

/ CRC 1265 /

Re-Figuration
of Spaces

Workshop

Re-Figuration of Cyberspace

18 – 19th April 2024

Technische Universität Berlin

Office BH 5-1 | Room BH-N 230

Ernst-Reuter-Platz 1, 10587 Berlin

www.sfb1265.de

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Interdisziplinäres Zentrum für
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DIW SOEP



TABLE OF CONTENTS

OVERVIEW 1

PROGRAM 2

ABSTRACTS 4

CONFERENCE VENUE 9

OVERVIEW

This workshop, organized by the project B02 „Control/Space“ at the Collaborative Research Center 1265 at TU Berlin, explores different spatial changes and dynamics of the Internet infrastructure using the notion of refiguration, which presents a concept of tensions between four key spatial figures and spatial logics: the place, the territory, the network, and the route. These tensions allow for the explanation of key conflicts in contemporary modernity.

The thesis of a refiguration of Cyberspace ties in with recent debates about the (re)territorialization, fragmentation, pluralization and/or splintering of the internet. As an increasingly conflicted infrastructure influenced by different actors and organizations in the field, the materiality and spatiality of the „network of networks“ is continuously shaped by strategic actions, spatial imaginaries, representations, and corresponding material figurations that assert forms of spatial control over parts of the internet infrastructure: whether by standard-setting organizations, governments, internet service and content providers, internet exchange points, or hardware availability. Refiguration of Cyberspace seeks to challenge monocausal and one-sided explanations and diagnoses of changes of „the“ internet by focusing on the simultaneity and superimposition of different, often conflicting spatial logics and dynamics regarding digital infrastructures and their contemporary meanings.

CRC 1265 “Re-Figuration of Spaces”

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Organization:
Subproject B02 Control/Space: On the Spatiality of Digital Infrastructures in Contextures, Mappings and Discourses

Book: Christopher Heidecke
Cover Image: Constantin Lus

Participation in the workshop is free of charge.

We ask interested parties to register in advance by April 12, 2024 at www.sfb1265.en/events/cyberspace.

PROGRAM

THURSDAY APRIL 18, 2024

13:00

Welcome and Introduction

Hubert Knoblauch (Berlin) and
Silke Steets (Erlangen-Nürnberg)

13:30 — Panel I Digital Sovereignty

Georg Glasze (Erlangen-Nürnberg)
*The Rise of the “Digital Sovereignty” Discourse
and the Question of a Geopolitication of the
Internet*

Ewa Dabrowska (Berlin)
*Between “Splinternet” and the “Open Internet”.
Sovereign Internet and Digital Economy
Regulation in India and South Africa*

15:00 Coffee Break

14:00 — Panel II Between Territorial Spaces and Network Spaces

Farzaneh Badiei (Atlanta/Berlin)
*Sanctions and Their Impact on Internet
Development and Human Rights*

Andreas Baur (Tübingen)
*Reaching European Stars with American
Clouds: Rooting European Digital Sovereignty
in Gaia-X*

17:00 Coffee Break

17:30 — Panel III Regions and Markets

Sezgin Sönmez (Berlin)
*Regionalization of Cyberspace: The RIRs and
their impact on Internet Governance*

Stefan Kirchner & Simon Pohl (Berlin)
Selling out the City

19:30 Dinner

FRIDAY APRIL 19, 2024

9:30 — Panel IV Geographies of Cyberspace

Boris Michel (Halle)
*Mapping Geographies of Cyberspace –
Geography’s Mapping of Cyberspace*

Finn Dammann (Erlangen-Nürnberg)
*Political Geographies of Digital Infrastructures.
Implications of Geopolitical Tensions and
Conflicts on Internet Traffic*

11:00 Coffee Break

11:30 — Panel V Network Topologies

René Tuma (Berlin/Vienna)
*Network Figures: Reconfigurations of the
Internet as a Refiguration of Spaces*

Till Straube (Frankfurt)
*Stack Trace: Topologies of Digital Infra-
structures*

13:00 Lunch Break

14:00 — Panel VI Global Networks

Daniel Voelsen (Berlin)
*Internet from Space. The Impact of LEO
Satellite Constellations on the Techno-political
Configuration of the Internet*

Maxigas (critical infrastructure lab)
*Media ecologies, infrastructures and environ-
ments: Infrastructure walk as a methodological
approach*

15:30 Closing Remarks

ABSTRACTS

Panel I

Digital Sovereignty

Georg Glasze (Erlangen-Nürnberg)

The Rise of the “Digital Sovereignty” Discourse and the Question of a Geopolitization of the Internet

Digital sovereignty has become a leitmotif of national and international digital policy in the 2010s and 2020s. In Germany, too, the concept of “digital sovereignty” has frequently been taken up in political and public discourse. This orientation towards sovereignty over digital information and communication systems must initially come as a surprise: Since the early 1990s, German telecommunications policy has been characterized by ideas of a “lean state”, the overcoming of borders and integration into a “global information society”. Any insistence on the principles of state-territorial sovereignty was considered outdated: Against this background, how can the success of “digital sovereignty” in Germany be explained? To answer these questions, I first reconstruct the discursive ruptures and (dis)continuities in Germany from the commercialization of the Internet in the 1990s to the early 2020s that contributed to the consolidation of a specific discourse formation around the buzzword “digital sovereignty”. I then situate this shift in discourse in an international context. This shows that the characterization of this shift as a geopolitization and fragmentation of the Internet is ultimately a rather Western-centric perspective.

Ewa Dabrowska (Berlin)

Between “Splinternet” and the “Open Internet”. Sovereign Internet and Digital Economy Regulation in India and South Africa

The discursive notions of “Splinternet” and “open Internet” play an essential role in the digital policies of countries searching to regulate the Internet, being digitally sovereign and establishing a flourishing domestic digital economy. Countries counting as emerging markets and regional powers, such as India and South Africa, are particularly keen on embracing sovereign digital development. In this context, the Indian government accuses Big Tech of “splintering” the Internet, hinting at sanctions imposed by Big Tech on Russia (Mathew 2022). It is a part of the Indian

government’s rhetoric of the necessity to limit the power of Big Tech on the Indian territory, to localize data of Indian citizens and to support the domestic IT sector. While acting against Big Tech, governments of emerging countries with ambitions in digitalization, such as India and South Africa, apparently stick to the ideal of the open Internet. At the same time, they contribute to the “Splinternet” itself. The Indian government banned TikTok and 200 other Chinese apps after a China-India border conflict in 2020. In contrast, South Africa heavily relies on Chinese Internet infrastructure. Both India and South Africa seek to obtain property over data of their citizens (van der Berg 2021). At the same time, they dismiss criticism of their data protection and localization endeavors as making the Internet less open. The paper examines the state of the Internet in these countries between digital sovereignty, striving to maintain the open Internet and geopolitization of the Internet and social media. To what degree do countries with political and economic ambitions in digitalization contribute to the “splintering” of the Internet, or, in contrast, strive to keep the Internet open? The paper speaks with the literature on the governance of the Internet, governance of the Internet by social media, fragmentation, geopolitization of the Internet and the political economy of the digital economy globally and in emerging economies.

Panel II

Between Territorial Spaces and Network Spaces

Farzaneh Badiei (Atlanta/Berlin)

Sanctions and Their Impact on Internet Development and Human Rights

This presentation puts forward the findings of a report published in 2023 and seeks feedback on how to improve and expand the research. The report investigates the impact of economic sanctions on the access of ordinary people and non-sanctioned service providers to the global Internet, as well as how sanctions affect the interconnected nature of the Internet. The global interconnectivity of the Internet is a key objective for many nations, and this research can help

policymakers develop effective sanction policies that preserve the global interconnectedness. During the presentation we will go over case studies and instances that sanctions impacted access to the critical properties of the Internet. The report also identifies the actors and Internet operations that are affected by various sanction regimes. By presenting an impact matrix, the study facilitates an assessment of the extent to which sanctions impact affected parties and third parties' access to the global Internet. In the end the session provides some recommendations that focus on mitigating the impact of sanctions on critical properties of the Internet through legislative and regulatory remedies, policy strategies, human rights and proportionality arguments, facilitating compliance, and engaging with the appropriate policy forums.

Andreas Baur (Tübingen)

Reaching European Stars with American Clouds: Rooting European Digital Sovereignty in Gaia-X

The Gaia-X initiative has been launched to bolster European digital sovereignty and to contest the dominance of non-European cloud providers with their massive market influence, whilst cloud infrastructures are core resources of our societies and economies. Despite this aim, the initiative paradoxically incorporates these very dominant hyperscalers, prompting scrutiny. The initiative speaks to European attempts to challenge Big Tech, but it is not an EU project nor a regulatory initiative. Gaia-X has a unique character combining political and non-political elements and actors, and aiming at infrastructuring digital sovereignty in the cloud sector through infrastructural development and governance structures. The main question to be answered center around the extent and way Gaia-X contributes to advancing digital sovereignty in Europe. Thereby, valuable insights into the current landscape of technological regulation and infrastructure undertakings are provided. The initiative's evolution unveils intricacies, with controversies shaping a distinct framework. This framework hinges on the interplay between territory and nationality within a context of borderless infrastructures. Here, a specific kind of hybrid governance emerges, seeking to navigate the balance between technological openness and closure, borders and

nationality in a borderless infrastructure, and bridging diverse political and business interests. The study of the development of Gaia-X provides insights in the opportunities and challenges in trying to achieve digital sovereignty, to achieve independence in a world dominated by US-American tech companies and more generally about current and future infrastructure governance in Europe.

Panel III Regions and Markets

Sezgin Sönmez (Berlin)

Regionalization of Cyberspace: The RIRs and their impact on Internet Governance

The Internet has commonly been interpreted as an ideal type of network, both in its materiality as a global communication infrastructure and in its logical organization. However, according to the general thesis of our research group, this network space has been coming into conflict for some years now with other spatial logics that seem to run counter to the network logic of the Internet. In addition to the current evident tendencies of centralization, territorialization and securitization of the Internet, in this article we want to focus on another process that we believe has hardly been considered to date: the regionalization of cyberspace. As a specific form of organizing digital communication in and through space, it follows already existing regional structures and institutions and accordingly refigures the network space of the Internet through different actions, means and rationalities. Based on the historical development of Regional Internet Registries, the localization of data through Content Delivery Networks, and the regionalized observation of data streams, this contribution wants to address contemporary tendencies of regionalization on different levels of the internet stack, and their commonalities regarding the thesis of a refigured cyberspace.

Stefan Kirchner & Simon Pohl (Berlin)

Selling out the City

In early days Airbnb has been heralded as a champion of the “sharing economy” enabling amateur hosts to offer short-term lodging to a global community of guests. However, public debates and research often highlight the rise of professional hosts as indication for a marketization of the Airbnb offer. How Airbnb listings developed across cities and time, as well as how Airbnb listings spread out across local hotspots is currently not well understood. We explore the connection between a potential marketization of living spaces via Airbnb’s digital marketplace and its spatial distribution at the city level. Our approach conceptualizes the Airbnb’s digital marketplace as field (Bourdieu 2005) and as network space (Knoblauch und Löw 2020; Löw und Knoblauch 2021) brokering accommodation at specific places within designated city territories. We ask, who dominates the digital marketplace across cities and across time, distinguishing between professional and amateur listings. For the spatial aspects of Airbnb, we identify local hotspots wherein listings operate in high density across city spaces and ask who dominates these hotspots. For our analysis we draw from an extensive dataset of 46 major Airbnb related cities all over the world that comprises monthly information on listings over a period of more than seven years. We investigate developments in market composition through time and utilize hotspot analysis to identify whether Airbnb induces a uniform trend towards marketization via professional hosts across cities. We explore the spatial diffusion of Airbnb listings focusing on four selected cities (Amsterdam, Berlin, London, San Francisco), representing contrasting examples of Airbnb research. This allows us to identify where in the cities Airbnb listings concentrate most and discern in what cities marketization is the most pressing and where the ideal of the sharing economy might have survived. Our results provide insights into the ambivalent marketization and diversity of Airbnb as field and network space around the world. Our paper contributes extensive empirical evidence on how Airbnb unfolded across time and space in the city contexts they are operating in and how Airbnb as salient case of the platform economy matured.

Panel IV

The Refiguration of Routes

Boris Michel (Halle)

Mapping Geographies of Cyberspace –Geography’s Mapping of Cyberspace

Within the discipline of geography research on the spaces of digital infrastructures and the uneven geographies of cyberspace emerged in the mid-1990s. Since then, the debate has undergone a series of conceptual and empirical cycles and shifts. My contribution is situated between the history of geography and critical cartography. It is interested in the cartographic construction and spatial imaginaries of the digital transformation. It begins with early mapping of digital infrastructures, the visualization of digital divides, follows the turn to data and datafication in the mid-2000s and extends to the renewed interest in material infrastructures. In doing so, the contribution aims to understand the recent interest in material infrastructures of the digital within a longer history of cartographic engagement with the geographies of cyberspace. The presentation focuses primarily on the discipline of geography and largely ignores contributions from other academic fields. The aim is to illustrate that geography has a relatively long tradition of thinking of digital spaces as fragmented and being skeptical of unitary narratives.

Finn Dammann (Erlangen-Nürnberg)

Political Geographies of Digital Infrastructures. Implications of Geopolitical Tensions and Conflicts on Internet Traffic

The political relevance of the routing of data packets over IP and its geographies has once again become apparent, not least against the backdrop of the infrastructural disruptions during the Russia-Ukraine war. Under buzzwords such as “digital sovereignty” and “Internet sovereignty”, the Russian administration has in recent years significantly expanded the surveillance of digital communications and the territorial regulation of traffic through the infrastructures of Russian Internet service providers (ISP) - most recently extending this to regions in Eastern Ukraine. At the same time, political moves towards territorially organized routing of data packets are not limited to Russia and other autocratic states: The US Clean

Network Initiative, the Brazilian-European submarine cable EllaLink, and the sanctioning of Russian ISPs and network operators by the London Internet Exchange (LINX) are examples of an international trend towards a geopolitical reconfiguration of the Internet. Using these examples, the presentation will examine the impact of geopolitical tensions and conflicts on the current organization, regulation and control of internet traffic.

Panel V
Network Topologies

René Tuma (Berlin/Vienna)

Network Figures: Reconfigurations of the Internet as a Refiguration of Spaces

Following on from discourses on the increasing fragmentation and centralization of the internet, the presentation argues for a spatial-sociological and figuration-theoretical perspective on digital infrastructures. The thesis is that the transformation of the Internet can best be described as an infrastructural transformation of its network figure and the associated imaginations, which in turn can be traced back to a tension between different logics of spatialization. Based on the discussion about the role of the network as a guiding episteme of recent social analyses and the development of a sociological concept of infrastructure, two current empirical developments are analyzed: the increasing spread of content delivery networks CDNs and the implementation of the new Internet protocol QUIC. The presentation shows how the current changes to the Internet - fragmentation and centralization - can be conceptualized using concepts from the theory of refiguration, as these highlight overlapping tensions and conflicts on different layers of the stack

Till Straube (Frankfurt)

Stack Trace: Topologies of Digital Infrastructures

The dichotomy between cyberspace and the physical world has been considered obsolete in the social sciences at the latest since mobile devices have enabled us to have a continuously networked everyday life. However, the digital divide,

which was thought to have been overcome, is still effective in many social discourses, and synthesizing concepts such as hybridity or glitch therefore remain productive vocabulary to this day. What is the nature of the translation between “virtual” content and meanings on the one hand and “physical” signals and storage media on the other? A technically informed answer to the problem suggests the concept of the stack - a multitude of protocols, standards and formats arranged hierarchically in abstracting layers. Based on application knowledge and empirical research, my paper explores the multiple spaces of digital infrastructures along the stack. I also propose vocabularies, concepts and methods to sensitize social science research projects to the posthumanist, performative topologies of digital apparatuses.

Panel VI
Global Networks

Daniel Voelsen (Berlin)

Internet from Space. The Impact of LEO Satellite Constellations on the Techno-political Configuration of the Internet

Throughout the history of the Internet, there have been struggles over the extent to which control over the Internet should be centralized or decentralized. In recent years, many governments, as well as powerful private companies, have been quite successful in consolidating power over “their” sub-networks, more or less deliberately contributing to the further fragmentation of the global network and the re-territorialization of the Internet. Recent developments in LEO satellite broadband Internet add a new layer to these struggles. On the one hand, these networks hold the promise of a truly global, world-spanning network. At the same time, however, as the use of Starlink in the Ukraine illustrates, these networks appear to be further contributing to the centralization of power over large parts of the Internet, while allowing for fine-grained territorial restrictions on access to these networks.

Maxigas (critical infrastructure lab)

Media ecologies, infrastructures and environments: Infrastructure walk as a methodological approach

Or, things we learned from infrastructure walks.

The critical infrastructure lab held a series of “infrastructure walks” in Amsterdam and Berlin, exploring the visibility of digital infrastructures deployed in public spaces. I situate the methodological approach in relation to other practices addressing key conflicts in contemporary urban life that immerse observers within the spatial figures and spatial logics of urban radioscapescapes. Subsequently, I highlight the methodological advantages of the infrastructural walk compared to similar approaches. Then, I report on the empirical and theoretical results obtained from the walks. In short, the infrastructure walk experience is a good basis for rethinking the key concepts of media infrastructures, media environments and media ecologies.

Industrial standards can be mobilised as an analytical grid to structure the urban experience of radioscapescapes. The insights thus generated correspond to counter-mapping the spatial control exercised over and through the electromagnetic spectrum in urban spaces. Such work exposes the reconfiguration of power relationships in the city through emerging technologies and legacy protocols. Infrastructure walks address the question of what media technologies may mean “after all”, that is in the context of the life world, lived experiences and action possibilities of end users as embodied citizens.

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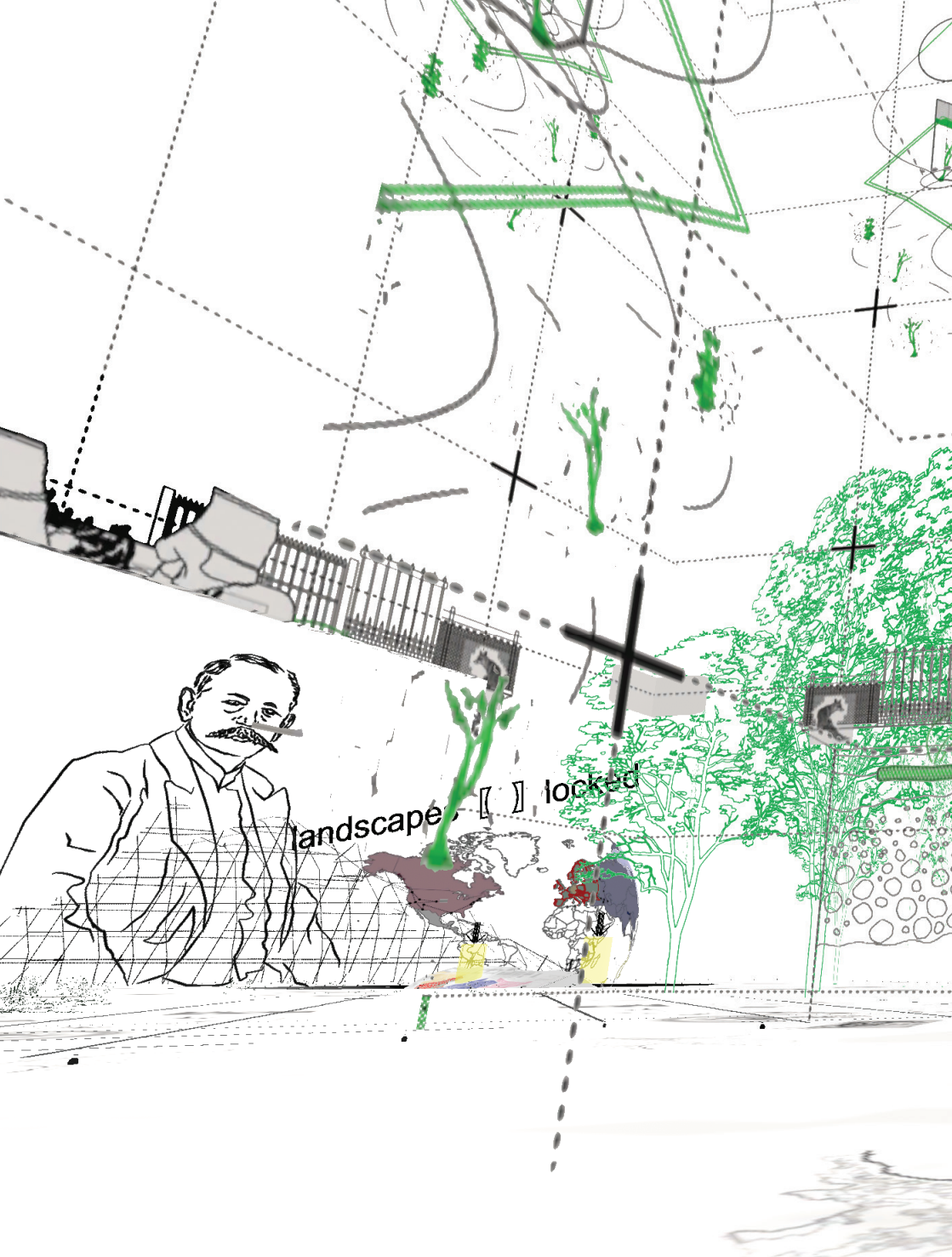
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