

Introduction: Situating Data as Cultural Inquiry

Nanna Verhoeff and Karin van Es

Abstract

This collection examines the impact of data, datafication, and algorithmization on contemporary culture, and thereby also on the agenda of the broader field of cultural inquiry. Our perspective is double. We ask: Where and how do data and algorithms shape and transform culture? But also, where and how do they impact and transform scholarly practices in the study of culture? Situating data as cultural inquiry, thus, is not only an act of localizing data both *in* and *as* culture, but also an act of situating our perspective on, and knowledge about, this culture. With the selection of chapters in this collection, contributing to the diversification of cultural inquiry, we propose conceptual and methodological directions for exploring where, when, and how data and algorithms (re)shape cultural practices, create (in)justice, and produce knowledge.

Keywords: cultural inquiry, situatedness, performativity, materiality, criticality, creativity

The datafication and algorithmization of culture and society transforms and expands the field of cultural inquiry. Both the objects of study as well as our scholarly practices—questions, approaches, and methods—change. Alongside new objects and questions, our traditional “objects” of cultural inquiry are increasingly digitized, mediatized, and given lives as data (Posner and Klein 2017). Indeed, data and algorithms are fundamentally cultural. On the one hand, they (re)produce ideologies, values, and beliefs (Beer 2019), and on the other hand, in processes of selection, abstraction, and translation, data are shaped by material, historical, and discursive conditions and restraints. While the processes of datafication are not always visible, their consequences

have far-reaching material and discursive effects. These unfold on various levels and scales—on the level of individual, everyday life; on community and institutional levels; and on the level of our planetary ecosystem.

A proliferation of new conceptual terms articulates perspectives on contemporary technological, social, and cultural transformations. The “computational turn” (Berry 2012) or “algorithmic turn” (Uricchio 2011) unleashed a “data revolution” (Kitchin 2022) and contribute to the advent of what we can discern as the “algorithmic condition” (Colman et al. 2018) of contemporary culture that shapes our “Datafied Society” (Schäfer and van Es 2017). These terms are accompanied by critical evaluations of, and creative interventions in, the fundamental consequences of datafication and algorithmization of culture and society. Critical scholarship has called out the logic of “surveillance capitalism” in the networked sphere (Zuboff 2015) and, perhaps also more fundamentally, forms of “data colonialism” and the “new social order” resulting from the appropriation of human life through data (Couldry and Mejias 2019). Creative responses from new fields such as the creative humanities, artistic research, critical making, and research by design have experimented not only with making visible and debatable the presence of data-driven processes and their direct impact on our environments and ways of living, but also with proposing or designing alternative interfaces to data for, and in, public spaces (Verhoeff et al. 2019).

These critical statements and creative interventions that address the cultural impact of data and algorithms have a shared agenda. They signal radical change, articulate questions and concerns, and call for new perspectives by urgently asking to take seriously the socio-material, epistemological, and ecological implications of the ongoing fundamental changes caused by the “deep mediatization” (Hepp 2020) of almost all societal realms. How can we understand the quality and significance of current socio-technical transformations that result from datafication and algorithmization? How can we explore the changing conditions and contours for living within such new and changing frameworks? How can, or should we, think and act within, but also in response to, these conditions? What are the ethics they call for? Or, to put it in Harawayan’s (2016) terms, what is our response-ability?

Cultural Inquiry as Perspective

Taking up the challenges of the datafication of culture, as well as of the scholarship of cultural inquiry itself, this collection contributes to the critical debate about data and algorithms by engaging with these bigger and

more fundamental questions from a specifically situated perspective. This perspective locates data not in abstract terms as “out there,” unreachable, invisible, and immaterial, yet ubiquitous and all-pervasive, but instead as fundamentally situated: present, emergent, and relational. Herein it pushes back against claims of data as “big” and “universal” and conceptual metaphors such as “cloud,” “liquid,” and “fuel” that encode how we make sense of data (Puschmann and Burgess 2014). Such claims and metaphors obfuscate the socio-political, ecological, and epistemological realities that situated data practices entail. As such it risks reproducing structural biases, blind spots, and inequalities.

However, as feminist science and technology studies scholar Donna Haraway (1988) has pointed out, a situated perspective prompts us to look both ways: at the object as well as subject of study. For our inquiry here, this entails locating data as embedded and embodied in cultural practices, but it also critically and self-reflexively situates us as researchers of those practices as also embedded and embodied within the same contemporary, datafied, and algorithmicized culture. Situating data, thus, is not only an act of localizing data both *in* and *as* culture, but it is also an act of situating our perspective on, and knowledge about, data. Such a perspective, we hold, is much needed for understanding how we think, practice, and conceptualize data in our contemporary culture and society, but it is also needed to conceive of possible interventions or ways to reshape these practices. Data are, thus, produced by culture and culture-producing. Taking data seriously as a question of culture—an approach also inherently embedded within this culture—then requires a situated, reflexive, critical, and a productive (or, creative) perspective. This collection responds to this demand by collectively formulating and demonstrating the value of such a perspective for, and approach to, data as *cultural inquiry*. Exposing the realities of situated data practices can be a first step toward meaningful intervention and change with the aim of a more responsible and just datafied society.

As digital humanities scholar Ted Underwood (2018) points out, the current age of datafication, algorithms, and machine learning needs the humanities, specifically for a traditional skepticism about numbers, but also for their ability to contextualize and deal with complexity (related to their cultural and critical analyses). Digital humanities scholars Miriam Posner and Lauren Klein (2017, 3) similarly contend that the field of media studies has particular sensitivities and concerns that enrich the broader field of data studies. Media theory brings in a perspective on medium specificity that contributes to new methods of critiquing data sets as produced both by technologies and cultural frameworks (cf. Poirer 2020) and the close

reading of code (cf. Marino 2006, 2020). Conceptualizations of performativity (Barad 2007; Drucker 2013) offer directions for thinking about and with the generative processes of data. These build (on) perspectives on the materiality, mediality, and performativity of data, and bring attention to the particular contexts—and thus politics—from which data and algorithms emerge. Moreover, the study of pressing societal issues of these times (e.g., fake news, polarization, predictive policing, surveillance, market domination) should not be left to the sciences only but requires a fundamental and deep collaboration with the humanities (Parks 2020). In a special issue on the study of Artificial Intelligence and machine cultures for the journal *Media, Culture & Society*, the editors stress the relevance of media and cultural studies specifically. As they claim, these fields within the humanities offer three important correctives to current debates as they help to question the notion of the “human,” contextualize machine cultures, and support ethical and responsible AI practices.

As an introduction to this collection, in the following we sketch the contribution of cultural inquiry in situated reflexive, critical, and productive approaches to data and algorithms. Fundamentally non-exhaustive and selective, we zoom in on inquiries specifically informed by the sensitivities of media studies. These sensitivities guide the book’s inquiries into how processes of datafication and algorithmization shape practices, create (in)justice, produce knowledge, and call for new research agendas and methodological directions for cultural inquiry. As outlined below, these are centered on questions, concepts, and debates around the materiality, power, and affect of data.

Approaching Data Critically

The impact of data and algorithms has contributed to the re-emergence of empiricism in science, policymaking, and public opinion and debate. It is grounded in a set of false assumptions—perpetuated by the metaphors mentioned earlier, e.g., big, universal, cloud, liquid, fuel—that data can be exhaustive, transparent, and unbiased and that if they capture a whole domain, arise from “nowhere” without agenda, are generated independently, and can speak for themselves (Kitchin 2022, 115–17). However, their etymological root in Latin notwithstanding, *data* are never really “given” without some trade-off. Or, to emphasize the act *before* data: data are always already framed when sought, and never simply “raw” (Bowker 2005), to be found “out there.” Moreover, data are also not just a result *of* but are also

resulting *in*: they have a past, a present, and a future. Media theorists Lisa Gitelman and Virginia Jackson formulated this eloquently: “Data need to be imagined *as* data to exist and function as such, *and that imagination of data entails an interpretive base*” (2013, 3; emphasis added). While such critiques immediately bubbled to the surface, they remained scattered at first.

Calls for a more systematic approach to data criticism followed. Within media studies, danah boyd and Kate Crawford were early to forward an agenda for the critical study of big data in their seminal article “Critical Questions for Big Data” (2012). Within critical geography, Craig Dalton and Jim Thatcher (2014) provided an initial agenda for what they termed Critical Data Studies. Since then, Critical Data Studies has developed as an interdisciplinary field drawing input from anthropology, law, information studies, political sciences, (new) media studies, and gender studies. It has played an important role in demystifying myths of accuracy and objectivity, exposing data as always-also partial, selective, and biased. It has tasked itself with exploring the ethical, cultural, and critical challenges posed by so-called “Big Data” (Iliadis and Russo 2016) and raising questions about the generation, circulation, and deployment of data by charting and unpacking more complex data assemblages (Kitchin and Lauriault 2018).

While Critical Data Studies is a blossoming and rich field, digital media scholar Yanni Alexander Loukissas sees limits to the critical reflection at the core of most branches, which he finds “can be detached rather than responsible, analytic rather than affective, or conceptual rather than hands on” (2019, 9). His work on the *locality* of data is a direct response to this issue. Inspired by feminist ethics of care, he embraces material engagement and affect and calls attention to neglected things. Apart from these aspects related to criticality, geographer and specialist in the critical study of the datafication of (smart) cities Rob Kitchin (2022, 302–6) urges for “decentering data” in critical data studies. It entails understanding data and its assemblages as constructions and expressions of society and culture. This, he finds, can be recognized in the work of feminist and critical race scholarship, but it is not common in most data studies. As such, the approach to data as culture and the collection of cultural inquiries in this collection are a productive contribution to and expansion of the field of, and discussions within, the critical study of data. For an approach to data-as-culture, the aim is not so much to understand what data *are*, but rather how they came to be and what they *do* as they are entangled with algorithms. Indeed, data and algorithms are operational in that they influence our lifeworld and are woven into everyday practices (Loukissas 2020; Rettberg 2020). This brings to the fore the *performativity* of data – specifically in a focus on data

practices and the socio-political, ecological, and epistemological conditions for, and implications of, such practices. Analyzing data and algorithms as performative entails a critical unpacking of how they shape, define, and maintain the world.

In contemporary critical approaches to data, we identify three recurring and interrelated foci of questions, concepts, and debates around the materiality, power, and affect of data that are pertinent to data as a cultural inquiry. Regarding materiality in relation to power, important work has, for instance, been produced in critical algorithm studies (Bucher 2012; Gillespie, 2014; Noble 2018; Pasquale 2015; Rieder 2015) that examines the social and political dimensions of algorithms. It has resulted in insightful contributions like that of Safiya Noble in *Algorithms of Oppression* (2018), which explore how search engines reinforce racism, and in *Automating Inequality* (2017), in which Virginia Eubanks exposes how digital tracking and automated decision-making profile, police, and punish the poor. Similar concern for the materiality of media can be traced to work in the field of software studies (Fuller 2003, 2008; Manovich 2001, 2013), with conceptual origins in the work of figures such as Harold Innis (1951) and Marshall McLuhan (1964).

Software studies has become a field concerned with analyzing the social and cultural impact of software systems and now also includes critical work done in interface studies (Chamberlain 2011; Galloway 2012; Stanfill 2015). It is closely related to platform studies (Monfort and Bogost 2009), which is concerned with interrogating the relationships between hardware and software. These fields share an interest in the *materiality* of media technologies and push back against metaphors and imaginaries of data as immaterial. This scholarly work is important because examining data as material “draws specific attention to the historical particularities, cultural specificities, and political consequences” (Dourish and Mazmanian 2013, 4) of data. Indeed, data are caught up in complex socio-technical assemblages. It is necessary to attend both to materiality and to representational and rhetorical aspects of data.

With its analyses of such assemblages, platform studies have moved away from a game studies perspective to include content sharing websites and social media applications (Plantin et al. 2018). This latter branch of platform studies (Gillespie 2010; Langlois and Elmer 2013; van Dijck 2013) has generated a spinoff in what could be referred to as platformization studies (Helmond 2015; Nieborg and Poell 2018; Poell, Nieborg, and Duffy 2022), which examines the extension of digital platforms into different spheres of life and cultural production.

Departing from a similar concern with the material, media studies saw a surge in infrastructure studies in part through the influential work of Brian Larkin (2008) and Lisa Parks and Nicole Starosielski (2015). They are concerned with the intersection of everyday life with the material artifacts of media infrastructures. The study of infrastructure has also found its bearing within digital media studies as digital platforms increasingly operate as infrastructures (Plantin et al. 2018; Plantin and Punathambekar 2019). A particular strand of infrastructure studies is concerned with the harm of data and AI to our environment, further entrenching inequality and acting as a driving force for undemocratic governance. The book *Atlas of AI* (2021) by Kate Crawford is exemplary hereof. While these studies depart from the materiality of data, they ultimately bring this to bear on questions of governance, ownership, and business models. This research results in interest for critical questions pertaining to issues of power such as labor, discrimination, exploitation, and surveillance. We now also increasingly encounter studies exploring the adverse environmental (material) effects of streaming media (Lobato 2019; Marks et al. 2020) and prompts for intensifying such concerns in environmental media studies or green(ing) media studies (Keilbach and Pabiś-Orzeszyna 2022).

Questions of power are also central in scholarship that calls for decentering data universalism and a de-Westernization of critical data studies (Milan and Treré 2019). This connects to concerns addressed in the research agenda of data activism (Milan and van der Velden 2018), data justice (Dencik et al. 2019), and data feminism (D'Ignazio and Klein 2020). While data activism is concerned with analyzing and intervening in socio-technical practices that critique big data collection, data justice focuses on social justice in data-driven systems and big data, and data feminism provides principles for a data science informed by feminist theory and activism.

Beside an initial focus on the material and discursive power of data and its consequences (Kennedy 2018) on a larger societal scale, new research agendas have been put forward that are looking at the “street level” (McCullough 2013) of digitization, datafication, and algorithmization. This encompasses, for instance, an interest in data’s “mundane” everyday experiences (Pink et al. 2017), its embeddedness in everyday practices of “vernacular data cultures” (Burgess et al. 2022), and an understanding of living with data “from the bottom up” (Coudry and Powell 2014). As a result of this research, there have been calls for attention to the affective dimensions of data (Kennedy 2018; Lupton 2017). This interest in data practices and affects builds on a longer tradition in media studies and the wider field of cultural inquiry to examine culture in and through everyday practices and experiences.

Cultural Inquiries, Plural

The digitization and datafication of culture and society has created new opportunities for research in the humanities and given rise to various computational approaches (cf. Dobson 2019; D'Ignazio and Klein 2020; Lindgren 2020; Rogers 2013). However productive these distant approaches can be for mapping phenomena and isolating patterns, this collection examines the close encounter between researcher, concept, and object. It entails the fundamental question of how we can do research on the situatedness of data while simultaneously considering our own situated position within a datafied society. Such a doubly situated and situating approach to data requires methods that build on the ethical commitment of critical humanities scholarship (Barad 2007; Geerts and Carstens 2019; Verhoeff and van der Tuin 2020) as well other disciplines that acknowledge data as also small, partial, local, material, and embodied. In line with this approach, this collection explores some areas within media studies, cultural theory, gender and postcolonial studies, and philosophy of science that study and work with data as part of the larger project of cultural inquiry. These entails various qualitative methods, situated readings, and creative methods that inquire into the material, power-full, and affective dimensions of data and data practices. It pushes forward the project of situated and "local readings" of data (Loukissas 2019). Such local readings immediately demonstrate how power, however historically determined, plays out differently in different contexts.

The contributions to this collection all respond to what we may consider the challenging "newness" of data for cultural inquiry and, specifically, its subfields of media studies. The datafication and algorithmization of culture not only demands a fundamental (re)assessment of our research objects and research practices, but also of how these processes have a fundamental impact on the research agenda, conceptual vocabulary, and methodological scope of cultural inquiry itself. As the chapters in this collection demonstrate, together this emergence of "data" as its own object of cultural inquiry entails not only a broad scoping of new "objects"—e.g., interstitial data and algorithmic serendipity—but also an articulation and mobilization of variously shaded new or revisited concepts and methods that help to take seriously the ecological, ethical, and epistemological implications of datafication and algorithmization as a pluriform and tentacular cultural process. As such, datafication and algorithmization prompts scholars to position and redefine themselves, in the process blurring and redrawing disciplinary boundaries.

Above we have sketched the way datafication involves cultural transformations that prompt questions about interrelated aspects and implications of materiality, power, and affect. These themes are central and recurring throughout this book. This collection brings together various perspectives on the datafication and algorithmization of culture from debates and disciplines within the field of cultural inquiry, specifically (new) media studies, game studies, urban studies, screen studies, gender studies, and postcolonial studies. The contributions are clustered around the aforementioned foci of *practices*, *justice*, and *knowledge* and an additional section on *agendas*, which explores future lines of research and new methods. Each section shows theoretical and conceptual tools for examining and understanding these aspects of data in contemporary culture as manifold and divergent but also connected, while also demonstrating links and partial overlap with the other sections. Therefore, we should speak of cultural inquiries, plural.

The first three chapters of section one investigate various contexts in which data are imagined and practiced: these include coffee roasting, precision farming, and urban design. The following two chapters—one on video streaming platforms and the other on electronic waste—explore the implications that the reliance of their articulation and circulation on material platforms and infrastructures has on the environment.

From these environmental concerns about waste and the impact of streaming, we shift attention to questions of (in)justice embedded in, and resulting from, working with data and algorithms. Section two is concerned with the “fairness in the way people are made visible, represented and treated as a result of their production of digital data” (Taylor 2017). Here, the focus is on different forms of inclusion and exclusion that are maintained or challenged by datafication, including datafication as boundary work, and the logics of race in governmental data systems. The last two articles address the role of art in uncovering the politics of facial recognition and Afrofuturist activism. These inquiries explore possible approaches and routes to “break” with problematic, oppressive, and exclusionary norms and assumptions that often infuse our data technologies and practices.

In the third section, four chapters examine the impact that data and algorithms have as part of the media technologies we work with for, and in, practices of knowledge production. This is illustrated through an analysis of knowledge production with metadata as active agents, a tracing of metadata in archival search systems, a proposal for diachronic affordance analysis, and an analysis of adaptive learning platforms. These contributions underscore the symbiotic relationship between data, algorithms, and knowledge. A

recurring question in these chapters is how principles of mediation and translation occur in the complex assemblages of human and non-human actors and how this has fundamental epistemic consequences.

The last section of this collection contains several shorter statements that each, from various perspectives, provide an outlook on new research directions, approaches, and methods—including new collaborative and interdisciplinary ways of working. These entail a call for entrepreneurial research, creative methods, collaboration and dialogue between the Global North and Global South, and an ecosystemic approach to data. With these chapters and these mission statements, we hope to have signaled and gestured toward future directions for cultural inquiries into data.

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About the Authors

Nanna Verhoeff is Professor of Screen Cultures and Society in the Department of Media and Culture Studies at Utrecht University. She initiated the research group [urban interfaces] and is co-lead of the Open Cities platform at Utrecht University. Her research on urban media combining perspectives from (digital) media and performance studies contributes to the interdisciplinary methodological development of the creative humanities.
> n.verhoeff@uu.nl

Karin van Es is Associate Professor of Media and Culture Studies at Utrecht University and is project lead Humanities at Utrecht Data School. Her main research concerns the datafication and platformization of culture and society.
> k.f.vanes@uu.nl

