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Navigating the terrain: a typology of mapping in journalism studies

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ABSTRACT

There is increasing scholarship marking a geographic turn in journalism studies. It focuses on examining the digital and physical terrain that audiences, sources and newsmakers traverse, and emphasises the spaces and places of news and knowledge production. This paper complements the trend by exploring how journalism scholars have adopted the idea of ‘mapping’ in this contemporary research. We present a four-part typology of mapping within the journalism field: cartographic, network, spatial cognitive and metaphorical. The paper argues for the importance of journalism scholars being able to more strongly align and justify the use of mapping in their work, and explores the complexities and opportunities that maps may present to enrich their research.

KEYWORDS

Mapping; digital cartography; network mapping; spatial cognitive; metaphorical maps; spatial metaphors

Introduction

The past decade has been dominated by closures, mergers and contractions of news outlets, with the COVID-19 pandemic escalating these trends (Barnes, Dugmore, English, Natoli, & Stephens, 2022). The decline in the number of local news services, especially, has raised alarm among academics, the industry, policymakers and communities (Abernathy, 2018; Hess & Waller, 2020). In an attempt to make sense of – and document – the rapidly changing landscape, there has been increasing value placed on geographic mapping techniques to visualise where news outlets exist (or not) within and across countries. Research such as The Local News Research Project in Canada (see Lindgren, 2009; Lindgren, Corbett, & Hodson, 2020), the expanding news deserts agenda in the United States (Abernathy, 2018) and research in the United Kingdom (Cardiff University, 2019; Gulyas, 2020) and Australia (PIJI, 2021), have all deployed cartographic approaches to help map the media landscape and/or build networks of support. Australia’s Public Interest Journalism Institute (a non-academic body), for example, utilises mapping software to document news availability (PIJI, 2021). While the institute offers no clear methodological framework to its approach, it presents a map of Australia in a dramatic jet-black tone that lights up like an electricity grid in areas where (albeit shifting) changes occur. The map serves as a visual feast for the media industry and policymakers who seek urgent ‘evidence’ and commentary as to the extent of the recent media carnage.

More broadly, there has been discussion around a geographic turn in journalism studies and an emphasis on the ‘places’ news is produced, which spans the digital and physical spaces covered by journalists, sources and audiences. There too is increasing emphasis on the broader spatial dimensions of news and networks, and an unpacking or delineation of space and place and its relevance to journalism studies (see Gutsche & Hess, 2018; Peters, 2016; Reese, 2016; Robinson & Anderson, 2020; Usher, 2020). In outlining the new geographies of journalism, Reese argues understandings of journalism have become more networked, capture the workings of new eco-systems, and present fresh methodological changes (Reese, 2016, p. 816). Amid these discussions, however, there has been little attention paid to documenting how the very use of the term ‘map’ has been adopted within journalism scholarship – its relationship to spaces, places and networks and/or value as an organising framework.

It is important to note that this research forms part of a broader Australian Research Council project that examines the civic future of local newspapers in Australia (LP180200813). Initially, our focus was to understand digital cartography, given the rising interest in this approach among think tanks and policymakers in Australia (see especially PIJI, 2021). However, our research revealed a variety of ways in which the idea of mapping is utilised across journalism scholarship. We outline a typology involving four approaches to mapping: *cartographic*, *network*, *spatial cognitive* and *metaphorical*. Given the wide and varied use of the term, we suggest there is a risk of a ‘laissez-faire’ approach, especially given mapping is broad and multi-disciplinary and afforded with rich and rigorous methodological histories and practices.

A note on space and place in journalism studies

The relationship between space and place is frequently discussed (and debated) in scholarship outlining spatial geographies in journalism (Gutsche & Hess, 2018; Usher, 2020; Weiss, 2018). ‘Space’ has been defined as everything from a meaningless realm (Cresswell, 2004) to something that is not a tangible reality, from the point of view of natural science, but a construct of experience (Castells, 2010; Massey, 1994). Castells, in his space of flows construct, argues the overwhelming majority of people live in places, and so they perceive their space as ‘place-based’, within the boundaries of physical contiguity (2010, p. 453). Massey, however, strongly resists the idea that boundaries, such as geographic territory, define ‘place’. Instead, she considers place to be a construct of social relations which are formed ‘out of a particular constellation of social relations meeting and weaving together at a particular locus’ (1994, p. 154).

There is not scope here to unpack this extensive debate, rather our intention is to highlight the various ways in which mapping may be utilised to represent the physical world and/or interpret social and spatial realms within journalism studies. In this way mapping may resonate with an array of approaches to understanding space and place – from journalism’s relationship to the physical places where news is produced (or not), to news and social connections and the social spaces (or what Pierre Bourdieu (1984, 1998) refers to as journalism and academic ‘fields’) where new knowledge is created and contested. While the increasing use of cartography to track news decline may have sparked our initial curiosity about mapping, understanding how journalism scholars

adopt 'mapping' to mark a 'place' for themselves and their scholarly ideas is as relevant as marking coordinates on a geographic map.

The value and history of mapping

Maps have been used throughout history as tools that help us navigate through environments, mark out boundaries and define territories (Dempsey, 2011) and, arguably, it is the practice of cartography that has the longest-standing association with the term. Map historian and geographer Harley (2018) argues that it has always been a human impulse to cognitively map the spaces around us, and that mapping is 'one of the oldest forms of human communication' (p. 1). Maps have been used as aids for promoting religions, tools in the waging of wars and the focus of exploration and empire building (Neal, 2021). In fact, the use of maps has been so vast and varied, Robinson and Petchenik suggest 'anything that can be spatially conceived can be mapped – and probably has been' (1976, p. 15).

While maps have traditionally been used to visually display quantitative data (such as latitude and longitude and coordinates), a wave of experimentation throughout the 20th century led to researchers within the social sciences exploring ways of using maps as a research method for qualitative data (Dodge, Kitchin, & Perkins, 2009; Mckinnon, 2011). Since this time, cultural and social researchers have continued to expand cartographic application and have moved towards using maps to not only *display* data but also *collect* and *analyse* data. Mapping is now used across a range of disciplines, from history and health to science and politics (see Cieri, 2003; Duncan, 2006; Middleton, 2010; Rocheleau, 1995). Research as broad and diverse as this, where varied epistemologies and theoretical frameworks are applied, shows that by using maps scholars are not just 'considering *where* things occur, but also *why* and *how* they occur in one place and not another' (Mckinnon, 2011, p. 45, emphasis added). While mapping across its various applications carries exciting potential to identify and establish empirical and network associations, it is susceptible to the same limitations of data accuracy and investigator bias as other methodologies. There have been calls from other disciplines, such as health, for scholars to take a more deliberate approach to mapping and take a 'magnifying glass to zoom in on certain points not apparent to onlookers on first inspection' (see Koch, 2011, np). We take up the challenge, by taking a more fine-grained look at the use of mapping by researchers across the journalism studies.

Mapping: a focus on journalism practice

In journalism practice, mapping to make sense of and navigate physical space has long been used within the news-making process (see Monmonier, 1989; Usher, 2020). Anderson (2018) highlights how the professionalisation of journalism led to reporters strengthening their epistemological claims via information visualisation to provide a more defensible version of 'the truth'. Cartographic news maps can compress both time and geographic distance, but this effort at reducing information complexity can mask political ideologies, simplify arguments, and silence those not represented (see Usher, 2020, for full discussion). Cartography and its shift into digital space tends to dominate discussion about journalism practice. Usher (2020) calls for a renewed focus and critical examination of the

role of digital cartography and categorises the relationship between journalists and maps in a three-part framework: journalists as map makers (eg, election mapping), journalists as map users (eg, mapping audiences, crime maps, crowd maps) and journalists as map subjects (eg, news deserts). This is a useful framework that complements our approach here, although our focus is on ‘mapping the mappers’ more broadly across journalism studies – beyond the use of digital cartography alone. That is, our study provides a comprehensive overview of how mapping is used by scholars within the various fields of journalism and as tools for navigation across geographic, social and intellectual spaces.

A typology of mapping

This paper reviews how mapping has been defined and/or used by journalism scholars and provides a framework to conceptualise the different approaches that have been identified in the literature. Our findings are based on a review of published academic studies that use the term ‘map’. The analysis focuses on how each of the studies refers to and/or operationalises the term. We used the search term ‘map’, which also automatically picks up the term ‘mapping’, to find academic articles through a library database of academic publications. This method of reviewing and analysing relevant literature is a common way to develop a typology (see Brandtzaeg, 2010; De Vreese, 2005; Komorowski, 2017; Tandoc, Lim, & Ling, 2018) and is also adopted by scholars who engage with the use of concepts and theoretical frameworks adopted in literature (see for example Steensen et al. 2019).

The academic journalism journals chosen for review in this study consisted of four international publications (*Journalism Practice*, *Journalism Studies*, *Journalism* and *Digital Journalism*) and one Australian publication (*Australian Journalism Review*). We first downloaded the metadata for all articles published in these journals that included the word ‘map’ as published over a five-year timeframe between 2016 and 2020. This generated 615 articles. We then excluded editorials, debate articles, book reviews, etc, before adopting a criterion strategy where all articles that met a predetermined criterion of importance were shortlisted (Palinkas et al. 2015; Morse, 2004). The criterion in this case was the inclusion of the term ‘map’ in either the title, abstract or keywords sections of articles. Keywords tend to provide an accurate and search-friendly depiction of a researcher’s work, while abstracts and titles are compelling short summaries of articles and indicate the disciplinary, theoretical and empirical emphasis of articles (see: Steensen et al. 2019). This created a corpus of 64 articles and the full versions were subsequently downloaded before we undertook a careful reading of each of these papers (Tandoc, Lim, & Ling, 2018). We did not predefine categories as we wanted to consider all uses of the term ‘map’ as mentioned in the literature (Steensen et al. 2019). We also listed instances where there was explicit mention of mapping as methodology. Our subsequent typology organised findings into four types of maps identified during this analysis: cartographic, network, spatial cognitive and metaphorical. What follows is an explanation of each of these categories.

(Digital) cartographic maps

Cartography is the study and production of maps and, with its roots in the discipline of geography, it requires the careful and detailed production of a visual map representative

of ‘real world’ geographic features (Mayhew, 2015). While this category could be viewed as the most traditional in terms of mapping, the maps being made, used and discussed in this category tend to employ digital software and are designed to be interactive. However (and somewhat surprisingly) only one academic paper adopted classic digital cartography as a methodology to explore complexities around declining local news. Lindgren, Corbett, and Hodson’s (2020) research uses the Local News Map, which is the centrepiece of the Local News Research Project in Canada. The Local News Map is an interactive digital map using a Google Maps interface that tracks changes within Canada’s media landscape, such as community newspapers that have closed or TV stations that have increased their service. The researchers outline the value of a mapping approach to meet calls for ‘more and better data’ (Lindgren, Corbett, & Hodson, 2020, p. 761). They draw on the work of Allen and Queen (2015) who highlight the trend in social sciences and humanities to embrace digital cartography and data visualisation:

‘Armed with these tools, researchers can combine and visualise existing data to generate knowledge in the form of “new insights and relationships previously unknown” (Allen & Queen 2015, p.87)’. (Lindgren, Corbett, & Hodson, 2020, p. 760)

The majority of the scholarship with a digital cartographic focus (eight of the nine studies in this category of our sample) aligned most strongly with Usher’s (2020) categories of studying journalists as map users and map makers. Scholars who study cartographic map *use* by professional journalists tend to research digital and/or data journalism, and commonly aim to investigate the impact or effectiveness of maps in this field (see: Hiippala, 2017; Stalph, 2018). For example, Young, Hermida, and Fulda (2018) explored the use of mapping in award-winning data journalism and found that dynamic maps were among the most used visual elements, but that the quality of these elements was often limited and there was a ‘lack of clear standards’ (p. 125). Those exploring journalists as map *makers* also found there were advantages and disadvantages to undertaking the practice. Adams (2018) outlined some of the challenges, most notably the limited amount of time and funding newsrooms allocated to cartographic practice, which can result in potentially weak, biased or irresponsible visualisations. He suggests, in his research on maps tracing immigration flows, that such representations can have ‘ideological and political power’ and therefore ‘careful consideration’ must be taken to ensure the ethical communication of information (p. 529). On the flip side, the benefits of map making are discussed in terms of mapping’s ability to increase audience engagement and communicate complex data. For example, Salovaara (2016) found collaborative cartography, in the form of crowd-sourced mapping, was helping to promote audience participation in news production and deepen understandings of dynamic journalism practice.

Network maps

Another type of map used by journalism scholars is the network map. Among our sample, five studies adopted network mapping as a way to display and/or analyse data. Within this approach, connections and intersections of elements are plotted graphically to help understand their relationship to each other. The maps used in this category are diagrams characterised by their use of vectors to create web-like representations, most commonly lines linking multiple elements displayed as dot points. While these diagrams

do not often display geographic features, they do typically relate to a physical location. For example, among the studies we examined, network diagrams were used to map media ecologies in China, Turkey and the US cities of Philadelphia and Madison (see Doğu, 2020; Robinson & Anderson, 2020; Zheng & Reese, 2017).

Network mapping is a popular tool when researching online information flows, especially via social media – a platform based on ‘connectedness-orientated communication’ (Kuwabara, Watanabe, Ohguro, Itoh, & Maeda, 2002, p. 186). In this way, scholars use network maps to explore blogs, Twitter and the role social media plays generally across news and information flows. Robinson and Anderson (2020) suggest mapping is an integral part of network ethnography, a mixed-methods technique they use to explore the relationships and connections within a news system (generally place-based). Anderson credits his network maps for providing him with clear clusters and giving him an early indication of which newsrooms and bloggers to focus on:

‘Even before I began the later stages of my analysis, it was possible to draw several early clues about journalism in Philadelphia from the social network maps’. (Robinson & Anderson, 2020, p. 991).

Robinson suggests network mapping filled a gap in her studies into information flows that other methods, such as community ethnography and textual analysis, could not fill on their own, ‘I knew I needed to start with drawing the networks to understand where to go from there’ (Robinson & Anderson, 2020, p. 994). The result generated maps that provided the ‘necessary scaffolding’ through which to view the network’s information flows (p.996). In this sense, network mapping can be a valuable addition in a mixed methods study, providing a foundation or baseline on which to begin further research (Robinson & Anderson, 2020). However, network mapping can also be the principal method employed, as Dogu’s (Doğu, 2020) research exploring Turkey’s news media network on Twitter shows. His mapping, created using visualisation software Gephi, allowed him to position actors, examine connections and clusters and then explore patterns. This provided him with ‘a meaningful map of connections’ (p. 692) through which findings were revealed and compared.

Network maps are similar to another type of mapping identified in our research, what we term ‘spatial cognitive’ maps, which shall be discussed shortly. Both approaches plot the relationship between elements. Where they differ is in the type of software utilised, their visual design and their degree of connection to a geographic place or location – network maps are more likely to be connected to physical spaces, whereas spatial cognitive maps tend to be representations of constructed cognitive spaces, as discussed in the next section.

Spatial cognitive maps

We have adopted the term ‘spatial cognitive’ here to encompass a variety of approaches that explore intellectual ideas and concepts, and which tend to use maps in a methodological and visual way. Of our sample, eight studies adopted this mapping type. We consider ‘spatial’ in terms of classic geographic studies, which revolve around terms such as above/below or inside/outside, while cognitive function is related to perception, reasoning, thinking, theoretical development and problem solving. For

example, scholarship that makes sense of complex theoretical ideas, such as Bourdieu's theory of social space, employ spatial maps to understand phenomena (see English, 2016). Within journalism scholarship, other approaches in this category include 'mind' or 'cognitive' mapping (see Hatcher & Thayer, 2017; Pearson, McMahon, O'Donovan, & O'Shannessy, 2019). They are often presented as diagrams that depict a structure or flow with a central or dominant element from which sub-categories or related elements branch off. For example, Loosen et al. (2020) use MindMap software to build a diagram that has the concept of X Journalism at its centre and the different types of this phenomenon, such as solutions journalism or hyperlocal journalism, splinter out from this central point.

Other maps in this category include axis diagrams. These diagrams visually display the similarities and differences between variables by plotting them against intersecting axis in the process of theory generation, while the diagrams create quadrants that show the nearness of and distance between the elements. For example, English (2016) draws on a Bourdieusian approach in his use of an axis diagram to 'map' sports reporting within the journalism field. This example highlights the synergies with classic spatial mapping techniques through an axis that visualises spatial dimensions of 'above' and 'below' and theoretical 'distance' between elements.

Maps within the spatial cognitive category tend to rigorously chart the connections and relationship of concepts, rather than physical elements, and are rarely place-based. In this way, maps have been used to help explore a variety of themes including journalistic collaboration, journalism types, technical possibilities and fact checking (see English, 2016; Graves, 2018; Hatcher & Thayer, 2017; Humprecht & Esser, 2018; Loosen et al., 2020). These maps are credited for providing an enhanced ability to compare and contrast data (Humprecht & Esser, 2018). Loosen et al. (2020) suggest such data visualisation reveals 'multiple avenues for making sense of the metadata' (p. 10), while Graves (2018) argues his graphic visualisation allowed 'unmistakable contrasts [to] emerge' (p. 619).

Metaphorical mapping

The most common way in which mapping was referred to across the literature was in a metaphoric sense, where 'map' was used figuratively rather than literally to navigate large volumes of literature or data. This approach tended to lack any methodological substance, but given the sheer volume of articles that referred to mapping in this way (42 of the 64 in our shortlisted sample), it could not be overlooked within the typology – a point we shall problematise shortly. In this way, metaphorical mapping was often used by journalism researchers as a way to situate the size and scope of their research or to provide an overview of scholarship within a field – much like explorers claiming a scholarly territory (see Abu Arqoub, Elega, Efe Özad, Dwikat, & Oloyede, 2020; Holt, Ustad Figenschou, & Frischlich, 2019; Wu, Tandoc, & Salmon, 2019). For example, Harlow and Salaverría (2016) research 'maps the emerging digital media landscape' (p. 1001) of online-native news websites in Latin America, while Dwyer and Martin (2017) 'map the news sharing ecology' (p. 1081) of social media platforms.

In some rare instances, this mapping approach gives structure to conceptual studies, helping to frame theories, ideas or hypotheses (see Hardy, 2017; Heikkilä & Kunelius,

2017; Martin, 2020; Thomson, 2018; Zeng, 2018). For example, Eldridge, Hess, Tandoc, and Westlund (2019) set about ‘mapping a future editorial agenda’ for digital journalism studies, and even adopted an associated metaphoric mapping tool of a ‘compass’ to guide scholarly thinking. In some cases, the simple semantic use of ‘map’ provides a setting for large volumes of data and/or cross-country comparisons, helping to situate ‘where’ knowledge is produced or is under focus (see Fengler et al., 2020; Gonen, Kampf, & Tenenboim-Weinblatt, 2020; Kus, Eberwein, Porlezza, & Splendore, 2017; Rowinski, 2016). For example, Plaut and Klein (2019) set out to ‘map current trends’ (p. 1698) by researching the role of fixers in 70 countries, and De Swert and Kuypers (2020) aimed ‘to map the use of ordinary citizens in the news’ (p.1037) by conducting a content analysis that spanned 20 countries. Among the most popular topics for investigation were social media platforms and digital journalism (see Canter, 2018; Duffy & Knight, 2019; Hermida & Mellado, 2020).

Discussion/Conclusion

This research highlights the value of ‘mapping’ as an organisational tool to help make sense of spaces and places where news is practiced, to generate ideas, understand networks or as a way for scholars to situate their expertise and survey a scholarly landscape. It was perhaps a surprise to find that so many of the researchers in our sample adopted mapping metaphorically – as a term to situate the size and scope of data or literature being canvassed. Here, scholars often used mapping as a turn of phrase – for example, ‘map’ could easily have been replaced with other phrases such as overview, plot, list, or track. Within these studies, other methods were utilised to explore their research questions, such as interviews (see Dörr, 2016; Thomson, 2018), content analysis (see Mellado & Scherman, 2020; Widholm, Riegert, & Roosvall, 2021), surveys (Plaut & Klein, 2019; Zeng, 2018) or systematic literature reviewing (see Abu Arqoub, Elega, Efe Özad, Dwikat, & Oloyede, 2020; Joris, De Grove, Van Damme, & De Marez, 2020). Given the practice of metaphorical mapping is often presented (albeit incognito) as a form of literature reviewing it is important to acknowledge that these latter approaches present their own set of guiding research principles and there is a need for metaphoric mapping to be refined or extended by those who adopt it. Silber (1995) suggests that, since the 1980s, sociological theory has been marked by an increasing frequency of spatial metaphors (think Bourdieu’s field theory highlighted earlier) and their use is underconceptualised. At their best, metaphors illuminate the meanings of experiences; at their worst, metaphors distort or obscure the essences of them (Carpenter, 2008). For example, to map a field (albeit metaphorically) implies one has the resources and navigational tools to adequately chart such scholarly territory. Mapping a journalism concept or body of literature implies that the explorer has access to all available literature to begin their navigational quest and masks inequalities within the field.

Spatial cognitive and network mapping approaches that form part of this typology offer the clearest methodological frameworks and provide visual representations of complex phenomena. We found the majority of scholars using these types of maps adopted mapping as their sole or primary research method. The more traditional (albeit digital) cartographic approach, meanwhile, is rarely utilised by journalism scholars as a methodology. Rather, academics who do include cartographic maps in their work tend

to examine the way those maps are used in journalism practice, or as Usher's (2020) identifies, they study *map makers* in the news production process. An interesting finding from this research is that, while digital cartography may be making an impact in policy-making spaces, it is not permeating through high level academic journals such as the ones examined here. Large-scale digital cartographic mapping projects in countries such as the US, Australia and the UK (especially those mapping news decline and casualties) are certainly attracting industry, community and political attention, but remain absent from the world's leading journalism journals. These projects have the potential to generate deep and broad insights into the state of journalism, but the leap from industry impact to academic value is under explored. Lindgren, who is an exception here, argues that mapping approaches do have significant policy impact and warrant more attention in journalism studies (Lindgren, Corbett, & Hodson, 2020). Arguably there is a need for stronger methodological insight into the use of mapping to aid this transition.

It is our hope that outlining a typology provides inspiration for methodological development among journalism scholars who may consider using mapping in their research. There too, may be scope to consider a mixed-mapping approach or a fusion of techniques to understand journalism's relationship to spaces and places. For example, Gutsche's mental mapping approach – which falls outside our typology timeline and publication focus – fuses traditional cartography with spatial cognitive mapping to ask everyday people and journalists to chart boundaries and centres of power within the geographic spaces they live and/or work (see Gutsche & Hess, 2018; Gutsche, 2014). In some instances, digital cartography could complement a cognitive mapping approach to provide visual representation of 'where' dominant scholarly concepts and ideas are generated rather than by whom. Like many typologies, however, ours has been designed to adapt and be adapted (Arora, 2012; Holbert, 2005) by scholars in the field over time.

Ultimately our typology highlights a need to move beyond traditional and digital cartographic approaches alone to consider how maps are used within journalism studies to make sense of spatial worlds (as tool of visual analysis, to plot emotions and concepts and as a metaphorical device). The map can provide a visual handle for complex data sets, highlight intricate social connections and assist journalism scholars in marking out their own territory in a field.

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