emotions and creativity into AI in the newsroom. The discussion and conclusions part of this study are relevantly tied to all automated and human content creators, that service both robot and professionals journalists in the media industry.

Will robotic journalists replace the labour of human-journalists? What are the consequences of having a robot journalist? How about the quality of newly written news articles? Will automated journalism assist journalists or not? How about managing emotions and creativity within the newsroom? Are some technologies forcing journalists to lose their dream job? The trend of automated articles is moving faster than ever before.

By telling a software the topic you want and you will have it written within seconds with less errors than human journalists. The advancements made in jobs regarding artificial intelligence will change the very nature of the work, itself. Some will be lost, some will increase, and others will be entirely new creations (Bareis, & Katzenbach, 2022 and

Aljazairi 2016). Technological developments have always assisted journalists in the newsroom by making journalistic labour more cost-effective and cheaper. By the same stroke, however, it reduces the staff.

Journalism according to Aljaizairi (2016) has always been shaped by technology. Even though technology is actually not the only factor that changes journalistic practices, however, the economic factors too affect journalism as well. Artificial Intelligence (AI), smart algorithms, and automatic processes are penetrating all aspects of human communications and human organizations, drastically changing media platforms as well as the relations between the media and their consumers.

The potential loss of human jobs as a result of such automation has become a major global challenge. According to leading forecasters, almost 50% of current human jobs are at risk (Rainie & Anderson, 2017]).

Artificial Intelligence in the broad sense refers to the use of machines to perform tasks typically requiring human intelligence, often by learning from experience, parsing natural language, recognizing patterns, and solving problems (Broussard, 2018), then ChatGPT and tools like it represent a specialized subset of AI called generative AI, so named because they involve the generation of new content—such as text, images, audio, video, or code—at unprecedented speed and scale. LLMs such as Claude 3.5 Sonnet from Anthropic or GPT-4 from OpenAI, for example, are advanced generative AI technologies that have been trained on huge volumes of text data that then allow users—such as people prompting ChatGPT—to generate human-like text on command. The developments in generative AI, in particular, have come to be seen as revolutionary trend, whether for good or ill, across many industries and domains. Many business executives talk about the technology's potential to transform hiring (Kelly, 2023) and customer service even as the same tools and capabilities have elicited fears of replacement among workers, with some estimates of 1 in 5 jobs (or more) being affected by some form of displacement in the near term (Hatzius et al., 2023).

AI is often defined as the science of making machines do things as if they were done by humans (Marko, Anne & Paivi, 2024). Recently, AI algorithms are being applied to perform all aspects of human journalistic activities: gathering data, analyzing the data to reveal new insights and trends, and composing narratives.

Methodology

Survey research method was adopted for this study and 15 human journalists were selected (three from each television stations in Nigeria). Selected television stations are: Nigerian Television Authority (NTA), TVC, Arise TV, Channels Tv and African Independent Television (AIT). Participants in the interview were selected on the basis that their years of practice is over a decade. Key informant interview questions guide was sent to them through their

whatsapp contacts. Qualitative data generated through key informant interview are grouped thematically to reflect whether AI can totally replaced human journalist and provided emotions and creativity in television newsroom in Nigeria.

Robotic Journalism

Through the practice of investigative journalism, traditional journalists aspire to reveal new facts and social trends. With their narrative talent, experience, values, creativity, and intuition, they convert these facts into journalistic stories for their audiences. The efficient new robot journalists may constitute strong competition for traditional journalists. The new field of robotic journalism is anchored on two pillars: The computer software that automatically extracts new knowledge from huge data silos, and algorithms that automatically convert these insights and knowledge into readable stories without human involvement.

Robotic journalism is viewed by some optimistic journalists as a tool that will release them from the necessity to conduct costly and, at times, dangerous investigations. Optimists hope that robot journalists will provide them with an automated draft for a story that human journalists will edit and enrich with their in-depth analysis, perspectives, and narrative talents. The more pessimistic journalists view new robot journalists as a genuine threat to their livelihood and style of working and living, especially in view of the anticipated pervasiveness of data collecting micro-sensors embedded everywhere — in people's clothing and in all the gadgets that surround mankind. Human journalists will be challenged to compete in this automated comprehensive data collection and writing ecosystem. These gloomy prophecies are not, however, inevitable. Due to several inherent limitations of AI algorithms, human journalists have some important advantages over robot journalists, but they must fully understand those limitations and adapt their mode of operation to take advantage of them.

Emotions and creativity in Television newsroom

Emotion suggest that there are six dominant emotional expressions (sadness, happiness, fear, anger, surprise, disgust) (Ekman, Friesen, O'Sullivan et al, 1987), which represent feelings people have to socially constructed events (Barrett, 2017). The "goodness" or "badness" of something, also known as affect (Slovic et al., 2004), is related to emotion, but it is an independent concept. For the purposes of this study, emotion means discrete emotions from Ekman, Barrett, and others, while affect is a broader understanding of the positive or negative attributes of an object that includes (but is not limited to) discrete emotions.

The scientific study of emotion and affect is over a century old (James, 1884), with keen interests in how they are constructed (Barrett, 2017), regulated (Gross, 1998), spread (Kramer etal., 2014), how they guide decision-making (Nabi, 2003; Peters et al., 2006), and also associate with a

range of social and psychological processes (Barrett et al., 2007; Cacioppo & Gardner,1999). In some cases, emotion and affect are studied as antecedents or consequences of key psychological events. For example, people study emotions to understand how they guide health choices (Peters et al., 2006) and how emotion can be the result of trauma or upheavals (Galea et al., 2020; Markowitz, 2022; Seraj et al., 2021). This study adopt a similar approach and attempt to understand emotion and affect as a consequence of technological innovation in television newsroom.

Empirical Studies on Automated Journalism (ROBOT Journalists)

In a study by Karlsen & Stavelin, (2013) titled Computational journalism in Norwegian newsrooms, the authours found that. computer assisted journalism, digital journalism, and robotic journalism describe different stages in the evolution in the integration of algorithms in journalism. According to Cox (2000), who offers a detailed history of the use of machines in journalism, the use of computers by journalists in newsrooms dates back to the early 1950s, coinciding with the early developments of the computer industry. Computer assisted journalism, also known as computer assisted reporting (CAR) (Karlsen and Stavelin, 2013), describes the early stage where computers were used mainly as a means to obtain research background while composing an article, pulling out statistics, and identifying similar stories that occurred in past years. Later, computers made it possible to retrieve information from digital libraries through the use of keywords in the search. Digital journalism mainly refers to the use of mining algorithms in search of hidden insights in huge data silos of structured and unstructured random data. An example of the use of digital journalism was published by Kira Radinsky, a data mining AI researcher, who applied data analytics tools to 150 years of articles from the NYT and other sources and discovered that in poverty areas if a year of drought is followed by a year of floods, there is a high probability of an eruption of a cholera epidemic. Her paper was published several months before the severe cholera epidemic in Cuba in 2012 that claimed many lives (Radinsky, 2012]).

Traditionally, the term “robots” was used in journalism to denote “robot agents” or “virtual assistants” that are able to “converse” with human journalists, mediating between them and the data silos. The term was coined by Lee & Kim (1998), who created the service “News On Demand” (NOD) in 1998, which used a robot to gather daily news information and deliver integrated newsfeeds to users. Subscribers to the service registered their information and received stories via email. Examples of these bots — essentially sophisticated AI algorithms — include *Wibbitz*, employed by *USA Today* to create short videos with narratives, and *News Tracer*, used by Reuters, whose algorithmic prediction tool helps

journalists gauge the integrity of a tweet.

One of the early uses of the term "robot journalism" was related to a robot editor developed by Google for its Google News Service. Google News, launched in 2002, is an aggregation service. Google developed an algorithm that "crawls" through thousands of news sites without human intervention and automatically selects the site's lead story and what is to be displayed on the home page, including the relevant links, based on a "source credibility" score. The product manager of the Google News Service boasted that "No team of human editors can compete with 24/7 robots" as cited in the work (Kurtz, 2002). Google is currently working on a different type of robot editor. Jigsaw, a technology incubator that belongs to Google's parent company Alphabet, developed a new algorithmicall (Mullin, 2017).

In 2007, a Japanese team led by Matsumoto of the Department of MechanoInformatics in the Graduate School of Information Science and Technology at the University of Tokyo engaged in the first and most ambitious endeavor to create a 3D robot journalist able to mingle in a crowd in a similar style to a human journalist. The algorithm developed by Matsumoto's group was programmed for "(1) autonomous exploration, (2) recording of news, and (3) generation of articles" (Matsumoto *et al.*, 2007). The Matsumoto robot was constructed on Segway wheels that provided mobility in a building or on a street.

The Beam is another mobile robot, developed by Suitable Technologies in Palo Alto, California. The Beam system is designed to enable the remote presence of a human journalist at an event, without anyone being physically there. The Beam facilitates multi-player mobile video conferences: Its motorized stand with a 17-inch flat screen can be remotely controlled by the user from a distance, allowing a person to have telepresence and conduct interviews in a manner similar to a video conference (Seth, David & Bean, 2024). The Beam system consists of a charging dock and a client software that connects the Beam to its operator over a network, allowing the Beam to move to various desired locations. The Beam enables interaction with other Beams that represent other users within the area.

Anybots, another telepresence robot manufacturer, assigns an avatar to represent the journalist in the remote space. "Short of being face-to-face, Anybots, Inc. offers the most interactive forms of communication available today by providing the user a personal remote avatar … With Anybots you can instantly be used in a distant environment experiencing the forefront of a new class of communication called mobile telepresence, allowing journalists to never miss an important event, meeting, or experience again". OhmniLabs is a robotics start-up whose telepresence mobile robot offers a unique tilting neck that allows Ohmni's operator to look up, down, and nod. With this single extra degree of freedom, Ohmni appears

more connected to the person remotely inhabiting it, and conversations immediately assume a natural, comfortable quality, as the humans conversing with Ohmni feel less restricted, not forced to constantly aim at the device or sit in one spot (Carter, 2013)..

A major change in the use of robotics in journalism occurred in 2010, when AI algorithms were developed in Northwestern University's computer science and communication labs with the objective of aiding human journalists in the very human occupation of writing stories. Narrative Science, a commercial company, grew out of the academic project in the labs. Narrative algorithms pioneers were careful to state that their objectives did not include totally replacing human journalists but merely to increase their efficiency. The first serious commercial attempt to convert facts into readable stories automatically was conducted at Northwestern University in a research project called the "Stats Monkey". The Stats Monkey algorithm was programmed to automatically generate baseball stories when fed game statistics " (Carter, 2013).

The Automated Insights algorithm can be programmed to write stories in any desired journalistic format: summaries, bullets, or long-form articles. Its real-time stories can be published on any scale in multiple formats — emails, mobile applications, and all types of social media.

The *Los Angeles Times* algorithms are programmed to ask relevant questions that an experienced journalist would ask in a given situation. For example, in a crime story such as a homicide, the algorithm will search the database for who committed the most serious offense by looking at the highest bail amount, or comb through the list of occupations for public service jobs and familiar names (Marshall, 2013).

Theoretical Framework

This study is situated within the framework of **Technological Determinsim theory**. The concept of Technological Determinism is believed to have been coined by Thorstein Veblen (1857–1929), an American social scientist. Veblen's contemporary, popular historian Charles A. Beard, provided this apt determinist image, Technology marches in seven-league boots from one ruthless, revolutionary conquest to another, changing old traditions and practices, flinging up new processes with terrifying rapidity. Technological Determinism is described as the ascription to machines (AI) of "powers" that they do not have.. Veblen, for instance, asserted that "the machine throws out anthropomorphic habits of thought." (Heilbroner, 1999) There is also the case of Karl Marx who expected that the construction of the railway in India would dissolve the caste system. The general idea, according to Robert Heilbroner, is that technology, by way of its machines, can cause historical change by changing the material conditions of human existence, the same way the

advent of AI is changing newsroom practices in television broadcasting.

Technological determinism (TD) according McLuhan cited in McLuhan, (1964) is the idea that technology has important effects on our lives. This idea figures prominently in the popular imagination and political rhetoric, for example in the idea that the Internet is revolutionizing economy and society. Therefore, AI algorithm is a determining force for social change in television newsroom in recent time.

Findings of the study

1st THEME: Automated journalism replacing human journalists in television newsroom in Nigeria.

Majority of the journalists interview agreed that AI is powerful but can not replace human journalist in television newsroom. They advance further that robots can handle camera functions, edit news, and prepared bulletins but allowing every aspects of the newsroom to be left to automated devices will result to dull and less inspiring forms of journalism. The fear of unemployment too was echoed

2nd TEHME: Can automated journalism of AI provides emotions and creativity in the newsroom

Contemporary, newsroom AI can not present post news emotions and human feelings as well as creativity that human journalists employed during news cast in television newsroom The sympathetic and excitement moods that accompany news stories from the news anchor and between one anchor to another that usually glued the audience to their Tv set can not be provided by AI. Thus, both generic and specialised AI in television newsroom only compliment the brain of human journalist.

Language patterns can unveil how human journalists make sense of disruptive technologies, offering insights about their perceptions and expectations of technology plus how those attitudes could impact audiences Technologically, Africa and Nigeria can be considered as laggard when it comes to adoption and implementation of new innovations, this could be reasons for the behind the responses above, But even in the industrialised Western society, AI has not successfully replaced human journalist and human brains when discussion about newsroom practices are mentioned. The study Marko, Anne & Päivi (2024) supported this views that automated algorithsm has transformed journalism making it possible for media houses to write edit and disseminate contents digitally. Marko, Anne & Päivi (2024), however, identified limits to what computer algorthism can handle which still make human journalists and human brains indisputable part of television newsroom.

Despite these efficiency expectations, journalists also have expressed ample concern about how emerging technologies might degrade their profession. News covering, writing and editing and disseminating can be handle by computer algorithsm of AI, however, broadcasting within the digital newsroom include certain

salient features which this study noted that data journalism is yet to in-provide into the existing newsroom AI.. Robtic display of pleasant and unpleasant emotions has not been seen in this era of automated journalism. Similarly human creativity too has not been noticed in the functional operation of the robot when put to use in the field of journalism.This study found that the absent of emotion and transformational creativity in automated journalism, created a vaccum which only human brain and human journalists can fill in the television newsroom.

One way to tap into the imagined futures of journalists that has yet to be explored, particularly at any large scale, is to study the emotions of journalists. Emotion, or the discrete feeling states that represent reactions towards events (Barrett, 2017), can serve as a valuable marker for signaling our hopes and desires as well as our fears and anxieties—thereby offering a lens into how people feel about the future in a way that helps to render that future actualizable. Studying emotions, as customary in disciplines like communication science (Nabi, 2010) and psychology (Cacioppo & Gardner, 1999), thus provides deeper insights into the motivational forces driving journalistic perspectives and the narratives they create, which have consequences on public perception and discourse about the future.

The adoption and implementation of automated journalism of AI give rise to competing narratives around their benefits and risks in society. The introduction of generative AI in the well-publicized form of automated journalism in late 2022 is no exception, with contrasting discourses of hope and fear surrounding its implications for business, creative industries, education, and other sectors.

The positive emotions and creativity in this study may also signal an initial inclination toward the hopeful imaginaries associated with artificial intelligence, both AI generally and generative AI particularly, which relates to how such technologies can be used for such labor-saving functions—making work more efficient, freeing journalists from manual tasks in reporting, and augmenting economic and social capacity broadly (Cave & Dihal,2019; Hautala & Heino, 2023). It must be acknowledged that as new and automated journalism of AI become fully integrated into television newsroom in Nigerian television, they may exacerbate existing unjust economic, social, and cultural conditions, leading to moral panics often associated with new AI in the newsroom.

This study accepted the recent history of disruptive technologies in journalism, where a succession of innovations—from the internet to social media to the smartphone—have largely undercut the traditional business models for journalism, leading to the layoffs of thousands of reporters and editors, and at the same time have amplified the “digital demands” on journalists, forcing those still in the profession to do

more and more with fewer and fewer resources.

Conclusion

This research underscores the pivotal role of journalists as interpreters of technological innovation and disruption, highlighting how journalist emotional reactions and creativity may shape public narratives around emerging technologies. The study contributes to understanding the intersection of journalism, emotion, creativity and AI, offering insights into the broader societal impact of generative AI tools. This study empirically documents journalists' responses to new technology immediately following their introduction, drawing parallels to reactions to past technologies deemed revolutionary. Journalists, as tastemakers and sense-makers for society, can mobilize their emotions, and the public display of these emotions and creativity can construct myths and narratives that influence societal understanding of technology's import and impact.

The study acknowledged that automated journalism of AI is only one of many technologies in which journalists might express their reactions to a critical incident such as this one. However, this study represents a springboard of the broader range of platforms and venues where journalists' emotions and creativity are displayed. Further, this study is limited to correlational and not causal claims in the television newsroom due to the nature of the field study that was conducted. Despite this, automated journalism has already replaced human journalism in the print media industry as the public discourse is well-established in scholarly work, and it remains a preferred platform for journalists to break news and share personal opinions. Future research could explore how this phenomenon unfolds across digital print media.

Recommendations

1. Adhering to rules guiding the use of AI will prevent job lost within the journalism profession

2. Creating robots that can produce emotions and creative feelings will endanger broadcast journalism just like the print media is undergoing technological challenges.

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