Six uses of analytics : digital editors' perceptions of audience analytics in the newsroom

SIX USES OF ANALYTICS
Digital Editors' Perceptions of Audience Analytics in the Newsroom

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Abstract

This article investigates how digital news editors perceive the uses and implications of audience analytics in contemporary digital newsrooms. Based on 21 interviews with digital news editors at 11 Belgian news organisations, including 7 national newspapers, one news magazine, one public and one commercial broadcaster, and one digital-born news medium, the study shows how audience analytics have become normalised in these digital newsrooms and how, in the perception of those who use them, tools for capturing audience behaviour data inform and shape their daily work practices and organisational strategies. Combining insights from literature with empirical findings, the study distinguishes six uses of audience analytics: Not only do analytics inform editorial decisions on (1) story placement, (2) story packaging, (3) story planning and (4) story imitation, but they can also serve as instruments for (5) performance evaluation and (6) audience conception. Overall, the digital news editors are convinced that audience analytics support rather than harm their journalism.

Keywords: audience analytics tools, digital media, web metrics, social media, computational journalism, newsroom management, innovations

Journalists' understanding of the audience has become increasingly more refined and data-driven throughout the twentieth and twenty-first centuries. In today's digital news environment, media organisations can now constantly monitor news users' behaviour on their websites and social media platforms (Napoli 2011; Hanusch 2017). Newsrooms worldwide have been implementing audience analytics, tools that provide their journalists with real-time metrics and quantified knowledge about the online behaviours and preferences of their website's visitors, based on observational data about how users land on their pages, how much time they spend reading articles, which headlines they click on, which topics they are interested in, and so on (Lee and Tandoc 2017).

While the increased use of audience analytics in journalism has been mapped in several studies across different countries (Bright and Nicholls 2014; Cherubini and Nielsen 2016), research on how these tools affect the daily work organisation and strategies inside the newsroom is still rather limited. First studies in this area have mainly focused on how audience analytics influence the provision and positioning of news stories on media websites (Lee, Lewis and Powers 2012; Tandoc 2014; Vu 2014) and how the quantification of news user behaviour impacts on journalists' relationship with and perceptions about their public (Anderson 2011). Later studies also focused on the practical, organisational and ethical implications of audience analytics for news work (Tandoc and Jenner 2015, 2016; Tandoc and Thomas 2015; Hanusch 2017) and on the impact of analytics on journalists' professional role perceptions (Ferrer-Conill and Tandoc 2018). Most of these studies contain a warning for potential "dumbing down" effects of audience analytics.

There is indeed the risk of a shift from an editorial to an algorithmic logic in the news-making process, which may intensify tendencies towards news commodification and the "marketisation" of journalism (Tandoc and Thomas 2015; Tandoc and Vos 2016). However, as Zamith (2018) concludes from his literature review, both scholars and practitioners seem to replace, or complement, their initial scepticism with a more pragmatic view that also recognises "more nuanced effects and prosocial possibilities". Yet, Zamith also notes that several questions are still unresolved, such as the question of how audience analytics are modifying journalists' professional routines and norms or how the "quantitative turn" in journalism is affecting the "allocation of capital within newsrooms" (2018, 430; see also Bunce 2017).

The interview study at hand deals with these latter questions. Whereas most research has focussed on the impact of audience metrics on journalists' news selection practices, we also look at how analytics, as they are becoming part of the newsroom infrastructure, inform the broader editorial and strategic decision-making processes inside the newsroom. We want to investigate to what extent and how analytics have been integrated within the organisational and professional context of newsrooms in Belgium, and how this has led to new or altered work practices and processes both at the daily and more strategic level. The study relies on interviews with digital news editors, which means that the results reflect the uses and effects of analytics in news work as perceived by the practitioners themselves. Below, we first discuss the theoretical background of our study before specifying the research questions and presenting our empirical study.

Literature review

Newsroom Innovation

As with all innovations in the newsroom, the adoption of audience analytics is both shaping and being shaped by the organisational context in which they are implemented. Literature on newsroom innovation shows that technology adoption is a process that is socially negotiated through the practices and strategies of both newsroom managers and staff. The integration of technology in the organisational context of the newsroom depends on many factors, such as the level of newsroom leadership over the availability and allocation of human and financial resources, or journalists' professional attitudes towards both the innovation and their audience (Boczkowski 2004; Paulussen 2016). Hence, to understand the adoption of audience analytics in contemporary newsrooms, it is relevant to take into account the organisational and professional factors that enable and constrain the integration of these tools in the daily news work practices.

While audience analytics are a recent technological innovation, it is important not to overstress their novelty and disregard the historical antecedents (Mitchelstein and Boczkowski 2009). Although web analytics seem to have quickly become "normalised" as a tool to monitor and incorporate audience feedback, media organisations have a fairly long tradition in audience measuring (Anderson 2011; Napoli 2011). For decades, newspapers have been gaining audience feedback from letters-to-the-editor or phone calls from readers and later on from readership surveys or circulation figures, while broadcast media carefully monitor their audience ratings. The emergence of web analytics can thus be regarded as a next phase in a longer evolution from rather intuitive imaginations of the audience to increased quantitative measurements of audience behaviours (Carlson 2018; Zamith 2018). In this sense, the implementation of web and social media analytics may be considered by professionals as a rather "natural" technological extension of tools and practices that have already been in place for a longer time. In other words, we can

expect that the embedding of web and social media analytics in the newsroom has been, and still is, met with little resistance since the new tools fit well into the existing routines, norms and work processes.

At the same time, it is relevant to note that newsroom managers also tend to use new technologies as a means to push new strategies through in the organisation. Lee and Tandoc (2017) point out, for instance, that newsroom managers use audience metrics to evaluate their employees and move them in a favoured direction. Bunce (2017) shows how audience analytics fit within a broader arsenal of techniques used by newsroom managers "to more efficiently monitor and discipline their journalists" and "to try to change the reporting priorities of their journalists". Thus, audience analytics are not only used in newsrooms to monitor users' engagement with online news stories, but they can also serve as tools for managers to reduce journalists' resistance towards certain content strategies. By using audience metrics for performance evaluation, managers can use these tools to discipline their team in accordance with the efficiency and profit motives of the news organisation.

Measurable Journalism

Belair-Gagnon and Holton (2018) draw attention on the fact that the integration of audience analytics in newsrooms does not just depend on internal dynamics but is also influenced by external pressures from web analytics companies. Having little experience in journalism, these companies introduce and promote profit-making orientations in the newsroom that challenge and influence the professional values and norms of news production. Authors have been discussing the commodification of news and commercial pressures on journalism for several decades (McManus 1994; McChesney 2004), but more recently, scholars have expressed concerns about how audience analytics and metrics may further accelerate and normalise these commercial orientations to the news, in which the public-oriented editorial logic of journalism is being subdued by the profit-oriented quantified and algorithmic logic of technology and media companies (Poell and van Dijck 2014; Vu 2014). The quantification of audience behaviour does indeed influence editorial decisions on the placement of news stories on the website, leading to what Tandoc (2014) sees as a process of selection and "de-selection". According to Tandoc and Jenner (2016), web metrics are not only increasingly used to determine the placement and packaging of news stories on the website, but also to inform editorial decisions on the planning of future coverage on certain topics or stories. The latter is confirmed by the study by Welbers et al. (2016) who found that audience clicks on newspaper websites affect the news selection choices for the print edition.

Furthermore, audience metrics may also lead journalists to mimic other media and copy stories that do well on other platforms for publication on their own channels. As theorised by Boczkowski (2010), the intensification of monitoring practices in news work, combined with journalists' inclination to imitate their competitors, may ultimately lead to increased news homogenisation. Instead of using the knowledge gained from the constant monitoring of content and audience behaviour to differentiate themselves from their competitors, journalists tend to imitate each other by selecting the same popular stories (Boczkowski and de Santos 2007). Hence, audience analytics may also lead to more story imitation.

Despite concerns about the potential dumbing-down effects of audience analytics on news selection, web analytics also create new opportunities for journalism. Both scholars and practitioners are increasingly aware that audience analytics might help journalists to restore their relationship with their audience (Zamith 2018). According to Hanusch (2017), knowledge gained

from analytics allows journalists to improve the multi-channel distribution of news. He found that editors are generally positive about the ways in which analytics provide newsrooms with detailed real-time metrics that allow them to develop new practices of "day- and platform-parting", in which they can "target specific audiences depending on the time of day they access news or the type of platform they use" (Hanusch 2017, 1583). Practitioners believe that such data-informed practices may narrow the "news gap" (Boczkowski and Mitchelstein 2013), i.e., the divergence between what journalists consider newsworthy and what the audience deems noteworthy (see also Lee and Chyi 2013). In order to better align their news supply to user demands, news organisations need to improve their knowledge about their users' behaviour and audience engagement, and, in combination with new content and distribution strategies, analytics might offer one way to achieve this goal.

Nevertheless, an international study by Cherubini and Nielsen (2016) suggests that news organisations still have a lot to learn about audience engagement. The report shows that web analytics are primarily used for short-term optimisation of the websites, such as the placement and packaging of stories on the homepage or the planning of follow-up stories for the online or print edition. Cherubini and Nielsen (2016) found less examples in which web analytics are used to lay the foundations for longer term editorial and organisational priorities like developing loyal and engaged audiences or more effective journalism. As said above, the underlying optimistic belief is that audience analytics might help newsrooms to improve their knowledge about audience engagement and public opinion formation. Ferrer-Conill and Tandoc (2018) found that this belief is already present among online journalists, who are increasingly taking up audience-oriented roles as they are encouraged by their superiors and peers to take into account audience metrics in their editorial decisions. This leads them to develop new practices in which quantitative and qualitative assessments of audience trends inform editorial decisions "on how to better match journalistic content to what the audience wants and expects" (Ferrer-Conill and Tandoc 2018, 449). Put differently, online journalists' knowledge and estimations of what the audience wants, expects and needs, seem to be increasingly based on their interpretations (and misinterpretations) of audience metrics. Further research is needed on the accuracy of such quantified measurements of audience engagement and public interest. Yet, it can also be assumed that the knowledge gained from audience analytics may have an influence on how journalists imagine or conceive their audience, leading them to replace the "imagined audience" by a "quantified audience" (Bunce 2015; Tandoc and Thomas 2015).

In sum, as noted by Carlson (2018, 413), current literature on "measurable journalism" sketches two possible scenarios: The first scenario emphasises how analytics "elevate economic imperatives above all else by enabling minute tinkering aimed at extracting larger audience numbers". In the other scenario, analytics are seen as an instrument for journalists to augment their judgments, improve their selection choices and multi-channel distribution strategies, and build better connections with their audience. Both scenarios are not mutually exclusive, though. Rather do they highlight the tensions that exist and have always existed between commercial and journalistic – and between quantified and creative – audience orientations in the newsroom (Anderson 2011; Nelson and Tandoc 2018). Therefore, instead of choosing sides, this study aims to investigate how digital news editors try to navigate and regulate these tensions when using audience analytics in the newsroom.

By combining insights from literature on newsroom innovation on the one hand and recent studies on measurable journalism on the other hand, we want to investigate the adoption and uses of audience analytics and their perceived effects on the daily and strategic operations and decision-

making inside the newsroom. The literature on newsroom innovation reminds us that new tools are rarely used to their fullest potential but shaped and confined by the social context of the newsroom. In other words, we assume that analytics do not generate any direct or linear editorial effects since their implementation in the newsroom is, like any other innovation, moderated by the routines, norms and attitudes of those who use them (Boczkowski 2004). To better understand how analytics blend and collide with current practices and norms, it is useful to look at the perceptions of the practitioners on the adoption of and resistance to analytics in the newsroom. Having delineated different practices in our synthesis of the literature on measurable journalism, the study further attempts to map and unravel the purposes for which analytics are being used in newsrooms and digital news editors' assessment of these uses. Hence, this study proposes two research questions:

> *RQ1: What are the professional and organisational factors that influence the adoption and acceptance of audience analytics within the newsroom?*

> *RQ2: How do digital news editors assess the different purposes for which audience analytics are used in the newsroom?*

Method

On an empirical, descriptive level, this study is the first to map the adoption of audience analytics in Belgian newsrooms. More fundamentally, however, the study tries to make a contribution to current journalism scholarship by examining digital news editors' perceptions and evaluations of the uses and effects of audience analytics within the newsroom. Considering that the use of analytics is not only affecting, but also affected by the people who use them, we opted for semi-structured, in-depth interviews with digital news editors. Interviews enable to get a nuanced insight and understanding of the negotiation process that guides the ways in which analytics become centralised and normalised in daily news work.

We conducted in-depth interviews with digital news editors. Aiming for diversity as well as comparability in our sample, we interviewed editors of the 11 most-read online news outlets in Flanders, the Dutch-speaking part of Belgium. The ranking was based on website traffic statistics of the Centre for Information on Media (CIM.be), consulted in January 2018. The list included the websites of seven national newspapers, one news magazine, one public and one commercial broadcaster, and one digital-born news medium. With the exception of the latter stand-alone medium, which occupied position 11 in the ranking, and the public broadcaster's website, all outlets belong to one of the three largest and financially stable media groups in Flanders (Medialaan-De Persgroep Publishing, Mediahuis and Roularta). However, despite the financial stability of the groups to which they belong, digital news media in Flanders, like in the rest of world, are under high commercial pressure due to the competition from platform companies, declining advertising revenues, and the moderate success of paywalls (Evens and Van Damme 2016). The online news outlets of the three legacy media groups have a freemium business model, while the content of the digital-born medium and the public broadcaster's website is free of charge.

We interviewed the chief online editor of each news outlet. For 10 organisations, we additionally interviewed one more person who held what Ferrer-Conill and Tandoc (2018) call an "audience-oriented position", such as "head of audience engagement", "social media manager", "digital manager", "chief social strategy" or "traffic specialist". These rather new newsroom

positions are explicitly tasked to make sense of audience metrics. Since our interviewees worked primarily for online news outlets and since the use of web analytics is mainly associated with the news organisation's website, the interviews mainly dealt with web analytics and online news decisions, but we also addressed the use of social media and the influence of analytics on news selection choices in the print or television outlet.

The 21 interviews were conducted between February and March 2018, using a semi-structured, theory-guided topic list with a fixed set of questions we asked to each editor. Journalists were first asked to describe their professional background and how a regular workday looks like for them in order to contextualise their subsequent answers. To what extent are they involved in editorial decision-making? How often do they attend editorial meetings? During this first introductory part of the interview, we particularly paid attention to hierarchies and job profiles in the newsroom to get a better understanding of how the current routines and organisational structures shape the adoption of analytics (RQ1). Next, they were asked to reflect on their prevailing uses of audience metrics and to assess the positive and negative ways in which metrics inform and affect news work (RQ2). We used a semi-structured topic list to ensure that we asked each interviewee about the use of analytics for the different purposes described in previous literature: story placement, story packaging and headline testing, story planning, and performance assessment (both at the story level and for job evaluation). The interviewees were asked to describe and evaluate whether and how they used analytics for these purposes. In addition, we asked follow-up questions about other relevant uses of audience analytics. Again, we showed particular interest in the editors' perceptions and assessments of these different uses and effects of analytics. The interviews took place face-to-face, except for one interview that was conducted by telephone. The interviewees were guaranteed anonymity, considering the culturally charged nature of audience analytics and the need for our participants to take an overt stance. All interviews were digitally recorded, which added up to 806 min of recording time in total, with an average length of 38 min per interview.

We used the qualitative data analysis software package NVivo 11 to transcribe all interviews verbatim and to process our data. Finally, all transcripts were subjected to thematic analysis, in which we searched for recurring themes within the data, using both codes that were set *a priori* to look for particular aspects as well as new codes that emerged from the data.

Findings

This section is organised around our two main research questions. For the first research question, we focus on the organisational and professional factors that either foster or restrict the adoption and acceptance of audience analytics as tools for journalism. The second research question requires us to zoom in on the editors' perceptions and assessments of the purposes for which audience analytics can be used.

The Adoption of Analytics in the Newsroom

Each of the 11 newsrooms in our study uses analytical tools to monitor their audience. Chartbeat and Google Analytics are the most popular ones, with Google Analytics being used in every newsroom and with two newsrooms that do not use Chartbeat. One of these two newsrooms developed a customised version of Chartbeat, while the other newsroom preferred a less expensive tool. To gather information from Facebook, Twitter and the comment pages on their own website,

Belgian digital news editors referred to Crowdtangle, Ezy Insights and Facebook Insights as the most used tools. However, some interviewees said they individually used a wider array of web and social media analytical tools such as Adobe Analytics, SmartOcto, IO, Spike, Hootsuite, CX Social and Echobox. All interviewees, and especially those who hold audience-oriented newsroom positions, were familiar with most of these tools, so we can safely say that audience analytics have become part of the digital toolbox of online news editors in Belgian newsrooms.

This is of course already reflected in the fact that all newsrooms have one or more staffers with an audience-oriented role. According to the interviewees, most of these "social media editors" or "engagement managers" were hired in the previous one or two years. In the larger media companies, in-house analytics expert teams – or "traffic teams" as they were called – have been established to monitor the success of content and audience behaviour on and across the different media channels and platforms. The digital news editors said they closely worked together with the "traffic team". To further develop their data management skills and keep up with the rapid pace of change, interviewees also said they participated in internal and external training sessions. Some of them also organised in-house workshops to share their knowledge with their colleagues.

In line with literature on newsroom innovation, our interviews suggest that organisational structures are sometimes viewed as an obstacle to the optimal use of new technologies. Some of our interviewees argued that physical and departmental boundaries within their newsrooms are not beneficial for the creation of a "culture of data". The traffic team is physically separated from the newsroom, which makes it difficult for them to gain a foothold in the newsroom. One of our interviewees, who served as a bridge between the traffic team and the newsroom stated that they were "*quite jealous of our colleagues at [Dutch newspaper owned by the same media company] where the traffic team works inside the newsroom.*" The interviewee added that, as they had to work physically separated from the editorial department, *"it is harder for us to follow the newsroom dynamics, so we can only make general recommendations."* However, in most newsrooms, online news chiefs and social media editors have a seat at the "central news desk", together with the other superiors of the news organisation. One chief editor said: *I am sitting at a central desk. All superiors sit there together and our social media manager sits there too. Actually, we are all involved in the negotiations and decision-making in the newsroom."* This close cooperation enables the transfer of a great deal of know-how on data between the different outlets through informal contacts. One social media manager described how his recommendations have increasingly been taken on-board over the past few years: *"I always work in consultation with the homepage editors, but they have now such confidence in me that I often do not have to justify my decisions anymore."*

Further, the interviewees tended to agree that a "data culture" could only arise if the newsroom managers would be more transparent about the use of data and if data were made accessible to individual journalists and editors, and not only to the traffic team and the editor-in-chief (see also Cherubini & Nielsen, 2016). In eight newsrooms, real-time metrics are continuously visible on large TV screens, not only to inform all journalists about which stories are doing well, but also to stimulate the acceptance and normalisation of analytics among the newsroom staff. In addition, the interviewees said they often provided journalists with extra information and context for them to be able to make the most out of these analytical tools. In most newsrooms, daily or weekly audience metrics reports are sent around through e-mail. An editor explained: *"One of our editors makes a top 5 of the best performing articles on the site and Facebook each day, in comparison with the global traffic and the monthly average."* In two newsrooms, these e-mails were sent to the entire staff. In most newsrooms, however, the reports are only circulated among

the online team and the editorial board or communicated to individual journalists that worked on the article. Some interviewees said that editorial meetings tend to start with a discussion of yesterday's traffic figures.

The social media and engagement editors we interviewed, said that they monitored audience metrics regularly, if not "*constantly*" or "*maniacally*". However, a lack of time kept them from studying the analytics in a more in-depth manner. The workload and continuous deadline of the online newsroom do not always allow them to do much beyond their daily tasks, as a site manager recognised: *"I simply don't have the time to follow these things to the letter."* Other interviewees argued that more knowledge can be gained from analytics, but this requires more resources. One interviewee said that his newsroom was now unable to systematically use Chartbeat's headline-testing feature because of a lack of time and resources. Another interviewee said they only appoint a journalist to be responsible for the social media channels when nobody has taken a leave of absence or has fallen ill.

When asked editors how they perceived the attitudes of journalists towards the use of web analytics inside the newsroom, interviewees agreed that there is a degree of healthy scepticism among journalists, but in general, resistance towards audience analytics is perceived to be rather low. Interviewees indicated that most journalists are curious and interested in audience data, although some noticed a difference between the print and online journalists. The latter seem to be more eager to learn and see how their own articles are performing online. One interviewee asserted that "*some journalists even think that they are not doing a good job when their articles no longer appear in the top 10 for a few days."* However, interviewees were also aware that an ever-more competitive battle for attention could lead reporters to focus on tangential stories that get a lot of hits. Audience analytics do foster internal competition. For example, a chief editor explained how he had to redirect incentives because journalists became reluctant to publish their stories behind the paywall as such stories never appear in the most-viewed list. Another digital news manager put it as follows:

> *"Journalists know that numbers depend on how an article is played out on the website's homepage or on social media. Some of them would therefore go and lobby the online team to highlight their own articles. So it creates a hunger for visibility, public and success. ... To a certain degree we also want that, ... but we try to avoid evaluating our journalists only on that basis. You need to do it in moderation."*

The Uses of Audience Analytics

For our second research question, we are interested in the purposes for which analytics are utilised and how analytics have an influence on the work practices and organisational strategies that determine the news decision-making process. Based on the literature, we distinguished different uses of audience analytics in the newsroom: audience analytics inform decisions about placement (Lee et al. 2012), story packaging, story planning, and performance evaluation (Tandoc and Jenner 2016; Tandoc and Lee 2017). Further, we discussed with interviewees to what extent audience analytics result in "story imitation" (selecting stories that do well on other websites or platforms; cf. Boczkowski 2010) and "audience conception" (the construction of the "imagined audience" on the basis of metrics, cf. Coddington 2018). Below, we discuss how editors perceive the possibilities and limitations of audience analytics for each of these six functions.

Story placement. Whereas Google Analytics is used for more general evaluations and comparisons on a longer-term basis (e.g. one week or month), Chartbeat is primarily used for real-time observational data about their readers and the intra-day management of their homepages. Web analytics inform editorial decisions on the placement of stories on the website (Lee et al. 2012). Since the website's homepage can only feature a limited number of stories, editors need to determine which stories to prioritise. Interviewees considered it obvious to "*take a look at Chartbeat figures*" when taking these editorial decisions. One editor stated that it was just a matter of good practice: *"if you have a dozen articles, it makes sense to give the most-read article a better position than those that are not read at all."* Another editor nuanced that *"it is not that we only look at Chartbeat, but if we see that an article does not give any return, it will not harm if we put it on a lower position."* Interviewees stressed that Chartbeat's recommendations are always balanced with editorial judgements about a story's newsworthiness. They all firmly disagreed with the idea that audience metrics would skew these judgements. One editor gave the example of Brexit coverage, which hardly, if ever, succeeds in arousing great audience engagement, but as it is deemed an important and relevant topic, they keep featuring these articles on top of the page. There was a general consensus among interviewees that, as one of them put it, *"you must of course respect journalistic values, so we will never put the important pieces at the bottom of our site just because they are not sexy enough to click on."* That said, the interviewees also stressed the importance of a well thought-out "homepage composition", and Chartbeat figures help them to create what some called a "*good news mix".*

Story packaging. A second way in which audience analytics are used for, is story packaging. Tandoc and Jenner (2016, 431) define story packaging as all adaptations journalists make to an article after it has already been mostly constructed. This includes decisions about the presentation of stories or their promotion on social media platforms. With the exception of the public service broadcaster, all media organisations systematically use the A/B-headline testing services of Chartbeat or similar tools like Google Optimize or Echobox. With headline testing, the web editor writes an A-headline and a B-headline, and the software will expose half of the readers randomly to the A-headline, while the other half is shown the B-headline to estimate which headline generates the most clicks. One editor said that *"in nine out of ten cases, we will pick the one with the highest rating. Unless we think it is formulated too bluntly or too 'clickbaity'."* When discussing "clickbait" more in-depth, all editors seemed rather vexed. They argued that a journalist can make an article more accessible for the public by writing an attractive or teasing headline, but they would never consider that as 'clickbait', a term they associate with misleading and deceitful headlines that do not match the story's content. For the interviewees, the demarcation line between clickbait and engaging headlines was very clear and evident. Confronted with the question of whether his readers would agree with him, one interviewee explained that *"if we write a headline that is not consistent with the content of the article, we know our readers won't click next time. It would be stupid to fool our readers."* Other interviewees made the analogy with newspaper headlines, arguing that it is a general rule in journalism that *"an article with a bad headline will not be read".*

Story planning. Previous research suggests that audience analytics are also used by editors to make decisions on which stories or topics to report about in the near future. For instance, if analytics show that a certain story is doing well, editors may plan follow-up stories or they may decide to assign additional coverage for the next day's print edition (Tandoc and Jenner 2016, 431-

432). The digital news editors in our study confirmed that audience metrics are taken into account for story planning. One editor gave an example of how audience metrics had even led them to hire specialist reporters for the science news beat because the scientific news stories performed surprisingly well on the website: *"If a science editor wants to write a new piece nowadays, I will tell him: 'don't hold back, write a lot about it!'"* Another interviewee said that his newsroom secured more time and resources for "regional judiciary", because it often appeared in the top five topics in Google Analytics: *"Whilst our court reporters could previously write 10 line stories, we are now letting them write 30 to 40 lines."* Editors thus admitted that they felt encouraged to invest more in certain topics that generate a lot of audience feedback. Sometimes audience metrics correct their 'gut feeling', as one interviewee explained:

> *"I never would have guessed it, but everything we publish on royalty scores incredibly well. We happen to have a journalist who is specialised in royalty, but in the past, she was never allowed to focus only on that subject. Now, she has her own royalty news blog on Sunday."*

In line with the study by Hanusch (2017), the interviews also indicate that story planning takes place throughout the news day and across different platforms. In other words, web analytics do not only influence editors' decisions about the online news, but they also inform the decision-making process about the print edition and other channels of the media organisation. One editor working for a broadcaster said that also their TV news editor sometimes looks at the web metrics to decide on the composition of the news broadcast: *"Recently, something he had planned to be the third item became the opening piece of the broadcast, because he saw how much attention it gained online."* Another editor gave an example of a small topic that exploded on Facebook in the course of the day, which urged him to assign a print reporter to the story. Interviewees said that these practices of multi-channel story planning become more and more commonplace in the newsroom.

Story imitation. As mentioned above, larger media organisations work with "traffic teams" that monitor stories and audience engagement in different outlets on different platforms. Half of the newsrooms in our study used social media analytics tools such as Crowdtangle and Ezy Insights to monitor the engagement and scope of their own articles on social media as well as those of their nearest competitors. If a certain story is performing well on a competitor's website, editors may be likely to pick them up for publication on their own media channels. This leads to story imitation and content homogenisation, but most of our interviewees did not consider it as a problem. Again, this routine was rather seen as a matter of good practice, as one interviewed stated: "*If we suddenly see that an article is performing particularly well on the website of [name of competitor], we will obviously pick it up, and vice versa."*

While interviewees recognised the commercial logic behind such selection practices, most of them were not concerned about potential dumbing-down effects. Instead, they were strongly convinced that when analytics are used wisely as a "*tool*" or "*compass*", and "*complementary*" to journalistic gut feeling, they could help to do better and more useful journalism. As one editor put it:

> *"Most media organisations are commercial enterprises, so in a way it is logical that we use these tools. Nevertheless, you always need to preserve your journalistic values and ethics. Otherwise you are not practicing journalism anymore, but plain commerce."*

Performance evaluation. In line with Lee and Tandoc (2017) and Bunce (2017), our interviews indicate that audience analytics are also used, to some degree, as tools to evaluate and discipline employees. In Belgian newsrooms, journalists regularly receive feedback based on web metrics. Besides individual feedback on particular stories, reports are also circulated to highlight "good practices" of the kind of stories and topics that performed well. A chief editor explained that they "*do not intend to organise a competition, but we want to create some kind of awareness among journalists, like, you know, 'these tools really tell you something'.*" Further, web analytics also help to socialise journalists into the "digital-first" culture that newsrooms try to foster. Interviewees acknowledged that especially among print journalists, web analytics are still met with a great deal of distrust or indifference, a finding in line with a recent study by Nelson and Tandoc (2018). However, most interviewees argued that this scepticism was rather due to a lack of knowledge about how these tools can be employed in favour of creating more engaging journalism. To increase knowledge and openness about metrics among their employees, one interviewee said that "*at my previous job, we had a 'Chartbeat trophy' – I'm not sure it still exists. Every time one of the newspaper journalists published an online article that went through the roof, I would hand him or her the trophy.*"

While journalists are thus actively encouraged to learn from metrics, none of the newsrooms used audience analytics to systematically measure their employees' job performance. Only at the digital-born medium, an interviewee told us that analytics are also monitored and compared on an individual level. She stated that for job evaluations, they "*take two things into consideration: how many articles someone has produced and how many views he has. If there is someone who keeps dangling at the bottom month after month, we will indeed draw some conclusions from that.*"

Audience conception. Finally, the interviews show that audience analytics have an influence on journalists' perceptions of what their public thinks. Their "imagined audience" becomes increasingly constructed on the basis of metrics. In general, web analytics seem to be regarded by our interviewees as valid measures of the audience's interests, sentiments and opinions. None of them questioned the algorithms on which these metrics are based. Instead, they argued that metrics helped them gain a clearer picture of their users on the basis of accurate, objective information. An often-heard argument is that, as one interviewee put it:

"*Back in the days, we had to sail blind. We made a newspaper by the seat of our pants, just assuming it would all be read. But now we sometimes have to admit: 'Sorry guys, it's not working'. I'm glad that we know our readers better now.*"

Digital news editors also said they felt more confident about the topics that their readers are interested in or concerned about. As such, audience metrics also serve as an indication of the interests and opinions among their readership. One of the interviewees stated that Google Analytics gives him a more reliable reflection of the audience's interests and opinions than social media, since the first actually tracks audience behaviour and engagement, while the latter mainly comprise self-expressed opinions of only a minority of people who want to speak out publicly.

Yet, there is a general consensus that progress still has to be made in the ways they interpret metrics as measures of public interest and opinion. Some interviewees believed they were moving in the right direction as their attention was shifting away from the mere clicks and page views to

more advanced measures such as attention time, level of content recirculation and user loyalty. Moreover, they stated that web and social media analytics always need to be combined with conventional forms of audience research and matched to the editorial norms, values and judgements. That way, audience analytics can become further integrated and normalised within the work practices inside the newsroom, or as one editor concluded: *"The media have always used audience measurements; web analytics do exactly the same thing, just more elaborated."*

Conclusion

The goal of this study was twofold. Firstly, we wanted to know to what extent Belgian digital newsrooms have integrated audience analytics into their daily operations. In line with international research, we can conclude that a large degree of normalisation has been realised with regard to the adoption of these new tools for audience measurement. All newsrooms in our study have invested in hiring new job profiles like "social media managers" or "engagement editors" to systematically monitor and make sense of traffic and audience behaviour data on the range of platforms that media organisations use for news distribution. Further, they all make efforts to facilitate the exchange of the knowledge of analytics among their journalists, both in the print and online teams, in order to build a "culture of data" (Cherubini and Nielsen 2016, 14), wherein every journalist is open to act on the insights gained from analytics. The interviews show that audience analytics are gradually becoming integrated and routinised within the daily work practices and organisational strategies of today's newsrooms. Editors consider it logical and obvious to use analytics as yardstick for making editorial decisions.

Secondly, we focused on the daily operational and strategic uses of analytics in the newsroom. Based on previous research, we distinguished six purposes for which digital news editors turn to audience analytics: story placement, story packaging, story planning, story imitation, performance evaluation, and audience conception. Our interviews show that Belgian digital news editors use analytics for each of these six purposes, although the findings are nuanced. Interviewees stressed that metrics are taken into consideration in deciding where to place or how to package a story on the website, but these algorithmic recommendations are always balanced against their own editorial judgments. They strongly rejected the idea that analytics would lead them to produce more clickbait or to favour the popular over the relevant news stories. With regard to story planning and story imitation, editors also seemed to suggest that analytics do not change the ways in which newsrooms have been working for decades, in the sense that editorial decision-making processes have always been informed by what competitors are doing and by what has already proven to appeal to the audience's attention. A newer practice is that audience analytics also allow newsroom managers to evaluate employees' job performance on the basis of how much attention and engagement they generate with their stories, but, with the exception of the digital-born news medium, the interviews suggest that analytics are not used for performance evaluation on an individual level. However, on a more aggregate level, daily or weekly web metrics reports and soft rewards for well-performing staffers allow newsroom managers to discipline and socialise their journalists within a more data-driven newsroom culture. Finally, our interviews suggest that web analytics also serve as a proxy or indication of public opinion. Digital news editors feel that the use of analytics has improved their knowledge about how to connect with the audience's interests and concerns.

In conclusion, we can say that there is a general consensus among digital news editors that analytics support rather than harm their journalism. While scholars have expressed their concern

about potential misuses or dumbing-down effects of analytics, the journalists in our study tend to minimise these risks, suggesting that newsrooms have always been expected to find a balance between their medium's commercial and editorial interests. However, the finding that editors are mostly positive about the uses of analytics in the newsroom does not mean that they are right. Interviews reflect the editors' perceptions, but do not allow us to say anything about the effects of analytics on the type of news stories that are published and highlighted in the media outlets, which is the focus of many concerns about the datafication of journalism. Further research should look into how current editorial and strategic uses of analytics in news work affect journalists' selection and storytelling practices. More specifically, we believe that content analyses and experiments can help researchers to better understand the short- and longer-term effects of the six uses of analytics on the news output.

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