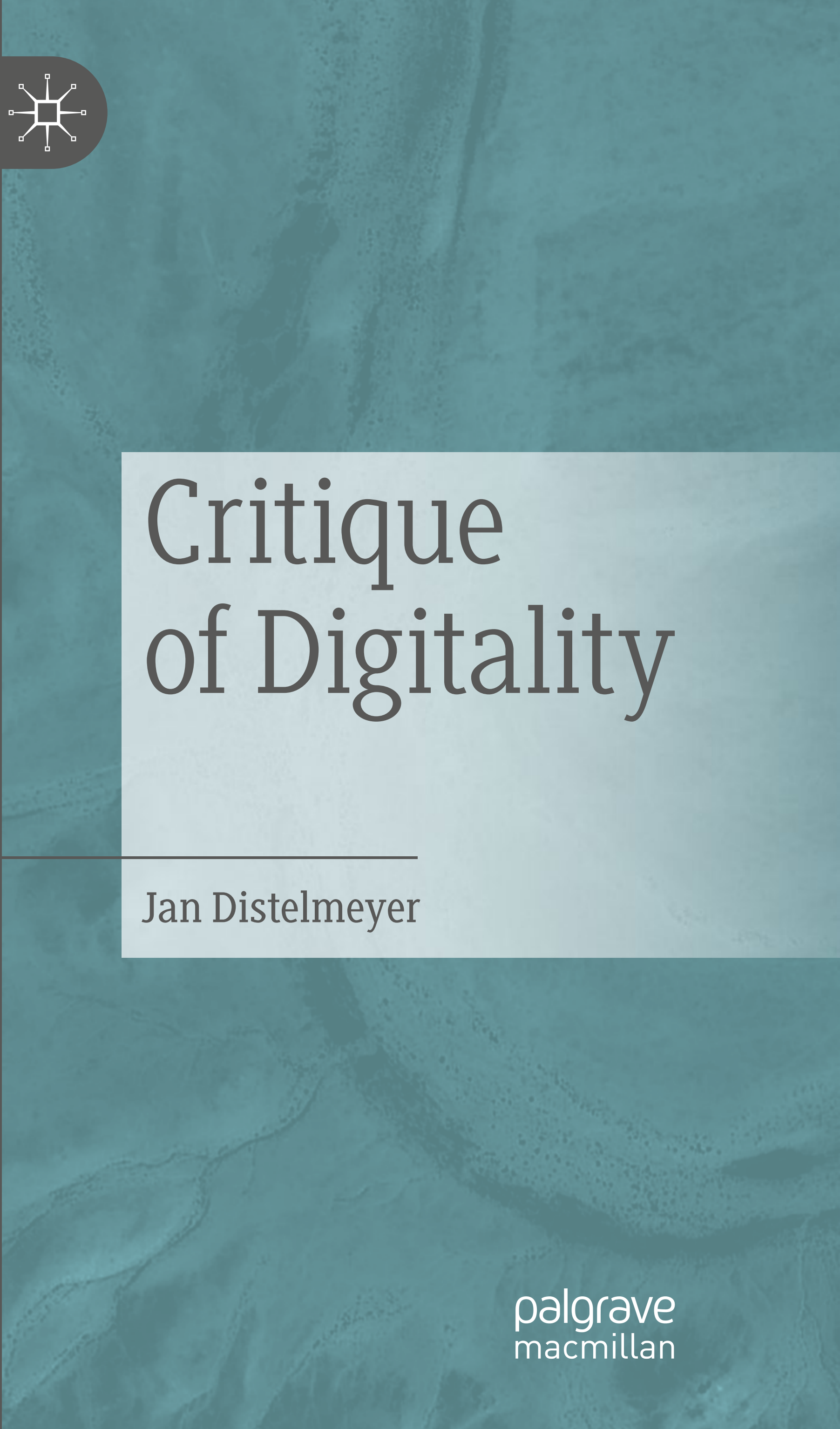

Critique of Digitality

Jan Distelmeyer

palgrave
macmillan

Critique of Digitality

Jan Distelmeyer

Critique of Digitality

palgrave
macmillan

Jan Distelmeyer
Europäische Medienwissenschaft
Potsdam University of Applied Sciences/University of Potsdam
Potsdam, Brandenburg, Germany

ISBN 978-3-658-36977-4 ISBN 978-3-658-36978-1 (eBook)
https://doi.org/10.1007/978-3-658-36978-1

© Springer Fachmedien Wiesbaden GmbH, part of Springer Nature 2022
This book is a translation of the original German 1st edition Kritik der Digitalität by Jan Distelmeyer, published by Springer Fachmedien Wiesbaden GmbH, part of Springer Nature in 2021. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). The author (with the friendly support of Simon Vincent) has subsequently revised the text further in an endeavour to refine the work stylistically.
This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.
The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.
The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Palgrave Macmillan imprint is published by the registered company Springer Fachmedien Wiesbaden GmbH, part of Springer Nature.
The registered company address is: Abraham-Lincoln-Str. 46, 65189 Wiesbaden, Germany

Acknowledgements

This little book has quite a long history. Its publication—initially in German—is first and foremost due to the initiative and openness of Ivo Ritzer, without whom the attempt to tackle such an expansive topic in a rather narrow framework would not have happened. The English translation was made possible by the support and wise advice of Simon Vincent, who has thought through linguistic and content issues together in an illuminating way for this practice of theory. The group of friends and colleagues whose suggestions have been incorporated in this book is so large that it is impossible for me to thank them individually in this context. Nevertheless, I would like to express my special gratitude for the regular exchange with students and teachers in Potsdam, in the research college "Sensing—The Knowledge of Sensitive Media" and in the research group "Interfaces" of the German Society for Media Studies. In particular, I would like to thank Till A. Heilmann, Timo Kaerlein and Florian Sprenger for their reading and criticism of the individual chapters. More than thanks I owe to Bettina and Pina Distelmeyer for their support, for our conversations and everything.

Contents

Digitality and Critique

1

1.1 Digitality (Programmatic Interactions)

Digitality is an imposition. This does not contradict the advantages of digital technology. Nor does it contradict the facilitation, assistance and productivity from which people profit in ever-increasing areas of their lives through the use of computers and their connectivity. Rather, the imposition and challenge follow precisely in tandem with the growing spread and importance of this form of technology and the easing of workloads associated with it along with its processes of automation, which furthermore, and in a quite particular way, liberates us from having to understand the processes involved.

The concept of digitality focuses on something fundamental. It marks, first of all, a humanities-based perspective on the totality of the far-reaching and deep-rooted developments that may also be summarised as computerisation. Therein lies the commonality of the various notions of digitality: Namely, the totality and peculiarity of the conditions and consequences of electronic digital computing in all its forms. Thus, digitality becomes an imposition and challenge for at least four reasons, which—since they are both constraining *and* illuminating—I would like to explore and discuss before anything else.

These four elements of imposition both determine and structure the first four steps of this chapter. The ambition of the term

J. Distelmeyer, *Critique of Digitality*,
https://doi.org/10.1007/978-3-658-36978-1_1

digitality, along with the simultaneous presence and concealment of (pre)conditions, apparatuses and processes all signify the first imposition (i.e. *programmatic interactions*). From the interaction of mythical and material factors follows the second imposition (i.e. *myth/matter*), which is followed by the third (*discourse*) that consists of the different theoretical approaches to digitality. Finally, the fourth imposition (*the network*), which is also discursive, concerns the recent tendency to equate "digital" automatically together with "networked".

Out of these four steps, I will go on to develop, in this first chapter, a concept of critique. It is conceived here as an unfolding of concerns, for which I will use the interface concept and the German term "leiten" in the following chapters. While the interface concept addresses various forms of relations thanks to which computers function, are networked and establish relations with the world beyond the computer, *leiten* refers in an equal and thus untranslatable manner to processes of physical conducting as well as idea-related leading and guiding. This is why the interaction of both terms seems to me to be extremely helpful in responding to the challenge of digitality. The brief introduction to a critique of digitality that this volume offers is thus an introduction both to an engagement with the (pre)conditions and consequences of electronic digital computing and to the challenges of such an endeavour. Therefore, I would like to start with the question of what the concept of digitality actually entails and helps to address.

The claim of digitality to grasp a totality of fundamentals and effects conceptually poses the first challenge, a Sisyphean task of tracing both the versatility and development of a technology whose celebrated strength lies precisely in its permanent changeability. Computer technology can and will, as its programmability guarantees, adapt itself to the most diverse ends. Continuous changes: Tracing and attempting to understand the conditions, apparatuses, processes, and consequences associated with buzzwords such as "digital revolution," "digitalisation," and epochs such as the "digital age" is, therefore, an ongoing occupation, with only those who wish to ignore the increasing influence of this technology doubting that such a task is necessary. If digitality is indeed commonplace, so its critique, its analysis and assessment, should also be.

Just how much this task requires can be demonstrated by the fact that, on the one hand, digital technology (and its logic) provides a kind of central focus or cohesion, while on the other, however, any idea of a conceptual unity is certainly misleading. For what we find under the glossy and catch-all term of "digitalisation" is highly diverse. Different processes, leading principally to concentrated and networked automation and acceleration, are rapidly becoming operative in several different realms, shaping educational institutions as well as industries, ecology as well as the economy, social behaviour as well as warfare and many other parts of not only human life.

Furthermore the tendency to bring together the most diverse processes, "which were previously addressed under the umbrella of terms such as 'social change' or 'technical progress' currently, under the hardly less-incoherent, highly de-differentiating collective term 'digital transformation'"(Krajewski 2019, p. N4), is a tendency that continues to grow. Indeed it reached a new peak in the spring of 2020 during the COVID-19 pandemic, especially among those voices that have since filed away misgivings as mere "debates about taste" as a result of it becoming clearly manifest how digitalisation is a "gift for humanity" (von Gehlen 2020) and how it had become "our refuge" (Rosenfeld 2020): "The digital now binds us together." (ibid.)

I will return to effect of the coronavirus in the course of the first chapter when considering all four elements of imposition. For the handling of the pandemic has vividly reinforced the blurring and overlapping of these terms, as I intend to outline in the first four steps of this chapter.

Initially, however—thus looping back to the first imposition of simultaneous presence and concealment—the desired ubiquity of computer technology is almost impossible to keep track of, and not just because of its vast proliferation. It is overwhelming and not only on account of its networked dispersion and embedding of itself into so many realms of far more than human life, encompassing, for example, computerised smart cities as well as a "hiveopolis" (APA 2019), hives with computerised sensory technologies. Moreover, this connected proliferation is occurring in tandem with a diversification of digital apparatuses, the sheer scope of whose forms is also expanding very rapidly.

The path leading from room-sized mainframe computers to home and personal computers, and from laptops to tablet computers, smart phones, smart wristwatches or even smart glasses is but one part of this complex aimed decidedly at humans. At the same time, the literal embedding of computer technologies continues in objects found in the Internet of Things, in machines and in bodies (for example in the form of pacemakers, hearing aids or RFID chips embedded under the skin of animals and humans). Their automation is designed to include a certain momentum that potentially takes humans out of the equation. In the case of autonomous and connected vehicles as well as "autonomous weapons" (Scharre 2018), this is still a highly controversial topic, although the "algorithmic trading" (Reichert 2009, pp. 69–74) of automated high-frequency stock exchanges has been part of everyday life for years.

In addition to the extensive proliferation and diversification of computer technologies, there is a fundamental property of computers that puts yet another strain on the task of creating an overview, one that makes it a somewhat ungraspable concept. How do we survey machines whose ambition is "universality"? How can an overview comprehend a General Purpose Machine, that "really all-purpose automatic digital computing system" (von Neumann 1993, p. 39), whose lack of purpose is paradoxically focussed on a single purpose, namely to compute? Furthermore, how can this overview succeed if such ongoing computing processes ultimately consist of "manipulating series upon series of characters according to unambiguous rules" (Coy 1994, p. 19), thanks to processors running at inhuman speeds that keep switching circuits through electrical impulses acting on the commands of a given programme? In other words: How can I recognise the very thing that in this way (increasingly) eludes observability?

This challenge that digitality imposes is related to a fundamental and, by way of intermediation, bridged difference: When dealing with computers, the observable and the unobservable are *programmatically* interconnected—and *programmatic* refers to both the concrete realisation of programmes and the underlying programmability that so fundamentally distinguishes computers from other technologies. Unobservable processes in and between computers are reciprocally connected with manifestations and perceptible effects of these internal programme and processor performances. Since the beginnings of electronic digital computers with instruction memories in the late 1940s, it has been necessary to mediate between the computational processes in the machine and what, as input or output, either instructs these processes or results from them.

This fundamental condition of processes has been discussed repeatedly as a kind of contradictory, oppositional coupling. In the mid-1980s, Frieder Nake (2021/1984, pp. 279–287) characterised the computer principle as one of doubling: The function of computers accessible to us is to operate both mediated and unmediated, and inaccessible facilitating the "machinisation of work performed by the human brain." In the late 2010s, Sybille Krämer (2018, p. 41) described the "Janus face" of "networked digitality" thus: In front of the user interfaces, "users can generate knowledge from the net in a more self-empowering way than ever before" by writing/reading. Behind all of this, however, lies "a realm of algorithms, protocols and devices communicating with each other so vast that it is barely controllable any more by user power".

The spheres of influence of such a coupling are in turn expanding and intensifying their own interactions, which, on the one hand, are characterised by the existence of and interaction with apparatuses and infrastructures, as can be visibly evidenced by the proliferation of mobile computers as smartphones. On the other hand, however, this present era of digitality is at the same time characterised by the power of hidden processes of *leiten*, calculating, instructing and controlling particularly emphasised in the developments and discussions around artificial intelligence and machine learning, on smart cities and Big Data.

The buzzword Big Data "first appeared in an academic publication in 2003", aiming at the big (and hoped-for) picture, yet it "only gained broader legitimacy around 2008" (Boellstorff 2014, p. 107), as it concerns the largest possible quantities of data. Such a mass of data, collected for example by registering activities on the internet or in cities, exceeds human comprehension. Thus, software applications that make as the basis of their operations the recording of as many connections and relations as possible are highly attractive. *Too big to fail*: The automatic evaluations of these vast data volumes and the results of data mining, promise both diagnostic precision and predictive miracles.

Concepts behind smart cities build on this, but not as a new phenomenon since “networked or computable cities began to appear as regular features in urban development plans from the 1980s onwards” (Gabrys 2014, p. 32). Such cities and other systems become “intelligent” insofar as their activities can be automatically recorded and, in the case of traffic flow, for example, regulated and directed thanks to sensor-enhanced computer technology. Intelligence is thus taken to mean here the ability to automatically and programmatically process the data that remains of the world once all necessary processes of formalisation have taken place.

The computer application of machine learning, understood as AI (artificial intelligence) and which was pushed forward in the 2010s, further expands on the concept of Big Data as both an exemplary and probability-calculating extrapolation of the past. The goal of these learning techniques is “to enable a computer to learn from experience in order to solve specific tasks and make predictions without having been explicitly programmed to perform this function” (Sudmann 2018a, p. 10). Patterns are detected within past situations and events, from which probabilistic assessments and decisions are derived in order to negotiate future ones. The special feature of this prediction technology, however, is that these machine learning programmes are considered successful and productive if they are proven to be correct in the tests on data already collected, so that their first task is not at all to predict the future, but the past (cf. Chun 2021). Determined to self-determine. What is referred to here as learning and intelligence is a specialised, automated quasi-independence which must first be created, aligned and trained by a third party. It requires exact preparation and maintenance. Therefore—because properties such as autonomy and self-reliance assume a freedom of will, which computers do not possess—this quasi-self-reliance could be more accurately called a programmatic autonomy, a new dynamic based on programmability. This quasi-autonomy involves automatic, not explicitly prescribed processes, for which it nevertheless needs its own programmatic and conditional frameworks.

For the same reason, there is much to be said for using the term “artificial intelligence” with caution. Since the term intelligence “invokes connotations of a human-like autonomy and intentionality that should not be ascribed to machine-based procedures”, the AlgorithmWatch initiative has suggested speaking here instead of processes of *algorithmic decision-making,* of “algorithmically controlled, automated decision-making (ADM)” (Alfter/Müller-Eiselt/Spielkamp 2019, p. 9).

AI’s learning processes, or more precisely ADM systems, are trained by human input, where artificial neural networks are fed with data. One highly important function is performed by the micro-tasks of crowdworking and clickworking, in which large numbers of people label images or read out texts, for example, in order that an information-processing system can detect and develop a library of speech patterns and image recognition which it will deploy in future scenarios; this form of AI will, in turn, be further optimised by human, everyday computer use. Of great interest here is that it goes unnoticed, for example, that the pre-trained models for image recognition run in the background on my smartphone, while “at night, during charging phases, the images taken during the day are analysed and processed using, among other things, facial recognition models” (Engemann 2018, p. 253).

Thus, the everyday relationship between humans and computers is by no means limited to what people do with computers through their conscious and intentional actions. Rather, it is characterised by complex ostensible and hidden interactions. Even in the now commonplace example of “digital photography,” those “little computers” that are digital cameras engage in more than one relationship with the information they capture in that they “record, process, transmit, distribute, display, and store” (Gerling/Holschbach/Löffler 2018, p. 81). Such interactions are shaping more and more forms of computers that are designed to capture life, measure it, and make it the very object of data production and distribution.

Hayles (2016, p. 33) has called this development of programmatic autonomy and agency “the third wave of computation”, after the mainframe supercomputers located in workplaces in the mid-twentieth century, and the worldwide adoption of personal computers (PCs) in the 1980s. This third wave is rooted in particular in the proliferation and embedding of a great variety of sensors, which record whatever it is that can be recorded using these technologies and turn it into processable data. Around twenty sensors in a current smartphone (from the microphone and GPS to the accelerometer) ensure that such networked computers constitute the most commonplace examples of such sensory and not always conscious relationships between humans and computers. Together they belong to the practices of sensing (cf. Angerer et al. 2018; Gabrys 2019), referring to an interweaving of human and computer modes of detecting and evaluating.

The fact that my smartphone permanently and precisely records then relays my movements is perhaps only apparent and useful to me personally when I can use it to locate both my position and direction of movement when using a navigation app. Quite who else benefits from this—the police, PR companies or those detecting the early onset of Parkinson’s, since movements can be tracked in depth, subtlety and detail (cf. Arora et al. 2014)—is a question of not only interest and concern, but also access and accountability. “When I’m talking to my wife,” computer scientist Iyad Rahawan (2019, p. 102) states, describing his discomfort with everyday sensing processes, “sometimes an advertisement appears on my laptop shortly afterward that matches the content of our conversation.”

During the COVID-19 pandemic, sensing processes were used worldwide and aggressively from March 2020 onwards. Various nations secured access to the smartphone data of their inhabitants and reacted to the coronavirus with “mass surveillance” (Föderl-Schmid and Hurz 2020). In Germany, the Robert Koch Institute, as an independent higher federal authority, asked users of fitness bracelets and smartwatches in early April 2020 to use voluntarily the “Corona Data Donation App” (cf. Fig. 2.5). Vital data on, for example, a user’s resting pulse and activities, which these “wearables” record thanks to their in-built sensors, are intended to help