CB134: Infrastructures of governance: Power and assemblages in the data-driven state

Contribution Review Sheet

Pending Contributions

Governance as Experimentation: Bioexperimental Regimes and the Market-Mediated Reconfiguration of Authority

Author

Alberto Aparicio (University of Texas Medical Branch)

Short abstract

This paper examines how biomedical experimentation is authorized through market-mediated governance, using Infinita City and Montana's Right-to-Try to show how authority, risk, and oversight are reconfigured beyond conventional public regulation.

Long abstract

This paper examines how authority over biomedical experimentation is being reconfigured through arrangements that relocate oversight, responsibility, and ethical judgment away from conventional public regulation and into market-mediated forms of governance. Focusing on the experimental jurisdiction of Infinita City in Próspera, Honduras, and Montana's expanded Right-to-Try framework, I develop the concept of bioexperimental regimes to describe configurations in which biomedical experimentation is enabled through the reallocation of legal authority, market mechanisms, and responsibility for risk. In such regimes, experimentation is embedded in jurisdictions and institutional arrangements that allow intervention to proceed without prior collective regulatory closure. Empirically, the paper draws on multi-sited research conducted between 2023 and 2026, including participant observation at Longevity Week in Infinita City and ten additional longevity-related events, semi-structured interviews with actors in the longevity biotechnology ecosystem, and analysis of legislation, manifestos, websites, newsletters, podcasts, and media materials. I argue that these cases are not simply instances of deregulation. Rather, they are diagnostic sites where governance itself becomes an object of experimentation through biomedicine. I show how proponents justify these arrangements through a repertoire centered on speed, autonomy, choice, and critique of regulatory monopoly. At the same time, safety and accountability are reconstructed through liability, insurance, privatized review, and enhanced consent. The paper contributes to STS debates on experimentation and bioconstitutionalism by showing how struggles over innovation are simultaneously struggles over who is authorized to decide, under what evidentiary and moral standards, and with what distribution of responsibility.

Keywords: experimental governance; bioconstitutionalism; bioexperimental regimes; longevity biotechnology

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The 'data work walk': A walking tour to experience the regulating and infrastructuring of work

Author

Francisca Grommé (Erasmus University Rotterdam)

Short abstract

The 'data work walk' is a participative walking tour, based on the notion of infrastructural inversion, to experience how

infrastructures of governance change how workers connect to the city, navigate their work demands and contribute to local economies of care and support.

Long abstract

With digitalisation, work is become more distributed, mobile and surveilled – while the pace of work is often increasing. The state takes part in these changes in myriad ways, among which policies and regulations welcoming platform work, the production of imaginaries highlighting freedom and status brought by tech and creative sectors, and supporting digital infrastructures for data-intensive work.

The ‘data work walk’ is an ongoing project in Rotterdam to create a participative walking tour, based on the notion of infrastructural inversion. This is necessary to know how inequalities are infrastructured in the digital urban environment, and to recognize workers’ local contributions and needs. We need to know, and experience, how infrastructures of governance change how workers connect to the city, navigate their work demands and contribute to local economies of care and support.

This panel contribution will visually guide participants through the walk, opening the possibility of methodological exchange. Think of everyday locations such as laptop cafés and flagship stores. Through comparison with the historical work practices etched in the architecture of the city, it becomes possible to surface and question policy and regulatory environments, and how they affect workers’ roles in the urban, digitalizing space. The method of creating a participative walking tour, moreover, is not solely a method of academic inquiry, it also is a means to create space and time for residents and policy makers to experience the fast changes in the paces, rhythms and engagements of workers.

From threat to instrument: How the European Union reframed Artificial Intelligence as a solution to climate change

Author

Pierre-Léo Rouat (School for Advanced Studies in the Social Sciences)

Short abstract

This paper traces how the EU reframed AI from environmental threat to climate solution, marginalising its impacts while using AI tools to extend its technological apparatus and depoliticise climate governance. It analyses european legislation and the flasgip Destination Earth programme.

Long abstract

This paper analyses the transformation of the European Union’s AI strategy. While the EU initially framed AI as an environmental threat, explicitly flagged in early drafts of the AI Act, it gradually reframed it as a policy instrument for tackling climate change. A crucial consequence has been the removal of environmental provisions from the AI Act and the proliferation of AI-based green programmes, of which Destination Earth is a paradigmatic example.

While existing literature focuses on the ethical foundations of the European AI strategy (Floridi, Taddeo) and its shift towards innovation priorities (Justo-Hanani), I study the framing of AI as a green solution. Drawing on scientific controversy studies (Lemieux) and assemblage theory (DeLanda, Latour), I treat this transformation as the provisional stabilisation of a sociotechnical controversy.

My methodology combines legal text analysis and interviews. The corpus includes successive drafts of the AI Act, the AI White Paper, and the Cloud and AI Development Act and parliamentary debates. I conducted twenty-one interviews with Members of the European Parliament and experts (Joint Research Centre, DG Connect, European Space Agency).

I show how earlier attempts to incorporate the negative environmental externalities of AI into regulations have been progressively

marginalised in the European Union, leading to their exclusion. In parallel, the ‘green AI’ framing was used to build the infrastructural state, a form of political authority operating through technical mediation rather than explicit delegation, in which normative choices about environmental futures are displaced into technical decisions that are political in their effects.

When ‘Data sharing is Caring’ Meets Reality: Ambiguity in cross-sectoral data sharing

Authors

Jonas Thorborg Stage (Copenhagen University)
Karsten Vrangbæk (Univ of copenhagen)

Short abstract

Cross-sectoral data sharing platforms promises integrated care, yet everyday use reveals ambiguity. Studying Samblik in Danish diabetes care, we show how expanded data access creates both new possibilities, frictions and uncertainty, reshaping professional roles and responsibilities.

Long abstract

Visions of coherent, cross-sectoral data sharing—where a unified “data double” of the citizen can be accessed by all providers across health and social care—figure prominently in digital health strategies in many welfare states. In Denmark, this vision materialises in Samblik, a data-sharing platform introduced to support more integrated care for people living with type 2 diabetes, providing professionals across sectors with a common overview of key patient data. Yet as more data becomes available, or easier to view, healthcare professionals experience new dilemmas and frictions, particularly for municipalities.

Drawing on a multi-sited case study across general practice, outpatient clinics, and municipal care providers, including interviewing nurses, doctors, technology providers, IT managers, and implementation actors, we examine the ambiguous data experiences produced when cross-sectoral infrastructures meet everyday healthcare work. We show how healthcare professionals navigate these experiences within a broader landscape of unclear professional jurisdictions, occupational values and significant infrastructural complexity.

Our analysis demonstrates how data sharing simultaneously generates new possibilities – such as satisfaction with improved access to data and reduced need for direct contact – while fostering persistent uncertainty about how to interpret and act on data, and how professional responsibilities are redistributed. These mixed experiences highlight that data sharing does not simply integrate care but actively reshapes the conditions under which care is enacted. By theorising data experience we nuance the commonly held assumption that “data sharing is caring” and show how shifting responsibilities, new opportunities for professional recognition, and emerging insecurities shapes digital transformations in Nordic healthcare.

Enacting citizenship: Navigating inclusion in Pakistan's automated welfare state

Author

Ali Mohsin (Graduate Partnership Network (GPN), Universty of Kassel)

Short abstract

Focusiung on Pakistan's cash transfers program, this paper investigates how women beneficiaries navigate an unstable infrastructural assemblage of databases, digital technologies, officials and (non-)state functionaries, and hygienic regimes to enact their new relationship with the state

Long abstract

States across the Global South have increasingly sought to automate welfare by relying on data-based infrastructures and digital

technologies. Hence, by fixing identities beyond the flimsy paper-based identification systems and by establishing systems that work as objective and standardized procedures these infrastructures are supposed to expand citizenship rights vis-à-vis the state. Focusing on Pakistani state's social protection program, the Benazir Income Support Programme (BISP) – also known as the Ehsaas Kafalat [Compassionate Guardianship] Programme (EKP) – this paper investigates the contradictory politics of such data-driven and digital infrastructures to show how they encourage and undermine, valorize and devalue certain imaginaries of, and engagements with the state. Introduced in 2008, its official goals were poverty reduction and women empowerment: women, representing the poorer households, are Programme's primary beneficiaries. To overcome leakages, improve transparency and the problems of human (political and bureaucratic) mediation and discretion, the Programme has come to increasingly rely on digitally-conducted surveys and on biometric verifications. Thanks to the largely favorable evaluations by the powerful international organizations, it has expanded exponentially even as four different governments have changed hands in the national capital: with less than two million beneficiaries in 2008 to over eight million beneficiaries today. By employing assemblage perspective, this paper argues that from the standpoint of the everyday experiences of women beneficiaries the Programme functions as a contingent and unstable entanglement of beneficiary claimants, databases, digital, biometric verification devices, state- and non-state functionaries, internet and electricity connections, hygienic regimes and even dust and sweat.

Computing Power and Data Politics – The historical infrastructure of the Norwegian public administration

Author

Torjus Solheim Eckhoff (University of Oslo)

Short abstract

This historical study of public computerisation in Norway uses documents to perform an infrastructure inversion following how computing power reordered the state-form. It tells the story of past attempts at governing technology to inform current debates on dependency and digital sovereignty

Long abstract

With a historical study of the computerisation of the Norwegian public administration in the 1980s and 1990s, this contribution attends to the interrelations between politics, infrastructure and computer technologies. Inspired by John Law's (1993) notion of organising modernity, I examine the ways in which key documents act as representations of ordering illusions and accomplishments of public computerisation, a technological development seen as crucial to modernise and renew the state apparatus. I use computing power as a heuristic to follow the reordering of the state-form. In technical terms, computing power is a measure of how much computation a system can perform (e.g., FLOPS). Building on methods of infrastructure inversion, I follow the historical materialisation of a growing infrastructure enabling compute, including hardware, software, network protocols, as well as the competence and epistemologies entangled with it. Moving beyond the mere technical notion of computing power, I emphasise the second word of the term and attend to the changing relational tensions following computerisation. This includes tensions between central- and decentralised institutions, public- and private actors, the national and international, and different types of expertise. Moving beyond the dichotomy of these tensions, I want to illuminate the reordering of relations and the emergence of new forms of power and compulsion. This study brings up often forgotten historical attempts to govern the development of computer technologies, stories that can be used to inform current and future discourses on national development, dependencies and digital sovereignty.

Digital preparedness: a new modality of governance

Authors

Kjetil Rommetveit (University of Bergen)
Niels van Dijk (Vrije Universiteit Brussel)

Short abstract

In this presentation we introduce a concept of digital preparedness as a critical inroad to the study of digital politics. We develop our concept through an analysis of digital responses to the Covid pandemic in Norway, focusing on the rapid creation of a preparedness registry.

Long abstract

In this presentation we introduce a concept of digital preparedness as a critical inroad to the study of digital politics in the 21st century. Digital preparedness is a hybrid form of governance mobilised to enhance future capacity for emergency response through increased data connectivity and collaboration across domains. It is triggered by a state of exception and works through a dual suspension: of rights and regulations, on the one hand, and of hindrances to digital innovation in the public sector and health data infrastructures on the other. We develop our concept through an analysis of digital responses to the Covid pandemic in Norway, focusing on the rapid creation of a preparedness registry. This registry integrated previously siloed health databases with mobility, social services, education, and defence data, while simultaneously justifying expansions of Norway's extensive health data ecosystem. We describe how digital preparedness was used to instigate regulatory and institutional reforms, and to overcome prior 'barriers' (such as fundamental rights) to increasingly connect heterogeneous data sources. We conclude by identifying the defining features of digital preparedness as a mode of governance and considering its implications for digital politics and crisis management.

Algorithmic Regimes of Feeling: AI, Healthcare and Affective Governance

Author

Klara-Aylin Wenten (University of Kassel)

Short abstract

This paper examines how AI in healthcare governs not only bodies and data, but also emotions. Drawing on STS and affect theory, it argues that AI-mediated health technologies codify and circulate emotional norms by translating feeling rules into computational forms of affective regulation.

Long abstract

AI applications in the health sector increasingly operate as regulatory devices that govern not only bodies and data, but also feelings. As AI is applied in diagnostic and therapeutic practices, the management of emotions itself becomes being

automated and standardized. This contribution examines how these AI devices enact new modes of governance by translating psychological concepts, societal norms and expectations of emotional behavior into technical design. Through this translation, I argue “feeling rules” (Hochschild 1979) representing prevailing expectations of appropriate emotions are recast as computational logics seeking to stabilize social order through emotional regulation. Drawing on STS and affect theory, this contribution conceptualizes AI based health applications as socio technical assemblages of affective regulation. Diagnostic algorithms categorize emotional states, while therapeutic chatbots model empathy, resilience and self care as measurable and optimizable behaviors. These systems extend governance into the emotional domain, aligning well-being and social stability with predictive analytics and automated care. Based on empirical material and a comparative perspective on Germany and Japan, the paper analyzes how AI-mediated health technologies codify and govern emotions across different sociotechnical and cultural contexts. It discusses if the promise of digitized care gives rise to new forms of emotional and affective governance, situating citizens within algorithmic regimes of feeling and broader projects of social order, technological rationality, and the governance of democratic life.

Justice in the datafied city: the rise of distributed acoustic sensing in smart cities

Authors

Sophie Hart (University of Southampton)
Rafael Mestre (University of Southampton)
Hannah Dalgleish (University of Southampton)

Short abstract

The current paper models the actors involved in the deployment of Distributed Acoustic Sensing in the UK using Rasmussen's Risk Management Framework. Social network analysis is applied to examine system dynamics and identify key actors that shape the development and governance of DAS.

Long abstract

Distributed Acoustic Sensing (DAS) is an emerging technology that operationalises datafication by detecting environmental vibrations along the length of dark fibres (unused optical fibre cables), generating continuous streams of analysable data. DAS is already being used to monitor railway tracks and seismic activity, to detect leaks in pipelines, and more. The flexibility and resilience of DAS infrastructure are drawing interest towards its integration into smart cities. The operation of DAS in smart cities is not yet known, but will likely depend on partnerships between various actors ranging from industry to government.

The current paper uses actor maps to model the interdependencies among actors involved in the deployment of DAS in smart cities across the system hierarchy proposed by the Risk Management Framework (Rasmussen, 1997). We have created an actor map representation to examine the ‘layout of decision-makers, planners and actors’ involved within the DAS sociotechnical system in the UK. We then employed social network metrics to interrogate actor prominence and system-level dynamics. By identifying both top-down and bottom-up influences that shape the deployment of DAS, the paper demonstrates how accountability gaps may emerge within the datafied state. We also propose systemic recommendations to promote the development of future, justice-driven governance structures aligned with public interests in regulatory oversight.

From Digital Sovereignty to Technopolitics: Reorienting Research and Policy

Authors

Frederik Schade (University of Copenhagen)
Chiara Carboni (Technical University of Denmark)

Short abstract

Exploring the political rationality of digital sovereignty, we argue that its (geo)politics are animated by a technopolitical rationality distinct from previous forms of power. By theorizing this rationality, we propose a new conceptual framework for thinking the politics of digital sovereignty.

Long abstract

As digital sovereignty discourse gains prominence in international geopolitics, scholars struggle with its significant ambiguity. To aid theorization and policy, this paper aims to clarify the political rationality of digital sovereignty. At first, a Foucauldian perspective seems to confirm the political ambiguity of digital sovereignty, as policy in this domain tends to mobilize techniques attributable not merely to political sovereignty but also to discipline and biopolitical security. However, as we show, a unifying tendency can be identified across discourses of digital sovereignty whereby technology consistently replaces the human as the primary object of politics. Based on this observation and drawing on examples from US, Chinese, and European policy, we trace the particular technopolitical rationality underlying the international digital sovereignty agenda. This emergent rationality, we argue, signals an under-researched international political convergence towards a techno-centric form of politics distinct from traditional forms of sovereignty, discipline, and biopolitical security (even if selectively drawing on their techniques). As for its object, this kind of technopolitics focuses on so-called “general-purpose technologies” viewed as simultaneously foundational, enabling, and constraining devices. Its rationality, then, focuses on strategically enabling and controlling widespread techno-social transformation(s) while avoiding undesirable technical constraints. Finally, its distinctive techniques center on forms of interventionist planning aimed at cultivating techno-centric “ecosystems” through which materials and socioeconomic activities can be extracted and directed towards governments’ strategic technological goals. This theory of technopolitics, we argue, equips us with a novel conceptual vocabulary to think through the politics of digital sovereignty across both research and policy.

Influencing the European Digital Identity Wallet: Civil Society and Unequal Access to Infrastructure Design

Authors

Lukas Schmitz (JKU Linz)
David Seibt (Johannes Kepler University Linz)

Short abstract

This contribution examines the European Digital Identity Wallet as an emerging regulatory infrastructure. It asks how civil society organisations influence its development and why some are more successful than others, comparing digital rights organisations and migrant organisations.

Long abstract

The European Digital Identity Wallet (EUDIW) is reorganizing access to public and private services across the EU, reconfiguring relations between states, citizens, and private firms. We approach this development as a case of governance by information infrastructure.

The EUDIW is a particularly instructive case, because it is still in the making. Unlike established infrastructures, which

fade into the background, its technical, legal, and organizational aspects are actively negotiated in social arenas where actors aim to influence an emerging digital infrastructure and the power relations it stabilizes.

We ask: How do civil society organisations attempt to influence the development of the EUDIW, and why are some more successful than others? We combine sociological field theory with STS perspectives to conceptualize the Wallet's development as a socio-technical field with unequal distributions of capital, including social networks, technical expertise, and financial resources. Empirically, we use expert interviews and document analysis to compare digital rights organizations and migrant organizations.

We find that EU institutions, state actors, and technical experts exert direct influence on EUDIW development through participation in regulatory and standardization committees. Civil society organisations, by contrast, intervene from marginal positions and struggle to exert influence. However, while digital rights organizations can mobilize technical fluency and network proximity to articulate their concerns, migrant organizations remain excluded from design decisions despite being disproportionately affected.

By analysing the EUDIW as a contested innovation field, we show how influence over emerging regulatory infrastructures depends on organisational positioning and the capacity to translate concerns into design choices.

The Politics of Artefacts Revisited: Information Infrastructures, Power, and Governance

Authors

Antti Silvast (LUT University)
Robin Williams (The University of Edinburgh)

Short abstract

Drawing on Ellul, Mumford and labour process theory through STS classics—Social Shaping of Technology, Technological Determinism and Winner's politics of artefacts—to digital infrastructures, this talk argues for an update to infrastructural power shaped by citizens, intermediaries and institutions.

Long abstract

This talk traces the evolution of understandings of the political significance of technology. Starting from early critical accounts of technology—including Marx's analysis of the factory system and Ellul's concept of technique—through the development of Science and Technology Studies (STS), we revisit classic approaches to the technology-society relationship, including the Social Shaping of Technology, critiques of Technological Determinism, and Langdon Winner's politics of artefacts. Drawing on recent work on Information Infrastructures, infrastructural power, and case studies of public administration infrastructures and digital labour platforms, this review argues for an updated understanding of the politics of artefacts and, specifically, infrastructural power that recognises how digital technologies operate through cooperative relationships among engaged citizens, intermediaries, and governing institutions. This processual account offers new directions for researching technology governance in an increasingly digitised world.

Proof-of-Concept Soverereignty: Blockchain Infrastructural Failure(?) in the Republic of the Marshall Islands

Author

Victoria Kozlova (Tallinn University of Technology, Royal Melbourne Institute of Technology)

Short abstract

This contribution examines Marshall Islands' blockchain UBI deployment, showing how technologies built for Western contexts fail in small island developing states. RMI's residents hold crypto wallets but lack internet to use them, as providers treat state sign-off as community consent.

Long abstract

Decentralised technologies, including blockchains, have been presented as appropriate solutions for climate change mitigation, “refugee management” and financial inclusion. Yet, critical analysis of humanitarian and development technology deployments demonstrates how vulnerable populations become “testing grounds” for innovative technologies. This dynamic has positioned remote small island developing states (SIDS) as particularly attractive sites of experimentation. The nationwide rollout of a blockchain-based disbursement mechanism for the “Enra” universal basic income programme in the Republic of Marshall Islands (RMI) is one such example.

Drawing on infrastructural inversion, this research exposes the hidden dependencies of the RMI’s blockchain showcase. The US-owned wallet Lomalo promises inclusion, while internet access in the RMI’s outer islands remains unreliable. Rhetorics of emancipation and decentralisation conceal Lomalo’s threat to reliable ordinary banking and access to cash. Our ethnographic research examines the RMI’s blockchain infrastructure as socio-technical assemblage co-produced through economic constraints to resist technological intervention; geographic remoteness across a 1.99 million km^2 archipelagic Exclusive Economic Zone; historic coloniality; and minimal local community participation despite government endorsement.

This contribution, connecting island studies with science and technology studies, documents how ecological and economic precariousness in the RMI gives rise to technological proofs-of-concept for commercial actors seeking market dominance. Technology providers treat state sign-off as sufficient and move on, adding another case study on their website, while the material conditions of daily life in the RMI make the infrastructure inoperable for its intended users.

Towards AI(ien)-nation: Global assemblages of machine learning in Malaysia's government departments

Author

Stefan Bächtold (Monash University Malaysia)

Short abstract

With a knowledge co-creation approach, we empirically observe the technopolitics of Malaysian bureaucrats operationalising their government's path towards an 'AI-nation'; negotiating contradictions between sovereignty, democracy, and Big Tech's infrastructural AI assemblages in local government.

Long abstract

Against the backdrop of the global expansion of data centre infrastructure for artificial intelligence (AI), Malaysia's government announced its ambition to become a so-called 'AI-nation' by 2030. Couched in a narrative of billion-dollar direct investments by Big Tech companies for the country to become 'Southeast Asia's data centre’, AI has become central to imagining Malaysia's future – and its position in delicate regional geopolitics marked by the chip wars.

While deploying AI into all aspects of Malaysian government activity is presented as ‘without alternative’, the details of this transformation are left undefined. The work of stitching together the government’s AI future with more mundane practices, infrastructures, and public service systems is thus mostly left to bureaucrats.

This paper empirically examines the technopolitics of governmental AI through these bureaucrats’ work of making

Malaysia's government fit into a global infrastructural AI assemblage. Based on a knowledge co-creation approach with selected ministries, we observe them assembling partially coherent rationales for AI applications; glossing over contradictions between sovereignty, democracy, and Big Tech solutions; negotiating and resisting the risks of governing with AI.

We then argue that this mundane work of operationalising AI into the everyday functions of state institutions is far from mundane: It is where a global infrastructural AI assemblage territorialises novel forms of government, subjectivities, and exclusions; and it is where localised infrastructures enact geopolitics. Studying and reflecting these practices in the majority world thus holds the potential to not only nuance, but re-imagine, decolonise, or resist Western imaginaries of AI futures.

Constructing the Citizen-Resident: Analysing the Infrastructuring of the Togolese e-ID

Authors

Eddie Kapou (International Institute of Information Technology Bangalore)
Chinar Prakash Mehta (International Institute of Information Technology Bangalore)

Short abstract

This paper analyses the infrastructuring involved in digital identification systems in a developing context like Togo in West Africa. This complex socio-technical system, which consists of open-source DPIs, state, and corporate actors, makes the citizen-resident legible by the state.

Long abstract

The identification of the citizens of a state has been a historical infrastructural act that materializes development agendas, the state-resident relationship, and questions of control and accountability (Szreter, 2007). Research has established an undeniable link between development and digital ID systems; inclusive, universal coverage can lead to a robust interface between citizens and other institutions including the government, public service providers, employers, and other commercial actors (Gelb, 2000; Gelb & Metz, 2018; White et al., 2019). Even so, Masiero and Bailur (2021) challenge this development rhetoric by highlighting the grave consequences of exclusionary digital ID systems that are, nonetheless, imagined to be a frictionless process of registration. Exclusion is compounded by existing social disadvantages; beyond issues of access to internet infrastructures, scholars have been concerned with datafied negative perception, and exclusion through design practices (Fernandes Da Silva Ranchordas, 2022; Park & Humphry, 2019).

In this paper, we take the case of the deployment of the identification Digital Public Infrastructure, Modular Open-Source Identity Platform (MOSIP) and its collaboration with Atos and IDEMIA, to identify the actor-infrastructure and how it intersects with the social realities of Togo. The Togolese government manages a historically challenged socio-economic context with different forms of inequalities. Our research question is: Which design choices (architecture & governance) structure the Togo e-ID and how do they impact the legibility of the citizen according to the state? Through a technographical approach, we position the e-ID infrastructure as a socio-technical system that constructs the neoliberal citizen through technical & architectural choices.

An Investigative Arts approach to emerging technology research as ‘neighbours in research’: the case of distributed acoustic sensing

Author

Angela Y. T. Chan (University of Southampton)

Short abstract

This paper describes an investigative arts and justice-centred approach exploring the impacts of the emerging technology, Distributed Acoustic Sensing (DAS).

Long abstract

This paper describes an investigative arts and justice-centred approach exploring the impacts of the emerging technology, Distributed Acoustic Sensing (DAS).

DAS repurposes legacy fibre optic cables (‘dark fibres’) to capture data in the form of environmental vibrations across extended geographies. While DAS infrastructure is currently in use for monitoring seismic activity, railway tracks and pipelines, there are data privacy concerns if this were to extend into a smart city technology.

Investigative arts combines research methodologies and public engagement approaches from both investigative (journalism, open-source intelligence research, data analysis) and artistic disciplines (visual arts, creative workshops, exhibition), to shape radical interrogations to systemic injustices in the public domain.

Applied to research on an emerging technology like DAS, this investigative arts project draws upon critical infrastructure studies, particularly on data justice topics involving climate and militarism. It identifies the speculative local impacts of DAS given its potential deployments by industry. Further, by understanding both the local and global ecology of stakeholders and their intentions with DAS innovations, making connections between the global DAS infrastructure (where Southampton is one node), its supply chain, and grassroots international solidarities is essential in ensuring robust data justice advocacy as the technology expands.

The project seeks to uncover knowledge together with Southampton residents, and an interdisciplinary team across data sciences, social sciences, humanities, and arts at the University of Southampton. A recent citizens’ panel in Southampton and London brought participants to discuss this technology, and highlighted concerns around data and technology governance, privacy and environmental impact.

Digitally infrastructuring urban governance: Urban Digital Twins and the shaping of citizens-states-markets relations

Author

Hadrien Macq (University of Liège)

Short abstract

Urban Digital Twins seek to provide virtual city replicas for governance purposes. This presentation analyses how they transform citizens’ roles, institutional practices and public–market relations, prompting critical reflection on the present and potential futures of urban democracy.

Long abstract

The latest salient iteration of the datafication of cities is Urban Digital Twins (UDTs), which are being promoted as the future of urban governance and democracy. UDTs are presented as dynamic virtual replicas of cities and consist of

interconnected data infrastructures that can extract, manage and analyse multi-sourced big data. I argue that UDTs are particularly insightful sites through which examine how digital technologies are shaping new relationships between citizens, public authorities and markets, and to critically consider possible future avenues for urban democracy and governance. My main objective is to understand how UDTs shape the way cities and citizens are governed by analysing and comparing experiments with UDTs within the EU and asking how they are transforming urban governance. I develop an understanding of UDTs as data assemblages — complex socio-technical systems infused with politics and context — and scrutinise how the generation, circulation and deployment of data are constituted by technological, political, social and economic elements. This highlights the specific situated ways in which UDTs reposition citizens in relation to public authorities (e.g. by involving them as data providers through urban sensors or by governing them in more individualised ways through the increasing use of digital platforms) and reorganise political institutions and procedures (e.g. by developing more participatory decision-making processes or by delegating part of urban governance to digital contractors). Overall, the perspective highlights the ongoing and future reconfigurations of crucial issues in urban governance, notably public mastery over data or specific forms of digital citizenship.

Portable Statecraft: Design Principles and the Infrastructural Governance of Digital Public Infrastructure

Author

Sruthi Vanguri (University of Amsterdam)

Short abstract

This paper conceptualises Digital Public Infrastructure (DPI) as portable statecraft. Through a comparative document analysis of India and the EU, it examines how design principles such as interoperability and scalability function as governance rationalities that depoliticise infrastructural power.

Long abstract

Digital Public Infrastructure (DPI) has emerged as a globally circulating governance model, comprising interoperable systems of digital identity, payments, and data exchange. Popularised during G20 discussions under India's 2023 presidency and increasingly promoted by multilateral actors, DPI is framed as a technically neutral foundation for efficient and inclusive governance.

This paper conceptualises DPI as portable statecraft: a standardised infrastructural template that travels transnationally through shared design principles such as scalability, interoperability, openness, and trust. Rather than analysing DPI as a singular technology, the study examines how these principles operate as governance rationalities that organise political authority through technical architecture.

This paper asks how DPI models circulate transnationally as portable forms of statecraft, and how core design principles such as scalability, interoperability, openness, and trust are implemented and institutionalised within distinct political contexts. Drawing on comparative interpretive policy analysis, the study examines foundational strategy documents, institutional frameworks, and implementation-oriented texts from India and the European Union.

The findings suggest that while both contexts mobilise a shared infrastructural vocabulary, they stabilise distinct assemblages of governance, with one oriented towards scale and inclusion, while the other towards sovereignty and regulatory harmonisation. By centring design principles as sites of power, the paper contributes to STS debates on infrastructural governance, policy circulation, and the data-driven state, showing how authority increasingly materialises through infrastructural deployment rather than legislative deliberation.

Keywords: Digital Public Infrastructure, infrastructural governance, policy circulation, statecraft, comparative policy analysis

Classifying the Unclassifiable: AI as a Moral Infrastructure and the Limits of Fairness-by-Design

Author

Huyskes Diletta (University of Milan)

Short abstract

Automated systems act as infrastructures of governance that embed institutional goals and moral judgments. Through a case study of an AI system in Amsterdam, this paper shows how fairness-by-design approaches overlook the cultural and political logics shaping data infrastructures and inequality.

Long abstract

Principles and practices on ethical and responsible AI have largely converged around “by-design” approaches that seek to embed normative values such as fairness, transparency, and safety into the technical development of automated systems. Yet automated systems are not shaped by technical design alone: they are also embedded in the goals, motivations, and institutional logics of the projects that produce them. These elements constitute a broader cultural and political layer in which automation operates as a moral infrastructure, organizing populations through implicit judgments and policy agendas. Drawing on theories of governmentality and science and technology studies, this paper conceptualizes automated classification as an act of ethical world-making, through which institutional values and historically situated moral orders become operationalized in algorithmic systems.

Empirically, the paper examines an exploratory qualitative case study of an AI-based welfare fraud detection system developed in the municipality of Amsterdam and explicitly designed to be “fair.” Based on semi-structured interviews combined with documentary analysis and secondary sources, the study investigates how fairness principles are translated into institutional practice. The findings reveal a central paradox: even when systems follow ethical AI guidelines, patterns of inequality persist. Discrimination therefore cannot be understood solely as biased data or flawed metrics, but as the expression of local moral orders embedded in the classificatory logic of automated systems.

The paper contributes to debates on AI governance by highlighting the limits of fairness-by-design approaches when detached from the institutional and cultural contexts in which automated systems emerge.

Give & Take: How Brazil’s Digital ID Expands and Limits Rights

Author

Carina R. Nasser (University of Amsterdam)

Short abstract

Following scholars who argue that state ID infrastructures both grant and deny rights to citizens, this paper centers Brazil’s new digital ID infrastructure to analyze how digital and data-centric infrastructures create new mechanisms, subjects, and outcomes of ID inclusion and exclusion.

Long abstract

Brazil’s new digital ID infrastructure—the CIN or carteira de identidade nacional (‘national identity card’)—promises

identification procedures that are more secure, convenient, and inclusive for Brazilians who struggle to access ID services. Nevertheless, the CIN often reinforces the same inequalities it seeks to redress.

This dual dynamic is not new or uncommon. State identification is often portrayed as both granting and taking away rights from marginalized populations (Gordillo, 2006; Koster, 2014). Vulnerable groups frequently struggle to access state ID infrastructures; however, they also use these infrastructures to fight for their rights.

Within this dual dynamic, how do digital ID infrastructures grant and take away rights from groups and individuals? I analyze how the CIN's digital features contribute to this dual dynamic by introducing two significant modifications. First, the CIN obscures state accountability by shifting identification procedures from municipal and state authorities to federal and private actors. Second, it demands new resources and knowledge (e.g., a working smartphone and digital literacy) from citizens,— thus creating both difficulties and opportunities for Brazilians struggling with state identification.

My focus on Brazil's ID infrastructure and its card follows a long tradition in science & technology studies and media studies to address a research puzzle by tracing an object's social, material, and historical trajectory (Gitelman, 2020; Robertson, 2010). This paper contributes to that literature by presenting a recent case from the Global South that spotlights how digital ID infrastructures present new questions within well-worn dynamics of inclusion and exclusion.

Entangled infrastructures and infrastructural inversion in public education: friction and agency in data-driven technologies

Author

Jo Pierson (Hasselt University and VUB)

Short abstract

The paper examines smartphone bans as infrastructural inversion. Based on participatory research in secondary schools, it asks whether digital disconnection is mere solutionism or can create productive friction that challenges infrastructural entanglement and strengthens public values in education.

Long abstract

Digital infrastructures increasingly govern public sectors as they become indispensable 'obligatory passage points'. In the public education sector, social media, smartphones, and educational technologies (edtech) are deeply embedded in everyday teaching, communication, and school organisation. While offering pedagogical opportunities, these infrastructures also raise concerns about distraction, dependency, data extraction, and the erosion of public values. In response, governments and educational institutions are introducing partial bans on smartphones and social media in schools.

This paper conceptualises such bans as a possible form of 'infrastructural inversion': a figure–ground reversal that renders visible the normally invisible, taken-for-granted operations of entangled socio-technical infrastructures (Simonsen et al., 2020). While current policies of digital disconnection are often no more than a purely technological fix, we examine whether banning data-driven technologies can be a step towards challenging the strategic entanglement of schools' social infrastructures with corporate-computational infrastructures (Pierson, 2021).

Drawing on qualitative participatory research and in-depth interviews with pupils and teachers in five secondary schools in Flanders (Belgium) in early 2026, we analyse lived experiences of the newly implemented governmental smartphone ban. Our framework integrates insights from Media and Communication Studies, STS, and critical edtech studies, with particular attention to infrastructural inversion and 'seamfulness' as the deliberate introduction of boundaries and friction in

data flows (Couldry & Mejias, 2019).

We assess whether such friction merely reproduces technological solutionism or whether it can foster responsible digitalisation by enhancing critical awareness, collective governance capabilities, and citizen agency over public values within the data-driven state.

GitHub as Global Digital Governance Repository

Author

Esmée Colbourne (The University of Copenhagen)

Short abstract

Governments increasingly rely on GitHub for digital governance, yet embed sovereignty within a foreign platform. This is a paradox where openness, dependency, and boundary-making are constantly renegotiated within a US-based private infrastructure.

Long abstract

Contemporary governments are increasingly relying on commercial infrastructures like GitHub, a US-based company who host a variety of opensource, public code as repositories in their pursuit of digital governance. Yet, while some initiatives by the platform have sought to enable national sovereignty in new ways e.g. GitHub's EU residency as of 2022, governments also increasingly have to comply with a platform logic that is grounded in the US political system. This paper investigates how governments perform digital governance through an exploration of GitHub's own list of government users, mapping of repositories, participation and deletion. GitHub is treated not merely as a technical repository but as platform, governance mechanism and archive. On one hand, GitHub's infrastructural affordances support both digital governance and citizen participation by making visible code, projects, accountability, and versioning. On the other hand, governments' use of GitHub, as well as GitHub's strategic and differing collaborations with governments, enact a form of boundary-making that shifts the ruling domain towards the glocal standards of the private platform. Infrastructures like GitHub are, of course, not neutral but mediate power through technical architectures (DeNardis & Musiani, 2016). By tracing governments' presence to GitHub and their participation within its infrastructural affordances, this paper argues that contemporary forms of digital governance are enacted through technical dependency that relies on GitHub playing multiple roles.

Ownership without Ownership: Governing Agricultural Data

Authors

Daniel Bertram (Leiden University)
Matthew Canfield (Leiden Law School)

Short abstract

This paper argues that the emerging liberal governance approach to agricultural data – which we describe as a model of 'ownership without ownership' – risks reinforcing infrastructural power dynamics.

Long abstract

Digital agriculture, spurred on by new infrastructures, techniques and practices of data collection and analysis, is emerging as the next frontier of food systems innovation. To steer this digital transformation, agricultural data governance

has come to assume a growing role in both private and public policies. This contribution traces the historical constitution of agricultural data governance as a field of trasnational regulation through a close reading of key soft law instruments – including voluntary corporate initiatives, policy documents, and sectoral data governance frameworks. We show that these normative instruments largely follow a liberal logic that seeks to maximise data flows in the same move as it attempts to redistribute those flows and contain their negative effects. This dialectic is entrenched through legal formats such as consent, privacy, and participation. Its effect is a regime of “ownership without ownership” that enables some private actors to make quasi-proprietary claims on agricultural data while limiting legal challenges to economic and infrastructural power.

Resisting through Dependence: Microsoft 365 and the Contradictions of Digital Sovereignty in France

Author

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Short abstract

By analysing French local governments’ continued use of Microsoft 365, this paper shows how ecosystem lock-in, organisational path dependence, and multi-level governance tensions constrain France’s pursuit of digital sovereignty, resulting in a dilemma of “resisting through dependence“.

Long abstract

Despite France’s increasing emphasis on digital sovereignty and efforts to reduce dependency on GAFAM (Google, Apple, Facebook, Amazon, Microsoft), Microsoft 365 remains widely used across local departmental governments. By analyzing Microsoft’s dominance in an integrated ecosystem, regulatory adaptation, and long-term local presence, this paper investigates institutional, technical, and political factors behind this paradox. It analyses France’s counterstrategies, including the Cloud au centre (Cloud at the Center) policy, SecNumCloud certification, and the promotion of sovereign alternatives like La Suite. Meanwhile, challenges in functionality, adoption, and governance coordination have limited their impact. Drawing on policy documents, government audits, public statements, and semi-structured interviews, this paper reveals major structural tensions between national strategies, local autonomy, and platform capitalism in digital governance. Microsoft 365’s prevalence in French local departmental governments exemplifies this ongoing struggle between resistance and reliance in the governance of digital infrastructure.

Keywords: Digital sovereignty, Microsoft 365, Cloud au centre, Platform dependency.

Negotiating the future of global encryption: States and the politics of post-quantum cryptography.

Authors

Clement Perarnaud

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Short abstract

This article explores how state actors have influenced the emerging field of post-quantum cryptography (PQC), and how the future of PQC has been anticipated and co-constructed by state and corporate actors as a result.

Long abstract

This paper investigates the standardisation of post-quantum cryptography at the global level. While expected to bring fundamental breakthroughs in various fields, the advent of large-scale quantum computers has been a major source of concern for governments worldwide, as they could break the most common cryptographic systems currently in use. Since the mid-2015s, these concerns led to the emergence of a new field of research known as post-quantum cryptography (PQC). The initial rise of PQC being driven primarily by state-led efforts, this research looks at the capabilities of different governments to direct, or nudge, the standardisation of post-quantum encryption at the global level. This research focuses in particular on the Internet Engineering Task Force (IETF), a global industry-driven standard body, where corporate and state actors negotiate and compete over the formulation of Internet standards. This research draws on a research fieldwork carried out in the IETF between 2023 and 2025, which comprised participant observation and sixteen semi-structured interviews with PQC experts. Studying specific controversies in the IETF reveals the mechanisms through which state actors (such as the U.S and Germany) assert their 'digital sovereignty' in relation to the Internet industry, through direct or indirect means. This article discusses how state actors have influenced the emerging field of post-quantum cryptography, and how the future of PQC has been anticipated and co-constructed by state and corporate actors as a result.

Keywords: State power, standardisation, Internet, encryption, anticipations.

The Subscribed State: Project Nimbus and the Erosion of Democratic Friction

Authors

Dan M. Kotliar (University of Haifa)
Alex Gekker (University of Amsterdam)

Short abstract

This paper theorises the Subscribed State, where governance shifts into proprietary cloud infrastructures owned by Amazon and Google. It shows how cloudification transforms democratic oversight, recasts bureaucrats as inefficiencies, and embeds state power within corporate algorithmic systems.

Long abstract

This paper theorises an infrastructural inversion of democratic governance, where the state is increasingly subsumed into the proprietary logic of cloud-based global digital platforms. We show how this represents a shift from territorial sovereignty to a "Subscribed State" model, where external corporate actors extend their influence over state decision-making. Under this paradigm, the core functions of the state are operationalised within black-boxed, privately owned infrastructures. The model prefigures a "more-than-now" future, where liberal democracy is challenged by the rise of an algorithmic state. By framing governance as a series of optimizations to be solved by AI, the project envisions a dehumanization of the public sector in favor of automated algorithmic systems. Consequently, the traditional "street-level bureaucrats" who mediate between the state and its citizens are increasingly framed as redundant "bureaucratic friction" or budgetary overhead.

We exemplify this transition through Project Nimbus, the wholesale "cloudification" of the Israeli state via Amazon (AWS) and Google (GCP). Through document analysis and interviews with actors within the state bureaucracy, we analyse how the cloudification of governance translates democratic deliberation into executable code. As state functions are outsourced to corporate cultures, the capacity for democratic oversight is eroded and replaced by a techno-solutionist approach that views AI as a more obedient and efficient alternative to a human, unionised workforce. This paper contends that the cloudification of the state redefines the relation between citizen and sovereign, questioning whether democratic

agency can survive when the very substrate of governance is owned and governed by market-driven infrastructures.

Bitcoin's Regulatory Assemblages: State Dominance in Data-Driven Monetary Infrastructure

Author

Ilan Talmud (University of Haifa)

Short abstract

Bitcoin confronts state hegemony via private protocols, yet the State reasserts its dominance through compliance tools & construction of boundary infrastructures. The paper traces regulatory unfolding where algorithmic ledgers reproduces State's dominance, prefiguring data-driven governance.

Long abstract

Digital identity systems are often portrayed as instruments of efficiency, inclusion, and transparency. Yet their underlying infrastructures materialize specific sociotechnical imageries of governance that blur the boundaries between public authority and private design.

Digital monetary infrastructures like Bitcoin expose governance as socio-technical struggle, where private protocols attempt to confront state regulatory hegemony by producing hybrid power relations. This paper analyzes the social unfolding of Bitcoin's regulatory field, from initial "wicked" ambiguity among diverse stakeholders (regulators, miners, exchanges) into its institutional absorption as discernible, legitimate financial asset. The paper shows how Bitcoin’s embeddedness in boundary monetary infrastructure reinforces existing financial power structure, under state dominance.

Through Netnography, multi-sited ethnography and infrastructural inversion, I trace how the State reasserts sovereignty via compliance tools, incoherent policy experiments, and construction of boundary infrastructures, subordinating algorithmic ledgers to public authority and powerful corporate interests. As such, data-driven governance reinforces rather than erodes state control. Bitcoin's ledgers then become sites where techno-libertarian innovation paradoxically reproduces existing monetary hierarchies, encoding state dominance into digital monetary ecologies. Contributing to EASST 2026's "More-than-now" theme, this paper uncovers how regulatory assemblages, especially monetary boundary infrastructures, prefigure futures where states domesticate private infrastructures, inviting STS methods to study these power shifts across global contexts.

Assembeling Vulnerability: Interoperability and the Ontology of Welfare Data

Author

Petter Falk (Södertörn University)

Short abstract

This presentation examines how interoperable welfare data systems create and recreate citizens as vulnerable subjects. Drawing on ethnographic research, it analyzes the assumptions of infrastructures and how practitioners negotiate epistemic limits in assembling data from multiple domains.

Long abstract

Over the past decade, public organizations have increasingly adopted cross-organizational data sharing to produce new forms of knowledge and governance through interoperable systems. In Sweden, for example, over 95 percent of municipal

social services use the interoperability infrastructure SSBTEK/GIF to aggregate data from nearly 20 organizations when assessing welfare applications (SKR, 2019; 2025).

However, interoperability is not a neutral technical achievement but an epistemic and governmental practice that reshapes how subjects and needs become intelligible (Isin & Ruppert, 2020; Koopman, 2019). Data in public organizations is produced within situated institutional practices and classificatory regimes, yet these contexts are often subordinated to standardization and infrastructural integration (Wagenknecht et al., 2024). When data is detached from its contexts of production and translated across domains (Lee & Ribes, 2025; Ribes et al., 2019), interoperability does not simply reveal a subject's state; it enacts it.

In welfare systems, one such enactment is vulnerability; the conditions in which a subject is deemed in need of government support. Through classificatory infrastructures, "the needy" are reconstituted as administratively legible subjects whose needs, risks, and deservingness are inferred from fragmented data. Some forms of vulnerability are stabilized and made governable, while others become illegible or erased. Interoperability thus functions as a technology of subjectification and epistemic governance, defining what counts as vulnerability and what interventions become possible.

Drawing on ethnographic research across Swedish welfare organizations, this presentation examines the ontological underpinnings of welfare data interoperability, how practitioners negotiate its epistemic limits, and how vulnerable subjects are ultimately assembled.

Rethinking Citizenship in the Age of Data Infrastructures

Authors

Carolina Polito (LUISS Guido Carli University)
Cristina Alaimo (ESSEC Business School)

Short abstract

Contemporary data infrastructures increasingly detach data representations from social reality. This paper introduces digital identity epistemic fragility to analyse how this detachment emerges and stabilises, drawing on an in-depth empirical study of South Africa's identity data infrastructure

Long abstract

Contemporary data infrastructures operate as epistemic anchors, mediating how social reality is rendered knowable, actionable, and comparable across organisational and institutional contexts. While growing scholarship has examined bias, discrimination, and opacity in data-driven systems, these concepts insufficiently capture a more subtle and structural transformation: the progressive detachment of data-based representations from the social realities they are meant to describe. This paper introduces digital identity epistemic fragility as a conceptual framework to analyse how such detachment emerges and stabilises within large-scale data infrastructures. The concept is developed through an empirical analysis of South African identity data infrastructures. The empirical analysis draws on over forty semi-structured interviews and informal conversations with government officials, industry representatives, standardisation bodies, and civil society actors, complemented by policy documents, technical standards, patents, and archival material tracing the historical evolution of South Africa's identity infrastructure. This project first clarifies the conceptual foundations of digital identity epistemic fragility and distinguishes it from adjacent notions such as bias, infrastructural failure, and algorithmic opacity, situating the contribution within the broader tradition of data infrastructure studies. It then outlines how it can be treated as an empirically tractable process through qualitative analyses of data infrastructures, including the tracing of referent displacement across data lifecycles, the reconstruction of infrastructural decision logics, and the examination of

how organisational actors interpret and rely upon system outputs over time.

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