Introduction

While the COVID-19 pandemic rages on in many parts of the word, social spheres are disrupted and transformed, challenging notions of distance, proximity, access or isolation. More often than not, digital technologies and services accompany these changes, and one of the oldest narratives of networked communication – to overcome time and space in a mode of instant connectedness – plays out once more. Most praise information and communication technology (ICT) during this state of global crisis as essential for keeping the economies of nation states and the mental health of its citizens above water; meanwhile, the digitalization of societies pushes ever onward – *en passant* – no longer a march but a sprint (Bratton 2020). Thus, others see less reason for enthusiasm: As people now depend even more on online retail, entertainment or video conferencing platforms to navigate their daily life, the pandemic also unveils the acceleration of capitalist exploitation in and beyond the digital sphere. Inequities in payment and health protections for the retail and delivery workers who make it possible for the "touchless" purchase of goods to be brought into our private sphere are becoming ever more significant (Pereira 2020). And while some praise the usefulness in broadly (and deeply) gathered data to help fight the spread of the virus, others have pointed out the risks of state surveillance, privacy violations and the non-consensual exploitation of personal data connected to technologies rolled out to cope with or restrain the pandemic, such as contact tracing systems (Guarnieri 2020).

Whatever side one might take in this debate, both sides may agree that the state of crisis unveils the advantages and disadvantages of the digital sphere, opening them up for discussion in the first place. Not at all are new, but now they are once again on the public agenda (Klein 2007). The concept of "digital sovereignty" may provide a useful prism to focus this debate, while retaining the term's multifaceted openness. It is about access to and autonomy or control over ICT in (at least) three domains: the responsibilities of nation states to protect the interests of their citizens (and government) when it comes to data and technological infrastructure; the interests of companies and corporations, especially in IT-related sectors; the competence and self-determination of individuals to critically and consciously engage with technology and the data they generate (Pohle and Thiel 2021, in this volume).

Digital sovereignty has become a hotly debated term in the past few years, as the premises of how ICT impacts societies have changed: Instead of further indulging in the collective imaginaries of better, digitally mediated futures, today's narratives are dominated by rather troublesome aspects of the digital transformation. Issues such as the increasing vulnerability and manipulation of individuals, the violation of fundamental rights through mass surveillance, the highly problematic biases inherent in machine learning and automated decision-making, or the digitally mediated undermining of democratic institutions and practices have all become more and more of a threat to open and free society. The current state of crisis – elevated by but not limited to the pandemic – adds fuel to this debate, as it contextualizes digital sovereignty in a fundamental reconsideration of democratic principles, civil rights and national identities: Is (technological) self-determination still a valid goal – or even an option for every individual to cope with the digital sphere? (Where) Are paradigms shifting? Are current phenomena of deglobalization undermining the basic principles of transnational digital networks? What new developments do we now face and how can we address and qualify the social conditions that are now exposed and aggravated by the COVID-19 crisis? What chances could this crisis bring for substantially rethinking our ideas of society, its organization as well as the design of the infrastructures, objects and processes that constitute our techno-social realities? What imaginaries are we being confronted with, or do we develop, what agendas should we pursue and how

can we implement them? Or do we have to fundamentally revisit our terms and strategies in the question of how to shape digital societies?

This book frames digital sovereignty as a right to be claimed and a process constantly in the making, as a condition of the ability to critically partake in the digital transformation. Emphasizing a political and transformative significance of the term, this interdisciplinary publication gathers scholars, activists, artists and human rights advocates who develop practices or provide spaces and structures to foster sophisticated means of digital involvement. Its aim is to identify diverse facets of what it means to be digitally sovereign, but also to critically discuss the viability of the term, especially in the light of modern-day crises and for the many future challenges yet to come. The positions assembled in this volume analyze new opportunities for social participation and policy making and recommend alternative technological and social practices utilized by various groups and collectives – both before and after COVID-19. The interdisciplinary approach to the topic, as we ascribe to this volume, is reflected in the individual contributions and, to some extent, by the profiles of the individual authors.

In their essay, **Ramesh Srinivasan**, who has a background in design studies as well as media art and science, and the activist **Peter Bloom** reflect on the fact that we still place our fullest and blind trust in technological solutions. Although technologies of today have so far failed to address our societal and planetary problems, as the authors say, we continue to pursue faith in them. Srinivasan and Bloom see some causes in the way new technologies are presented to us as unavoidable while, at the same time, remaining opaque. Also, an unprecedented amount is being invested in future speculations, fantasies of a technocracy and technology development that do not take into consideration the social and global risks. The essay is a plea for a future that honors our planet.

In an attempt to somehow find ways to mitigate developments that negatively impact our lives, the concept of digital sovereignty has become a powerful and central element. In their text, the political scientists **Julia Pohle** and **Thorsten Thiel** deliver an overview of the evolution of the concept and its many uses. They thoroughly systematize the various normative claims to digital sovereignty by retracing how sovereignty has re-emerged as a key category with

regards to the digital. Pohle and Thiel frame digital sovereignty as a discursive practice in politics and policy and argue for more reflection and debate on how sovereign powers can be held democratically accountable.

The designer and philosopher **Denisa Reshef Kera** draws on the metaphorical lenses of the Leviathan and the Wicker Man in order to problematize citizen's agency (or rather the lack thereof) in light of smart contracts and automated decision-making processes. In order to engage citizens in the making and stewarding of governance infrastructures, she argues that it is essential to provide spaces for those very citizens to explore and experience possible effects of emerging technologies on their own lifeworld. Against this backdrop, she proposes the sandbox logic of prototyping and testing near-future technological realities as a powerful way for citizens to become informed and involved in discussions around aforementioned technologies. She offers reflections on her practical work in establishing such an environment allowing for testing, experimenting and deliberating on possible, algorithmically mediated futures.

Digital sovereignty is discussed by **Gesche Joost** as a guiding principle to bridge the gap of the digital divide. By highlighting some aspects of digital inequalities on a global level, she asks about our guiding principles for future policy making in order to overcome those inequalities. With her text, the design researcher and political advisor Joost opens the way to think proactively about policy spaces that are decidedly dedicated to a more inclusive digital society. Joost discusses the European policy frameworks as an opportunity for more data protection, cybersecurity and ethically designed artificial intelligence.

The sociologist **Philipp Staab** states in his essay three specific areas of sovereignty crisis: consumer sovereignty, civic sovereignty and economic sovereignty crisis. Along the recent history of the capitalist development of the internet, Staab argues that in order to understand the extent of the sovereignty crises in digital capitalism, we need a systematic analysis of the connection between commercialization and oligopolistic domination of the internet – as well as its political control. The essay frames the European data policy as an important contribution towards preserving economic, civil and market sovereignty.

Claudio Guarnieri, security researcher, technologist and human rights activist, offers a personal account on the open-source movement and discusses the efforts of Big Tech to appropriate open-source systems and work methods. As a way to counter such an industrialization of community-driven technology, Guarnieri calls for reclaiming digital sovereignty by first understanding the technological black boxes of our daily lives. His artworks "RADIO ATLAS" (2020–) and "BLE ATLAS" (2020–) analyze and display the data transmitted via smartphone radio emissions and Bluetooth low energy (BLE) beacons – the latter becoming a valuable research devise for BLE-based COVID-19 contact tracing apps.

As a data politics researcher, Fieke Jansen looks at the conceptualization of contemporary data governance in relation to capitalism and the value of data. Her text draws on a close reading of the European Commission white paper on artificial intelligence (AI). Along this reading, Jansen reveals how data and data infrastructures are seen by the state, e.g., as essential to sustainable economic growth and societal well-being. She elaborates how the Commission regards major shifts in technological development as opportunities to (re)gain control over data infrastructure spaces, especially in the context of a market for European trustworthy AI products.

In a strong manifesto style, the writer and urbanist Adam Greenfield connects the pandemic, climate change and the staggering developments in machine learning, automated decision making and other replacements of human agency and communality to a context in which societies and the dynamics of our planet are brought out of balance. In its exploration of the planetary upheavals constituting the Anthropocene, the sweeping analysis includes a profound critique of left accelerationism: Behind the accelerationist teleological endeavor to transcend late capitalism by firing up the capitalist motor, Greenfield exposes a blatant techno-solutionist attitude that undermines basic principles of political economy – and mutual care.

The London based collective Common Knowledge offers insights into their very hands-on approaches to digital sovereignty. In their contribution, Common Knowledge share and connect experiences from both their own working structures as a not-for-profit worker cooperative as well as from their various activities in building technological infrastructures for different community groups and unions concerned with building working class power and

sovereignty in different forms. In order to achieve the latter, they argue, *just enough* digital sovereignty should be the goal, in that "digital technology must be seen as an enabler and multiplier of collective action and organizing techniques, not a replacement."

The design researcher **Paola Pierri** investigates the relationship between digital sovereignty and democratic rights, particularly the relations between state, citizens and corporations. In their promotion of the Californian Ideology narrative that the individual is liberated via technology, corporations construct the mirage, Pierri argues, of an autonomous digital citizen. In doing so, they undermine state sovereignty itself by taking over the legitimation of popular or individual sovereignty. Based on this critical inside, Pierri calls for the construction of new imaginaries for enabling individual sovereignty in the digital age, detached from tech corporate biases.

The artist and designer **Juan Pablo Garcia Sossa** weaves together and reflects on several threads around identity, situated knowledges and exploitation. Understanding the notion of *Tropikós* as a mindset, he poses the question of whether and how the concept of digital sovereignty can be manifested in the tropics. In his artistic piece GeoFilters, he investigates differences and ambiguities in the meanings and understandings of terms such as *privacy* and argues for a radically differentiated perspective in order to avoid the pitfalls of what he calls binaries and verticalities.

In his essay, the writer and journalist **Thomas Ramge** frames the phenomenon of techlash as a starting point for a new postdigital discussion, a discussion that places digitalization in a radically new paradigm of costs and benefits. He pleas for a pragmatic attitude toward all things digital, drawing a scenario for the future that emphasizes a sovereignly use of digital technologies. For him, constructive criticism of technology is the prerequisite for bringing the rebound effects of digitalization in the post-digital age under control.

The design researchers **Bianca Herlo**, **Sandra Stark** and **Malte Bergmann** draw an understanding of digital sovereignty from a design perspective, as a practice that focus especially on countering inequalities. The text reflects a design research process that led to the development of the multilingual installation "Talk to Me." Through the installation the authors discuss the potentials and confines of digital and public participation, and the crucial role digital literacy plays here. They frame digital literacy as one that not only

stresses competent navigation through the digital world but embraces the dimension of steering and designing processes of digitalization – as a form of critical, socio-political embedded digital literacy.

As a speaker for feminist net policy, **Francesca Schmidt** looks at the digital policy area as one that is still evolving and still lacks feminist and intersectional approaches. By describing how forms of discrimination are interconnected with new technologies and digital cultures, she contributes to the research and activism environment of feminist digital policy. Her essay takes a closer look at the consequences we face due to norms and rules that are initially based on data that is outdated or manifests structures of discrimination and dominance. Schmidt suggests that one possibility in addressing this imbalance is to provide anti-discrimination legislation for algorithms.

International press such as *The New York Times* (Metz and Hill 2021; Metz 2019) has repeatedly covered the techno-investigative research of **Adam Harvey** and **Jules LaPlace**. In their article the artists, developers and researchers describe the core of their recent work, the project MegaPixels (2018–2020),[1] which uncovers the widespread practice of harvesting data sets *in the wild*: Images and video footage available via online databases, often harvested without the consent of the persons depicted, are exploited as machine learning data sets for face recognition and other biometric analysis.

Mona Sloane's contribution is set against the backdrop of a New York City reality in which even the most mundane social interactions (have to) take place online due to the COVID-19 pandemic. The sociologist elaborates on the research project Terra Incognita NYC, which explored how New Yorkers dealt with this very phenomenon, how they created and navigated these new public spaces online and the broad range of experiences they had. Sloane reflects on the data gathered through the lens of digital sovereignty and shares considerations on topics such as access, ownership and infrastructure, and highlights the implications of individuals legal status as well as class divisions for both understanding as well as practically experiencing what it means to be digitally sovereign.

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1 In January 2021 MegaPixels was transferred into a new project, Exposing.ai, offering a website and database for users to check if their images on Flickr.com have been used as part of AI training datasets – thus uncovering "how yesterday's photographs became today's training data" (https://exposing.ai/about/).

The artist **Danja Vasiliev** provides an insight into his current project WannaScry, a *critical engineer's* take on video call technology. With the migration of workplaces and social interactions into the distancing sphere of one's home, video conference platforms experienced a surge in popularity during the pandemic. Vasiliev shows that the seemingly private face-to-face conversations are at risk of being exploited, e.g., by using harvested data of facial expressions to train machine learning algorithms. Addressing the efforts of tech companies to close their systems off from user interference, the interview contextualizes the artwork in Vasiliev's general approach of exposing opaque digital devices, applications and services.

Museums are among the cultural institution most deeply affected by the pandemic lockdowns taking place in most parts of the world. The curators and artists **Yang Jing** and **Li Zhenhua** examine how art museums in China struggle not only with the closing of their exhibition spaces but also with the data extractivism of (Chinese) platform capitalism and state censorship while they are faced with the need to open their collections and programs to social media platforms such as WeChat or Douyin. The case studies on the COVID-19 accelerated digitalization of art exhibitions and museum communication provide insights into the situation of art venues in China during the pandemic.

In their article, the researchers in digital aesthetics **Søren Bro Pold** and **Christian Ulrik Andersen** reflect Amazon's algorithmic apparatus and its highly commercial process as one of the four biggest technology companies that is known for its disruption of well-established industries. The authors elaborate on the extent to which we become characters in Amazon's "big data drama" through focusing on Joana Moll's artistic-investigative work "The Hidden Life of an Amazon User" (2019), and Robert Musil's novel *The Man Without Qualities* (1930-43). Along the two artworks, Pold and Andersen draw attention to Amazon's algorithms, at profiles of disruption without qualities and how we as users are endlessly profiled.

Hagit Keysar (theorist and activist), **Elizabeth Calderón Lüning** (political scientist) and **Andreas Unteidig** (design researcher) share the conviction that logics of DIY, collective prototyping, open source and participatory design can be powerful tools for advancing a community-driven imagination of digital sovereignty.

However, they argue that such logics and their corresponding pro-
cesses often come with their own caveats and obstacles. Their
chapter offers a case study of an interdisciplinary research project
that aimed at co-creating techno-social infrastructures for digital
sovereignty, and unpacks a range of challenges encountered in its
course. A critical reading of promising concepts as well as a thor-
ough reflection of risks, contradictions and politics-in-practice, they
argue, might open opportunities for both political action and public
discourse that problematizes and challenges the tightening corpo-
rate control over digital realms.

In his essay, the media archaeologist Siegfried Zielinski takes
his current collaboration with the avantgarde musician and sound
artist FM Einheit as a starting point to explore the notion of the virus
for subversive practices, in language, art and beyond. While empha-
sizing the freedom of the host, not the virus (which is bound by its de-
terminacies), the poetic investigation follows thinkers such as William
S. Burroughs or Jean Baudrillard to offer alternatives to the return to
a state of normalcy. After mapping some of the sensitive and fragile
interdependencies between nature, humans and their technologies,
Zielinski closes his thoughts with a personal projection for a future
mode of teaching and research in art and design.

We understand this book as a call for inter- and transdisciplinary en-
gagement with the practices and spaces of possibility that address
skewedness and imbalance in the networked society. It is thus not
surprising that this book brings together many authors from various
backgrounds and fields of activity. This variety of perspectives, com-
petencies and experiences is, we believe, one of the central strengths
this compendium has to offer. We are convinced that the practice of
scientific knowledge production and discourse, if it wants to make a
difference, must be inclusive itself, fostering dialogue between dif-
ferent experiences, viewpoints and knowledges. This book is thus an
experiment as much as it is a plea for a cultural change in academia,
aiming at adequately addressing the complexity of the concept of dig-
ital sovereignty and its societal implications.

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