Expectations, Challenges, and Expertise : The Importance of Non-Western Data Journalism

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Appelgren , E , Krøvel , R , Linden , C-G & Oscar , W 2020 , Expectations, Challenges, and Expertise : The Importance of Non-Western Data Journalism . in B Mutsvairo , S Bebawi & E Borges-Rey (eds) , Data Journalism in the Global South . Palgrave Studies in Journalism and the Global South , Palgrave Macmillan , Cham , pp. xxi-xxxv . https://doi.org/10.1007/978-3-030-25177-2

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Cover image: MirageC / Getty images
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Introduction

As part of the globalization of communication, new forms of journalism with origins in the West are spreading to other parts of the world. This book collects research on how this diffusion of new journalistic ideas is taking place and how these ideas are being adopted and transformed in different contexts. In this case, these ideas are related to data journalism and the development of transnational journalism cultures. This means that imported journalism values are being layered upon already existing institutional arrangements (Hellmueller 2017; Relly and Zanger 2017). The study of communication has been long dominated by ideas grounded in the West. We could argue that Western theories and arguments are inadequate for understanding local and regional communication processes and phenomena, and this perspective helps us understand why this collection of studies on how new journalistic ideas are spread is so valuable. We could also argue that this development cannot be separated from communication technologies as the importance of new forms of media the diffusion of, for instance internet access or mobile phones (Heeks 2010).

It is not a new phenomenon to turn to data in journalism; reporters have been doing so in different ways for a very long time. However, substantial leaps in developments of data repositories, data analysis systems, data widgets, data analytics, and the overall development of big data analysis have resulted in optimistic visions about and expectations for what the intersection of journalism and data could bring to the future (Boyd and

Crawford 2012; De Maeyer et al. 2015; Lewis 2015). This feeds into a line of research on media innovation efforts in journalism and how news industries such as news startups strive to make improvements to journalism and the news media (e.g. Usher 2017). Much has happened globally, from computer-assisted reporting (CAR) in the past to visions and practices for data in journalism in the present (e.g. Coddington 2015; Hermida and Lynn Young 2019). Or has it?

Comprehensive and recent research into everyday data journalism practices among, for example, major US news publishers reveals that fairly little advanced data analysis is being used in everyday news reporting (Zamith 2019), especially when compared to the predictions of practitioners, researchers, and pundits in recent years. Instead, in Europe, Latin America, and Africa, civic technologists traditionally found in the periphery of journalism have been engaging in journalistic practices because they believe at times that journalism "has failed" to deliver in its task to make data accessible to the wider public, act as a gatekeeper to highlight important issues, and illustrate benefits of open data and freedom of information (Cheruiyot et al. 2019). Similarly, because of the dangers involved in producing and publishing journalism in Latin America, some of the most important "journalism" has been produced by social organizations, such as indigenous NGOs, that can provide at least some protection for sources publishing critical news. Countries with century-old traditions of freedom of information legislation may also still face similar challenges in terms of access to data for journalistic purposes compared to countries with fairly new legislation (Appelgren and Salaverría 2018).

Global, national, and local obstacles are making data journalism a practice that cannot be taken for granted. Research has shown that journalists and newsrooms in Western democracies are struggling to allocate sufficient resources to develop the expertise needed to carry out data journalism. Furthermore, access to relevant quality data is still one of the core challenges for data journalists, with Freedom of Information Acts serving as important tools for journalists. Yet the challenges facing news publishers and data journalists in the southern hemisphere may be much bigger, even insurmountable. Journalists in the Global South, as focused on in this book, may face circumstances where authorities are not only restricting access to relevant data but even censoring, imprisoning, or killing journalists who try to access and report data in an unfavorable way. The situations can vary widely in different contexts and over time, but there may also be some recurring patterns. In most Arab countries, the

justification of "national security" is used to ban certain kinds of news and restrict the release of information to the public, even when no real threat is involved. In Africa, available data is often flawed for institutional reasons, such as a lack of resources, which presents an inaccurate picture of society (Jerven 2013; Lindén 2013). The governments of some countries also intentionally paint a rosier picture than what is really the case. In Tanzania, the collection and distribution of data that is not approved by the country's chief statistician is a criminal offense; the scrutiny of its economic and social data has been criminalized because alternative information reveals a very different state of the economy and social life than the one presented by public sources. In Central America and Mexico, journalists publishing data on, for instance, crime and corruption jeopardize their safety. However, getting access to information is only part of the job. Quite often, data needs to be obtained from a number of different sources. More often than not, the process of cleaning the data and making it useful for data analysis is both time-consuming and expensive (see e.g. Kulkarni et al. 2016).

This book, *Data Journalism in The Global South*, edited by Bruce Mutsvairo, Saba Bebawi, and Eddy Borges-Rey, contributes to advancing the data journalism field and extending the geographical gaze beyond that with which many of us are familiar. For readers with some knowledge about data journalism in the western hemisphere, the empirical findings from the Global South may ring a familiar tone: journalists struggling to gain access to data or not feeling literate in math and statistics. However, other conclusions point to a more specific context, such as the lack of training and money, which means data journalists have to rely on Western donors such as Google News Lab, Voice of America, and World Bank Institute. This opens the door for a discussion on the impact of Western ideals on local journalism, and, as Relly and Zanger (2017) have shown in their research on support for journalists in Afghanistan, news media work is prone to "capture" by a variety of actors outside media organizations. Despite this gloom and the many obstacles to the development of the genre, this book's authors have managed to find several successful cases of data journalism, for instance from Malaysia, Kenya, and Argentina. In the Middle East, Qatar-based Al Jazeera is one of the pioneers; Caixin Visualization Lab in China is another interesting case that is explored in detail by Roselyn Du. In the Philippines, data journalism is well established in the leading newsrooms. As Ilagan and Soriano show in their study of four of the most established and oldest news organizations,

Filipino journalists have come a long way in telling stories through data despite limitations, such as a lack of resources.

Collaboration is a key feature of data journalism, which has become a global community. One example is the data from the Panama Papers, which has also been prominently used by African journalists. According to Last Moyo, the Papers show the revolutionary capacity of data to transform investigative journalism. Journalists all over the world managed to expose the illicit financial flows and tax havens used all over the region. However, in other contexts, authors have only been able to refer to the potential possibilities or slow emergence of data journalism since the data and professional capacity are just not there, even when collaboration is offered. It is fair to say that in most newsrooms data has not transformed the practice of journalism, and data's impact could rather be discussed in terms of imagined affordances; that is, how it could potentially disrupt journalism (Nagy and Neff 2015).

This book harmonizes with the ambitions of our own work in other editorial contexts. Firstly, with the other members of the editorial team of *Digital Journalism* and in his capacity as its editor-in-chief, Oscar Westlund has actively worked towards improved diversity in the composition of the editorial board as well as in the articles being published. One strategy for achieving this has been to commission special issues that explicitly call for papers from all corners of the world as well as areas from which less high-quality research has been published in the past (c.f. Westlund 2018). Secondly, and related to the first, Ester Appelgren and Carl-Gustav Lindén (together with Arjen van Dalen) will be finalizing in 2019 their guest editing of a special issue for *Digital Journalism* entitled "Data journalism research: Studying a maturing field" with the aim of expanding the data journalism research field by encouraging articles that broaden the theoretical, empirical, and geographic perspective on data journalism as one particular form of digital journalism. Thirdly, Roy Krøvel recently published a co-edited book (with Mona Thowsen) entitled *Making Transparency Possible: An Interdisciplinary Dialogue* that brings together scholars and practitioners from different corners of the world to discuss the salient case of investigative data.

Geographically, there is a lack of systematic comparative research and studies mapping how data journalism is practiced in regions like Africa, Asia, Central and South America, and Russia, where data journalists might face not only data scarcity or state control over information but also the insecurity that seeking data could pose a threat to their lives. Our ambition

with this chapter is to draw on our previous and ongoing research and editing endeavors related to data journalism. The next section will discuss and define data journalism. Thereafter, we will review and discuss the developments of research into data journalism in non-Western contexts. This will set the stage for determining the value of the contributions in this book. Research into data journalism, especially in non-Western societies, has repeatedly been framed and/or discussed in terms of the many challenges involved.

Setting the Stage: What Is Data Journalism?

What do data journalists actually do that sets them apart from other professionals in the newsroom? In recent years, data journalism has become an umbrella concept for forms of journalism previously labeled as computer-assisted reporting (CAR), online journalism, and data-driven journalism (DDJ)—see for example Usher (2019, p. 72)—while a new addition, computational journalism, has been established mostly in academic circles (Coddington 2015; Stalph and Borges-Rey 2018). Journalists themselves do not necessarily perceive analyzing data as something new (Rogers 2011), albeit the extent and ways in which they do so obviously vary. Rather, the development of emerging and easy-to-use tools for collecting, analyzing, and presenting data has sped up the process of working with large data sets compared to before (Appelgren and Nygren 2014). In their editorial setting, these technological advancements and others have revived debates about journalistic boundaries and journalism as a profession (Carlson and Lewis 2015; Carlson 2017; see also Eldridge et al. 2019). However, what ultimately makes data journalists stand out are not the data-driven large-scale journalistic projects with an emphasis on new technological possibilities, but rather the stories that can only be told with the aid of data, where journalists uncover connections that could not have been found using analogue journalistic methods.

As Sambrook (2018) and others explain, digital communication technology has given rise to large global networks of journalists cooperating on specific investigations—sharing information as well as technological know-how. There are many reasons why journalists from the Global South have played important roles in global collaborations. On the one hand, important leaks and revelations of illicit financial flows have come from tax havens and corporate havens in the Global South. On the other hand, a

number of leading politicians and personalities found to be involved in illicit financial flows have come from countries in Africa, Asia, or Latin America. Cooperation across borders has proved to be invaluable for gaining access to information as well as being able to analyze and understand the meaning of massive data leaks.

When interviewing data journalists, a researcher may find that there is resistance to the term *big data* in relation to journalism. This is because data journalists around the world tell stories based on rather small data sets and use basic statistical analysis to keep the stories accessible to their sometimes less data-literate audience (see e.g. Anderson and Borges-Rey 2019). Very few newsrooms have the resources and institutional capacity to involve hardcore computer and data scientists or specialists in analytics and analysis (c.f. Ferrer-Conill and Tandoc 2018; Zamith 2018) in their daily practices. Thus, the time spent on epistemic practices such as gathering, verifying, refining, and analyzing data can be rigorous (Ekström and Westlund 2019), but these processes are often highly innovative, in particular when obtaining access to data (Appelgren and Salaverría 2018). Actually, a key characteristic of data journalists is that they develop unique data skills and knowledge about data. Furthermore, even if they are one-of-a-kind in the newsroom, they most often work in teams. These teams can be permanently installed in the organization as so-called data desks, but they also appear as temporary working groups, where journalists and technologists are put together in their different roles to work on certain data-intense projects together. By extension, it is worth noting that such coordination among journalists and technologists has become increasingly common. It was first identified in empirical studies of mobile media (Westlund 2011) and blogs (Nielsen 2012) and has since also been studied in relation to overall media innovation and organizing (Westlund and Krumsvik 2014; Chua and Westlund 2019; Cornia et al. 2018) as well as more specifically to areas such as web analytics (Belair-Gagnon and Holton 2018) and news personalization. In *Global Teamwork: The rise of collaboration in investigative journalism*, Sambrook (2018) explains how global mutual aid networks of journalists are changing investigative journalism by facilitating cooperation across borders. These global collaborations have had a significant impact on politics in many non-Western countries.

Studies have furthermore found that a constant need for skills development, as well as a need for recognition from peers (Appelgren 2016), is evident among data journalists, and in the European and US context,

journalists interested in data journalism are therefore connected through social media, using resource sites and meeting up at dedicated data journalism conferences such as The National Institute for Computer-Assisted Reporting (NICAR) arranged by the US organization Investigative Reporters and Editors. There is a mentoring culture, where more experienced data journalists help out, and by doing so, they develop specific values and ideals that indeed challenge traditional journalistic boundaries (Appelgren 2016).

During the last decade, several awards have been created to celebrate the work of data journalists, for example the Global Editors Network Data Journalism Award, the Investigative Data Journalism Awards and the Nordic Data Journalism Awards (Appelgren 2018). While some scholars have used such awards to identify interesting cases for further study, there is also a more critical scholarly debate about the innovativeness in published data journalism (Zamith 2018, 2019; Appelgren 2018).

A related concept to data journalism is data-driven news work. This can cover many things, but most importantly, it refers to the use of metrics and analytics to predict audience behavior and optimize the offering of media companies (c.f. Carlson 2018; Zamith 2018). Complex data models of readers are used to analyze, for instance, why they pay for news online and, more importantly, what sort of topics and framing turns them into loyal subscribers. These systems support decision-making and steer newsrooms towards certain types of news reporting. It is not uncommon for data journalists to sometimes engage in moonlighting, that is, working with corporate audience metrics, mainly because they know how to work with data. Furthermore, within this context, data journalistic projects seem to be driving user engagement, thus improving the business model of news media. On the fringes of journalism, citizen journalists and activist journalists have used digital media to disseminate information and videos of events that again have sparked interest from legacy media.

DATA JOURNALISM IN NON-WESTERN SOCIETIES

Data journalism has become a global phenomenon that cannot be fully grasped within a national context, and research needs to broaden the geographical scope (Cheruiyot et al. 2019). Few studies have taken a comparative perspective or studied data journalism beyond the Western world, but there are exceptions. Uskali and Kuutti (2015) carried out a

study in six countries, and Felle (2016) interviewed 26 participants from 17 countries in Europe, the Americas, Australasia, and Africa. However, their focus was still on Europe, North America, and Australia, with no African journalist quoted. In *Making Transparency Possible* (Krøvel and Thowsen 2019), several authors discuss their experiences from global networks of journalists that teamed up to reveal illicit financial flows. Examples are drawn from Syria, Armenia, South Africa, Guatemala, and elsewhere. McKune explains how investigative journalists learn from each other to protect themselves from dangers and potential violence (McKune 2019). Fadnes explores how the international publication of the Panama Papers stories could affect the safety of data journalists in one of the node countries, in this case Guatemala (Fadnes 2019). Krøvel underlines the importance of working on inter-disciplinary teams that include auditors, economists, lawyers, and social scientists in addition to computer scientists and journalists.

In this book, the chapters are mostly empirical and based on case studies. Similarly, in the forthcoming special issue of *Digital Journalism*, *Data journalism research: Studying a maturing field*, guest edited by Appelgren, Lindén, and van Dalen, a selection of national case studies reflects on the development of data journalism across the globe. A common denominator for the studies included in the *Digital Journalism* special issue is thus that data journalism, as Porlezza and Splendore put it, has not yet taken the news outlets, or at least legacy media, by storm. Furthermore, regardless of the geographical location and media system, data-driven practices often come with new relationships with actors outside of journalism, and frictions that occur between outsiders' goals and traditional journalistic notions of gatekeeping have the potential of introducing non-traditional practices into mainstream journalism (Cheruiyot et al. 2019).

Similar to data journalism work in Western news media, news stories are often based on government data. Because the population of data journalists is typically small at the national level and data journalism education by journalism schools is still in its infancy, skills development is a rather solitary activity, and educational resources are often found in Anglo-American journalistic settings. In this Italian study, the authors find that ideas and values adopted by Italian data journalists originate from the Anglo-American journalistic culture, where most notably the norm of objectivity, but also the view on open source, networked journalism, and computing culture, for example, differ significantly from the Mediterranean journal-

ism culture (p. 12). However, by comparing the data-journalism peripheral actors in Europe and Africa, Cheruyiot, Baack, and Ferrer Conill (2019) concluded that African actors consider their local and national origins when adopting practices of data journalism. In a study of how the audience was constructed in the production of British data journalism artifacts, Anderson and Borges-Rey (2019) identified a tendency to be driven by telling a story about the truth of the world or trying to be truthful. In contrast to studies of data journalism in the Global North, Lewis and Al Nashmi found in the Arab region that journalists struggle with freedom of expression limited by official policy and social expectations of loyalty reinforced by religion.

Expertise As an Opportunity for the Future of Data Journalism

Data journalism, with notable exceptions such as Pro Publica, is still a genre that is typically performed by small teams or single dedicated reporters without formal training in programming, statistics, or data science. The access to free or cheap easy-to-use software for analytics and visualization, an abundance of instructional online tutorials, and openly available public data have opened up a path to DIY data journalism. These resources are also available to people in poorer countries, but the performance of data journalists relies on specific expertise.

Journalism studies and digital journalism studies have generated numerous inquiries into and debates about the expertise of journalists as opposed to other actors in the field of producing and distributing information. Many scholars have taken their point of departure in the sociology of professions or boundary work. Journalists form an occupation composed of journalists with distinct expertise, and they often seek to maintain control over their body of knowledge and its application in news work (e.g. Carlson and Lewis 2015). Expertise is central to journalistic authority (Carlson 2017) and has been conceptualized as a key tenet in early works in the field (Lewis and Westlund 2015; Westlund and Lewis 2017). More generally, while arguing for a knowledge-based view (KBV), Grant (1996) discusses how both explicit and tacit knowledge are important for all organizations in order to maintain a competitive edge. Moreover, he argues, organizations cannot expect all of their employees to know everything; thus, specialization is important. However, this also requires coordination.

While news publishers have previously established barriers between certain groups of specialists, they are nowadays often working towards facilitating coordination.

There are multiple ways to distinguish between different forms of coordination. First, we may distinguish between coordination among actors internally situated in the organization, such as journalists, business people, and technologists (Westlund 2011), and second, we may also distinguish between coordination among journalists and external social actors with whom they coordinate to produce and publish their products or services, such as representatives for web analytics (Belair-Gagnon and Holton 2018). Third, we should also acknowledge and study informal and formal collaborations with external stakeholders, such as civic tech companies (Baack 2018). Fourth, practitioners and scholars should explore cross-cultural coordination across borders.

Ultimately, issues surrounding expertise are closely connected to epistemology, which refers to the study of knowledge: what we know, how we know, and how knowledge is justified (Ekström and Westlund 2019). Through an epistemological lens, one core question relating to expertise has to do with the sort of knowledge needed to produce high-quality news and how data journalism changes which knowledge is needed. Another is related to the truth claims made. "Journalists can articulate truth claims about event referring to their own expertise, or pass truth claims made by sources" (see e.g. Ekström and Westlund 2019). Carlson (2019) discusses how the rise of automated journalism, just like for photojournalism, has fueled debates about mechanical objectivity.

In *Making Transparency Possible*, the authors find that research on digital investigative journalism lags several years behind digital developments in journalism. This would appear to be particularly true for many non-Western countries. However, digital journalists in non-Western countries tell stories that highlight the need for future research. In South Africa, the independent investigative journalists of AmaBhungane have found ways to finance high-quality investigative data journalism using digital platforms to build a community of supporters. It seems that AmaBhungane has succeeded in building "critical mass" of local experts who are able to adapt digital investigations to local needs. As Anya Schiffrin explains, much more research needs to be done on how digital journalism is being financed in Africa and how sources of finance facilitate and influence journalism there (Schiffrin and Powell 2019).

In Colombia, indigenous activist/citizen journalists have formed tightly knit online and real-world networks that operate inside indigenous organizations to cover indigenous issues and indigenous struggles. In conflict-prone areas such as the Cauca region of Colombia, journalists depend on organized civil society to be able to investigate and disseminate information. The current level of organization among indigenous activists and communicators could not have been reached without digital communication. A large number of indigenous experts in digital communication have facilitated the emergence of wide-reaching digital networks that connect organizations and indigenous journalists. In such cases, it would seem that data analysis and digital publication play less of a role than digital communication. Digital communication between indigenous and activist journalists makes it possible to effectively organize across communities and regions. The interplay between social organizations and emerging digital journalism begs more research.

Social organizations provide some protection for journalists in countries and regions where governments are not able or willing to defend free speech and free media. Safety concerns are affecting investigative journalism in general and hinder journalists from fully taking advantage of the potential of digital data analysis. The interplay between the threats and violence that journalists are facing and the developments in digital journalism should also be looked at more thoroughly. In this book, we get a glimpse of the status of data journalism in terms of the interplay between the development of expertise and knowledge surrounding data journalism, legislation, political climate, and the norms inside the newsrooms.

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References

Anderson, B., & Borges-Rey, E. (2019). Encoding the UX: User Interface as a site of encounter between data journalists and their constructed audiences. *Digital Journalism*. https://doi.org/10.1080/21670811.2019.1607520.

Appelgren, E. (2016). Data journalists using Facebook. *Nordicom Review, 37*(1), 156–169.

Appelgren, E. (2018). An illusion of interactivity: The paternalistic side of data journalism. *Journalism Practice, 12*(3), 308–325.

Appelgren, E., & Nygren, G. (2014). Data journalism in Sweden. *Digital Journalism, 2*(3), 394–405. https://doi.org/10.1080/21670811.2014.884344.

Appelgren, E., & Salaverría, R. (2018). The promise of the transparency culture: A comparative study of access to public data in Spanish and Swedish newsrooms. *Journalism Practice, 12*(8), 986–996.

Baack, S. (2018). Practically engaged. *Digital Journalism, 6*(6), 673–692. https://doi.org/10.1080/21670811.2017.1375382.

Belair-Gagnon, V., & Holton, A. E. (2018). Boundary work, interloper media, and analytics in newsrooms. *Digital Journalism, 6*(4), 492–508.

Boyd, D., & Crawford, K. (2012). Critical questions for big data: Provocations for a cultural, technological, and scholarly phenomenon. *Information, Communication & Society, 15*(5), 662–679. https://doi.org/10.1080/1369118X.2012.678878.

Carlson, M. (2017). *Journalistic authority: Legitimating news in the digital era.* New York: Columbia University Press.

Carlson, M. (2018). Confronting measurable journalism. *Digital Journalism, 6*(4), 406–417. https://doi.org/10.1080/21670811.2018.1445003.

Carlson, M. (2019). News algorithms, photojournalism and the assumption of mechanical objectivity in journalism. *Digital Journalism.* https://doi.org/10.1080/21670811.2019.1601577.

Carlson, M., & Lewis, S. C. (2015). *Boundaries of journalism: Professionalism, practices, and participation.* New York: Routledge.

Cheruiyot, D., & Ferrer-Conill, R. (2018). "Fact-checking Africa": Epistemologies, data, and the expansion of journalistic discourse. *Digital Journalism, 6*(8), 964–975.

Cheruiyot, D., Baack, S., & Ferrer-Conill, R. (2019). Data journalism beyond legacy media: The case of African and European civic technology organizations. *Digital Journalism*, 1–15. https://doi.org/10.1080/21670811.2019.1591166.

Chua, S., & Westlund, O. (2019). Audience-centric engagement, collaboration culture and platform counterbalancing: A longitudinal study of ongoing Sensemaking of emerging technologies. *Media and Communication, 7*(1), 153–165.

Coddington, M. (2015). Clarifying journalism's quantitative turn. *Digital Journalism, 3*(3), 331–348.

Cornia, A., Sehl, A., & Nielsen, R. K. (2018). 'We no longer live in a time of separation': A comparative analysis of how editorial and commercial integration became a norm. *Journalism.* https://doi.org/10.1177/1464884918779919.

De Maeyer, J., Libert, M., Domingo, D., Heinderyckx, F., & Le Cam, F. (2015). Waiting for data journalism. *Digital Journalism, 3*(3), 432–446.

Ekström, M., & Westlund, O. (2019). Epistemology and journalism. In *Oxford encyclopedia of journalism studies*. Oxford: Oxford University Press. https://doi.org/10.1093/acrefore/9780190228613.013.806.

Eldridge, S. E., II, Hess, K., Tandoc, E., Jr., & Westlund, O. (2019). Navigating the scholarly terrain: Introducing the digital journalism studies compass. *Digital Journalism, 7*(3), 386–403.

Fadnes, I. (2019). Reporting on unfinished business: Emerging digital media and investigative journalism in Guatemala. In R. Krøvel & M. Thowsen (Eds.), *Making transparency possible: An interdisciplinary dialogue*. Oslo: Cappelen Damm.

Felle, T. (2016). Digital watchdogs? Data reporting and the news media's traditional 'fourth estate' function. *Journalism, 17*(1), 85–96.

Ferrer-Conill, R., & Tandoc, R., Jr. (2018). The audience-oriented editor. *Digital Journalism, 6*(4), 436–453. https://doi.org/10.1080/21670811.2018.1440972.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal, 17*(S2), 109–122.

Heeks, R. (2010). Do information and communication technologies (ICTs) contribute to development? *Journal of International Development, 22*(5), 625–640.

Hellmueller, L. (2017). Gatekeeping beyond geographical borders: Developing an analytical model of transnational journalism cultures. *International Communication Gazette, 79*(1), 3–25.

Hermida, A., & Lynn Young, M. (2019). *Data journalism and the regeneration of the news*. London: Routledge.

Jerven, M. (2013). *Poor numbers: How we are misled by African development statistics and what to do about it*. Ithaca/London: Cornell University Press.

Krøvel, R., & Thowsen, M. (2019). *Making transparency possible: An interdisciplinary dialogue*. Oslo: Cappelen Damm.

Kulkarni, P., Joshi, S., & Brown, M. S. (2016). *Big data analytics*. New Delhi: PHI Learning.

Lewis, S. C. (2015). Journalism in an era of big data: Cases, concepts, and critiques. *Digital Journalism, 3*(3), 321–330.

Lewis, N., & Waters, S. (2018). Data journalism and the challenge of shoe-leather epistemologies. *Digital Journalism, 6*(6), 719–736. https://doi.org/10.1080/21670811.2017.1377093.

Lewis, S. C., & Westlund, O. (2015). Big data and journalism: Epistemology, expertise, economics, and ethics. *Digital Journalism, 3*(3), 447–466.

Lindén, C. (2013). *The great African data debate*. Retrieved from https://www.wider.unu.edu/publication/great-african-data-debate. Accessed 13 May 2019.

Linden, C.-G. (2016). Decades of automation in the newsroom: Why are there still so many jobs in journalism? *Digital Journalism, 5*(2), 123–140.

McKune, C. (2019). It happens overnight. In R. Krøvel & M. Thowsen (Eds.), *Making transparency possible: An interdisciplinary dialogue*. Oslo: Cappelen Damm.

Montal, T., & Reich, Z. (2017). I, robot. You, journalist. Who is the author? Authorship, bylines and full disclosure in automated journalism. *Digital Journalism, 5*(7), 829–849.

Nagy, P., & Neff, G. (2015). Imagined affordance: Reconstructing a keyword for communication theory. *Social Media Society, 1*(2), 1–9.

Nielsen, R. K. (2012). How newspapers began to blog: Recognizing the role of technologists in old media organizations' development of new media technologies. *Information, Communication & Society, 15*(6), 959–978.

Relly, J. E., & Zanger, M. (2017). The enigma of news media development with multi-pronged 'capture': The Afghanistan case. *Journalism, 18*(10), 1233–1255.

Rogers, S. (2011, July 28). Data journalism at the guardian: What is it and how do we do it. *The Guardian*. https://www.theguardian.com/news/datablog/2011/jul/28/datajournalism

Sambrook, R. (Ed.). (2018). *Global teamwork: The rise of collaboration in investigative journalism*. Oxford: Reuters Institute for the Study of Journalism.

Schiffrin, A., & Powell, R. (2019). Investigative journalism on oil, gas and mining: Has Donor-driven use of digital technology made a difference? In R. Krøvel & M. Thowsen (Eds.), *Making transparency possible: An interdisciplinary dialogue*. Oslo: Cappelen Damm.

Stalph, F., & Borges-Rey, E. (2018). Data journalism sustainability: An outlook on the future of data-driven reporting. *Digital Journalism, 6*(8), 1078–1089.

Usher, N. (2016). *Interactive journalism: Hackers, data, and code*. Urbana: University of Illinois Press.

Usher, N. (2017). Venture-backed news startups and the field of journalism. *Digital Journalism, 5*(9), 1116–1133. https://doi.org/10.1080/21670811.2016.1272064.

Usher, N. (2019). Hacks and hackers. *The International Encyclopedia of Journalism Studies*, 1–7. https://doi.org/10.1002/9781118841570.iejs0254.

Uskali, T. I., & Kuutti, H. (2015). Models and streams of data journalism. *The Journal of Media Innovations, 2*(1), 77–88.

Van Leuven, S., Kruikemeier, S., Lecheler, S., & Hermans, L. (2018). Online and newsworthy: Have online sources changed journalism? *Digital Journalism, 6*(7), 798–806.

Westlund, O. (2011). *Cross-media news work sensemaking of the mobile media (r)evolution*. Gothenburg: University of Gothenburg.

Westlund, O. (2018). Editorial. *Digital Journalism, 6*(10), 1288–1293. https://doi.org/10.1080/21670811.2018.1537721.

Westlund, O., & Krumsvik, A. H. (2014). Perceptions of intra-organizational collaboration and media workers' interests in media innovations. *The Journal of Media Innovations, 1*(2), 52–74.

Westlund, O., & Lewis, S. C. (2017). Four conceptual lenses for journalism amidst big data: Towards an emphasis on epistemological challenges. In A. Nguyen (Ed.), *News, numbers and public opinion in a data-driven world*. New York: Bloomsbury.

Zamith, R. (2018). Quantified audiences in news production: A synthesis and research agenda. *Digital Journalism, 6*(4), 418–435.

Zamith, R. (2019). Transparency, interactivity, diversity, and information provenance in everyday data journalism. *Digital Journalism*. https://doi.org/10.1080/21670811.2018.1554409.

Zhang, X. (2018). Visualization, technologies, or the public? *Digital Journalism, 6*(6), 737–758. https://doi.org/10.1080/21670811.2017.1340094.