EDITORIAL AUTOMATION: THE PURSUIT OF JOURNALISTIC MEANING IN AUTOMATED TOOLS AND AUTOMATED DECISION-MAKING SYSTEMS IN AUSTRALIAN NEWSROOMS

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Introduction

Journalists, editors, developers, and other news workers create and use automated tools to support their work. Commercial software, open-source programs and other ad hoc algorithmic designs shape contemporary news production and distribution. The possibilities of Artificial Intelligence (AI) and data-driven technological tools are the core of the news assembly line (Marconi, 2020). Automated news writing, for example, has been one of the focus areas of development for relevant actors in the industry, such as news wire services, public service media and big global companies. Natural Language Generation (NLG) algorithms have upscale formulaic and standardised text structures. The most popular computer-generated genres are sports, finance earnings or earthquake alerts. Another area where algorithms have a central role is the content supply to loyal and casual audiences whereby computational algorithms by publishers' content management systems and apps curate and suggest personalised content to readers based on metrics and data from their reading habits and topical preferences (Bodó, 2019; Harambam et al., 2018; Kunert & Thurman, 2019).

The panorama of editorial automation is moving quickly in many organisations. However, the technological transition towards AI and machine and deep learning as supporting processes go at their own pace in other contexts beyond the US and Europe and cast doubts about their implementation. This abstract presents the preliminary findings of an exploratory study about using automated tools and automated decision-making (ADM) systems in Australian newsrooms. The study examines the implementation of these computational tools, their journalistic uses, practices, and professionals' perceptions of emerging issues about automation in Australian traditional and emerging outlets. It

investigates the limits of undertaking these technologies. Recent studies document that (ADMS) is changing their workflows and creating new models of producing news that break with previous forms of labour organisation. A variety of perspectives are proposed to explain this transition: hybrid journalism (Diakopoulos, 2019); structured journalism (Jones & Jones, 2019); algorithmic journalism (Dörr, 2015), robot journalism (Latar, 2018); and iterative journalism (Marconi, 2020) to mention a few. Editorial ADMS are understood as computational processes used in journalistic work that combine significant data inputs, programming languages, statistical modelling, and machine training algorithms with supporting human judgments in daily journalism (Kluttz et al., 2020; Marconi, 2020; Thurman et al., 2019; Diakopoulos, 2019). News organisations have employed ADMS based on their needs and understanding of journalistic ideals, adapting these tools to their contexts.

Methods

I conducted 17 semi-structured interviews with news practitioners of traditional and emergent organisations to investigate the developments in the use of automated tools and the current obstacles to their design in news work in Australia. I focused on recruiting participants working in different areas, directly engaging with editorial work and other news workers collaborating in designing tools that support journalistic work and whose knowledge is based on computational and programming sciences. For news workers, I selected participants based on a purposeful sampling method (Palinkas et al., 2015), choosing practitioners who were most likely to be working daily with automated technologies or in areas more disposed to be automated in the immediate future based on the existent empirical research (i.e., sports, finance, weather, and breaking news).

Preliminary results

There are three emerging findings in this study. Firstly, the COVID-19 pandemic has caused increased interest and experimentation with visual automation tools and semi-automated writing in several organisations. Two of them approached the pandemic's reporting by blending processes that used written iterative templates and scraped COVID-19 statistics to generate structured data flows that filled daily reports and infographics on the topic. Although automated data visualisation was vital in past critical events (such as bushfires), data visualisation was decentralised in some newsrooms, and journalists could access pre-set graphs and visuals during the pandemic. These ways of working with automated tools are comparable to other international documented cases (Danzon-Chambaud, 2021). In the short run, there is no great enthusiasm for NLG uses, but some organisations are planning and discussing its implementation. Practitioners interviewed reported that this is not a journalistic priority, and outlets face different challenges in automating news.

Second, as journalists worked increasingly with data during the pandemic (mainly using audience metrics and official statistics), they created new data routines and became aware of the need for specific data skills to follow the new workflows. However, there are contrasting views regarding the perceived impacts of automation and data-driven technologies in their profession. Whilst some participants with skills in coding, forensic

tools and data journalism emphasised that human journalism "is not something that can be replaced soon", other participants consider that AI technology might have a significant impact on news labour as automation speed up different processes, causing similar effects as those driven by the digitalisation of news in recent decades. In automated news writing, knowledgeable news workers argue that AI and Machine Learning algorithms demonstrate that computers can create realistic texts; however, these technologies fail to replace journalists' fundamental skills, such as prioritising and creating understandable news narratives.

Lastly, there are differences in the best approach to industrialising these tools, mainly developing them in-house or acquiring the technologies from third-party companies. Newsrooms tend to generally depend on third-party services to outsource automation processes, mainly commercial software and app services to use these technologies. Examples of that reliance are the popularity of commercial transcript apps that are used widely and have been perceived as "game changers". Another instance is how recommendation strategies are designed based on a whole range of analytics software and platform company services (such as Google Analytics) that capture audience signals through algorithms to make decisions on the distribution of topics and personalised content.

In conclusion, there is no singular approach to configuring cultures of editorial automation in Australian newsrooms, which greatly depends on their publishing systems and organisational priorities. When creating their automated process, journalists' most relevant problem is adding journalistic value to any automated endeavour, delineated by the outlets' public and commercial orientations. Discussion to best implement advanced editorial decision-making systems is happening in many Australian news organisations participating in the study. To adopt automatic writing, the fact that English is the dominant language to train automated tools gives Australian news outlets a comparative advantage. However, the process has limitations, such as the potential market share of Australian news consumers for these genres, the investment needed in the development of prototypes and their industrialisation, the stable data flows to work with structured data and the distinctive features of Content Management Systems (CMS) among the main ones.

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