University of Groningen

News devices

Bounegru, Liliana

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2019

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):
Bounegru, L. (2019). *News devices: how digital objects participate in news and research*. University of Groningen.

1. Introduction

———
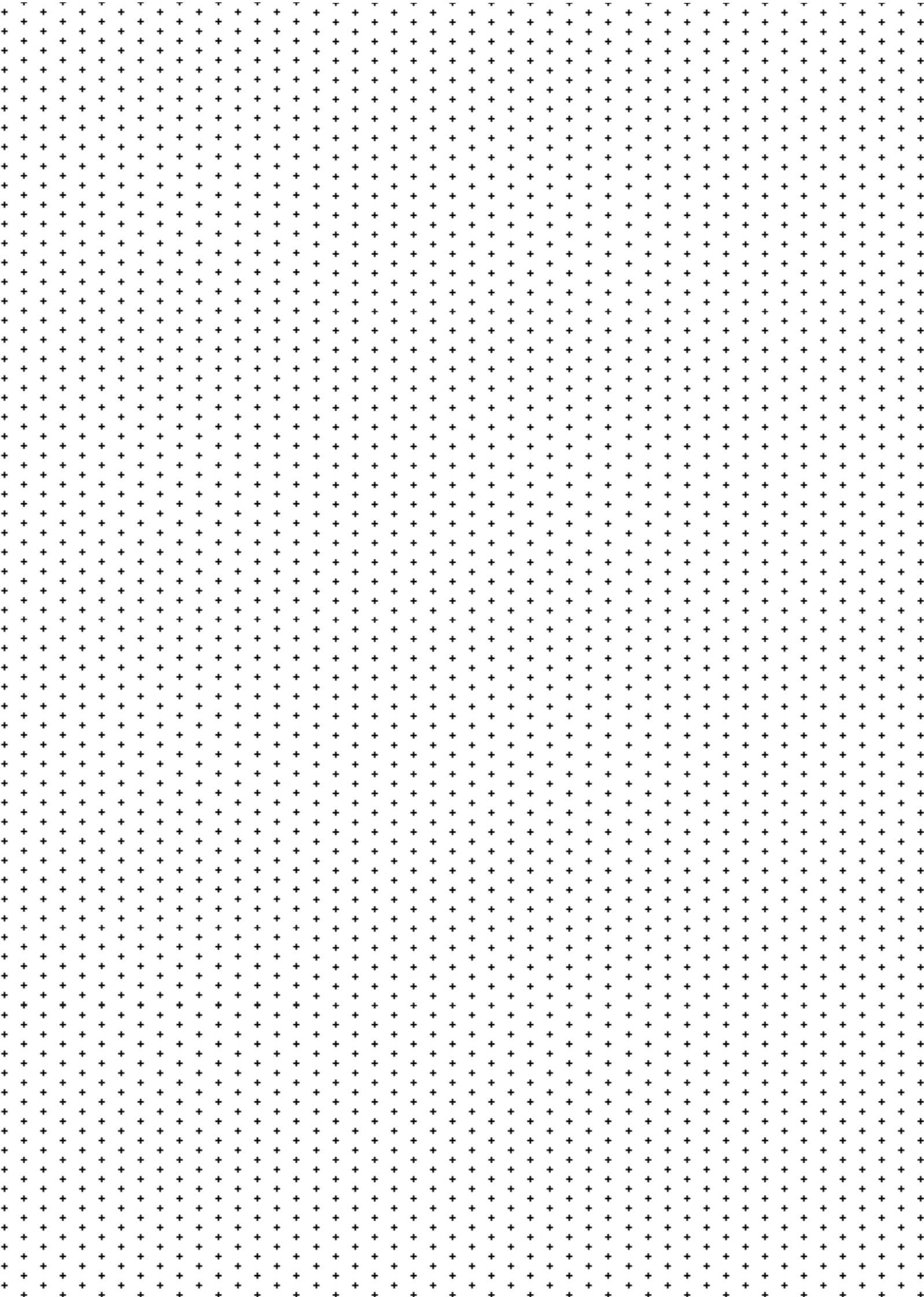
T his thesis examines how digital objects participate in news work and how they can be configured for research on digital journalism and its relations with other fields. To this end, it proposes an orientation towards the *news device* as a research topic and approach. I use the notion of news device to refer not only to the digital objects involved in news work but also to a particular way of approaching their participation in these processes. The news device approach calls attention to the ways in which practices and relations are co-articulated with digital objects involved in news work. It also attends to how such digital devices may afford modes of studying these practices. To make the case for the news device approach, I examine the participation of three types of devices in three aspects of news work: (1) the role of the network graph in storytelling, (2) the role of the online platform in journalism coding, and (3) the role of the web tracker in audience commodification.

In developing this approach, I draw on and contribute to several bodies of work which are inspired by science and technology studies (STS): the "material turn" in journalism research (Boczkowski, 2015), and STS-inspired digital media and social research. Overall, the aim is for this approach to contribute to the dialogue between these areas with fresh analytical perspectives and new empirical material.

1.1 Why Study Digital News Work

In Western democracies news work and digital media are today "deeply implicated in one another's existence", as Suchman (2014, p. 129) puts it about media and technology. News work is increasingly taking place in and through a variety of intersecting digital devices, from websites, to search engines, online platforms, apps, bots, web analytics, data analysis and visualisation tools. This is what Lewis and Westlund (2015) call "cross-media news work". Online platforms such as Twitter, Facebook and Instagram, for example, have become sites of experimentation with various journalistic arrangements, from business models, to genres of content, and relations with audiences, sources and other

stakeholders. The implications of these ever-shifting configurations are not yet fully understood, and they are constantly being probed by media organisations, platforms and academic researchers alike. To further complicate matters, it is not only news work that increasingly takes place in and through digital devices, but also our lives, societies, cultures and research practices (Bucher, 2018; Deuze, 2012; Mackenzie, Mills, Sharples, Fuller, & Goffey, 2015; Marres, 2017a; Ruppert, Law, & Savage, 2013). Indeed, online platforms are increasingly understood as "perpetual experiment engines" (Crawford, 2014) that approach society in a "beta-testing" mode (Marres, 2017a, 2017b).[1]

Why does the proliferation of digital objects in news work matter? The reweaving of news work through digital media and technologies has frequently been met with both excitement and concern with regard to its implications for many aspects of news business and practice. For example, there has been a lot of interest in the potential and limitations of these technologies to expand the production and reach of news through experimentation with citizen and participatory journalism (Borger, Hoof, Meijer, & Sanders, 2013; Bruns, 2008; Karlsson, Bergström, Clerwall, & Fast, 2015; Singer et al., 2011) and alternative media (Atton, 2015; Couldry & Curran, 2003; Fenton & Barassi, 2011; Poell & Borra, 2012). There has also been interest in their capacities to improve story discovery and diversify storytelling formats (Broersma & Graham, 2013; Pavlik, 2001; Pavlik & Pavlik, 2017; Thorsen & Jackson, 2018). But there have also been economic concerns associated with digital transformations in the news media industry, the disruption of established business models and the capacities of new models to sustain the journalistic profession (Nielsen, 2016). The advent of digital media has led to questions around the viability of journalism as a profession as we witness a decline in the number of journalists employed by newspapers and their working conditions (Pickard, 2011; Starr, 2012). Concerns have also emerged around legitimation, authority and trust in the relationship between news and its publics, the changing patterns in news consumption and the fragmentation of the audience itself (Blumler, 2010; McChesney, 2003; Peters & Broersma, 2016; Siles & Boczkowski, 2012; Usher,

---

1 For a discussion of "variability" as new media feature, referring to the potentially infinite versions that digital objects can have, see Manovich (2001). For a discussion of the "perpetual beta" as an approach to developing Web 2.0 or social media products, see O'Reilly (2007).

4

2018).

Perhaps the most recent wave of unease relates to the scandals about "fake news" (Tandoc, Lim, & Ling, 2018), information disorder (Wardle & Derakhshan, 2017), misinformation, propaganda and political manipulation (Woolley & Howard, 2018) of the past few years. These scandals have further problematised the relationship between the news industry, online platforms and digital technologies and cultures more generally, including around issues of manipulation of public opinion and growing distrust in journalists and experts (McNair, 2017; Tandoc, Jenkins, & Craft, 2018).

1.2 Attending to Digital News Work Through News Devices

These kinds of societal debates are also reflected in the growing body of academic literature about digital journalism. Attending to the complexities of the interactions between digital devices and news industry practices, has led journalism scholars to explore multi-disciplinary outlooks, drawing on fields such as political science, sociology, history, linguistics and cultural analysis (for a review, see Ahva & Steensen, 2017). As I examine further in the next chapter, in recent years there has been growing interest in socio-material perspectives (Ahva & Steensen, 2017) and a so-called material turn in journalism studies (Boczkowski, 2015). These have arisen to address transformations at the interface between news work and digital devices. Coming to the study of journalism as an STS-inspired digital media researcher, I take this body of work as one of the starting points of my project.

Drawing on foundational texts and authors in STS, and particularly Actor-Network-Theory (ANT) and the work of Bruno Latour, these approaches strive to avoid forms of either technological or social determinism, that are said to be present in journalism, media and communication studies literature (Lievrouw, 2014; de Maeyer, 2016; Primo & Zago, 2015). They achieve this through close empirical examination of the mutual shaping or co-production

(Jasanoff, 2004) of digital media and news practices in the situations where they interact. In these accounts both digital objects and news work are considered as socio-material constructions (Boczkowski, 2004a). Digital objects are foregrounded to the extent that they make a difference to news work, and the focus is on when, where and how they make a difference (Kreiss, 2015).

Hence, rather than focusing on large scale changes that digitisation may or may not bring to news work (for better or for worse), in this dissertation I examine how digital news practices and relations can be traced by attending to digital objects in situated contexts of use. In particular, I look at three important but under-noticed objects in digital journalism: network graphs, the GitHub platform, and web trackers; and three aspects of news work: making narrative, making infrastructure and making audience (Table 1). News devices are construed as digital objects situated in particular news work settings. The aim is to explore how each of these devices is implicated in news work and with what consequences.

Area of news work	Making narrative and storytelling	Making infrastructure and coding	Making audience
Digital object	The network graph	The coding platform	The web tracker
News device	The network as storytelling device	GitHub as connective coding device	The tracker as audience marketplace device

Table 1: Types of news work, digital objects and news devices
examined in this dissertation

I start with an aspect of news which is perhaps the most familiar and accessible: journalistic representations or news stories. In the rest of the chapters, following the advice that Becker (1982) gives in the context of his work on the sociology of art, I move from *news products* to *news work*, *networks* and *"worlds"* as a way to explore the coordinated activities through which news texts are brought into being. The aim is not to give a definitive and final answer to the question of whether digital transformations of news work are

good or bad and whether we should be excited or fearful of them, but rather to develop means by which questions around the impacts of such transformations in specific settings can be formulated and explored.

The digital objects I selected differ in their kind, provenance, socio-material organisation and functions. As I further discuss in the next chapter, my interest in the digital objects I am studying is informed by issues raised in journalism studies literature and my own professional and research experience. Networks are a common tool in STS-inspired digital social and media research (Moats & Borra, 2018) and I have often used them in my own research work.[2] At the same time I have encountered ambivalence about network analysis and visualisation in conversations with journalists in my professional work for the European Journalism Centre, a non-profit specialising in journalism education and training. The claim about the ontological multiplicity of objects, i.e. the fact that objects may be multiple things all once due to the different ways in which they are enacted in various sites, situations and practices (Mol, 1999; see also Bucher, 2018 on the multiplicity of digital media algorithms) led me to develop an interest in examining how networks are done in the context of journalism, compared to the way they have been put to work in my own field, digital media and social research. Some of the "blind spots" in the study of journalism identified by journalism materiality researchers fuelled my interest in the other two objects. By taking the code sharing platform GitHub as a site of study, I aimed to engage with the critique of the monopoly of the newsroom as a site of study and of news making (Anderson, 2011b; Boczkowski, 2015). I also took up the suggestion to complement more extensive treatments of the editorial sides of news work with the less addressed business sides of news by examining the commodification of news website users through web tracking infrastructures.

Methodologically, the most acclaimed work that takes a socio-material disciplinary approach in journalism research has relied on well-established ethnographic approaches, observation of the work and actions of people and

---

[2] See, e.g., Bounegru, Gray, Venturini, & Mauri (2018), Venturini, Bounegru, Jacomy, & Gray, (2017) and Venturini, Jacomy, Bounegru, & Gray (2018).

objects, interviews and document analysis (Boczkowski, 2015; de Maeyer, 2016). However digital media and devices are increasingly reweaving not just journalism but also ways of studying and knowing news and other aspects of collective life. The potential of digital traceability is beginning to be acknowledged by STS-inspired journalism researchers (Lewis et al., 2013; de Maeyer, 2016).

This argument that digital devices can be configured as part of the "research apparatus" (Marres & Gerlitz, 2015) is more extensively developed in the context of STS-inspired digital social and media research, which is the second research area that I draw on, and one of my disciplinary homes. The device-centred research approaches that have emerged in these areas draw attention not only to how digital devices shape *practices and relations* (whether social, cultural, economic, political or otherwise) but also how they come with particular ways of *knowing and valuing these practices and relations* (Marres, 2017a; Rogers, 2013; Ruppert et al., 2013; Weltevrede, 2016). In the context of journalism, the latter would include the proliferation of impact and engagement metrics to assess the value of journalism work (Petre, 2015), as well as the use of data from online platforms to study journalism (see, e.g., Bruns, 2016). Device-centred research approaches draw attention to digital devices not just as objects of research but also as possible resources to support research, if configured in the right ways.

The question of the configurability of digital devices into research devices is addressed more extensively in the next chapter. By orienting myself towards these approaches I do not aim to suggest that these should replace existing methods at work in the study of journalism nor that they provide a straightforward way for journalism researchers to integrate data from digital devices in their work. On the contrary, the STS-inspired approaches that I draw on often raise questions about digital traces as simple descriptions of social phenomena and aim to both investigate and interrogate the ways in which digital devices configure action, and the way they process and give access to digital traces. In contrast to understandings of the digital as a straightforward source of data about social phenomena, my aim is to

understand how, to what extent and under what conditions news devices might be successfully enlisted as research devices in the study of news by exploring how they may participate in formulating, configuring and investigating the research object or problem under study.

It is these two propositions, that news work is co-produced through interactions with digital devices and that the latter can be configured into journalism research devices, that I take up in the notion of news device. The aim of this dissertation is to put to test the capacities of this approach to account for the participation of digital media in news work and their implications, through a series of case studies that take digital devices as both an object of study and as part of the research method. This observation brings about another distinction that needs to be made in my objects of study: that between what Rogers (2013) would consider "pre-digital" objects that have seen a renaissance in the context of digital media and culture (the network diagram), and devices and objects that are considered to be "native" to the web, such as the code sharing platform and web tracking devices. I draw upon this distinction because, as I will discuss later in the Introduction, it has implications for the way I methodologically treat these objects.

A final comment to contextualise my approach before going on to the outline of my thesis: both the devices and practices I study and the research areas I draw on are very dynamic and a lot has changed since I started this work. GitHub, the code sharing platform that is the object of study of Chapter 4, has been acquired by Microsoft last year (in 2018). The implications of this acquisition for the platform's business models, uses cases and design remain to be seen. Nevertheless, the acquisition has opened up the space for other platforms to compete with GitHub over developers unsatisfied with the company's move (GitLab, 2018), even though seemingly without success (Finley, 2018; Asay, 2018). Web tracking, the topic of Chapter 5, has also seen major new rules being enforced through the EU General Data Protection Regulation (GDPR).[3] These regulations are aimed at reconfiguring the relationship between website users and the data collector and processor side of

---

[3] https://eur-lex.europa.eu/eli/reg/2016/679/oj

the advertising market by providing users more awareness and control over the data they share with third-parties while visiting websites online. These rules might also impact the configuration of news audience marketplaces.

A lot has also changed in the journalism socio-materiality research landscape since I started planning work on this dissertation in 2014. Socio-material approaches appear to be on the rise in digital journalism research (Ahva & Steensen, 2017). Work in this area has accelerated and publications have proliferated to the extent that, as mentioned earlier, there is talk of a material turn in journalism research. An entire special issue called "Objects of Journalism and the News" has been dedicated to exploring an "'object-oriented' approach to journalism studies" (Anderson & de Maeyer, 2015, p. 3). Another special issue dedicated to theorising digital journalism has seen an important place offered to socio-technical approaches to understanding journalism (Steensen & Ahva, 2015). The recent *SAGE Handbook of Digital Journalism* (Witschge, Anderson, Domingo, & Hermida, 2016) includes multiple chapters dedicated to socio-technical approaches to understanding the news.

At the same time in my own area, new media and digital culture, a lot has changed in the way of digital research methods. This thesis began in the middle of a moment of accelerating platformisation of the web and associated API-enabled research methods, which I have drawn upon in some of this work. Subsequently, platform responses to misinformation and the recent Cambridge Analytica scandal, have prompted debate about a so-called crisis of API-based social media research (Rogers, 2018), as platforms are increasingly closing their APIs, and as social data is increasingly seen as compromised (see also Bruns, 2018; Venturini & Rogers, forthcoming). These developments make debates about the broader contexts and implications of digital research methods even more pressing, and in the Conclusion I will further discuss some of these implications as well as future research directions.

1.3 Thesis Outline

This thesis starts from the recognition that digital media are shaping not only news work but also ways to create knowledge about news practices. This recognition prompts us to consider how the socio-technical research approaches at work in journalism studies may be combined with device-centred analytical approaches that have emerged in recent digital sociology and new media research.

The central argument of this dissertation is that STS-inspired approaches to the materiality of journalism and device-centred approaches from digital media and social research, in combination, offer modes of studying the participation of digital objects in journalism that can leverage the affordances of digital devices for research.[4] In this dissertation I refer to these as news device approaches and illustrate how the interactions between different digital objects and different aspects of news work can be studied. To summarise, several assumptions underlie this project. The first is that news work increasingly takes places in and through interconnected and competing digital devices, or what Ruppert et al. (2013) call "fields of devices" (p. 19). The second is that news work and digital devices are co-produced though their interactions. Digital devices are not neutral intermediaries but shape the conditions of possibility of news work. News practices do not just make use of digital devices but shape how a device is done and what it becomes in a particular situation. For example, think of the way in which the use of YouTube for opinion manipulation has made us understand the platform as a "misinformation machine" (Tufekci, 2017). Here I align myself with Deuze and Witschge (2018) who call for journalism to be approached as a dynamic, unstable and ongoing configuration of relations, as well as with van Dijck (2013) who proposes digital devices such as online platforms to be understood as "a set of relations that constantly need to be performed" (p. 26). What is important here is not just the recognition *that* the material participates in news making (this is

---

[4] Weltevrede (2016) defines the "research affordances" of digital media as the research possibilities that emerge from the interactions between researchers and their questions and objectives on the one hand, and the analytical capacities of digital media on the other.

something that has been recognised for a long time) but, rather, how to explore *when* and *how* it participates and with *what consequences* (and to elaborate how it makes a difference, if at all). This recognition informs the overall research question of this thesis: *How can a news device approach help to account for how digital objects participate in and format news work and ways of studying it?*

As mentioned above, this question is addressed empirically by examining the interactions between three areas of news practice and three digital objects. The digital objects are entry points for examining three areas of the digital that are playing a significant role in shaping digital news work: digital visual culture, online platforms, and the online advertising and marketing industries. Methodologically, I use a variety of methods that are sensitive to how digital objects afford, organise and constrain the practices they interact with, from multimodal analysis, to digital methods for single and cross-platform analysis, and visual network exploration.

Through this work I make a number of contributions. Firstly, I empirically examine the role of three less studied but important digital objects in journalism. Secondly, I aim to contribute to a more substantive dialogue between STS-inspired digital journalism research and STS-inspired digital social and media research, by illustrating how methods and sites from digital social and media research can be brought to bear on journalism. Thirdly, I reflect on what this change of sites and methods brings to our understandings of news research and practice, of how digital objects are making a difference in news work and in research, as well as in interactions with other domains.

The thesis is organised as follows. In the introductory chapter, I outline my research project and make the case for why examining the interactions between digital objects and news work is important. I introduce the news device approach to argue that attending to the interactions between digital objects and news from a device perspective may offer fresh angles on digital transformations in particular settings.

Chapter 2 more precisely situates and positions this research project in the

context of STS-inspired journalism studies and within device-centred approaches to digital social and media research. I focus on these bodies of work because of their widely recognised, rich and nuanced approaches to the mutual shaping of technologies and practices, drawing on STS. I discuss the conceptual and methodological aspects of these bodies of work which I bring together in the news device approach. I start by discussing how journalism researchers associated with the material turn approach technical objects as socio-material arrangements, and interactions between news and digital objects as processes of co-articulation. Next, I introduce a related way in which the interactions between digital objects and news work can be approached, namely through device-centred approaches from digital social and media research. These approaches draw on a diversity of fields, from STS, to software and platform studies, and provide a promising way of gaining a rich understanding of digital devices as the material of journalism and as part of the research apparatus for knowing journalism. Finally, the chapter discusses how the news device approach frames the study of interactions between digital objects and news work and describes the development of the three empirical cases.

Chapter 3 is the first empirical chapter. In this chapter I study the narrative affordances of network graphs, the de facto diagram type of the digital age, in the context of journalistic storytelling. The device perspective in this chapter is developed by studying journalistic storytelling or narratives not by taking a particular genre or topic as a starting point, but by taking a key visual and analytic form of the digital age, the network diagram, as a narrative device. The question I ask is: How are network diagrams used for journalistic storytelling and how do network analytics and visualisation shape these stories? To address these questions, I draw on multimodal analysis and graph semiotics to identify the narrative readings that networks elicit in a corpus of journalistic stories. I show that the identified patterns in the narrative readings that network diagrams elicit are shaped by visual network properties and classic network concepts as well as by the journalistic genres in which they are embedded. In doing so I hope to contribute both to the study of journalism and narratives, and to the understanding of the narrative potential of network visualisation, which I discuss as "network stories".

Chapter 4 is a contribution to platform studies, and more specifically to the platformisation of news and to the study of coding in journalism. I address the question of how the online platform GitHub shapes coding practices. I do so by examining how public journalism code development and the making of digital news infrastructures are configured through platform-making activities, which include technical infrastructure configuration and economic imperatives. Drawing on van Dijck (2013), I propose the concept of "connective coding" to capture these processes through which the platform participates in journalism coding to commodify it. I also address the question of how news initiatives participate in the platform by proposing an analytical approach that repurposes connective coding. I examine modulations of practice in a collection of journalism code repositories gathered by Source, a key journalism coding initiative. The focus is on platform-specific forms of coding work and their temporality, and how journalism code is engaged with on GitHub. I find that most journalism code does not keep up with the platform's preoccupation with fresh content and that the platform's culture and dominant publics shape how journalism code is valued.

In Chapter 5 I draw on research into audience economics and media audience markets, and on socio-material approaches to digital media to study audience commodification from the perspective of web tracking devices. More specifically, I take the "fake news" scandal as an occasion to address the relationship between the online advertising and marketing industries and two types of digital cultural production: news and junk news or viral misleading content that mimics the news format. The question that drives this chapter is: How can audience commodification be approached from a digital device perspective? To address this question I extract third-party tracking mechanisms embedded in a collection of pages from mainstream and junk news websites. I examine their audience marketplace configurations from the point of view of the web tracking infrastructures of these sites. This analysis contributes to the study of the business side of news by providing a picture of audience marketplace practices in which legal initiatives such as the recently enforced EU General Data Protection Regulation (GDPR) are aiming to intervene.

In the sixth and final chapter I formulate conclusions about what a news device perspective can bring to the study of news and to journalism research. I summarise the main contributions of this dissertation and reflect on the challenges and implications of this approach for journalism research and sketch a few directions for future research.