

Data journalism: Reporting through numbers and upholding the canons of journalism

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ABSTRACT

The study "Data Journalism: Reporting through Numbers and Upholding the Canons of Journalism" examines the fusion of storytelling and numerical analysis in journalism. It emphasizes the importance of accuracy, dataset verification, and open reporting practices in data journalism. The paper also highlights the revised notion of fairness in data journalism, which requires removing biases in data sources and algorithms. Fairness involves being aware of biases in data and working towards an equitable representation of opinions. Transparency is a growing commitment in data journalism, replacing objectivity with a more nuanced approach. Journalists become guides through the data world, admitting their limitations, uncertainties, and potential biases. The amalgamation of conventional objectivity and an open method of interpreting data amplifies the legitimacy of journalism pursuits. Accountability is crucial in the era of data journalism. Working together, journalists and data scientists must clearly define roles, own up to mistakes quickly, and be open about the sources and methods of data. A possible way for newsrooms to adapt to this data-driven environment is to combine conventional and modern methods. The challenges presented by data journalism present opportunities to restate fundamental values of truthfulness, impartiality, objectivity, and responsibility, leading to a more perceptive, captivating, and morally sound kind of journalism in the digital era.

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1. INTRODUCTION

Data journalism is a revolutionary method to news reporting that exists at the nexus of technology and journalism. Journalism has always adhered to a set of values and procedures referred to as the "canon of journalism." Ethical and successful journalism is built upon the canon. These ideas are being reinterpreted and broadened in the data journalism era to take into account the changing nature of information distribution. Data journalism involves the systematic collection, analysis, and presentation of data to reveal compelling narratives and insights. It goes beyond traditional reporting methods, leveraging advanced data analysis techniques and data visualization tools to enhance storytelling and engage audiences. This approach enables journalists to provide readers with a more comprehensive understanding of critical issues and promotes data-driven decision-making (Denham, 2023). In the digital age, information is abundant, and data is the currency that fuels the media landscape. The emergence of data journalism has revolutionised the methods by which journalists obtain, examine, and display information. This has enabled them to unearth untold tales, substantiate assertions, and offer context for intricate matters. Data journalism has transformed investigative reporting and improved the breadth and impact of journalistic storytelling by utilising the power of numbers and data. Globally, data journalism has transformed journalism practices. Investigative journalism has benefited from this type of journalism, which enhances news production and distribution. Digital journalism is the way of the future, and data journalism techniques are quickly becoming standard practice in the field. In a continent plagued by widespread corruption (Mutsvairo, 2019), dwindling public confidence in the media (Chibuwe et al., 2022), and an increasing demand for media that serves the public interest (Chibuwe et al., 2022), data journalism in Africa has the potential to revitalise the goal and essence of journalism. For the news consumer, a large portion of data journalism practice is invisible. From filtering through large amounts of data to find interesting leads, to industrial-scale information gathering through techniques such as "scraping"; from the storage and leaking of large amounts of data using digital storage media, to having access to data about consumers of news and information services, new ethical questions are raised at each stage (Bradshaw, 2018).

More visible data journalism practices include production techniques like process automation (which results in a loss of editorial control), global publication, networked and interdisciplinary modes of collaboration, a greater emphasis on visual communication, and novel forms of user-driven storytelling that incorporate personalisation and/or interactivity. Novel procedures give rise to fresh moral conundrums. Consider the necessity of striking a balance between proactive values, such as the pursuit of truth and accuracy, and constraint norms, such as source protection, privacy, and accountability. It is also significant to remember that the information

environment has contributed to the growing popularity of these tactics by raising new ethical concerns about the journalist's role as gatekeepers in light of the widespread availability of information and the resulting claims to "truth." While there are numerous ways to characterise data journalism, including as a procedure, a product, or a collection of abilities (Bradshaw 2018), ethical research often focuses on practice. News media is always evolving due to the big data era. One of the largest changes is the move to algorithmic and data-driven news generating. These days, journalism practice is improved by data generated by technological programmes such as digital metrics and algorithms (Mutsvairo et al., 2020). However, little is known about how data journalism and cooperation interact with news organisations' economic models from an infrastructural perspective—that is, significant activities and resources as well as partner networks (Osterwalder and Pigneur 2010).

2. EXPLORING DATA JOURNALISM IN JOURNALISM PRACTICES

The process of gathering, evaluating, and presenting data in order to find insights and stories that might otherwise go unreported is known as "data journalism" (Appelgren, Lindén & van Dalen, 2019). It is a style of journalism that is increasingly being employed by news organisations around the world, as it allows journalists to deliver a more thorough and evidence-based approach to reporting (de-Lima-Santos & Mesquita, 2021). Utilising data to tell stories is the fundamental component of data journalism. This entails gathering information from a range of sources, such as financial reports, social media, and official documents (Wang & Li, 2019). Journalists can use data analysis to find trends, patterns, and other insights after it has been gathered. One of the primary benefits of data journalism is that it allows journalists to deliver a more nuanced and detailed approach to reporting (Kalatzi et al, 2019; Habes et al, 2021; Habes et al, 2023). Journalists can present a more complete picture of complicated situations by utilising data to support their reporting (Veglis, 2021). For instance, while covering a specific policy topic, a journalist might utilise data to add context and subtlety to the piece by illustrating how the policy has changed over time and contrasting it with similar policies in other nations (Ziani et al., 2017). Furthermore, Tahat et al. (2022) state that data journalism can be very helpful in exposing corruption and other types of wrongdoing. Journalists can spot trends and anomalies that might otherwise go overlooked by examining financial records, official statistics, and other sources. This could eventually reinforce the rule of law by bringing wrongdoing to light and holding people in positions of authority responsible (Habes et al., 2023). Additionally, data journalism may need a lot of time. Collecting and analysing data can take a large amount of time, and it can be difficult to combine this with the needs of daily news reporting (Tahat et al, 2022; Tahat et al, 2020). Prioritising data journalism can be difficult for news organisations because of this, particularly

if they are under pressure to consistently provide breaking news stories (Ziani et al., 2017). Notwithstanding these obstacles, data journalism is growing in significance within the field of journalism (Al-Quran et al., 2022). Journalists are discovering new methods to leverage the growing amount of data at their disposal to unearth significant stories and insights (Zamith, 2019). In many cases, data journalism is being utilised in combination with more traditional kinds of reporting, in order to create a more thorough and nuanced approach to reporting (Lowrey, Broussard & Sherrill, 2019). In the end, data journalism has the power to revolutionise journalistic practices by offering a more sophisticated and evidence-based style of reporting (Krøvel, 2021). By using data to find stories and insights, journalists may help to hold those in power accountable, promote openness and accountability, and enable a more informed public discourse (Huda & Azad, 2015). Because of this, data journalism is probably going to stay a significant component of journalism practices for some time to come (Abdoun, 2020).

3. DATA JOURNALISM AND THE CANONS OF JOURNALISM

Journalism and data interact in a variety of ways. Data communication is one of the most crucial methods, and it's usually done with charts and visualisations. Newspapers were among the first medium to bring infographics to the public's notice, with well-known examples like USA Today's Snapshots, which often featured ornate and uncomplicated images (Otten, Cheng & Drewnowski, 2015). The core of ethical journalism continues to be the canon of journalism, which includes values like truthfulness, impartiality, fairness, and accountability. These ideas are not abandoned by data journalism; rather, they are incorporated into a more complex framework. Fairness involves interpreting data responsibly; objectivity necessitates openness in data sourcing and analysis techniques; and accuracy becomes entwined with statistical validity (Tong and Zuo 2021). Borges-Rey (2016, 2020) builds an epistemological framework of data journalism in Scotland, Wales and Northern Ireland utilising three conceptual lenses – materiality, performativity and reflexivity. He contends that the performativity of data journalists and the materiality of data interact constantly, mediating the journalists' reflexivity. In other words, 'data as a material entity intermediates the professional activity and attitudes of data journalists' (2016: 834). These ideas offer a framework for comprehending the ways in which newsroom infrastructures, media ecosystems, data politics, and access to data affect data journalism in Africa. According to Tuin and Dolphijn (2012), the origin of the data is what determines its materiality. According to Borges-Rey, information frequently comes via internal collations run by news firms, FOI requests, open data policies, private parties, and/or disclosures from whistleblowers. For instance, Borges-Rey (2020) points out that the Freedom of Information Act (FOIA) in Scotland, Northern Ireland, and Wales basically permeates the material aspect of the statistics that data journalists use as proof. Because of this dependence on FOIA, the public bodies' bureaucratic systems can potentially restrict data access (Borges-Rey, 2020). Data can occasionally only be retrieved after protracted, hard negotiations with the organisation that owns the data (Borges-Rey, 2020). In certain situations, when data is ultimately received, it is in a format that is non-readable (Borges-Rey, 2020). The performativity of journalists in their use of data journalism is hampered by all these obstacles. The way that data journalism performativity and data materiality interact influences data journalists' reflexivity.

African journalists that covered these issues for the International Consortium of Investigative Journalists were involved in the Panama Papers and the Luanda Leaks. Investigating the most important stories in the world, this nonprofit newsroom in the United States collaborates with a local and international network of reporters and other outlets. Large-scale, data-driven investigative articles cannot be produced by African journalists without these ties with the Global North. Journalists encounter two fundamental obstacles. First, they are unable to work together on any leaked materials they may receive because of the political economy issues previously mentioned. Second, they lack the tools necessary to transform massive amounts of unstructured data into data that can be searched. Data science methods are not available to many newsrooms in Africa. In the case of the Panama Papers, for example, the total data exposed was roughly 2.6 Terabytes and included 11.5 million compromised documents. Journalist Lekan Odiyepo of Nigeria noted that without access to sophisticated digital forensics, it would be practically impossible to study this volume of data. By changing how the public consumes information, the technique assisted the news industry in achieving new heights in digital news production. Given that the public largely trusts evidence-based reporting, the method may help restore readers' faith (Heravi and Harrower 2015). In the post-truth era, fact-based journalism and superb storytelling abilities supported by data are more in demand than ever. Although there is some doubt regarding the impartiality that data can provide to journalism (Tong and Zuo 2021), fact-based journalism enables the production of high-caliber media that captivates readers and upholds a robust democracy. However, it is vital to explain best practices that transcend organisational distinctions and calibrate the

execution of journalistic data-driven projects beyond award-winning, cross-border projects (Heft, Alfter, and Pfetsch 2019; Konow-Lund 2019; Alfter 2016).

Huda and Azad (2015) claim that data journalism brings with it new difficulties and moral dilemmas. Crucial concerns include guaranteeing data accuracy, safeguarding privacy, and preventing misunderstandings. Journalists have to balance the need to tell compelling stories with the responsibility to report facts accurately. In the era of data, it is crucial to preserve openness regarding data sources, methods, and any biases in order to preserve the journalism canon.

Accuracy: In the context of data journalism, accuracy is crucial since it forms the cornerstone of credible reporting (Habes et.al, 2023). While factual accuracy is highly valued in traditional journalism, data journalism requires accuracy in both language and statistical depiction. According to Habes et al. (2023), journalists are required to thoroughly confirm the dependability of datasets, examine methodology, and guarantee that their analyses precisely represent the realities they aim to portray. The difficulty is striking a balance between the need to preserve accurate, factual data representation and the demand for compelling stories. As a result, accuracy in data journalism involves a comprehensive dedication to the veracity of both numerical and narrative data (Habes et al., 2023).

Fairness: according to Kalatzi et al. (2018), fairness in data journalism includes equitable data portrayal in addition to offering balanced points of view. Data sources may be biased by nature, and interpreting them without taking these biases into account or addressing them can result in the spread of false information. In order to ensure fairness, datasets must be carefully examined for any underlying biases, demographic subtleties must be taken into account, and existing societal biases must not be amplified. To ensure that their work promotes a fair knowledge of the issues at hand, journalists need to be aware of the ethical implications of the data they choose and analyse (Kalatzi et al., 2018).

Objectivity: A fundamental component of traditional journalism, objectivity takes on a complex new meaning in the field of data journalism (Tong et al., 2021). While complete neutrality might be unachievable, openness is something that data journalists aim for. This entails revealing the methodology, data sources, and any possible conflicts of interest in the analysis. In data journalism, objectivity is stating the obvious, offering competing theories, and letting readers make their own judgements. To keep the public's trust, it is imperative to strike a balance between accurate reporting and acknowledging the inherent subjectivity in data interpretation (Tong et al., 2021).

Accountability: According to Borges-Rey (2020), accountability is a fundamental concept that applies to both traditional and data journalism. In the era of data, accountability includes treating data responsibly in addition to fact-checking. Journalists need to take responsibility for the results of their analysis, own any mistakes quickly, and be open and honest about their working methods. Since data journalism frequently entails cooperation between data scientists and journalists, clearly defining roles becomes crucial to preventing data misuse or misinterpretation. Holding oneself accountable for the ethical consequences of data-driven stories strengthens the credibility of both the journalist and the news organisation (Borges-Rey, 2020).

Truthfulness: Porlezza and Salvo (2020) opined that truthfulness is a cornerstone of journalism, particularly evident in the realm of data journalism. The accuracy of data collection is paramount, requiring journalists to meticulously source reliable data and transparently communicate any limitations. Verification processes, including fact-checking and cross-referencing, ensure the fidelity of the information presented. Contextual understanding is crucial, demanding a nuanced grasp of the data's background and relevant social factors. Careful consideration of visualizations is vital to prevent misleading representations of data. Transparency in methodology, including detailing collection and analysis methods, fosters trust with the audience (Cheruiyot, 2019). Also, cautious interpretation guards against overgeneralizations, ensuring that conclusions drawn align with the evidence presented. According to Otmar (2023), in the synthesis of data and journalistic principles, truthfulness stands as a guiding canon, ensuring the integrity and credibility of information in the complex landscape of data journalism.

To put it briefly, data journalism requires a recalibration of classic journalistic ideals to meet the needs of a data-driven landscape. These values include accuracy, fairness, objectivity, and accountability. Adhering to these principles guarantees that data journalism maintains the integrity and ethical standards necessary for a reliable press in the digital age, while also improving storytelling.

4. CONCLUSION

The revolutionary shift brought about by data journalism presents a unique chance to uphold the fundamental values of truthfulness, impartiality,

accountability, and justice within the framework of journalism while also challenging established journalistic practices. When data is incorporated into journalistic workflows, there is an increased need for accuracy and fact-checking procedures to guarantee that stories are accurate. This dedication becomes a pillar as a required reaction to the challenges of managing enormous datasets as well as a journalistic ethics.

In data journalism, fairness requires a redefinition that goes beyond the conventional goal of balance to actively confront and correct biases that are present in data sources, algorithms, and analytical models. The transition towards a fairer portrayal of varied viewpoints guarantees that narratives based on data contribute to a thorough comprehension of intricate matters.

In data journalism, objectivity develops into a dedication to transparency. Journalists take on the role of guides in the data world, freely expressing their limitations, uncertainties, and possible biases. Contextualising information, offering competing explanations, and equipping viewers with the means to investigate the data for themselves all contribute to an impartiality that promotes knowledgeable citizens. Journalistic endeavours gain credibility when they combine traditional objectivity with an open method of interpreting data.

Additionally, data journalism emphasises the significance of accountability for both the appropriate handling of data and the accuracy of reporting. As data scientists and journalists work together more frequently in newsrooms, it's important to establish clear roles and accountability. A culture of accountability is bolstered by swiftly owning up to mistakes, correcting misinformation, and maintaining transparency regarding data sources and procedures.

A possible way ahead for newsrooms as they adjust to the data journalism era is to combine classic and digital methods. News organisations can use the opportunity presented by data journalism to reaffirm their dedication to accuracy, fairness, objectivity, and accountability. This synthesis produces news that is more perceptive and captivating while fostering an ethical basis that is essential to journalism's legitimacy and dependability in the digital age. By embracing the revolutionary potential of data journalism, newsrooms can become information aggregators that also educate and enlighten audiences, giving them a better understanding of the world in which they live.

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