

The Datafication of Media (and) Audiences

An Introduction

David Mathieu and Ana Jorge

MedieKultur 2020, 69, 1-10

Published by SMID | Society of Media researchers In Denmark | www.smid.dk

The online version of this text can be found open access at www.mediekultur.dk

The need for audience research in the study of datafication

Over the past decade, a substantial body of research has emerged from what is called critical data studies (see Iliadis & Russo, 2016), warning about and detailing the threats posed to our democracies by datafication. Datafication has been approached as an ideology (Van Dijck, 2014), as a process of colonization of the lifeworld (Couldry & Mejias, 2019), or as the main engine behind a new social and economic order, surveillance capitalism (Zuboff, 2020), in which our needs and desires are commodified and exploited by massive and automated processes of data collection, analysis, and retroaction. The media are at the forefront of these developments through the global infrastructure that they have engendered in order to control data (Arsenault, 2017), but also through the establishment of new forms of relationship and interaction with their audiences.

Academic knowledge built over the last five decades on media audiences may be called into question by these developments, as algorithmic recommendations, machine learning, platform design and new metrics reframe, anticipate and shape the audience's every move. While it was once held that audiences were selective in their choice of content (Katz et al., 1974), formed communities of interpretation (Fish, 1980) and gave their attention to public issues freely (Warner, 2002), it would appear that they are now increasingly being selected, calculated, interpreted and anticipated by media on the basis of a wide range of data provided more or less willingly and consciously. This datafication of media audiences—i.e. the quantification of the mediated experiences of audiences—is

not to be understood simply as a new form of knowledge production about the audience, but also as a new era in the quantification and commodification of audiences, challenging our understanding of audiences as agentic and autonomous subjects.

There is a blurring between tech companies and media, which means that there is already a great deal of research on the datafication of media. However, what we know about the datafication of media is often generically approached through the headings of wide societal concerns, such as privacy or surveillance, or narrowly reduced to specific technologies, such as apps or algorithms. Furthermore, this research has concentrated on production and content analyses (or, more precisely, analyses of technological objects), while little is known about the experience of audiences. Much critical attention has been paid to Google, Facebook, Twitter and other media, but more for the implications for privacy of massive data collection, or for the threats they pose to democracy at large, than for the ways in which they interact and foster relations with their audiences. There is a need for more meso media-specific discussions of datafication and, within these, heightened consideration for media audiences.

Given the obvious link between critical studies and media studies, it is surprising that concern for media audiences (or 'users', as they are called today) is long overdue. There is however a familiar trope in this order of things: it is fitting to attempt first to understand media and textual power before turning to its reception; and yet this often results in delivering accounts that suggest a passive, defenceless and inadequate audiences, victims of powerful media (Livingstone, 2019). A proper account of audiences is an essential ingredient of media studies, an idea that dates back to the early study of radio audiences by Herzog (1941).

Defining an audience perspective on the study of datafication

Klaus Bruhn Jensen (1986) justified the interest in audience research with three key points which have the potential to challenge received views on datafication: 1) audiences always make a difference; 2) audiences are always problematic; and 3) audiences are always an empirical question. In a similar vein, Livingstone (2019), drawing from the history of audience research, suggests three lessons from which current research on datafication can learn: 1) attend to the audience and what is said about them; 2) look into the diversity of audience experiences; and 3) recognize that "the circulation of meanings includes not only encoding but also decoding" (p. 5).

With these tenets in mind, this special issue invited scholarly contributions with the aims to:

- Explore critically the tensions between, on the one hand, attempts at control and commodification made possible by the datafication of media (and) audiences, and, on the other hand, the reactions and agentic possibilities of audiences to comply, avoid or cope with these attempts at control.

- Provide an empirical basis to answer broad and worrying questions about the democratic and societal consequences of datafication, about its impact on media consumption and on everyday and cultural life, by operationalizing the media audience as a key actor in mediated processes of datafication.
- Shed light on and theorize new forms of relationship and mutual influence that link media (encoding) with their audiences (decoding) in the age of datafication.

The insights from this special issue first and foremost concern media organizations that engage with their audiences through the prism of datafied practices and technologies. However, given the blurring of media and technology mentioned above, the audience perspective developed within media studies can open original lines of inquiry in other study domains that do not relate closely to the notion of audience. Documenting the ways audiences are captured by data or their reactions to datafied media can help understand the implications of the quantification of human experience, processes of normalization (or what Zuboff, 2020, calls habituation) or rejection of datafication, as well as important transformations that are carried by datafication. An audience perspective can shed light on the new asymmetries and power relations created by datafication. In fact, with its historical interest in the power relations between media and audience, audience research is well equipped theoretically to tackle such a knowledge interest. Such a perspective can apprise the implications of the (lack of) transparency and accountability of data practices in media industries, notably through its concept of literacy. It can document the cultural specificities through which datafication is appropriated and domesticated in different contexts, settings or countries.

Adopting an audience perspective on datafication does not imply a celebratory narrative in which the audience prevails in the face of datafication. It is important to avoid the familiar dualism in research between dystopian and utopian understandings of datafication. Instead, audience research can be used to bring nuances and complexity in these debates, and can only do so by making the audience visible in the study of datafication—not only visible in the interest that research has in protecting and emancipating the audience, but also voiced in the research itself.

We can say that the time is ripe for audience research to make a contribution to the critical study of datafication and that this special issue provides a firm step in that direction. This special issue is, to our knowledge, the first collection of works paying systematic attention to media audiences in the study of datafication. It offers six original contributions that explore different aspects of the relationship between media and audiences in the context of datafication.

The first article, “Disconnecting, minimizing risk, trust and apathy: A compass of coping tactics in datafied everyday lives” by Jannie Hartley Møller and Sander Andreas Schwartz, documents the tactics that users of digital platforms rely upon to cope with datafied media. Based on focus group interviews with Danish citizens, the study unveils

four coping tactics: coping by disconnecting, by minimizing risk, by apathy or by trust. The second article, “Appscapes in everyday life: Studying mobile datafication from an infrastructural user perspective”, is authored by Signe Sophus Lai and Sofie Flensburg. Combining qualitative interviews with a mapping of the app infrastructure of mobile phone users, the study argues for a “disconnect between what users believe happen to their data and the actual data harvesting and distribution mechanisms of their apps”. This is followed by a contribution by Jeremy Ryan Matthew titled “Netflix and the design of the audience: The homogeneous constraints of data-driven personalization”. Mixing an analysis of the Netflix interface with observations of uses and discussions with users in British Columbia, Canada, the article argues that the Netflix recommendation system is designed to dazzle and disorient users, constraining their agency.

The fourth contribution, by Rasmus Rex Pedersen, offers an analysis of music recommendations by the streaming platform Spotify. The article, entitled “Datafication and the push for ubiquitous listening in music streaming”, argues that datafication allows Spotify to market a novel mode of music consumption based on moods, moments or situations in the everyday life of users, keeping them listening.

Next, “The datafication of public service media: Dreams, dilemmas and practical problems. A case-study of the implementation of personalized recommendations at the Danish Public Service Media DR”, written by Jannick Kirk Sørensen, discusses the challenges faced when adapting a recommendation system developed essentially on the basis of commercial interests for public service values and practices.

This collection ends with an article by David Mathieu and Pille Pruulmann Vengerfeldt titled “The data loop of media and audience. How audiences and media actors make datafication work”. The article develops a model of the data loop, which considers how data circulate back and forth between media actors and media audiences, providing moments of agency for these actors to influence one another.

This special issue also includes two book reviews that provide further material to reflect on the datafication of media and audiences. Jannie Hartley Møller reviews the first book, *Metrics at work: Journalism and the contested meaning of algorithms*, authored by Angela Christin. The book looks at how audience analytics are responded to in French and American newsrooms. The second book, *Automated media* by Mark Andrejevic, is reviewed by Jakob Svensson. It concerns itself with the logic of automation applied to the media, with an eye on the implications of this development for media audiences.

In the following, we would like to detail three ways in which the different articles forming this special issue make a contribution to the study of datafication of media and audiences.

Audiences as objects and subjects of datafication

As pointed out above, Livingstone (2019) suggests two perspectives to attend to concerning media audiences: 1) what is said about them and 2) what they say about themselves.

Firstly, there is a perspective that concerns itself with audience measurement and commodification, attending to the gaze that datafication enables as media look down at their audiences. This perspective considers audiences as objects to be apprehended, described, measured, predicted and perhaps even controlled. For media organizations, datafication is said to represent a “paradigmatic shift” (Fisher & Mehozay, 2019, p. 1) in the way media audiences are measured and represented. The appeal of data resides in the promise that data-driven technologies will provide more detailed and comprehensive knowledge about media audiences (Athique, 2018; Zeller, 2015). For instance, the proliferation of new metrics and analytics in the newsroom is pushing journalists to consider a “quantified” audience (Zamith, 2018) in the form of clicks their articles receive. Bolin and Andersson Schwarz (2015) describe a move from descriptive Gaussian statistics towards Paretian statistics that attend to the emergent and relational aspects of data points, especially post-demographic information such as tastes, interests, etc. (Rogers, 2015). They also remark, together with Athique (2018), that audiences are increasingly distanced from the data collected, as data analytics are tracking not people but their devices, leading Fisher and Mehozay to conclude that the audience is “seen differently, but not more accurately” (2019, p. 1).

There is a further perspective that sees audiences as subjects that actively use and select media, domesticate them, interpret their meanings and implement them in their everyday lives. One will recognize the perspective brought by new audience studies developed in the 1980s, emphasizing the active audience and researching agentic activities in audience practices. This interest is less developed in the literature on datafication, but worth naming are the works by Bucher (2017) on the “algorithmic imaginary” and Lomborg and Kapsch (2019) on “decoding algorithms”. These authors understand algorithms as texts that can be interpreted, showing how audiences are not passive in their uptake of data technologies. Helen Kennedy and her colleagues have been advocating more research on public agency (Kennedy, Poell, et al., 2015) and public understanding of datafication (Kennedy, Elgesem, et al., 2015); however, this literature is not specifically concerned with media but touches on self-tracking (e.g. Lupton, 2016; Neff & Nafus, 2016) or advertising (e.g. Dolin et al., 2018; Eslami et al., 2018), and general issues of privacy (e.g. Bergström, 2015; Draper & Turow, 2019) and surveillance (e.g. Dencik & Cable, 2017; Lupton & Michael, 2017). This special issue complements this literature by focusing specifically on the application of datafication in the context of media use, as anticipated and designed by media producers or lived and reacted upon by media users.

The contributions presented here provide a good illustration of these two perspectives; interestingly, though, what this special issue is beginning to open up is more integration between the two strands of research. For example, while Sørensen (p. 90-115), Matthew (p. 52-70) and Pedersen (p. 71-89) are looking at how media consider and represent their audiences as ideal users in, respectively, public service media, music listening and video streaming platforms, Hartley and Schwartz (p. 11-28) and Lai and Flensburg (p. 29-51) provide insights into the reactions, uses and appropriations of actual users. The

integration of the two perspectives is apparent in the work of Matthew (p. 52-70) and Lai and Flensburg (p. 29-51), who explicitly seek to link an analysis of the objective (and material) conditions of datafication with their subjective apprehension by actual users. This integration of perspectives is most evident in the article by Mathieu and Pruilmann-Vengerfeldt (p. 116-138), which seeks to integrate in one unified model how media rely on datafication to engage with their ideal users and how actual users may react to and possibly influence, through their ordinary consumption of datafied media, the images constructed by media actors. In doing so, these authors emphasize the mutual dependence of media producers and audiences—or of encoding and decoding—as these actors send feedback to one another via the circulation of data.

The visibility of audiences

Another important task achieved by this special issue is to provide visibility to audiences by studying empirically the processes of datafication. Audiences are visible in the contradictions, ambiguities and tensions they bring through their appropriation of datafied media. These are eloquently analysed by Matthew (p. 52-70), who questions the ambivalent reactions of Netflix users who seem simultaneously to appreciate and downplay, enjoy and be discouraged by the personalization of content suggestions offered by Netflix. With the help of de Certeau, Hartley and Schwartz (p. 11-28) conceptualize the audience in its relationship with the system and its strategies of datafication. Audiences are not the passive victim of the system, but, as the authors argue, react to the anxieties that datafication engenders in their everyday lives by developing coping tactics—tactics of resistance, but also of compliance. These authors show how perceptions of datafication push users to adapt their media practices, affecting the relationship that audiences have with media. The latter point is essentially the argument put forward by Mathieu and Pruilmann-Vengerfeldt (p. 116-138) in their model of the data loop, showcasing the agency that media audiences (together with media actors) have in making datafication work.

The works of Sørensen (p. 90-115) and Pedersen (p. 71-89) reveal how the audience is an important stake in the development of datafication. Sørensen shows how considerations for the public are tempering the application of datafication in public service media, and by the same token demonstrates how datafication follows commercial logics that clash with the values of public service media. Complementarily, Pedersen reveals that the use of user data by Spotify, in an effort to increase consumption on its platform, is pushing the boundaries for how users encounter and experience music. These contributions begin to unveil how “audience logics” (Schrøder, 2017, p. 102) are a driving force behind the datafication of media.

A material turn in audience research

As Web 2.0 encouraged the participation and interaction of audiences, who left digital traces of their “prosumptive” practices (Ritzer et al., 2012), or what is also called ‘produsage’ (Bruns, 2008), an interest in the materiality of technology took over media studies. This interest focused on capturing audience behaviour, their interaction with media qua objects, and the ways affordances of new and social media shaped audience practices, and eventually the constitution of publics (boyd, 2011). Within that same period, the audience was declared dead (Rosen, 2016, but see Livingstone & Das, 2013), studies of reception felt out of fashion, and new methodologies were developed that could see network relationships between users or trace their digital uses of media through clicks, likes, shares and tweets (Mathieu et al., 2015). A material turn in media studies resulted in the textual dimension of media and sense-making practices of audiences to be neglected.

Livingstone (2005) observed that there are methodological difficulties in combining both a textual and material perspective in the study of audiences. As she explained:

Through the concept of double articulation, Roger Silverstone (1994) contrasts the media qua material objects such as the television or Walkman, namely as technological objects located in particular spatio-temporal settings, with the media qua texts such as the news or the soap opera, namely as symbolic messages located within particular sociocultural discourses. Broadly, to focus on the media-as-object is to invite an analysis of media use in terms of consumption in the context of domestic practices. On the other hand, to focus on the media-as-text is to invite an analysis of the textuality or representational character of media contents in relation to the interpretive activities of particular audiences. The implication, clearly, is that the audience is also doubly articulated—as the consumer-viewer. Frustratingly, researching audiences simultaneously in terms of reception and contexts of use seems hard to sustain (p. 344).

The contributions in this special issue are beginning to show a change in this matter, as they attend to the materiality in data, yet not at the expense of questions of reception. This special issue witnesses a closer relationship between the materiality and textuality of media products, which have forward-looking implications for the future development of datafication. A conclusion suggested by the various contributions to this special issue concerns the misalignment or gap between the material conditions provided by datafication and, to use the words of Livingstone, both what audiences say about it and what is said about them.

Sørensen (p. 90-115) and Pedersen (p. 71-89) account for this materiality by considering how data are a resource used for the conceptualization of the audience. Sørensen observes that it is in the contextualization—in the practice—of datafication that problems arise. These contributions show how data practices are complex assemblages that involve several logics which crisscross and sometimes clash with one another.

Following a decoding tradition, or what Abercrombie and Longhurst (1998) have called the “appropriation/resistance paradigm” of audience research, Mathieu and Pruulmann-Vengerfeldt (p. 116-138) and Hartley and Schwartz (p. 11-28) show how the

subjective experiences of datafication impact the use made of datafied media. Taking their point of departure in the anxieties of media users to reflect on the nature of the tactics these users rely upon to cope with datafied media, Hartley and Schwartz hint at a discomfort, a tension, perhaps even a crisis of trust provoked by the gap between the material conditions offered by media and the reactions of the audience. Mathieu and Pruulmann-Vengerfeldt develop a model that considers the moments of agency that are made possible by the circulation of data between actors and digital interfaces of collection and retroaction. These authors understand interfaces of data collection and retroaction as means by which media producers and audiences can influence one another.

This material turn is perhaps most evident in the methodologies adopted by some of the contributions that offer analysis of empirical users. Both Lai and Flensburg (p. 29-51) and Matthew (p. 52-70) attempt to understand and analyse the material and the textual together, but also to bring into the mix considerations for the practical and discursive consciousness of users, for the everyday culture and practice that become entangled with the datafication of media. As a result of their methodological approach, the gaps between the objective conditions of datafication and their subjective experience by users become an issue addressed more directly in empirical research. Lai and Flensburg suggest that users are not well-equipped to understand the implications of their use of mobile phone apps. Anchoring their work in the concept of corporate obfuscation, these authors suggest a need for better literacy in the audience, which a systematic mapping of the privacy implications of apps—what they call the ‘appscape’ approach—can provide. Matthew goes a step further in that direction by (re-)introducing the concept of false consciousness to express the contradictions he sees between the design of the Netflix interface and its subjective experience by users.

We hope this special issue demonstrates that audience research can contribute to the study of datafication by bringing attention to issues that relate specifically to audiences. In doing so, audience research can help answer, empirically, theoretically and methodologically, pressing questions asked by critical data studies. We believe it can even suggest new, original perspectives on the topic, in particular regarding the tensions and complexities that arise as audiences are doubly articulated as both objects and subjects of datafication, or as both sense-makers and users of datafied media.

References

- Abercrombie, N., & Longhurst, B. (1998). *Audiences: A sociological theory of performance and imagination*. London: SAGE.
- Arsenault, A.H. (2017). The datafication of media: Big data and the media industries. *International Journal of Media & Cultural Politics*, 13(1), 7–24. https://doi.org/10.1386/macp.13.1-2.7_1
- Athique, A. (2018). The dynamics and potentials of big data for audience research. *Media, Culture & Society*, 40(1), 59–74. <https://doi.org/10.1177/0163443717693681>

Editorial: The Datafication of Media (and) Audiences

- Bergström, A. (2015). Online privacy concerns: A broad approach to understanding the concerns of different groups for different uses. *Computers in Human Behavior*, 53, 419–426. <https://doi.org/10.1016/j.chb.2015.07.025>
- Bolin, G., & Andersson Schwarz, J. (2015). Heuristics of the algorithm: Big data, user interpretation and institutional translation. *Big Data & Society*, 2(2), <https://doi.org/10.1177/2053951715608406>
- boyd, d. (2011). Social network sites as networked publics: Affordances, dynamics, and implications. In Z. Papacharissi (Ed.), *A networked self: Identity, community and culture on social network sites* (pp. 39–58). New York: Routledge. <https://doi.org/10.4324/9780203876527-8>
- Bruns, A. (2008). *Blogs, Wikipedia, Second Life, and beyond: From production to produsage*. New York: Peter Lang. <https://doi.org/10.1108/02640470910947700>
- Bucher, T. (2017). The algorithmic imaginary: Exploring the ordinary affects of Facebook algorithms. *Information, Communication & Society*, 20(1), 30–44. <https://doi.org/10.1080/1369118X.2016.1154086>
- Couldry, N., & Mejias, U. A. (2019). *The costs of connection: How data is colonizing human life and appropriating it for capitalism*. Stanford University Press. <https://doi.org/10.1515/9781503609754>
- Dencik, L., & Cable, J. (2017). The advent of surveillance realism: Public opinion and activist responses to the Snowden leaks. *International Journal of Communication*, 11, 763–781.
- Dolin, C., Weinschel, B., Shan, S., Hahn, C.M., Choi, E., Mazurek, M.L., & Ur, B. (2018). Unpacking perceptions of data-driven inferences underlying online targeting and personalization. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems—CHI '18*, 1–12. <https://doi.org/10.1145/3173574.3174067>
- Draper, N.A., & Turow, J. (2019). The corporate cultivation of digital resignation. *New Media & Society*, 21(8), 1824–1839. <https://doi.org/10.1177/1461444819833331>
- Eslami, M., Krishna Kumaran, S.R., Sandvig, C., & Karahalios, K. (2018). Communicating algorithmic process in online behavioral advertising. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems—CHI '18*, 1–13. <https://doi.org/10.1145/3173574.3174006>
- Fish, S.E. (1980). *Is there a text in this class? The authority of interpretive communities*. Cambridge, MA: Harvard University Press.
- Fisher, E., & Mehozay, Y. (2019). How algorithms see their audience: Media epistemes and the changing conception of the individual. *Media, Culture & Society*, 41(8), 1176–1191. <https://doi.org/10.1177/0163443719831598>
- Herzog, H. (1941). On borrowed experience: An analysis of listening to daytime sketches. *Zeitschrift Für Sozialforschung*, 9(1), 65–95. <https://doi.org/10.5840/zfs1941915>
- Iliadis, A., & Russo, F. (2016). Critical data studies: An introduction. *Big Data & Society*, 3(2), <https://doi.org/10.1177/2053951716674238>
- Jensen, K.B. (1986). *Making sense of the news*. Aarhus: Aarhus University Press.
- Katz, E., Blumler, J.G., & Gurevitch, M. (1974). Utilization of mass communication by the individual. In J.G. Blumler & E. Katz (Eds.), *The Uses of mass communications: Current perspectives on gratifications research* (pp. 19–32). New York: SAGE Publications. <https://doi.org/10.1086/268277>
- Kennedy, H., Elgesem, D., & Miguel, C. (2015). On fairness: User perspectives on social media data mining. *Convergence: The International Journal of Research into New Media Technologies*, 23(3), 270–288. <https://doi.org/10.1177/1354856515592507>
- Kennedy, H., Poell, T., & van Dijck, J. (2015). Data and agency. *Big Data & Society*, 2(2), <https://doi.org/10.1177/2053951715621569>
- Livingstone, S. (2005). The changing nature of audiences: From the mass audience to the interactive media user. In A. N. Valdivia (Ed.), *A companion to media studies* (pp. 337–359). New Jersey: Blackwell Publishing Ltd. <http://doi.wiley.com/10.1111/b.9781405141741.2005.00018.x>

Editorial: The Datafication of Media (and) Audiences

- Livingstone, S. (2019). Audiences in an age of datafication: Critical questions for media research. *Television & New Media*, 20(2), 170–183. <https://doi.org/10.1177/1527476418811118>
- Livingstone, S., & Das, R. (2013). The end of audiences? Theoretical echoes of reception amidst the uncertainties of use. In J. Hartley, J. Burgess, & A. Bruns (Eds.), *A companion to new media dynamics* (pp. 104–121). Chichester: John Wiley & Sons. <https://doi.org/10.1002/9781118321607.ch6>
- Lomborg, S., & Kapsch, P.H. (2019). Decoding algorithms. *Media, Culture & Society*, <https://doi.org/10.1177/0163443719855301>
- Lupton, D. (2016). *The quantified self: A sociology of self-tracking*. Malden, MA: Polity.
- Lupton, D., & Michael, M. (2017). ‘Depends on who’s got the data’: Public understandings of personal digital dataveillance. *Surveillance & Society*, 15(2), 254–268. <https://doi.org/10.24908/ss.v15i2.6332>
- Mathieu, D., Vicente-Marino, M., Brites, M.J., Amaral, I., Chimirri, N.A., Finger, J., Romic, B., Saariketo, M., Tammi, R., Torres Da Silva, M., & Pacheco, L. (2015). Methodological challenges in the transition towards online audience research. *Participations*, 13(1), 289–320.
- Neff, G., & Nafus, D. (2016). *Self-tracking*. Cambridge, MA: The MIT Press.
- Ritzer, G., Dean, P., & Jurgenson, N. (2012). The coming of age of the prosumer. *American Behavioral Scientist*, 56(4), 379–398. <https://doi.org/10.1177/0002764211429368>
- Rogers, R. (2015). *Digital methods* (First paperback edition). Cambridge, MA: The MIT Press.
- Rosen, J. (2016). *The people formerly known as the audience*. Press Think. Retrieved 15 March 2016 from: http://archive.pressthink.org/2006/06/27/ppl_frmr.html
- Schröder, K. C. (2017). Towards the ‘audiencization’ of mediatization research? Audience dynamics as co-constitutive of mediatization processes. In O. Driessens, G. Bolin, A. Hepp, & S. Hjarvard (Eds.), *Dynamics of mediatization* (pp. 85–115). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-62983-4_5
- Silverstone, R. (1994). *Television and everyday life*. London: Routledge.
- van Dijck, J. (2014). Datafication, dataism and dataveillance: Big data between scientific paradigm and ideology. *Surveillance & Society*, 12(2), 197–208. <https://doi.org/10.24908/ss.v12i2.4776>
- Warner, M. (2002). Publics and counterpublics (abbreviated version). *Quarterly Journal of Speech*, 88(4), 413–425. <https://doi.org/10.1080/00335630209384388>
- Zamith, R. (2018). Quantified audiences in news production: A synthesis and research agenda. *Digital Journalism*, 6(4), 418–435. <https://doi.org/10.1080/21670811.2018.1444999>
- Zeller, F. (2015). Big data in audience research: A critical perspective. In F. Zeller, C. Ponte, & B. O’Neill (Eds.), *Revitalising audience research. Innovations in European audience research* (1st ed., pp. 261–276). London: Routledge. <https://doi.org/10.4324/9781315762821>
- Zuboff, S. (2020). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. London: Profile Books.

David Mathieu
Department of Communication and Arts
Roskilde University

Ana Jorge
CICANT
Lusófona University