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What does digital journalism studies look like?

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Abstract

This article analyses the characteristics of digital journalism studies through an empirical investigation of all articles published in the journal *Digital Journalism*, from its launch in 2013 to issue 6, 2018. The aim of the analysis is to identify dominant themes and degrees of diversity and interdisciplinary in digital journalism studies, and to identify biases and blind spots. The article is based on analysis of keywords, abstracts and references used in all articles published in the journal. The findings suggest that while the research published in *Digital Journalism* is firmly situated within journalism studies, it has a stronger emphasis on technology, platforms, audience and the present. The article also finds that digital journalism studies, as seen in *Digital Journalism*, is dominated by perspectives from the social sciences, while largely ignoring digital journalism as a meaning-making system, and that the field of research could benefit from the application of theories and perspectives from the humanities and to some extent from theoretical computer science and informatics. Finally, the article argues that digital journalism studies suffers from a lack of connections between empirical research and the many conceptual discussions that dominate the (sub)field.

Keywords: digital journalism studies; digital journalism; digital journalism research; journalism studies; journalistic metadiscourse; interdisciplinarity

Introduction

In his editorial for the inaugural issue of the journal *Digital Journalism* in 2013, Franklin argued that the absence of a journal devoted to the changes to journalism and society brought forth by digital technologies had "constituted an extraordinary omission in scholarly publishing provision within the field of journalism studies" (2013, 1). The aim of the new journal was to fill that void by becoming "a repository for research-based studies which catalogue these changes" (2013, 2). In other words: *Digital Journalism* wanted to become a hub for the study of digital journalism and an archive of its development.

During the six years that have passed since the launch of the journal, it has undoubtedly made its mark not only as a hub for a (sub)field within journalism studies, but also within the broader discipline of communication. According to the Google scholar journal ranking, which masseurs a journal's impact over the past five years (the h5 index), *Digital journalism* became the fourth most influential journal within the discipline of communication during 2018.[1] The journal thereby surpassed all the other major journalism

journals (*Journalism Studies*, *Journalism: Theory, Practice & Criticism*, *Journalism Practice*, and *Journalism & Mass Communication Quarterly*). Although citation metrics do not tell the whole story of a journal's impact and significance, it is remarkable that a journal established to cover a sub-field may in fact outgrow the field it is supposed to be subordinate to.

It is therefore time to stop and reflect over what digital journalism studies has become. Does the success of the journal *Digital journalism* imply that digital journalism studies has become a scholarly field of its own? If so; what are the relationship between digital journalism studies and journalism studies, the field it was established as subordinated to? This article takes those questions as its starting point in an attempt at answering the question posed in the title: What does digital journalism studies look like?

There has been no lack of attempts at defining digital journalism studies in recent years. Several conceptual books and journal articles – most notably the two handbooks edited by Witschge et al. (2016b) and Franklin and Eldridge II (2017) – have contributed extensively to the scholarly discussion on what digital journalism studies is and how it develops. However, not many have taken an empirical approach beyond the review of literature in search for answers. Our contribution is an empirical one. We will present and discuss an extensive empirical analysis of all articles published in *Digital journalism*, the journal, which the founding editor Franklin, as cited above, wanted to become the repository of digital journalism studies. Before we present exactly what and how we have conducted this empirical analysis, we will present some of the ideas discussed in the literature. After all, there is more to digital journalism studies than what can be found in the journal *Digital journalism*.

The rise of digital journalism studies

The phrase "digital journalism" first appeared in scholarly publications like *Newspaper Research Journal* and reports from the Nieman lab at Harvard around the time the Internet became publicly available through the World Wide Web during the mid-1990s. Some of these early publications point to future directions and discussions of great significance, like Harper (1996), who investigated to what degree US newspaper editors were concerned with making a revenue with the online editions they were planning to launch. The study of digital journalism was, in other words, from the very beginning enmeshed in an economic discourse, in which how to finance journalism in a digital age has been one of the core questions. Furthermore, Fulton et al. (1994) discussed what journalism is and who is a journalist in a digital age when "everyone can report and edit the news". Fundamental questions of who and what journalism is and can be in a digital age has in other words also dominated the scholarship on digital journalism from the very beginning.

However, "digital journalism" did not become a common phrase in academic publications before much later. The phrase occurs in 34 different publications between 1995 and 2000, rising to 168 publications between 2000 and 2005, according to a Google scholar search. Scholars were more occupied with analyzing "online", "web" or "multimedia" journalism during these years. Between 2005 and 2010, Google scholar returns 796 hits on the phrase, rising to 3790 between 2010 and 2015, and 6820 from 2015 to 2018. Such search results must of course be corrected with the general increase in all kinds of publications available through Google scholar searches during the same years. Nevertheless, the study of "digital journalism" is predominantly a post-2010 phenomenon, and there is

probably no coincidence that the massive increase in scholarly attention to the phrase coincides with the launch of *Digital journalism* in 2013.

Influences from STS

The shift of attention from "online", "web", "multimedia", etc., to "digital" in scholarly publications might seem insignificant, but represents a discursive change from talking about the various technological aspects of journalism in a digital age to talking about "the whole world of cultural, economic, social, and technological aspects of the contemporary field of journalism" (Witschge et al. 2016a, 2). This discursive shift also implies a non-deterministic turn away from looking at how digital technology affects journalism, to how journalism, in conjunction with other social institutions, is both shaped by and shapes what a digital society is and how it develops. Such a turn is heavily influenced by science and technology studies (STS) and theories that emphasize how technology is socially constructed (Bijker, Hughes, and Pinch 1987; Bijker 2009).

Boczkowski's (2004) book *Digitizing the News* represents a seminal source of influence for this discursive change as it introduced STS perspectives to journalism studies and emphasized the mutual shaping of journalism and technology through ethnographic research in newsrooms. The book spurred a strand of ethnographic research within journalism studies that empirically investigated the connections between, and codependency and mutual shaping of, journalism and technology (see for instance the two edited volumes Domingo and Paterson 2011; Paterson and Domingo 2008). This, in turn, inspired the methodological application of sociotechnical theories like actor-network theory (ANT) in digital journalism studies, which emphasize not only the mutual shaping of journalism and technology but also juxtapose human, technological and material actors and actants as equally important to this mutual shaping. Such approaches have been praised for their non-deterministic, unbiased and empirical orientation (Turner 2005; Primo and Zago 2015), but also critiqued for their inclination to produce nothing more than dull descriptions (Benson 2017).

Nevertheless, STS approaches have contributed valuable nuances to the relationship between journalism and technology -- approaches, which undoubtedly have shaped how the "digital" is understood in digital journalism studies as something, which goes beyond binary code to include social, political, cultural, epistemological and economic discourses. However, given the emphasis on "digital" and thereby technology in digital journalism studies, one could perhaps anticipate that theories and disciplinary perspective from academic fields like computer science, informatics and information science also would influence the scholarly work at great length. This is something we will empirically investigate in this article as part of our first research question:

> RQ1: What are the dominant themes and disciplinary perspectives in the journal *Digital Journalism*?

The multidisciplinarity of (digital) journalism studies

RQ1 presupposes that digital journalism studies, as it is presented in *Digital Journalism*, is dominated by more than one disciplinary perspective, just like journalism studies is.

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Journalism studies is a field traditionally marked by approaches and perspectives from sociology, political science, cultural studies, language studies and history (Zelizer 2004). In a longitudinal analysis of disciplinary perspectives in the journals *Journalism Studies* and *Journalism -- Theory, Practice & Criticism*, Steensen and Ahva (2015) found that sociology was the main source of influence in journalism studies and that this discipline had become increasingly dominant. Political science perspectives, which dominated the field in the early 2000s, was the second most common discipline, while cultural studies, language studies and history played minor parts. In addition, fields and disciplines like business and administration, economics, law and philosophy were also present, while technological perspectives were on the rise.

The question is if digital journalism studies is marked by the same disciplinary patterns as journalism studies, or if this (sub)field has different sources of influence. The academic metadiscourse on digital journalism studies (i.e. scholarly publications discussing what digital journalism studies is) suggests that the field is marked by a fixation with the blurring of boundaries that allegedly used to be clear cut. Examples include boundaries between journalists and audiences, professionals and amateurs, organizations and individuals, marketing and news, automation and manual labor, tech developers and journalists, different kinds of modality (text, video, audio, etc.), facts and opinion, objectivity and subjectivity, real and fake news, distributors and producers, technologies and content, consumption and production, and the private and the public. In the words of Eldridge II and Franklin (2017, 4) digital journalism studies "can be understood through the ways it has embraced unclear definitional boundaries around journalism as it has experienced radical change in the past few decades". The (sub)field is in other words dominated by a discourse of change, expresses for instance as a "need to address changing contexts and new practices, need to reconsider theories and develop research strategies" (Witschge et al. 2016a, 2). This discourse of change has, according to Ahva and Steensen (2017), evolved from viewing change as a revolution to change as deconstruction, in the sense that digital journalism studies today is preoccupied with deconstructing previously established notions of what journalism is. In this article, we will investigate the degrees to which this emphasis on change creates new and different interdisciplinary paths for digital journalism studies as we seek answers to the following research question:

> RQ2: To what extent and in what ways are articles in *Digital Journalism* cross- and interdisciplinary?

The emphasis on change and deconstruction in the metadiscourse of digital journalism studies should imply that digital journalism studies reaches beyond the disciplinary paths established by journalism studies in search for new ways of conceptualizing and analyzing its objects of study. In other words: One could reasonably expect digital journalism studies to be both highly cross-disciplinary, implying that its developments are understood from a variety of disciplinary points of view, and highly interdisciplinary, implying that the various disciplinary perspectives are brought together to create new conceptual frameworks that make sense of it all.

However, when researchers put much emphasis on the things that changes, there is always the risk that the things that do not change are neglected and that descriptions of

change become more important than figuring out the deeper relations between journalism and society. In the words of Peters and Carlson (2018, 3); "one of the dangers in placing change above solidity is the increased difficulty of moving from the surface to engage in deeper social questions". It is therefore necessary to ask if digital journalism studies, as it is presented in *Digital Journalism*, is characterized by any such shortcomings. Boczkowski and Mitchelstein (2017) have already argued that digital journalism studies is marked by two limitations: 1) the ability to connect empirical findings from digital journalism studies across other domains of digital culture, and 2) a lack of conceptual exchanges with other fields and disciplines. Our third and last research question embarks from such arguments as we assume that digital journalism studies might have some biases and blind spots, which could be detected through empirical investigations:

> RQ3: What, if any, are the empirical and theoretical biases and blind spots of research published in the journal *Digital Journalism*?

Methodology

We will answer the three research questions through an analysis of keywords, abstracts and references of articles published in *Digital journalism.* This design allows us to do an analysis of *all* articles published in the one journal that has risen to become the most central to the (sub)field of digital journalism studies. Moreover, the research design allows us to compare the findings with a similar analysis of articles in the journals *Journalism Studies and Journalism: Theory, Practice and Criticism* (Steensen and Ahva 2015).

However, the approach has some limitations, as digital journalism scholarship is also published in other journals, and in reports and books. An analysis of the journal *Digital journalism* can therefore only to a certain extent paint a picture of the status of the (sub)field of digital journalism studies. Moreover, analyzing keywords, abstracts and references does not give a full account of the research published since we have not included analysis of full articles. To overcome this weakness, we have combined qualitative and quantitative, and inductive and deductive research approaches, to secure that our findings are as reliable as possible. We will present and discuss these methodological procedures below, but first we will make transparent how we obtained the data.

We downloaded the metadata for all articles published in *Digital journalism* from issue 1, 2013 to issue 6, 2018 from the journal's homepage by using the reference manager software Zotero.[2] The analysis followed the methodological procedure developed by Steensen and Ahva (2015), with some additional analytical steps. Since an article's references are not part of the metadata that can be downloaded with the use of a reference manager software like Zotero, we had to obtain the references from the Web of Science (WoS) database. Unfortunately, the WoS database had only stored metadata (including references) from *Digital journalism* from the 2015 volume and onwards, so we were not able to get the references from articles published in the two first volumes. The data obtained from the journal's home page and from the WoS database was imported to Excel for analysis.

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Keywords

Keywords are words and phrases authors select to categorize their work. However, there are no standardized ways of writing keywords and journals normally provide few guidelines. According to *Digital Journalism's* style guide, authors must provide between 6 and 8 keywords. The publisher, Taylor & Francis, offers some advice on how to write keywords in their online author service section. These advices include search optimization and relevance to the focus of the work presented (Taylor & Francis 2015). We therefore assume that authors choose keywords that provide an as accurate and search friendly depiction of their work as possible, implying that topics covered and theories and methods used are likely to appear as keywords. We therefore believe that analyzing keywords is a fruitful way of detecting dominant themes in articles across a journal.

We extracted all keywords from all articles (1740 keywords from 295 articles) and first identified all the unique keywords in the material. This involved not only removing keywords that were repeated in several articles, but also grouping keywords together that perhaps were spelled differently but in essence were the same. Examples here include keywords like "journalist" and "journalists", which we grouped together as the same keyword, as we did with keywords like "Actor-Network Theory", "Actor Network Theory" and "ANT".

This initial structuring of keywords made it possible to identify 935 unique keywords used in the 295 articles. We then added an additional layer of synchronization and grouped keywords that in essence pointed to the same thing into one clustered keyword. An example here is keywords like "Facebook", "Twitter" and "social media" which we grouped together as the clustered keyword "social media". This process gave us 506 unique and clustered keywords, which we then analyzed to see if we could detect any common themes. Through a hermeneutic process of coding and recoding the clustered keywords according to themes, we were able to identify several thematic clusters of keywords.

Abstracts

The analysis of keywords provides a broad overview of the topics covered in *Digital Journalism*. However, analyzing keywords has some weaknesses. We can for instance not take for granted that theoretical and disciplinary perspectives are visible as keywords. To further investigate the interdisciplinary character of *Digital Journalism* as well as the dominant disciplinary perspectives and theories, we carried out an analysis of abstracts. Abstracts should be compelling short summaries of articles, including research questions and main findings (Taylor & Francis, 2015). Thus, while abstracts do not give a full picture of articles, they will probably indicate the disciplinary, theoretical and empirical emphasis of articles.

First, we analyzed abstracts deductively according to main disciplinary categories. The disciplinary categories were pre-defined, based on Zelizer's (2004) discussion of the interdisciplinarity of journalism studies and Steensen and Ahva's (2015) similar analysis of abstracts in *Journalism Studies* and *Journalism: Theory, Practice & Criticism*. The categories included political science, sociology, language, philosophy, history, business and administration, technology and law. This first part of the abstract analysis can be characterized as qualitative content analysis, in which the aim is to identify latent content,

implying "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (Krippendorff 2004, 18).

The deductive analysis of abstracts was done in two steps: First, we read and analyzed half of the abstracts (140, sorting the abstracts chronologically on publication year, every other abstract was read and analyzed), and categorized each abstract according to dominant disciplinary perspectives, and which theories (if any) were mentioned. Many abstracts included more than one disciplinary perspective and the categorizing of disciplinary perspective was highly interpretive. In order to secure the quality of this analysis the authors read the material several times, and re-categorized some of the material based on discussions among the authors. Given the degree of interpretation and the relatively small *n*, we will not present the findings in specific numbers, but rather use broader categories like "majority", "minority", "about one third", etc. Finally, we mapped the presence of specific theories in abstracts. For this reading, we did not predefine any categories, as we wanted to map all theories mentioned. For each abstract, we asked whether the abstract included explicit mention of theoretical perspectives (categorized "yes"/"no") or not. In addition, we wrote down which theoretical theories that were explicitly mentioned.

Second, and in addition to the deductive analysis of abstracts described above, we performed an inductive analysis of abstracts. Here, authors conducted a qualitative close reading of 95 abstracts from articles in issue 1 and 3 in all volumes. The purpose of this reading was to add nuance to the findings, and capture potential blind spots in the deductive analysis of disciplinary perspectives. This analysis implied that we read the full articles when the abstracts did not provide sufficient information on theoretical/disciplinary perspective or methodology.

References

Since abstracts does not allow for the inclusion of references, there is a risk that they will not contain sufficient information on the theoretical and disciplinary perspectives applied in articles. To accommodate this potential bias, we analyzed the references listed in the 204 articles published in *Digital journalism* from issue 1, 2015 to issue 6, 2018.

This dataset consists of 10182 references, implying that each article cited on average 50 references. Unfortunately, the references, which we downloaded from Web of Science, were not complete. They included author names, publication year, name of publication, volume (if relevant), page start (if relevant) and DOI handler (if relevant). In addition, author names and publication titles were not spelled in a consistent manner, often also abbreviated differently. For instance, the journal *Journalism Studies* were in some references abbreviated and spelled JOURNALISM STUD, while in others nor abbreviated. Similarly, the same authors appeared with their full name in some references and first names initialized in others. Book titles were also sometimes abbreviated, sometimes not.

Because of these inconsistencies, we had to base the main bulk of the analysis on some kind of unique identifier of sources. The only available identifier was DOI handlers (Digital Object Identifier), which journal articles, proceedings and increasingly digitally published book chapters have. We therefore limited the main part of the analysis to references that contained DOI handlers (41 per cent of the references). This means that we had to omit most books, research reports and non-academic sources like newspaper from

most of the analysis. However, to secure the validity of this data selection, we did a separate analysis of all publications that were referenced more than 10 times, also including references that did not contain DOI handlers. We manually secured a consistent spelling of these publications.

In addition, we downloaded a database of all scientific journals registered in the Norwegian register for scientific journals, series and publishers.[3] This database contains a categorization of journals in fields and disciplines, which allowed us to determine which fields and disciplines influence digital journalism studies the most.

Findings

We will first present the findings of the analysis of keywords, before we present the abstract analysis and finally the analysis of references. This means that we will not structure the presentation of findings according to the research questions. We will instead use the research questions to structure the Discussion-section below.

Keywords and themes

We were able to identify 11 different thematic clusters from the 1740 keywords (see Table 1). 64 percent of all keywords belong to one of these 11 thematic clusters. 94 percent of all articles have at least one keyword that belong to one thematic cluster. 89 percent of articles have two keywords that belong to a thematic cluster, while 79 percent have three or more keywords that belong to the thematic clusters. The 11 thematic clusters therefore provide an overview of a majority of all articles.

Thematic cluster	**Occurrences in articles in DJ 2013-2018**	**Share of all keywords**	**Share of articles with keyword from thematic cluster**	**Most frequent clustered keywords**
Technology	270	16%	48%	digital, data, algorithm, computational, automation
Platform	217	12%	49%	social media, online, mobile, newspapers, multimedia
Audience	180	10%	35%	audience, citizen, participation, public, commenting
Methodology	81	5%	21%	content analysis, survey, comparative, research interview
Theory	75	4%	21%	gatekeeping, agenda, discourse, ANT, field theory
Business	61	4%	15%	business, branding, paywalls, startups, management
Region	60	3%	15%	local, global, hyperlocal, Arab spring, United States
Genre	53	3%	15%	long-form journalism, churnalism, narrative, investigative journalism
Philosophy/ epistemology	44	3%	10%	ethics, verification, fake news, epistemology
Visual	36	2%	8%	photography, visual
Professionalism	35	2%	9%	Professionalism, norms, value, role

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Table 1: 11 thematic clusters identified through the analysis of keywords in articles published in Digital Journalism from issue 1, 2013 to issue 6, 2018. These 11 thematic clusters account for 64 percent of all 1740 keywords in the 295 articles.

As is visible in Table 1, the most dominant thematic cluster is *Technology*, which was the most dominant thematic cluster in all years, apart from in 2013, when the *Platform* and *Audience* thematic clusters were bigger. The most common clustered keyword in the technology cluster is, no surprise, "digital", which occurs 55 times. This clustered keyword includes variations like "digital data", "digital technology", "digital journalism", etc. However, "digital" is only the third most common clustered keyword used in *Digital journalism.* We find the most common clustered keyword within the platform cluster, namely "social media". This clustered keyword (including variations like "Facebook" and "Twitter") occurs 110 times, which is almost twice as many times as the second most popular clustered keyword – "audience" – which occurs 60 times.

Abstracts and interdisciplinarity

Turning to our analysis of disciplinary perspectives in abstracts (N=140), we find that they are mostly dominated by sociological perspectives, followed by technological and political science perspectives. These findings are quite similar to the ones reported by Steensen and Ahva (2015) on disciplinary perspectives in *Journalism studies* and *Journalism: Theory, Practice & Criticism*, with two important, but not particularly surprising, differences:

1. A much larger share of the abstracts in *Digital Journalism* is dominated by technological perspectives
2. There is a general tendency that abstracts include a technological perspective in addition to other disciplinary perspectives.

This latter point is illustrated in Figure 1, which shows the most common combinations of disciplinary perspectives found in the abstracts. About half of the abstracts analyzed (71) have two almost equally important disciplinary perspectives and most of these combinations were related to sociology and technology.

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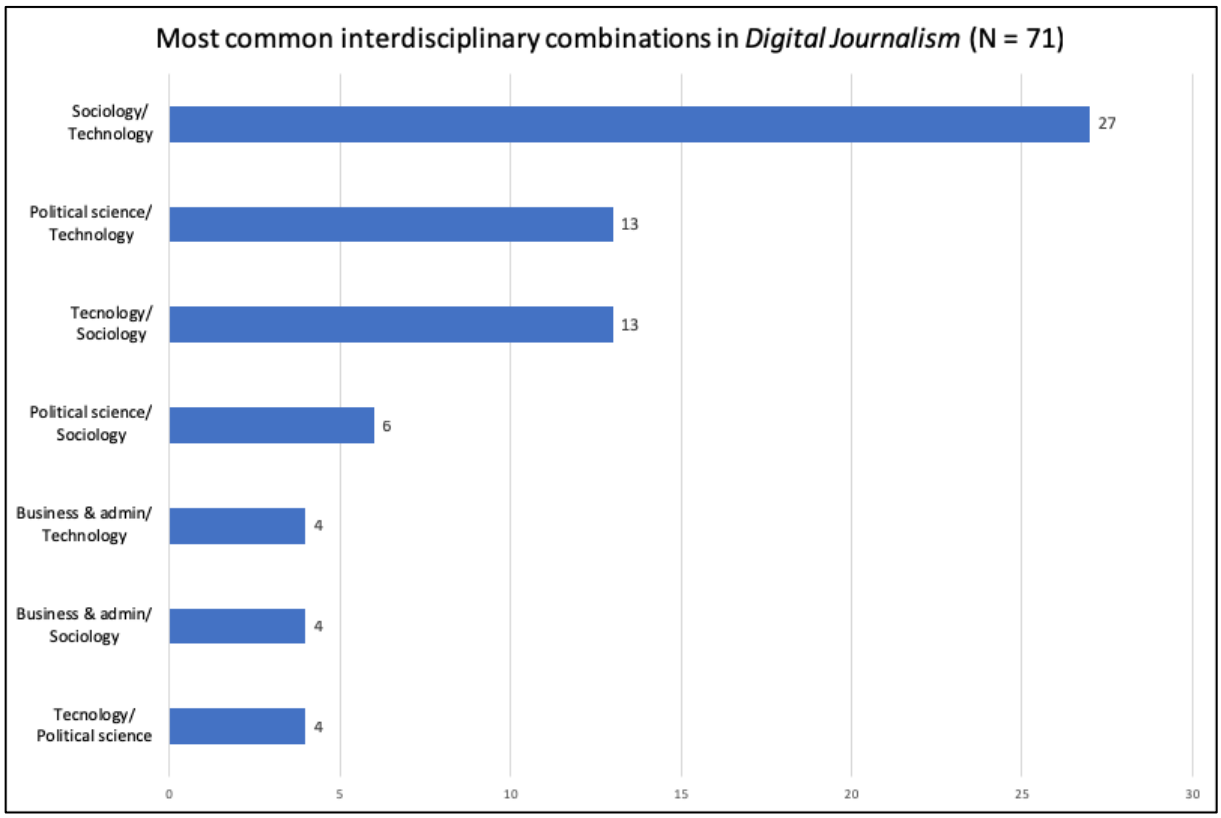

Figure 1: Combinations of disciplinary perspectives in abstracts of articles published in Digital journalism 2013-2018. The figure shows abstracts coded with two almost equally important disciplinary perspectives (71 out 140 abstracts). Numbers must be treated with caution since the N is quite small, and the analysis is quite interpretive, which makes reliability difficult to assess.

These sociotechnical abstracts are typically dominated by investigations of the ways in which the digital media environment affects and alters journalistic roles, routines and practices. Examples include Mabweazara (2013), who explores "how the appropriation of the internet and the mobile phone by Zimbabwean print journalists has contributed to a transformation of the profession at a number of levels, including news sourcing routines, and the structuring of the working day"; and Canter (2015), who suggests that "types of Twitter use are diverse but routine practices are forming in the areas of newsgathering and live reporting, causing a shift in traditional gatekeeping and verification conventions".

Political science is the third most common disciplinary perspective in the abstracts analyzed. These articles typically emphasize the political role of news and journalism, foregrounding concepts such as democracy, publics and citizens. Articles within the fourth most common disciplinary perspective, Business and administration, typically focus on business models in the digital age and ways in which the digital media environment poses opportunities and challenges for news media as businesses.

The remaining disciplinary perspectives proposed by Zelizer (2004), including philosophy, culture, history, language, and law, are seldom present in the abstracts. It is for example interesting to note that there are relatively few articles primarily concerned with language. Few studies analyze news content to explore how journalism deals with and reports specific topics – or how news genres evolve or change in the digital media environment. When researchers who publish their work in *Digital Journalism* analyze text, they tend to do so to find indications of enactments of for instance journalistic roles. We

rarely found articles with a primary aim of analyzing textual features of digitally produced news or how the news media deal with specific topics or political debates.

Attitudes towards theory

The majority of abstracts do not explicitly mention a specific theory or theoretical framework. These studies seem to build theoretical knowledge based on the sampling of both original and previously published empirical knowledge. This approach resembles a grounded theory approach, which – even though grounded theory is not explicitly mentioned in abstracts – is the dominant approach in more than half of the analyzed abstracts, as was also the case in Steensen and Ahva's (2015) previous analysis. It should be pointed out that the relative lack of theoretical explitness in abstracts does not necessarily indicate that that works published in *Digital Journalism* are theoretically underdeveloped. This lack should arguably rather be seen as an indication of an empirical orientation and theory building in digital journalism studies, taking empirical investigations, rather than theoretical propositions, as its starting point, thus reflecting journalism studies as "a field dominated by a pragmatist-participatory attitude towards theory" (Ahva and Steensen 2019, forthcoming).

However, quite a few articles are conceptual works that introduce new theoretical or methodological propositions for the study of digital journalism. In a closer analysis of the 95 abstracts (and partly also articles) found in issues 1 and 3 of all the volumes of *Digital Journalism*, we found that a relatively large amount of these contributions, almost 40 percent, were either predominantly theoretical contributions, attempts at conceptualization, literature reviews or discussions about research methodology. Some of the most influential articles published in the journal (in terms of citation metrics) are among the ones introducing new conceptual or theoretical frameworks, like Lewis and Westlund (2015) who "argue for developing a sociotechnical emphasis for the study of institutional news production".

The emphasis on conceptual and methodological developments can be interpreted as a sign of a (sub)field in search of its identity. We found a similar sign in the bulk of abstracts that explicitly mention a specific theory or theoretical framework. We identified 59 different theories in the 140 abstracts, which, again, mirrors the theoretical richness found in Steensen and Ahva's (2015) analysis of *Journalism Studies* and *Journalism: Theory, Practice & Criticism*. Sociological theories dominate, with an emphasis on concepts such as institutions, structuration, fields and capital – and more broadly – on perspectives highlighting journalism as an institution and profession, and various forces shaping journalism (i.e. journalistic routines, practices, relations to audiences). This latter includes theories highlighting the relation between humans and technology, such as actor-network theory (ANT). Theories from political science are also quite frequent and include theories of citizenship, privacy and surveillance, political economy, and agenda setting.

Apart from ANT and similar sociotechnical theories from science and technology studies, there is lack of theories coming from technology-oriented fields and disciplines like computer science, informatics and information science. This is a bit surprising, given the dominance of technology both as a thematic cluster of keywords and as a perspective in abstracts.

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Attitudes towards methodology

In our inductive analysis of the 95 abstracts of articles from issues 1 and 3 in all volumes, we also examined the research methods applied. Of those 68 articles that contained some kind of empirical data, we identified 52 that described methods that we classified as social scientific – more than three in four. We included both quantitative and qualitative approaches, from surveys via quantitative and qualitative interviews to observation and field studies.

Methods normally associated with the humanities, such as different kinds of quantitative and qualitative text analysis (image analysis included) were found in 26 abstracts – a little less than four in ten. In other words, there were twice as many articles applying social scientific as humanistic methods. However, only 13 of the articles applied qualitative, humanistic methods. We also found that those articles that claimed to apply methods like qualitative text analysis, discourse analysis, etc., often seemed to do so without applying the research tools commonly associated with humanistic text analysis.

Sources of influence

The findings so far have revealed that digital journalism studies, as portrayed in *Digital Journalism*, seems quite similar to journalism studies in terms of disciplinary perspectives, theoretical frameworks and methodological approaches, apart from the unsurprising fact that technology has a more prominent place. However, the degrees of interdisciplinarity found so far do not indicate that the orientation towards technology has resulted in disciplinary crossovers between journalism studies and fields and disciplines like computer science, informatics and information science. The final dataset we have analyzed -- references in articles published in *Digital journalism* (from issue 1, 2015 to issue 6, 2018) -- may shed some more light on the possible existence of such disciplinary crossovers.

No doubt, articles published in *Digital journalism* have a variety of sources of influence. Each article cites on average 50 references (listed in the references section). The references with DOI handlers (41 percent) point to 672 different publications, out of which 87 percent are scientific journals, 7 percent are books and book chapter and 7 percent are proceedings. Figure 2 displays the 20 most frequent publications to refer to. These publications account for 63 per cent of all references with DOI handlers.

References to articles published in the major journalism journals are most common. The four journalism journals on top account for 36 per cent of all references with DOI handlers. It is perhaps no surprise that references to articles published in *Digital Journalism* are most common. Authors need to make sure that their article fits well with the journal's aim and scope and one way of securing this is to build further on research already published in the same journal. However, since *Digital journalism* is such a young journal, one could have expected that authors would reference other journals with a longer life span to a greater extent.

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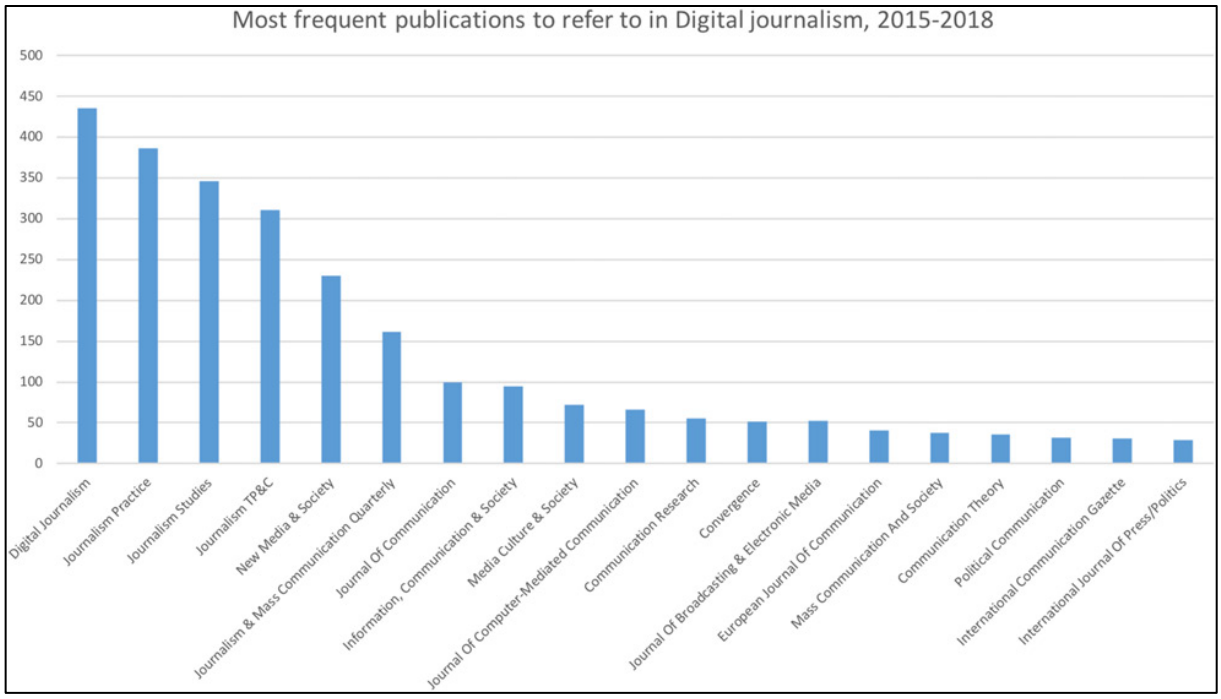

Figure 2: The most frequent journals referenced in all articles published in Digital journalism from 2015 to issue 6, 2018. Based on references with DOI handler only (N=4125), which account for 41 per cent of all references. The top 20 publications account for 63 per cent of all references with DOI handlers.

If we look at the disciplines and fields the publications referenced in *Digital journalism* belong to, we find that 69 per cent of all references with DOI handlers point to publications within the discipline of communication (or "media and communication" as the category is labeled by the Norwegian register for scientific journals, series and publishers).

The remaining 31 per cent of references point to publications registered with 47 different fields and disciplines. The Norwegian Register for Scientific Journals categorizes the vast majority (67 percent) of these fields and disciplines as belonging to the social sciences, while 14 per cent belong to the category "medicine and health sciences", 12 percent to "natural sciences and technology", and 7 percent to the humanities.

Figure 3 displays the 21 fields and disciplines (apart from media and communications) with 10 or more references in all articles published in *Digital journalism* from 2005 to 2018 (issue 6)

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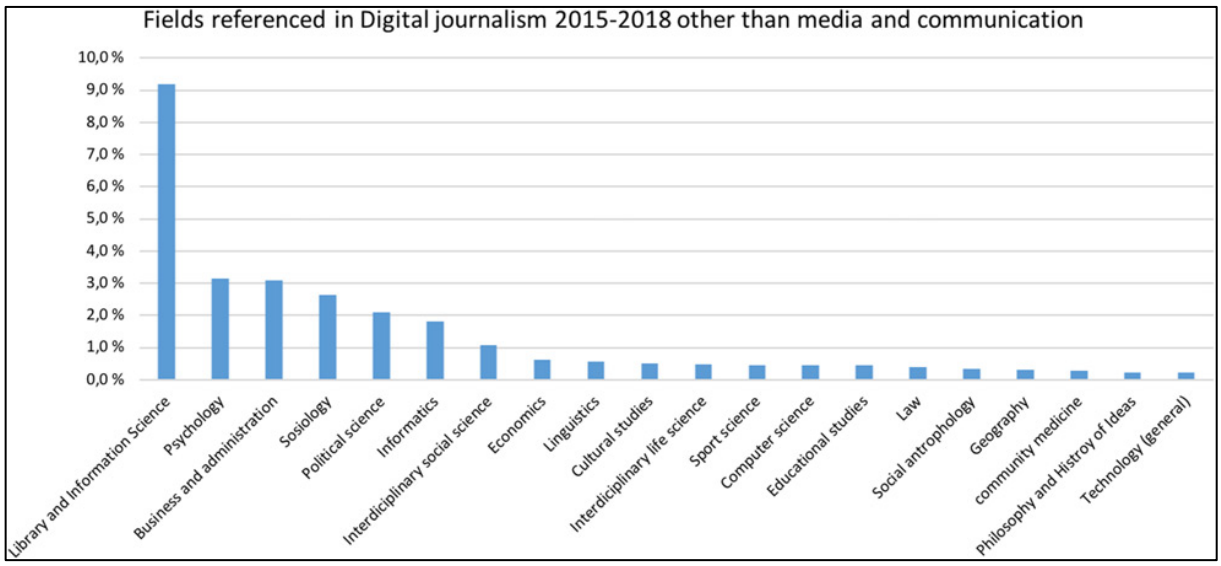

Figure 3: References to publications belonging to other fields and disciplines than media and communication in articles published i Digital journalism from issue 1, 2015 to issue 6, 2018. Only references with DOI handlers are included. Categorization of publications in fields and disciplines follow The Norwegian Register for Scientific Journals. N=1316.

Publications belonging to library and Information science are the most common source of influence apart from media and communication journals. This discipline account for 9.3 percent of all references with DOI handlers. The most referenced journals within this discipline are *Information, Communication & Society* (95 references) and *Journal of Computer-Mediated Communication* (66 references). The second most influential discipline is psychology, with 3.2 percent of all references with DOI handlers. The most common journals here are *American Behavioral Scientist* (22 references) and *Computers in Human Behavior*.

Because of inconsistencies with the data, the analysis of references presented above only accounts for references with DOI handlers. To check if this limitation obscures the validity of the analysis, we performed an additional analysis of all publications (journals, books, reports, etc.) that were cited 10 times or more (104 publications), regardless of whether the reference contained a DOI handler or not. Since the spelling of publication names was inconsistent in the data, we manually corrected the spelling of all these 104 publications throughout the dataset. However, for 4 of these 104 publications it was impossible to decide which publications they actually referred to, because the abbreviations could potentially indicate several different publications. We were therefore left with 100 publications that were referenced 10 times or more in *Digital Journalism* from issue 1 2015 to issue 6, 2018. 62 of these publications were academic journals. These journals reflect the analysis of references with DOI handlers above, both in terms of which are the most frequently cited and which disciplines they belong to.

27 of the 100 publications cited 10 times or more were books (without DOI handlers). Since these books potentially offer a different perspective on what influence articles published in *Digital Journalism*, we list them in Table 2 below.

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Book	**Times Cited**
Jane B. Singer et. al (2011) *Participatory Journalism*	40
Kari Andén-Papadopoulos & Mervi Pantti (2012) *Amateur Images and Global News*	25
Matt Carlson & Seth C. Lewis (eds, 2015) *Boundaries of Journalism*	22
Herbert J. Gans (1979) *Deciding What's News*	22
Karin Wahl Jørgensen & Thomas Hanitzsch (eds, 2009) *The Handbook of Journalism Studies*	18
Tarleton Gillespie et. al (eds, 2014) *Media Technologies*	18
Pablo Boczkowski (2004) *Digitizing the News*	17
Chris Peters & Marcel Broersma (eds, 2013) *Rethinking Journalism*	17
Daniel C. Hallin & Paolo Mancini (2004) *Comparing Media Systems*	16
Henry Jenkins (2006) *Convergence Culture*	15
Chris Paterson & David Domingo (eds, 2008) *Making Online News*	15
Philip M. Napoli (2011) *Audience Evolution*	14
Axel Bruns (2005) *Gatewatching*	14
Gaye Tuchman (1978) *Making News*	14
Rodney Benson & Erik Neveu (eds, 2005) *Bourdieu and the Journalistic Field*	13
Bill Kovach & Tom Rosenstiel (2001) *The Elements of Journalism**	13
Mark Deuze (2007) *Media Work*	13
Pablo Boczkowski & Eugenia Mitchelstein (2013) *The News Gap*	12
Dan Gillmor (2004) *We the Media*	12
Stuart Allen (2013) *Citizen Witnessing*	11
Philip Meyer (1973) *Precision Journalism**	11
Klaus Krippendorff (2004) *Content Analysis**	10
Lawrie Zion & David Craig (eds, 2014) *Ethics for Digital Journalists*	10
Pamela J. Shoemaker & Timothy Vos (2009) *Gatekeeping Theory*	10
Zizi Papacharissi (ed, 2009) *Journalism and Citizenship*	10
Pablo Boczkowski (2010) *News at Work*	10
Bruno Latour (2005) *Reassembling the Social*	10

*Table 2: All books cited 10 times or more in articles published in Digital Journalism, issue 1, 2015 to issue 6, 2018. These books account for 10 percent of all publications cited 10 times or more (100 publications). *The citations of these books refer to several editions of the same books.*

We can make several interesting observations about the books in Table 2. First, only three of the 27 most cited books were published before 2000. Two of these three books are classical news production studies (Gans 1979; Tuchman 1978), while one is a classical journalism textbook (Meyer 1973). Ten of the books are recent publications (published 2010 or later), thus suggesting a contemporary bias. We find the same bias when we look at the publication year of all references, as 85 percent of them are published post 2000 and more than half (54 percent) are published post 2010. Only seven percent of all references (both with and without DOI handlers) are published before 1990 (N=10135).

Table 2 also reveals that books discussing aspects related to what we above identified as the audience thematic cluster are quite dominant, as six of the books belong to this theme (Jane B. Singer et al. 2011; Gillmor 2004; Papacharissi 2009; Allen 2013; Napoli 2011; Andén-Papadopoulos and Pantti 2011). Similarly, books that explicitly deal with the

relationship between technology and media/journalism within a sociotechnical framework are quite common (Boczkowski 2004; 2010; Boczkowski and Michelstein 2013; Carlson and Lewis 2015; Gillespie, Boczkowski, and Foot 2014). Only four of the books can be said to deal with something other than journalism (Latour 2005; Jenkins 2006; Gillespie, Boczkowski, and Foot 2014; Krippendorff 2004), thus strengthening our finding that digital journalism studies, as it is portrayed in *Digital Journalism*, is very enmeshed with journalism studies.

Discussion

The findings presented above reveal that digital journalism studies, as portrayed in the journal *Digital Journalism*, is marked by:

- a thematic orientation towards technology, platforms and audiences
- an emphasis on conceptual and methodological discussions
- a participatory-pragmatist attitude towards theory
- a dominance of perspectives and methodological approaches from the social sciences, especially sociology and political science
- understandings and investigations of technology and "the digital" mostly based on sociological frameworks and/or sociotechnical frameworks from the interdisciplinary field of science and technology studies
- influences from predominantly journalism studies and the broader discipline of communication, but to some extent also from information science and psychology
- a variety of theoretical perspectives
- a contemporary bias, implying that findings, discussions and conclusions from recent publications (post 2010) might overshadow previously accumulated knowledge

These findings provide answers to the three research questions that guided the analysis of empirical data. Regarding *RQ1: What are the dominant themes and disciplinary perspectives in the journal Digital Journalism?* the answer is to be found in 1) the 11 thematic clusters identified based on keywords, out of which technology, platforms and audiences are the most important; and 2) in the analysis of disciplinary perspectives in abstracts, which revealed that sociology and technology are the most common disciplinary perspectives. Moreover, a recurring theme of discussing new conceptual and methodological approaches within digital journalism studies has emerged in the findings. This is no surprise, given the fact that digital journalism studies is a young (sub)field, which – like any other new field or discipline – is likely to search for its identity through theoretical and methodological discussions and, possibly, innovations. However, this is not a finding that makes digital journalism studies any different from journalism studies, as the latter also has been "obsessed with the very definition of its core concept – what journalism is" (Reese 2016, 3).

Diversity within the familiar

The second research question -- *To what extent and in what ways are articles in Digital Journalism cross- and interdisciplinary?* -- has a more complicated answer. Our analysis has searched for thematic, disciplinary, theoretical and methodological diversity. In some

respects, digital journalism studies, as it is presented in *Digital Journalism*, comes across as quite diverse. The number of theories identified in abstracts no doubt represents a high degree of diversity, as do the thematic clusters, which range from philosophy to genre studies and technology, thus reflecting disciplinary diversity across the social sciences, humanities and natural sciences.

Yet, the research published in *Digital Journalism* is heavily anchored in journalism studies, as the analysis of both abstracts and references revealed. The diversity of the (sub)field therefore mirrors that of journalism studies, as previously analyzed by Steensen and Ahva (2015). Moreover, even though there is much emphasis on developing new methodological approaches in digital journalism studies, our analysis reveals that the methods actually applied by researchers who publish their empirical work in *Digital journalism* are not that diverse. (Semi-)quantitative methods from the social sciences dominate.

Diversity in terms of interdisciplinarity seems, at least on the surface, quite high. A variety of fields and disciplines influence the research published in *Digital journalism*, including most of the familiar ones identified by Zelizer (2004) -- sociology, political science, cultural studies, language, history, economy, philosophy, technology and law -- but also quite some substantial influences from the disciplines of psychology and library and information science. However, we find it a bit surprising that technological fields and disciplines like computer science and informatics are not more influential. Furthermore, digital journalism studies seems less diverse than journalism studies when it comes to influences from the humanities, as perspectives and (qualitative) methodological approaches from for instance language studies, history and philosophy are almost absent.

We therefore conclude that digital journalism studies, as it appears in *Digital Journalism,* is indeed marked by diversity, but not a kind of diversity that sets it aside of journalism studies. It is diversity within the familiar.

Biases and blind spots

Our third and last research question -- *What, if any, are the empirical and theoretical biases and blind spots of research published in the journal Digital Journalism?* -- provides us with some interesting findings and possible directions for future research. First, digital journalism studies, as it is presented in *Digital journalism*, has a social science bias, both methodologically and theoretically, which leads to several blinds spots especially related to journalism as a producer of meaning and knowledge in the digital age. Second, digital journalism studies has a contemporary bias, thus neglecting to some extent the legacy of journalism studies. Third, and echoing Boczkowski and Michelstein's (2017) argument, digital journalism studies has a blind spot in that it does not include theoretical insights from fields and disciplines like computer science and informatics.

Regarding the social science bias: there are many reasons why journalism scholars should view digital journalism, and other forms of journalism for that matter, predominantly as a social phenomenon. A dominance of social science perspectives and approaches is therefore not in itself a problem. One might even argue that without such a dominance, digital journalism studies would neglect the social, political and to a certain extent cultural ramifications of the digital on journalism. However, approaches from the humanities are also capable of analyzing journalism as a social (and cultural) phenomenon. When perspectives

from the humanities are marginalized as they seem to have been with the ways in which digital journalism studies has developed in *Digital Journalism*, and when social science approaches are reduced to (semi-)quantitative methods, crucial elements of digital journalism might be overlooked. The future reader who consults *Digital Journalism* to find out how ideas and discourses were constructed in journalistic texts in the 2010s, how journalism created meaning of and for the societies and cultures it served, how journalism functioned as a system of knowledge creation, and how such questions were connected to historic developments, is likely to be disappointed. To provide answers to such questions, digital journalism studies should to a greater extent embrace the disciplinary perspectives and qualitative methodologies of the humanities.

Regarding the second blind spot, the neglect of historic perspectives, we conclude that digital journalism studies should have a stronger connection with the past in order to better understand the present and predict the future. No doubt, an emphasis on the present is understandable, perhaps even logical, in a (sub)field like digital journalism studies, which to a certain degree is determined to investigate the current changes to its object of study due to recent technological developments. However, this does not mean that such inquiries should only emphasize what is changing, and only look at such changes from the perspectives of recent theories and research. Peters and Carlson (2018, 3) argue that an emphasis on recent changes might "prevent us from questions of material and social power".

Regarding the third blind spot related to the lack of interdisciplinary connections with fields and disciplines of technology, it seems obvious that digital journalism studies should move beyond a topical interest in technology and methods involving skills in computation and the analysis of big data. Digital journalism studies should in addition connect with fields and disciplines like computer science and informatics on a more theoretical level. For instance, the field of theoretical computer science "provides concepts and languages to capture the essence, in algorithmic and descriptive terms, of any system from specification to efficient implementation" (Leeuwen 1990, A: Preface). As digital journalism becomes increasingly dependent on algorithmic processing, acquiring such concepts and languages seems crucial for digital journalism scholarship. Similarly, theoretical understandings of information transformation across natural and engineered systems, which is the essence of informatics as an academic field, seem important for digital journalism scholarship. Practices of digital journalism, especially those related to investigative journalism, are increasingly preoccupied with the analysis of massive amounts of unstructured data, which requires both methodological and theoretical knowledge in order to make sense. Here, digital journalism scholarship needs not only the same kind of knowledge to assess critically such practices of journalism, but also the knowledge to experiment with how digital journalism can make sense of such information transformations. Some examples of the latter already exist, either from within informatics itself, like Wiedemann et al.'s (2018) experimental research on developing tools for the analysis of massive amounts of documents like the Panama Papers or similar big leaks -- or from interdisciplinary cooperation like Maiden et al.'s (2018), Nyre's (2015) and Backholm et al.'s (2018) experimentations with new journalistic applications.

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Defining digital journalism

The empirical articles we have analyzed have one thing in common, in addition to being published in the same journal: They relate to the same object of study, namely digital journalism. If we were to deduce an understanding of this object of study solely based on the empirical research presented in *Digital journalism*, what would it look like? First, it would not look very different from a definition of traditional journalism, given the similarities between journalism studies and digital journalism studies we have found. Second, it would need to emphasize that digital journalism is predominantly a *social practice* and *institution*, given the dominance of sociological perspectives in the articles published in *Digital Journalism*. Third, a definition of digital journalism based on these articles would have to emphasize the *changing* nature of this social practice and its institutions, changes mostly related to *technology*, *platforms* and conceptions of *audiences.*

Consequently, it is possible to deduce the following definition of digital journalism based on the research published in *Digital Journalism:* ***Digital journalism is the transforming social practice of selecting, interpreting, editing and distributing factual information of perceived public interest to various kinds of audiences in specific, but changing genres and formats. As such, digital journalism both shapes and is shaped by new technologies and platforms, and it is marked by an increasingly symbiotic relationship with the audiences. The actors engaged in this social practice are bound by the structures of social institutions publicly recognized as journalistic institutions.***

This definition relates to digital journalism only as practice and product and does not encompass the types of knowledge digital journalism creates and how this practice and its products functions as a meaning-making system. Nor does the definition give any clues on how digital journalism relates to other social institutions, its cultural implications and questions of power. It is therefore not a definition that grasps everything about digital journalism. It is a definition marked by the biases and blind spots of the research published in *Digital Journalism.*

Limitations

This study is not free from weaknesses and limitations. The most obvious weakness is that we have only analyzed articles published in the journal *Digital journalism*. Digital journalism scholarship finds it home in many other journals, not to speak of all the books, conference proceedings and reports published each year with relevance to digital journalism research. It is quite likely that we identified the biases and blind spots discussed above because research addressing those biases and blind spots is published elsewhere. However, the journal *Digital journalism* aims at covering all aspects of digital journalism from a variety of perspectives and methodological approaches, and does not make explicit anything in its self-presentation that would explain the biases and blind spots identified. Also, given the fact that the journal has gained so much impact in so few years, it seems evident that it is a main driver in how the (sub)field of digital journalism studies develops. We therefore feel quite confident that our findings, and our critique, are representative as an analysis of not only the journal, but also of the (sub)field of digital journalism studies.

Our choice of analyzing predominantly metadata and not the actual articles themselves represents a second limitation. We therefore come close to throwing stones

while living in a glass house when we critique digital journalism studies for marginalizing perspectives and qualitative approaches from the humanities. We have tried to overcome this limitation to some extent by analyzing abstracts both deductively and inductively and by consulting full articles when we were in doubt. However, future investigations of the metadiscourse on digital journalism studies could benefit from analyzing full articles to a much greater extent. Finally, our content analysis of especially abstracts have some limitations related to its high degree of interpretation and thereby subjective evaluation. We will try to compensate this weakness by making our data publicly available, so that others might do their own analysis -- and critique ours.

A third limitation is related to what our metadata included. The data we have analyzed did not include author information like gender, geographic location, age and ethnicity. Future research should look into those other characteristics in search of for instance demographic biases and blind spots and gender issues in digital journalism studies.

Conclusion: The Janus face of digital journalism studies

We started this article with the observation that digital journalism studies is about to outgrow the field it was established as subordinate to, namely journalism studies. Throughout this article we have consequently labeled digital journalism studies ambiguously as a "(sub)field", thereby not taking a stance on whether digital journalism studies is a field of its own or not. It therefore seems appropriate that we now unmask this ambiguity. Is digital journalism studies a field of its own?

The most logical answer, based on our analysis, is no, digital journalism studies is not a field of its own, understood as having clear boundaries towards other fields. To put it simply; digital journalism studies is journalism studies – with a little twist. Our analysis clearly demonstrates that digital journalism studies, as it is presented in the journal *Digital Journalism,* is well situated in the midst of journalism studies. It is marked by the same kind of diversity and interdisciplinarity as journalism studies and the same attitude towards theory. The largest difference is that digital journalism studies is more preoccupied with technology, the present, and perhaps audiences.

Some of the findings we have presented in this article might seem contradictory, for instance that research published in *Digital Journalism* is marked by a grounded theory inspired empiricism (label the pragmatist-participatory approach by Ahva and Steensen, forthcoming 2019) while it at the same time has a strong emphasis on conceptual and methodological discussions. We believe this contradiction constitutes a defining Janus face of digital journalism studies, and we will therefore end this article with some reflections on the possible pitfalls of this two-faced state of the digital journalism research mind.

The Janus-faced state of digital journalism studies is constituted by the following paradox: The research published in *Digital Journalism* is marked by a magnitude of attempts at critiquing old understandings and concepts and developing new. Yet, it seems as if these conceptual discussions have only limited influence on the ways in which researchers analyze their empirical work. Maybe there are too many conceptual discussions going on at the same time, leading to a lack of agreement on which theoretical paths to follow. Since the emphasis of much of the empirical research published in *Digital journalism* is dominated by things that change and things that are new (like new platforms, technologies, business models and practices), there is a risk that theoretical explanations are rendered

unnecessary, perhaps even unwanted. Authors might view theoretical explanations as something that could obscure the possibility to show off whatever new thing the empirical investigation has uncovered. Furthermore, what seems to be new and popular ways of theorizing digital journalism, like for instance Actor-Network Theory, might be, as Benson (2017) argues, just tools to justify that descriptions of empirical findings are more than enough. This, combined with a fascination for quantitative, computational methodology, which in themselves have an anti-theoretical bias and therefore might lead to what Anderson (2008) has called "the end of theory", could lead digital journalism studies on a path to a place where theory has no relevance.

We believe this would be a dangerous path for digital journalism studies to follow, because it would inevitably lead the (sub)field to a place where it loses impact beyond its own boundaries. Fortunately, the conceptual discussions that do go on in *Digital Journalism* (like the ones in this special issue) point to different paths. The challenge is to make empirical investigations follow at least some of the same paths, while also not forgetting the paths that are about to become forgotten and overgrown, namely the ones found within the humanities, and the ones that are more difficult to see, namely those found within theoretical computer science and informatics.

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Notes

[1] See https://scholar.google.com/citations?view_op=top_venues&hl=en&vq=hum_communication (accessed 13. October 2018)

[2] Zotero is an independent open source, free to use reference manager software developed as project of the Corporation for Digital Scholarship and the Roy Rosenzweig Center for History and New Media. It is available at https://www.zotero.org/

[3] The Norwegian Register for Scientific Journals, Series and Publishers is operated jointly between The National Board of Scholarly Publishing (NPU) and The Norwegian Centre for Research Data (NSD) on behalf of the Norwegian Ministry of Education and Research. Located at https://dbh.nsd.uib.no/publiseringskanaler/Forside.action?request_locale=en

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