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# INFRASTRUCTURAL RUPTURES: ANXIETIES, BORDERS, AND CLOUDS

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## PANEL DESCRIPTION:

Communication infrastructures, again, are the locus of power and reconfiguration of global order. Historically, imperial powers have used infrastructures to extend control beyond their borders. While infrastructures are again commonly leveraged in war (such as telecommunications networks in Palestine (Meinton 2019; Wind 2024, Sa'di Ibraheem and Wilkof 2025) and internet infrastructure in Ukraine (Fontugne et al 2020; Limonier et al 2021), this panel examines how infrastructures are used as a

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continuation of politics with material means. In other words, how infrastructures provide ordering to social life without explicit coercion.

Increasingly complex, layered, and entangled networks of communication infrastructures constitute the invisible scaffolding of social life, only rarely becoming an object of public concern. Concealed to their users, they are the main stage of local and global conflict, shaping our societies and their development trajectories.

While infrastructure is an increasingly common topic in Media Studies and Science and Technology Studies (Hesmondhalgh 2021), the current geopolitical moment demands states to reassert their position. However, their direct control over infrastructures has often waned. This happened because infrastructural power originates from the state but subsequently 'diffuse[s] outwards from the particular power organizations that invented them' (Mann 1984, 194). This forces us to rethink the relation between infrastructure, politics, control, and power for people, society, and states in a rapidly changing geopolitical landscape. We contribute to discussions on ruptures by exploring how digital infrastructures reconfigure the state, market, and citizen nexus and by presenting potentially disruptive research approaches to global networks by starting from infrastructure's materiality and financialization.

Digital technologies are disrupting and reconfiguring how control is exercised and experienced. The first paper uses the concept of bordering as a theoretical lens to explore how control is exercised in cloud infrastructures, which are both place-based and placeless. The second paper complements this approach through a case study of the Dutch domain name registrar plans to move their infrastructure to AWS. Through this, the author explores the relationship between the Software as a Service cloudbusiness model and the governing of public infrastructure/cloudification. The third paper draws on the notion of anxiety to theorize about the observed loss of control and the externalization of responsibility in the relation between citizens, civil servants, and communication infrastructures in the Dutch context.

Disrupting understanding of how power is configured in and through digital infrastructure by centring materiality and financialization. The fourth paper engages with the method of defamiliarisation to explore governance approaches to AI infrastructure that stay within planetary boundaries, to critique Europe's current state-market entanglements. The fifth paper analyses digital infrastructures from the majority territory to show how algorithmic governance is the extension of historic and ongoing global politics that encompass digital financialization and algorithmic necropolitics.

The papers all have a case study approach foregrounding loss of control in particular countries and contexts. Together, the papers show the transfer of power to other actors with their particular agendas and interests that lead to a reconfiguration of control, as well as subjectivities. The panel is timely because it shows that countries have not (yet) developed an answer to the transition from privatization and globalization to predatory neorealism that echoes 19th-century conceptions of power that assert that 'might is right'.

These interventions jointly showcase how transnational communication infrastructures bring new challenges to states and citizens. They form the starting point to discuss new infrastructural ideologies (Maxigas and ten Oever 2023) to inform subjectivity, organization, and materiality, to ensure that infrastructures serve the public interest and contribute to social, economic, and environmental justice.

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## MORE COMPUTING FOR A BURNING PLANER? A SCARCITY APPROACH TO AI INFRASTRUCTURES


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The advent of Generative AI products like ChatGPT or Bard requires a lot of computing power and exacerbates data centres' environmental impact. For example, Microsoft's water consumption for cooling its data centres has dramatically risen from 4.2 million m3 in 2020 to 6.4 million m3 in 2022 (Microsoft 2024, 26). This rise can partly be attributed to the increased computing power and cooling needed to run ChatGPT, which is hosted on Microsoft Azure. Concerns about the climate and ecological impact of the technology industry predate Generative AI, as witnessed in the growing academic interest in theorizing about the materiality and environmental costs of the internet and the cloud (Edwards, Cooper, and Hogan 2024; Hesmondhalgh 2021). Scholars have quantified energy consumption and carbon emissions of AI models (Bender et al. 2021; Hao 2019), water needs to run data centres (Hogan 2015), and the impact of AI on different earth systems throughout the entire hardware lifecycle (Falk, Van Wynsberghe, and Biber-Freudenberger 2024). Like all other infrastructures, data centres shape the distribution of social and economic activity in a certain way (Bowker and Star 2008), centralizing power in the hands of a few companies and facilitating the free flow of capital while externalizing social and environmental costs to society. Falk et al. (2024) show how environmental harms are disproportionally felt in the Global South, while its economic benefits are primarily concentrated in the West. This article takes an infrastructural perspective on the relationship between AI, governance, and the environment. Infrastructure studies allow scholars to engage with the materiality of infrastructure (Hesmondhalgh 2021), and move beyond the cultural imagination of AI as immaterial and the carbon tunnel of sustainable AI to account for its operational and embodied harms.

In this paper, we build on this body of work that foregrounds the unsustainable nature of AI to explore how the governance of its infrastructures needs to be reconfigured for society to stay within the planetary boundaries. Here, we recognize that in the current AI landscape, environmental concerns occupy a marginal position in policy debates. When governance frameworks do address AI's environmental harms, they are narrow in scope, focusing on reducing carbon emissions and energy use, and not the neoliberal calculus that underpins this industry, which is inherently at odds with ecological integrity and environmental justice. To explore the reconfiguration of governance of AI, we move beyond a critique of what is, the sum of all environmental harms associated with AI infrastructures' and 'the limits of current governance frameworks', to what could be, emancipatory alternatives that go beyond the status quo, by asking experts to design AI infrastructures in scarcity. For this, we combined participatory action research (Greenwood and Levin 2007; Grønhaug and Olson 1999) with the method of defamiliarization (Bell, Blythe, and Sengers 2005; Kaomea 2003) in the context of Europe. which originates from literary and critical theory. An approach used to make the familiar unfamiliar and challenge everyday automated perceptions about an object or situation (Bell, Blythe, and Sengers 2005; Kaomea 2003). Specifically, the method of critical defamiliarization which juxtaposes what could be against what is, aims to allow

participants to bring new normative questions to the fore and “search for emancipatory alternatives to transcend the status quo” (Gunderson 2020).

Our analysis shows that when experts centre scarcity in their governance approach, demands change from narrow sustainability efforts to the desire to reconfigure the technology industry structurally. Here the state is seen as the primary power holder that has to limit the environmental externalities created by the neoliberal political calculus governing AI infrastructures and provide public interest solutions. In particular, we illuminate how participants emphasized that designing in scarcity is about governance, about shifting infrastructure development towards the public good to ensure environmental justice and social equity. This is at odds with contemporary AI governance approaches which see the market as the main power-holder that should ensure environmental considerations in AI infrastructures. This speaks to the desire to the re-imagine the role of the state, through which participants offer two fundamental critiques of the European form of technological and economic statecraft; the entanglements between the state and the market and the reduction of nature to a mere resource to be extracted, appropriated, or preserved for particular political projects.

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# PRACTICES OF ORDERING AND BORDERING IN SOVEREIGN CLOUDS

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> '15 years ago, I worked for one of the big financial institutions in the UK […] and I knew, where our data was. We had four data centres; I drove to them all regularly. I knew what data was in each rack. […] But since then, businesses

> have become a little bit more global and public cloud happened. And the way you design and build public cloud is globally.' (Martin Hosken, VMware, 10/09/2024)

Cloud computing changed the idea of place and placelessness of IT infrastructures. Although cloud computing is itself material and made of brick and mortar data centres, the idea, the metaphor but also its technicalities promise and entail placelessness. Data is stored and computed, services are offered from virtual places where its location is not globalised. When cloud computing emerged and started to change IT infrastructures around 2006, it was accompanied by techno-solutionist imaginaries and a metaphorical language (Mosco 2014) as well as the promise of placelessness. The hope and conviction were that everything could be available everywhere and anytime – via the cloud. There was not much thought on problems and risks at that time (and if so, they were mostly dealt with by referring to encryption (ibid.).

Yet, in the last years, the political attempt to control and reign in on 'the internet' and its underlying IT infrastructures also affected cloud computing. Cloud infrastructures became subject to increasing attempts for control and regulation. The Snowden revelations, surveillance capitalism and single regulations such as the US CLOUD Act informed the debate and Europe's focus on reigning in on dominant tech, protecting privacy and supporting European industry lead became subsumed under the umbrella term of strengthening European Digital Sovereignty – also in the cloud. The relatively vague concept of digital sovereignty is put forward to regain control and protect sensitive data, companies and individuals from the dangers of (foreign) Big Tech.

Hu (2015, 4) argues that 'if the cloud represents a new reconfiguration of the relationship between place and placelessness, it is clear that this relationship directly affects the organization of contemporary power.' Building on Hu, one must understand how this reconfiguration is done, so the question arises: How is control enacted technologically but also socially inscribed into cloud infrastructures?
In this paper, I argue that many of these intents to control the cloud, particularly ideas of digital sovereignty, can and should be understood as practices of bordering the cloud.

The relationship between cloud and bordering practices is defined by tension. Territorialisation and data localisation are core aspects of digital sovereignty strategies in general, but they are also introduced to the cloud, contradicting its core characteristics. The cloud, i.e., the use of storage, compute, and services remotely, is not inherently built for strict localisation, distinct territories and borders. A central aspect of cloud services is that they run on external hardware, shared with many other users, virtualised and not residing in only one specific location. Curiously, the implementation of technologies and practices of digital sovereignty has not been conceptualised as bordering practices. However, although experts claim that borders are not inherently part of cloud technologies, borders are being enacted within the technology on a daily basis. This is not only important for the debate on digital sovereignty and controlling or securing the cloud, it has also greater political impact. In order to better understand how

and with which impact digital sovereignty is implemented in the cloud, it helps to understand technical designs and practices as practices of bordering the cloud.

While bordering practices have long been part of IR debates (e.g. Parker and Adler Nissen 2012), bordering as a concept has not been developed in relation to cloud technologies – much less so questions of cloud sovereignty or digital sovereignty. Using concepts such as 'liminal sovereignty practices' (Loh and Heiskanen 2020) and infrastructuring digital sovereignty (Musiani 2022), I conceptualise enactments of digital sovereignty as bordering. Thereby, we can analyse the political relevance of allegedly technical day-to-day practices in securing and controlling cloud infrastructures. The concept of bordering allows to better understand the middle ground between a complete separation and territorialisation of infrastructures and the openness and free flow of data. Digital sovereignty is often used to legitimise spatial closure strategies as an answer to perceived threat of data flows (Glasze et al. 2022, 3). One of the first attempts to introduce territorialisation and separation in cloud setups was the Microsoft Cloud Germany, which failed mainly due to its strict separation and high cost. Current sovereign cloud projects and data spaces have mostly departed from the idea of a complete separation.

However, as I will argue, they are navigating these tensions between full technical separation/closure and openness/interconnection by implementing technical and organisational bordering strategies. I conceptualise bordering the cloud as implementing organisational and technical means for distinguishing and sorting between mobile and immobile data and for distinguishing localised and interconnecting cloud services. Therefore, bordering allows for much more nuanced insights compared to concepts such as territorialisation, fragmentation and balkanisation.

I further argue that there are three drivers for implementing bordering practices in cloud infrastructures: to enforce (1) compliance (data is stored and processed according to the local regulations), to (2) guarantee the privacy of users, and to (3) protect against industrial and government espionage, leaks and attacks for a fair competition.
In the paper, I will discuss bordering practices looking at the (1) recent concept of (federated) data spaces which is characterised as a way to achieve "digitally sovereign" cloud ecosystems and at (2) sovereign cloud projects, mostly provided by private cloud providers. Inspired by STS, the analysis is based on extensive fieldwork including expert interviews, background talks, observations of conferences and business events, as well as documents on the architecture and promotion of sovereign cloud solutions.

As the analysis shows, we can classify several technical and organisational strategies such as "entity splits" or "federation" as bordering practices. These borders are hardly ever absolute and do not entail a complete split of the technology, but checkpoints are established and 'technologies designed to filter "good" from "bad"' (Minca and Vaughan Williams 2012, 767): decisions are taken on what is allowed to pass the checkpoint and what cannot. This paper argues that with the understanding of bordering, we can make sense of the observed wish in cloud infrastructures to have functionality and services without borders, but data kept within the secure borders of a local cloud, a nation state

etc. Current sovereign cloud solutions and the concept of federated data spaces combine the locality of data and universal functionality, i.e. the mobility of services and less sensitive data via several bordering practices.

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## CLOUDS OVER THE NETHERLANDS: THE DUTCH DOMAIN REGISTRY'S MOVE TO AMAZON'S CLOUD AND THE FUTURE OF INTERNET GOVERNANCE


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In early 2024, the Foundation for Internet Domain Registration in the Netherlands (SIDN) announced plans to migrate part of its core domain registry operations to Amazon Web Services (AWS), triggering intense debate about the future of internet governance. This research examines how SIDN's decision reflects broader shifts in the management of critical internet infrastructure as organizations increasingly move to commercial cloud platforms (Chander and Gürses 2024). Our analysis reveals that SIDN's AWS migration was driven by silent commercial ambitions to transform its

domain registration software into a global Software-as-a-Service (SaaS) offering (Cath and Hubert 2024). This commercial motivation, rather than pure technical necessity, guided the choice of AWS over local alternatives or continued in-house operations. While public debate focused primarily on digital sovereignty concerns, this research argues that the more fundamental issue is how cloud migration threatens to permanently alter SIDN's ability, and other Internet governance organizations like it, to fulfill its public interest mandate.

In the quiet corridors of digital governance, a seemingly routine technological decision has erupted into a profound debate about control, infrastructure, and the future of the internet. SIDN, the Foundation for Internet Domain Registration in the Netherlands, manages the country's .nl domain and serves as its critical internet infrastructure operator. As mentioned, in early 2024, SIDN announced a plan to migrate part of its operations to Amazon Web Services (AWS), the cloud computing division of the American e-commerce giant. What initially appeared to be a mundane technological transition quickly transformed into a charged political controversy that is challenging long-standing assumptions about internet governance. As the move of .nl to AWS would transform the nature of stewardship of the .nl country-code Top Level Domain (cc-TLD), from a locally managed public resource to a service run on (in part) on a global corporate cloud computing behemoth.

The seemingly straightforward cloud migration quickly became contentious. Dutch headlines captured the mounting tension: "How Dutch is .NL?" and "Minister Puts Brakes on SIDN's Proposed Move to AWS" signaled more than bureaucratic pushback
—they represented a deeper reckoning with the changing landscape of internet governance. This was also reflected in the growing critique from industry, civil society, academics and political stakeholders. The Dutch cloud community expressed profound concern, academics and tech critics warned of the dangers of surrendering “national” and vital digital infrastructure to a single American cloud provider (Hijink 2024). Local internet governance organizations voiced their surprise and disappointment. Elected officials took notice and argued that the decision was not in line with existing policy, where SIDN implements changes in consultation with the government.

This is not merely a story about a small country’s domain registry's infrastructure. Rather, this is about infrastructural power, geopolitics, and environmentalism. It is about the question of what happens to the public interest mandate of internet governance organizations when they move to the cloud, and how the cloud companies’ for-profit motives infuse the very core of how the internet functions. The process of ‘cloudification’ involves the progressive migration of digital systems from localized, sometimes publicly managed computing platforms to expansive, predominantly American cloud ecosystems. The current market leaders, by a long margin, are AWS, Microsoft, and Google.

The case of SIDN illuminates local internet governance dilemmas while offering broader insights into the future of internet governance. In particular, it helps us

understand how internet governance is evolving as more of its critical functions—not just ccTLDs like .nl
—become dependent on the cloud computing infrastructure of three American behemoths: AWS, Microsoft, and Google. This case study reflects a larger trend, with foundational infrastructure moving from trusted local communities to commercial cloud behemoths (Chander and Gürses 2024; Gurses and Hoboken 2018). The latter can come at the expense of internet governance organizations' public interest mandates. This development is growing across the Internet industry—from telecommunications to news media organizations, to domain registries—and the long-term adverse consequences for the public interest are insufficiently mapped.

This research provides such an initial mapping about the future of internet governance and public infrastructure management, as more of it moves to the cloud. The key points this research will make is that we can no longer assume that critical internet infrastructure organizations will automatically continue to serve broader societal interests while responding to changing global economic and political forces, that lead them to move more of their critical functions to hyperscale cloud computing companies. It will do so by showing how SIDNs choice for AWS was fueled by it growing commercial ambitions.

Looking ahead, this case study demonstrates the urgent need to understand how cloud computing is changing Internet governance. We need to ensure its current governance models are sufficiently robust to protect public interest commitments while resisting the commercial changes brought to their functioning by the cloud. The research concludes that it will be difficult for internet governance organizations to effectively fulfill their public service missions when they surrender control over core functions to commercial cloud providers and are shaped in its image. We recommend SIDN reground their approach in its public service mandate. Business as usual, delivering the .nl service, generates a steady income stream which should be possible to pursue without compromising its public interest mission. This focus on its core-mandate is essential to ensure that internet governance continues to serve the public good rather than being transformed by commercial imperatives that entrench the power of a handful of cloud companies.

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## ‘YOU CANNOT CONTROL IT ANYMORE’: TRACING INFRASTRUCTURAL ANXIETY AMONG THE PUBLIC AND CIVIL SERVANTS IN THE NETHERLANDS

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This article explores the relation between citizens, civil servants, and communication infrastructures in the Dutch context. To explore this, we foreground citizens' experiences and attitudes toward communication infrastructures, and illustrate how civil servants approach infrastructure governance through standardization. The analysis, rooted in Langdon Winner’s (1977) framework of technologies as hosts for contemporary anxieties, identifies how a crisis of control manifests in the experience and governance of communication technologies. Drawing on the notion of anxiety, we provide insights into the relation of actors and communication infrastructures, clearly exposing a governance gap. While there are claims about the nature of these relationships, the experience of the encounter is understudied, while, as we show, infrastructural anxiety is a commonly experienced phenomenon among citizens and civil servants. The study employs a rich multi-method approach: a representative survey of the Dutch population, 69 interviews prompted by an artistic intervention simulating a 5G base station, and elite interviews with civil servants from key ministries. We consistently observed a loss of control and the externalization of responsibility as it manifests on an individual level as well as a structural level in governance. These insights can inform research and policymaking in an era where industrial policy is back on many governments’ agendas.

**Literature**

While communication technologies were first heralded for their ability to shrink space and time (Postman 1986) now they are often blamed for eating up our time and attention. The debate about technology, control, and power is by no means a new one, but these topics are reinvigorated through the debates in academic and policy circles about digital sovereignty and industrial policy (Calderaro and Blumfelde 2022; Flonk, Jachtenfuchs, and Obendiek 2024; ten Oever et al. 2024). However, several authors have argued that debates about digital sovereignty are largely of a discursive, not material nature (Baur 2023; Lambach and Oppermann 2023; Adles-Nissen and Eggeling 2024). In this paper, we try to explore the root cause for this relatively recent phenomenon and do so by stepping back, in order to have a wider view. Concretely this means, we will not just look at state policies or material technologies, but seek to combine these with concerns that live in society by exploring the perceptions and experiences of individuals and governments with communication infrastructures. To operationalize this, we will focus on the Netherlands.

**Method**

This research is based on a representative survey and semi-structured interviews to first quantitatively pin-point the Dutch population's concerns around communication infrastructures before qualitatively looking at how the Dutch general public experiences concerns and avenues of intervention. Finally, elite interviews show how Dutch civil servants experience these infrastructures by looking at governance challenges encountered in standard-setting interventions. We rely on three datasets collected through two methods: a representative population survey (N=2154) and 69 semi structured interviews with members of the general public (N=89) and seven semi structured interviews with civil servants (N=7).

**Contribution**

We explore the relationship between citizens, the general public, civil servants and communication infrastructures within the Dutch context to illustrate the ways in which communication infrastructures are experienced and governed. The relationship of different actors to technologies are often treated separately, rather than triangulating the experience of individual and governmental encounters with communication infrastructures. Comparative insights can help clarify governance gaps and hence, contribute to policymaking and research as industrial policy re-emerges on governmental agendas.

**Structure**

First, this paper lays out recent academic debates on infrastructures, sovereignty, and anxiety to investigate the perceived role of communication infrastructures in society. By departing from an infrastructure perspective, we formulate a relational understanding of how infrastructures distribute control and power. This is followed by the ongoing key debate of digital sovereignty, which shapes citizen and government engagement with infrastructures in the European Union (EU). After pin-pointing problems of sovereignty, autonomy, agency, and control within human-machine interactions, we delve into the

beginnings of scarce scholarship on anxiety. By drawing on this shared emotion around infrastructures, we establish a common ground for the comparative evaluation of different groups and their engagements with communication infrastructures.

To investigate the overarching question of how the experience of encounters with communication infrastructures manifests in different actors, the three analysis sections ask the following research questions:
RQ1: What are the concerns of the Dutch population with regards to communication infrastructures?

RQ2: How does the general public experience communication infrastructures and their avenues for engagement?

RQ3: What is the perceived role of standard-setting in intervening in the shaping of communication infrastructures according to civil servants in the Netherlands?

Initially, we seek to discern what the concerns of the Dutch population are with regards to communication infrastructures. We establish these concerns mainly through a representative survey, and in part through semi-structured interviews. Second, we set out to understand how the Dutch general public experiences communication infrastructures, and their avenues of intervention to obtain more control. We do this largely through semi-structured interviews, based on findings from the representative survey. Finally, we engage in elite interviews with Dutch civil servants to understand their perspective on communication infrastructures, and the perceived role of standard setting in intervening in the shaping of communication infrastructures.

**Preliminary Findings**

The analysis confirms what Langdon Winner established in 1977, namely that technologies function as a contemporary host for anxieties, and that there are no single actors that feel like they are able to ascertain control. We respond to this finding by arguing that a reflection on infrastructural anxiety, as it pertains to both the individual and governmental level, may bring together individual concerns and governmental responses around communication infrastructures. By integrating infrastructural anxiety within digital sovereignty debates, we formulate theoretical and policy suggestions that bridge challenges on both levels.

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## THE BANALITY OF GLOBAL ALGORITHMIC VIOLENCE: GLOBAL DIGITAL TRANSFORMATION AND PREDATORY GLOBAL ALGORITHMIC GOVERNANCE

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This research addresses the key question: How does global digital transformation (GDT), specifically global algorithmic governance, act as a determinant of health (DoH), and what are its digital infrastructural pathways to influencing health inequalities and outcomes? Drawing interdisciplinary insights from a variety of methodological lenses—science and technology studies, the global political economy, economic sociology, and digital transformation—the paper develops its conceptual framework for GDT as a DoH, this time exploring emergent global algorithmic governance (Birch & Cochrane, 2021; Edwards & Veale, 2017; Fourcade, 2024; Gabor, 2021; McMillan Cottom, 2020; Sadowski, 2020; Zuboff, 2019).

Global algorithmic governance refers to globally coordinated processes to promote a specific algorithmic governance approach through global institutions, policies, procedures, protocols, systems, and standards (Edwards & Veale, 2017; Mignot Mahdavi, 2024; Ziadah, 2024). Prominent GDT initiatives, particularly digital public infrastructures (DPIs) and their related artificial intelligence and machine learning (AI/ML) capabilities, cultivating an emergent form of global algorithmic governance through three processes: digital platformisation (Sadowski, 2020; van Doorn & Badger, 2020), data assetisation (Birch et al., 2021; Birch & Ward, 2024; Breckenridge, 2019; Donovan & Park, 2022a, 2022b), and algorithmic governance (Fourcade, 2024).

These processes are being globally advanced through digital financialisation, referring to the merging of GDT with the financialisation of development via surveillance capitalism and infrastructural projects, such as through AI-embedded DPIs (Gabor, 2021; Jain & Gabor, 2020; Zulfiqar, 2023). Globally coordinated processes tied to digital financialisation harness DPIs' interoperable and AI/ML capabilities to extract more of users' behavioural and transaction data[1] for monetisation, assetisation, and hyper

[1] Digital footprints, refers to data harvested from digital technologies and infrastructures on people's everyday behaviours, habits, and transactions (e.g., mobile phone calls, texts and use patterns (e.g., if phone contacts include first and last names as opposed targeted algorithmic governance enacted by companies and governments on digital platforms and tech stacks (Breckenridge, 2019; Jain & Gabor, 2020; Schapiro et al., 2023; Zuboff, 2019). Users' digital footprints are harvested and transformed via data analytics into data assets, such as reputational collateral[2] designed to make the poor more 'investible', which undergo another level of abstraction – a prerequisite of financialisation – to be sold for revenue or algorithmic governmentality (Breckenridge, 2019; Fourcade, 2024; Gabor, 2021; Rouvroy & Berns, 2013; Zuboff, 2022)

Global governance institutions, such as the World Bank, play a prominent role in promoting and normalising the extension of digital financialisation into global markets, public systems, and people's lives through GDT and digital financial inclusion initiatives, compelling governments' and their entire populations platformisation, such as through the mass enrollment of populations onto national DPIs (Donovan & Park, 2022; Gabor, 2021; Jain & Gabor, 2020). Digital financialisation drives global data extraction for AI/ML instrumentalisation throughout DPIs, such as to extract more rents, enact extraterritorial/illiberal forms of governance, and exert power over states and societies (Doorn & Badger, 2020; Mignot-Mahdavi, 2024; Sadowski, 2020; Zuboff, 2018).

GDT efforts tied to digital financialisation are also promoting, accelerating, and hyper scaling forms of algorithmic governance featuring predatory dynamics: (1) predatory inclusion and abstraction (Langley & Leyshon, 2022; McMillan Cottom, 2020; Taskale, 2024), (2) financialisation of everyday life (FEL) (Lai, 2018; Langley, 2020), and (3) algorithmic necropolitics (Nemer, 2022; Silva, 2023).

Global algorithmic governance's direct and indirect pathways shape health inequalities, risk distributions, and adverse outcomes. Directly, digital health is a key site for digital financialisation as an area 'especially ripe for "health as an asset class" initiatives' (Gabor, 2021, p. 451). Indirectly, predatory global algorithmic governance is implicitly violent, where it either creates, perpetuates, or allows structural, infrastructural, and algorithmic violence to occur that adversely impacts various health determinants and outcomes. Essentially, predatory global algorithmic governance's embodied consequences are manifestations of what this paper terms 'global algorithmic violence'.

Global algorithmic violence (1) diminishes human dignity, (2) prevents people from achieving a full quality of life and reduces their well-being, and (3) involves issues that

are correctable and preventable through human agency concerning globally networked digital infrastructures, AI, and policy choices. Hegemonic GDT's initiatives' promotion of digital financialisation fosters predatory global algorithmic governance and, in turn, global algorithmic violence. Global algorithmic violence's embodied implications

to only first names being used as proxy for assessing credit risk); real-time location, online, and digital transaction behavior; email responsiveness and social media habits; and more (Breckenridge, 2019).

[2] Reputational collateral, a type of alternative collateral, refers to digital footprints used to assess risk for individuals without land or material assets or formal credit history, to extend things like credit and insurance to new segments of the market and populations historically underrepresented (e.g., women, daily wage earners, and individuals without land, material assets, or formal credit history)(FAO, 2024).

manifest as health inequalities and adverse health-relevant outcomes that diminish people's overall well-being and quality of life.

Methodologically, secondary data from academic literature, policy reports, and grey literature, as well as primary data from semi-structured qualitative interviews with relevant global policy actors, practitioners, and experts, are analysed to demonstrate how global algorithmic governance functions as a DoH in real life, primarily explored in the Kenyan context through two primary examples.

First, global governance institutions, such as the World Bank, promote digital financialisation by promoting global fintech providers and financial markets as the primary solutions for closing health financing gaps, such as through digital health platforms and mobile money platforms for health access. However, in doing this, intensifying global and local predatory dynamics that undermine health equity (e.g., global digital financial inclusion efforts tied to DPIs that facilitate more predatory extraction with materially harmful effects, such as Safaricom's M-Shawri[3] predatory short-term loans).

Second, global governance institutions promote digital financialisation by enabling private entities to leverage gift exchange by offering critical resources or funds to engage in more data extraction, particularly in very regulated areas such as health, deepening predatory algorithmic dynamics and assetisation processes with necropolitical effects. For instance, the Kenyan government's public-private partnership with Safaricom, PharmAccess[4], and CarePay[5] for its digital health app (M-TIBA), which granted CarePay access to the National Health Insurance Fund (NHIF) database, and entered into an opaque health data-sharing arrangement sharing user-patients data with Pfizer[6] in exchange for funding (Al Dahdah, 2022; Sekalala et al., 2025).

GDT is a DoH, with digital financialisation as a key pathway through which GDT influences health inequalities. Within that broader concept, global governance-driven digital financialisation is a key driver of predatory global algorithmic governance and, thus, a key DoH equity. Examining GDT processes' health equity implications reveals the various forms of violence permeating this structural transformation process,

opening new opportunities for accountability and action at the global governance level. Conceptually, framing GDT as a DoH contributes to the broader interdisciplinary scholarship and policy debates on digital transformation and global algorithmic governance, proposing a broader future research and policy agenda.

[3] A Kenyan digital lending app on M-PESA, Kenya's national digital payments DPI.
[4] A Dutch NGO.
[5] A Kenyan digital health insurance and wallet platform app.
[6] A US-based global bio-pharmaceutical giant.

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