



Overview of symposium abstracts

(in order of presentation)

Title:

Disentangling smart cities, surveillance capitalism, and urban authoritarianism

Author:

Katherine Foo

Abstract:

In 2019, arguably half of the world is ruled by populist authoritarian regimes. Not only is it critical to understand and govern smart cities within “actually existing” urban strategies (c.f. Brenner and Theodore, 2002; Shelton et al., 2015), but the academic community has got to wake up to the very real possibility that most smart cities may develop in a global context of authoritarian rule. A democratic assumption of the free flow of information pervades smart city scholarship, but while this assumption is consequential, it has been largely unexamined. In this paper, I discuss the relevance of a growing urban authoritarianism for concepts and practices of smart cities. In particular, the concept of smart cities is differentiated from other contemporary urban frameworks by its focus on the roles, capabilities, and potential of information-communication technology (ICT) in cities. A major feature of democratic political regimes involves the central role of information in driving decision-making. Authoritarian regimes, in contrast, use information strategically in order to achieve desired political ends. Meanwhile, some have coined the phrase “surveillance capitalism” to describe neoliberal smart cities. The ideological and material implications of ICT systems deserve greater attention, as their deployment are widely divergent in democratic neoliberal and authoritarian contexts. This paper is aimed to open a conversation about the heavy role of ICT in urban governance in a heightening atmosphere of authoritarian global rule.

Keywords:

Smart cities, urban politics, information-communication technology, surveillance, authoritarianism, neoliberalism

Smart City Programme India - Exploring the Dialectical and Discursive Agency of Urban Futures

Authors: Kesar¹, Purushottam and Dr. Ache², P.M. (Peter)

Keywords: Agency, Governmentality, Policy-brokers

Abstract:

The Smart City has been the foremost city-making exercises, encompassing a spectrum of stakeholders and undertaken mostly through state-led flagship programmes, like the Smart City Programme (SCP) for Indian cities. Here, we examine the structuration of SCP from a perspective that seeks to ask, what is at stake, for the project of the ‘urban’ (the ‘practice’ cf. Roy, 2016). This so, as genealogical evidence signals that different ontologies of the ‘urban’ are constructed through turns in flagship programmes. The SCP seeks to radically alter the urban and futures trajectory, and shift the contours of seeing and doing ‘city-making’ through the creation of newer categories of city metrics and standards. Our study suggests that while adopting SCP, actor-assemblages mutate predominant modes of structuring the project of ‘urban’ that accompany SCP and create newer order Governmentalities. Actors with their agency, employ practices which are both ‘adjustments’ as well as ‘strategic’ to carve the Smart City Future in a calculus governed by social and political realities. In this, the role of policy-brokers is significant. The theoretical and conceptual takeaway, emphasizing the dialectical carving of futures trajectories, Smart or the other, where the ‘actor-agency’ engages with the predominant Governmentalities in dynamic processes - an under-theorized dimension, which negotiates with interpellation of futures trajectory.

-X-

¹ **Assistant Professor**, Manipal School of Architecture and Planning (MSAP), Manipal Academy of Higher Education, Karnataka State, India.
and, Doctoral Candidate, Department of Geography Planning and Environment, Radboud University, Nijmegen, Netherlands. E-mail: puru.kesar@manipal.edu and p.kesar@fm.ru.nl

² **Chair of Planning**, Institute of Management Research, Radboud University, Nijmegen, Netherlands
E-mail: p.ache@fm.ru.nl

Dr Anna Nikolaeva

Department of Human Geography, Planning and
International Development Studies
University of Amsterdam;
Copernicus Institute of Sustainable Development
Utrecht University;
a.nikolaeva@uu.nl

Politics of non-knowing in smart cities

Critical scholarship on smart city has discussed and critiqued the notion of “smartness” purported by corporations, governments, entrepreneurs, consultants and academics. Researchers have pointed out that what counts as “smart” in smart cities is based on a very limited understanding of intelligence and knowledge, an understanding that renders all urban processes as measurable, quantifiable and eventually subject to optimization (Luque-Ayala, 2019). At the same time alternative approaches to urban knowledges are downplayed or ignored. While this scholarship has advanced our understanding of the politics of knowledge in the smart cities, I argue that it is equally crucial to focus on the politics of “non-knowing” (as articulated by Beck & Wehling, 2012). Drawing on four cases studies on smart technology and cycling in four cities, the contribution proposes a series of questions on the politics of non-knowing in a smart city. How does the construction of the “unknown” advance particular agendas and includes or excludes various players from the conversation on urban futures? How “non-knowing” is contested in smart cities, and what is the role of technology and big data in this? Whose “non-knowing” counts and what kind of knowledges it may displace and marginalise?

Title: Governing Oxfordshire's smart and innovation-led agenda: what is the role of citizens?

Adam Michael Packer, University of Oxford

Abstract:

Understanding the role of local governments in developing smart city policies and practices is central to challenging the normative ideas, politics and ethics underpinning these activities. Established in 2017 the Oxfordshire County Council's 'Innovation Hub' or 'iHUB' seized opportunities to participate in or lead projects test-bedding or integrating technologies into local authority operations and services. This has largely focussed on transport and mobility priorities, such as developing Connected and Autonomous Vehicles, reflected in the region's wider 'innovation' strategy. I use interviews with members of the iHUB team to evidence the empirical complexity of local government operations, producing competing discourses of 'smart citizenship' across the iHUB's interventions. The paper contributes to critical smart scholarship in three ways: 1) it evidences how a local authority draws the lines of inclusion and exclusion for citizens, both discursively and materially, across different smart city concerns, 2) it questions how iHUB team members understand forms of public accountability, and 3) it argues that *any* kind of 'right to the smart city' requires the greater integration of civic organisations, communities and individuals in order to hold these bodies to account.

1 1 Commoning the Smart City: A Case for a Public Internet Provision

Paolo Cardullo
Technology Adoption Group
Maynooth University
Paolo.Cardullo@mu.ie

While traditionally the Internet has facilitated interaction between humans, the current landscape starts being dominated by the Internet of Things (IoT). These interconnected sensors and mostly automated apps have become vital to the data extractive practices of Big Tech, threatening digital rights for lack of accountability and regulation. At the same time, with ethical hackers shifting their attention towards blockchain technologies and IoT mesh networks, the appeal for communitarian mesh networks and public Wi-Fi has withered, exposing their long term sustainability issues.

The solution to this, the paper argues *in three case studies*, is for the ‘intelligent city’ to regain digital sovereignty by way of guaranteeing a public Internet provision: from direct control of this service and creation of democratic forms of governance of data infrastructure to composite forms of ‘social urbanism’ such as public wireless hotspots in public places and facilities like parks, squares and libraries.

Sabrina Huizenga
ESHPM, Erasmus University Rotterdam
Huizenga@eshpm.eur.nl

Dara Ivanova
ESHPM, Erasmus University Rotterdam
Ivanova@eshpm.eur.nl

Imagineering Democracy through Urban Labs: Unpacking experimental territories and re-writing meaning in the city

Abstract

Urban labs are discursively constructed in the field as experimental territories of knowledge production and democratic urban governance. This is mirrored in the majority of literature, which engages with the term. However, empirical evidence shows this to be misleading and incomplete as the performative effects of the label ‘urban lab’ have important consequences for urban democracy. The process of urban laboratization is more accurately understood as urban imagineering – engineering the spatial, social and political through the creation of imagery. Imagineering simultaneously signifies imagining and engineering places, thus resonating well with the acts and intentions of city-makers to both create and imagine the city. Urban imagineering analyses this re-writing of experimental territories through three techniques: (1) the spatio-temporal claiming of a territory, (2) producing a liminal, free-place where the impossible becomes possible and (3) opening up and closing down by capitalizing on the scientific authority of the label. These techniques open up questions about urban participation and democracy within the discourse of urban laboratization, among which questions about who is allowed to imagine the city; who possesses city-making literacy and how city-making projects are presented to different publics.

Key words: urban labs, laboratory, imagineering, performativity, city

Beyond Smart Cities Today

Abstract Submission

Title: Politicising Urban Analytics: A case study of City Digital Twins for urban planning

Authors: Timea Nocht¹, Noura Wahby², Greig Charnock³, Nicole Badstuber¹

Affiliation: ¹Centre for of Smart Infrastructure and Construction, Department of Engineering, University of Cambridge; ²Department of Geography, University of Cambridge; ³Department of Politics, University of Manchester

The emergence of digital publics and smart city approaches to urban planning has challenged traditional understandings of the right to the city. It has directly impacted decision-making processes by disrupting traditional data collection processes, expanding the scope of urban modelling to include automation, and forecasting city futures - further entrenching techno-managerialism in public administration and policy-making. Critical scholarship has focused on unpacking the neoliberal structural basis of smart cities and the material, political and digital dispossession of the subaltern, yet work that unpacks specific digital city-making tools remains rare. Of interest is the realm of micro-decisions that shapes the design of technologies that underpin Smart City approaches and their material, privacy, and socio-political consequences.

This presentation aims to unravel the politics of urban modelling and the potential for digital tools to create emancipatory spaces for 'smart citizenship'. We take the case of the Cambridge City Digital Twin (United Kingdom) to critically analyse the development, design, and future implementation of a specific data-driven innovation that has the potential to disrupt traditional practices of city planning. Based on interdisciplinary insights and a qualitative enquiry, our research first alludes to how modelling is used to include/exclude local stakeholders in local planning policy-making. Second, it demonstrates how the 'black-box' of urban modelling is politicised and privatised by local government and consultants. Third, it highlights how technologies can be harnessed to empower citizen engagement in the digitising of cities. The results prescribe a critical approach to deconstructing technologies for improved decision-making and the creation an emancipatory politics of data.

Gabriele Schliwa
Utrecht University School of Governance

5G is coming

The next generation mobile network provokes both utopian as well as dystopian urban imaginaries. Presented as a certain future and logical evolution from present day 4G, cities worldwide started to run test-sites for 5G mobile networks and applications in the promise of high speed, high efficiency, realtime data processing and new market and service development. But how are 5G networks being co-designed and how does this technology interfere with other urban infrastructures? What are current and future user applications? How can we understand contemporary 'realtime' modes of capitalist production through the lens of 5G development?

This presentation addresses the need to engage with invisible yet enabling digital infrastructures and design processes of the smart "real-time city" (Kitchin, 2014). While the translation of imaginaries into "actually existing" (Sheldon et al., 2015) smart cities requires higher bandwidth for data processing (Halpern et al., 2013), little empirical work has been done to understand wireless network development and how it impacts urban life and experience. Taking the digitalisation of logistics at Rotterdam harbour and urban mobility in Berlin as case studies, my presentation explores and reflects upon work in progress concerning 5G infrastructure design.

Imagining the smart city: multiple discourse constellations and some fantasies

In the last decade the smart city idea has emerged internationally as a panacea for urban issues ranging from rampant crime to climate change events and disasters. The proliferation of big data together with the ubiquity of smart phones has led to an interesting moment in the evolution of the smart city: IT firms are now positioning themselves as players in the urban governance space whilst bottom up mobilization by urban advocacy organisations is gaining traction.

The aim of this presentation is to reflect on findings of the first phase of a comparative project entitled 'Provincialising the smart city in India and South Africa'. Methods included a comprehensive media scan, a policy scope and literature review. Preliminary findings from South Africa show that the smart city story over the last fifteen years follows a curious trajectory of initial, bounded enthusiasm, followed by a quiet period, with a recent intensification of technical and corporate rhetoric. These 'discourse constellations' sometimes meander into the fantastical but generally find their places in multiple governance frames that speak to policy visions and priorities. We argue that these discourse formations have profound conceptual relevance in that they speak to a more finely grained interface between the 'smart' and the 'real' city. A deep enquiry into this relationship reveals insights into the nature of contemporary urbanity that not only departs from corporate smart rhetoric but also reveals a more nuanced analysis, beyond the demonization of large-scale ICT interventions.

Nancy Odendaal, University of Cape Town, South Africa (Presenter)

Ola Söderström, University of Neuchâtel, Switzerland

Evan Blake, University of Neuchâtel, Switzerland

Abstract proposal for the conference “Beyond Smart Cities Today”

“Genealogy and circulation of the Smart City concept in Chile: exploring new forms of urban planning and governance”

How do ideas or discursive forms of the Smart Cities concept emerge and circulate in Chile? In particular, how does the topic of electromobility arise, through which networks of actors and power relations does it transit and become appropriated in this country? This research studies how Smart Cities and electromobility have become fundamental issues in Chilean public policy in recent years. It tackles not only the declared benefits –reduction of greenhouse gases, air pollution and noise, etc.– but also explores other hidden motivations behind interests of large economic groups linked to lithium, an essential mineral for the production of batteries that any electric vehicle requires and of which Chile has almost 50% of the reserves worldwide.

However, what appears as a perfect case of criticism of the Smart Cities model –or another example of “neoliberal Chile”– is not what moves this research. Although this political-economic reality is considered as a context, the interest is to unveil the genealogy of the Smart Cities concept in Chile and of electromobility as one of its “star products”. The research addresses questions like how are ideas mobilized, who the agents are, which processes of adaptation or resistance are produced with respect to the particular conditions of the places in which they are developed, identifying mutations, assemblies or hybrids that may be emerging in our territories. Through multi-situated and multi-semiotic ethnographies, this recent postdoctoral research works on two case studies. First, SE Santiago, a public Smart Cities program developed by CORFO (the national Corporation for the Promotion of Production); and second, a territory, Antofagasta, a port city in northern Chile where the country's largest mining activity is concentrated – and close to the *Salar de Atacama* from where lithium is extracted.

Constanza Ulriksen Moretti
Postdoctoral researcher
Instituto de la Vivienda
Facultad de Arquitectura y Urbanismo
Universidad de Chile
culriksen@uchilefau.cl

Singapore's Smart Nation Vision

Imaginations, Realities, and (Dis)Continuous Inequalities

Smart urbanism is a popular urban policy approach of the cities of the world. It offers seductive visions of a better future for all driven by adoption of digital technologies. Research on opportunities and challenges of smart urbanism in different urban contexts in the Global South is emerging but fragmented. This talk will give an overview of the key trends shaping smart city developments in Asia using Singapore as a site of exploration. Reflecting further, this presentation takes a critical look at the imaginations of 'smart citizenship' embedded in Singapore's Smart Nation vision and identifies those who fall outside such future visions. I will discuss how normativity is entrenched in such imaginaries of urban futures and offer insights on emerging digital inequalities. From this emerges early lessons on how smart city scholarship and practices need a shift in paradigm and why this is crucial for building an inclusive future for all.

Can smart cities resolve the challenges of post-industrial cities in North England?

The case of Bradford

Dr PB Anand¹, Jamie Saunders² and Omar Wright¹

¹ University of Bradford; ² City of Bradford Metropolitan District Council.

Abstract

The aim of this paper is to examine the particular challenges of economic decline, social exclusion and their impact on many social and economic indicators in the post-industrial cities of UK and the extent to which smart cities are presenting opportunities to approach these complex issues from new data and new perspectives.

Bradford, a city that once pioneered woollen textile manufacturing is today located in a challenging economic geography. The years of economic decline are reflected much more significantly in the vast gap in average life expectancy between populations in different parts of the city and in social outcomes such as education, jobs and welfare-dependence. Yet, Bradford in recent years has been pioneering growth in small enterprise and exports. In this context, this paper examines the decline and rise of Bradford, changing demographic context and to what extent digital technologies are playing effective role in some dimensions but are not being effective in others. In particular, we will be looking at health indicators such as prevalence of diabetes and obesity among sub-populations in Bradford and examine how smart city ideas can help in addressing some of these challenges.

The Distributed Impacts of Smart Technology: At the Interface of Logistics and the Internet

Dr. Jess Bier, bier@essb.eur.nl, +31 (0) 61-921-3870

Assistant professor of urban sociology, Erasmus University Rotterdam

Abstract

This paper examines an under-theorized intersection between the literature on smart cities and research in critical logistics: the interface between digital and analogue infrastructures for the circulation of data and goods. I argue that social research on smart technology should take greater account of the specific ways that smart infrastructural systems for distribution are intertwined with analogue logistical systems that continue to operate together with the digital. Through an examination of the methods for routing internet data and shipping containers along particular routes that connect the Port of Rotterdam with Asia and the Middle East, I tease out specific relationships between container shipping and the internet, two inseparable but distinct infrastructural ecosystems that are crucial for the circulation of data and goods worldwide. This focus is important given that urban smart tech is often developed in concert with logistical applications, and metropolitan areas are themselves conglomerations of logistical services that stretch far beyond the city.

In popular depictions of the internet, links are often made between the form of specific infrastructures and their political impacts, such as the connections drawn between the internet's egalitarian routing protocol and its allegedly democratic character. In contrast, container shipping still relies heavily on the hand-to-hand transfer of paper documents, such as the bill of lading, which even logistics professionals connect to the supposedly opaque and autocratic character of the shipping industry. Here I seek to demonstrate that shipping and internet routing practices are more alike than is often assumed, while also contending that we cannot infer political implications from the material organization of the network alone. Instead, greater attention is needed at the interface of digital and analogue systems of circulation, in order to better understand the distributed social and political implications of smart technology.

Envisioning Conversational Agents in Public Spaces – a case of talking lampposts

Jos van Leeuwen*, Arnold Jan Quanjer, Antti Jylhä
The Hague University of Applied Sciences

Beyond the potential of new layers of urban infrastructure – sensor-laden networks, big data, artificial intelligence – to optimize cities functionally, lay promising opportunities to also use these technologies for new forms of social interactions. In an ongoing smart city development project, we explore the potential of distributed conversational speech interfaces in the social context of local urban communities.

Speech interactions are often associated with virtual assistants and smart home devices [3], designed primarily for private contexts. A less developed domain is speech interfaces in public contexts [1]. In our research we explore the potential of speech interfaces in lampposts [2]. With a network of talking lampposts, citizens may find new channels to interact with the municipality – e.g., to report problems in the neighborhood or suggest ideas for city development – and to develop new social initiatives.

Using a rudimentary prototype, we explore and investigate scenarios for dialogues between citizens and lampposts. The dialogues are designed to investigate the boundaries of desirable and acceptable experiences, with progressively more intrusive discourse from the part of the lamppost. Citizens engaging in this experiment are stimulated to envision potential use cases and reflect on privacy issues. This also elicits thoughts on possible consequences in the social context of citizens: some participants were concerned about being perceived as informants by other residents, while others like the lamppost to help find new contacts in the neighborhood.

During the conference, we will engage the audience in live experiments on stage and in subsequent co-design activities with all participants, to uncover challenges, opportunities, and dilemmas for the introduction of speech interactions in public spaces.

REFERENCES

- [1] Leigh Clark, Phillip Doyle, Diego Garaialde, Emer Gilmartin, Stephan Schlögl, Jens Edlund, Matthew Aylett, João Cabral, Cosmin Munteanu, and Benjamin Cowan. 2018. The State of Speech in HCI: Trends, Themes and Challenges. *arXiv preprint arXiv:1810.06828*.
- [2] Jos P. van Leeuwen, Arnold Jan Quanjer, Antti Jylhä et al. 2018. *Kunstmatige Intelligentie in de Publieke Ruimte in Scheveningen – Projectrapportage*. The Hague: De Haagse Hogeschool (in Dutch).
- [3] Martin Porcheron, Joel E. Fischer, Stuart Reeves, and Sarah Sharples. 2018. Voice Interfaces in Everyday Life. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. ACM, New York, NY, USA, Paper 640, 12 pages. DOI: <https://doi.org/10.1145/3173574.3174214>

* Professor of Civic Technology, corresponding author: j.p.vleeuwen@hhs.nl

Ethics of technological urbanism

Cities are often the epicentre of urban technology development, experimentation, and deployment. “Technological urbanism” – a term I propose in favour of the commonly used, and perhaps reductive, “smart city” – refer to the phenomenon of contemporary and emerging urban technology developing and taking shape in cities, that also simultaneously reproduces the city. This paper proposal seeks to develop the concept of the “ethics of technological urbanism” to probe the ethical implications of emerging urban technologies with their risks, questions of governance, of power relations between technology creators, regulators and users, and of the equitable distribution of benefits and burdens.

Technological urbanism aims to shift the focus from the generally aspatial analysis of technological society to that which is cognizant of social-spatial processes that interact with the technological. It recognises the highly accelerated timeframe of technological development, the vastly magnified scope and power of technology-enabled human action (Jonas, 1984), and the unprecedented urban-spatial import of these emerging urban technologies. These suggest that current theoretical framings and ethical foundations are unable to adequately address the implications of emerging technologies (Moor, 2006; Heikkerö, 2012), especially pertaining to their urban-spatial effects. Anchoring the critical lens on the urban context serves to encourage a substantive shift towards engaging technological issues from a spatially grounded perspective, and to yield analyses that more effectively describe, understand and evaluate the phenomenon of urban technologies (Hommels, 2005; Monstadt, 2009).

The paper will first review, map and distil the domains of ethics, technology and the urban through different disciplinary lenses, namely (1) philosophy of technology and social sciences of technology, (2) urban ethics, and (3) technology and the city. Second, it postulates that “technological urbanism” is a field in its own right that require reformulated perspectives and theoretical underpinnings pertinent to emerging urban technologies and the contemporary urban milieu. Third, it will present a research agenda on the ethics of technological urbanism.

References

- Heikkerö, T. (2012), *Ethics in Technology: a Philosophical Study*. Lanham MD: Lexington Books.
- Hommels, A. (2005). Studying obduracy in the city: Toward a productive fusion between technology studies and urban studies. *Science Technology and Human Values*, 30(3), 323–351.
- Jonas H. (1984) *The imperative of responsibility: in search of an ethics for the technological age*. Chicago: University of Chicago Press.
- Monstadt, J. (2009). Conceptualizing the political ecology of urban infrastructures: Insights from technology and urban studies. *Environment and Planning A*, 41(8), 1924–1942.
- Moor, J.H. (2006), Why we need better ethics for emerging technologies. *Ethics and Information Technology* (2005) 7:111–119.

Author: Emily Yongxu SOH, PhD Candidate.

Affiliation: Faculty of Architecture and Urban Planning, Technion Israel Institute of Technology, Israel.

Barteld Braaksma & Rik Helwegen

Title: *Creating Fairness in Machine Learning applications using Causality*

Recent efforts of Dutch government to pursue data driven decision making received a lot of attention and in particular encountered critique because of their ethical consequences. For example, discrimination by applying Artificial Intelligence techniques like Machine Learning (ML), that are optimised for efficiency only, may harm vulnerable groups in society. In this contribution, a novel method is proposed to prevent undesired discrimination in practical ML applications. This method was developed in a cooperation between the City of Amsterdam, University of Amsterdam (UvA) and Statistics Netherlands (CBS). Causality theory is utilised to structure complex statistical effects explicitly and incorporate formally defined metrics of fairness. The method has been tested on the classification of risk profiles in the context of unlawful social welfare, based on a sample of social welfare receivers. The results of the proposed method indicate a well-defined trade-off between fairness and accuracy. Under reasonable assumptions, risk profiles cleared from possibly discriminating aspects are still predicted with fairly good accuracy on a balanced data set. The proposed method thus shows high potential for practical applications.

Interactions in smart cities: the role of affordances

Alexander Koutamanis

Delft University of Technology

Collecting and processing data in smart cities is far from trivial but interpreting these data in a comprehensive, coherent and meaningful manner is daunting. The theory of affordances provides a basis for interpretation concerning the interactions between users and urban environments.

Affordances are defined as the actionable properties a particular environment offers to a specific animal. Perceiving affordances involves a comprehensive matching of the animal's effectivities (capacities for action) to features of the environment. Effectivities involve not only generic capacities (e.g. the ability to walk) but also constraints from current activities (e.g. loads carried or the company of other animals). As a result, rather than reducing data complexity to a few convenient indicators, affordances actually celebrate complexity and the informational richness it entails.

In urban environments, one can distinguish between three different dimensions in affordances:

1. The physical dimension concerns interaction with the natural and built environment
2. The social dimension covers interactions with other users in the same environment and therefore also issues of group forming and antagonism
3. The cultural dimension addresses the codified constraints a society adds to physical and social interactions

The total affordances of an environment are produced by the combination of the three dimensions but even a small adaptation in any dimension can have far-reaching effects. Viewing smart cities through affordances therefore reveals a surprising malleability in urban environments, based on both the adaptability of users to environments and the quick and extensive transition of people from passive use to active adaptation of an environment. It also defines functional (as opposed to performance) goals for the Internet of Things in smart cities.

Contestable infrastructures (my title, title missing)

C.P. (Kars) Alfrink
Doctoral Researcher

In the actually existing smart city, algorithmic systems are increasingly used for the purposes of automated decision-making, including as part of public infrastructure. Algorithmic systems raise a range of ethical concerns, many of which stem from their opacity. As a result, prescriptions for improving the accountability, trustworthiness and legitimacy of algorithmic systems are often based on a transparency ideal. The thinking goes that if the functioning and ownership of an algorithmic system is made perceivable, people understand them and are in turn able to supervise them. However, there are limits to this approach. Algorithmic systems are complex and ever-changing socio-technical assemblages. Rendering them visible is not a straightforward design and engineering task. Furthermore such transparency does not necessarily lead to understanding or, crucially, the ability to act on this understanding. We believe legitimate smart public infrastructure needs to include the possibility for subjects to articulate objections to procedures and outcomes. The resulting "contestable infrastructure" would create spaces that open up the possibility for expressing conflicting views on the smart city. Our project is to explore the design implications of this line of reasoning for the physical assets that citizens encounter in the city. Because after all, these are the perceivable elements of the larger infrastructural systems that recede from view.

"Knowledge, privacy concerns and behavior regarding the datafication of public space; a gamified survey approach."

Emiel Rijshouwer

Abstract

Smart city technologies and Big Data solutions are considered to be the Holy Grail regarding the demographic, urban, economic, social and environmental challenges that the world's inhabitants are supposed to be confronted with, now and in the near future. Advocates of the deployment of increasingly far-reaching data-collection and sensing technologies in public space sketch how increasingly ubiquitous ways of 'knowing' cities could contribute to their sustainability and to the safety and the well-being of their citizens. The critics of this alluring narrative warn us that the eagerness by which tech-monopolists collect personal information of citizens does nothing but serve their commercial interests, invading their privacy without them benefiting. Although both 'camps' predict that the datafication of public space will have enormous consequences for citizens, and that they should be actively involved in this process, we do not know in how far they are aware of this development; nor what their privacy concerns and their behavior regarding this development would be. By means of a gamified survey we developed an experimental tool to test that. We find that – in the context of The Netherlands - [@@@]. We conclude that [@@@]

Moving beyond data assemblages to understand air quality sensor data.

Nicole Hengesbach
Warwick Institute for the Science of Cities
University of Warwick

Intrigued by implications in and of air quality data, I report on applying a data assemblage lens and mixed-methods (desk research, interviews, auto-ethnography) to the realm of citizen-driven do-it-yourself air quality sensing.

This project elucidates how the community, the practices and the deriving data are locally and socially situated and contingent. One major consequence of this is that how to make sense of the data, from nearby or afar, is ambiguous. What the sensor readings can *really* tell us depends on the technical workings and materiality of the sensors and the context of where they are deployed. Interpreting the visualisation of the data is not straightforward and some local knowledge seems crucial to be able to do so, which somewhat contradicts the bird's eye perspective that is used for the map (see figure 1).

The project then sheds light on the methodological challenges of studying (distributed and citizen-driven) data assemblages that produce urban data. Thinking beyond Kitchin and Lauriault's (2014) suggestion to unpack data assemblages, the following considerations emerge: Determining a given data assemblage's boundaries is difficult and hinders focus and productivity. This favours overviews over in-depth analyses and omits opportunities to understand urban data practices and specifically their local entanglements, contexts and applications. From here, how can we—methodically—move towards understandings of local data practices and aspects of pedagogy and literacy to engage with the actual, situated, work that assemblages do? How can we use visualization techniques, digital methods and in situ methods, such as data walks, as tools to understand local data settings (Loukissas 2019)?

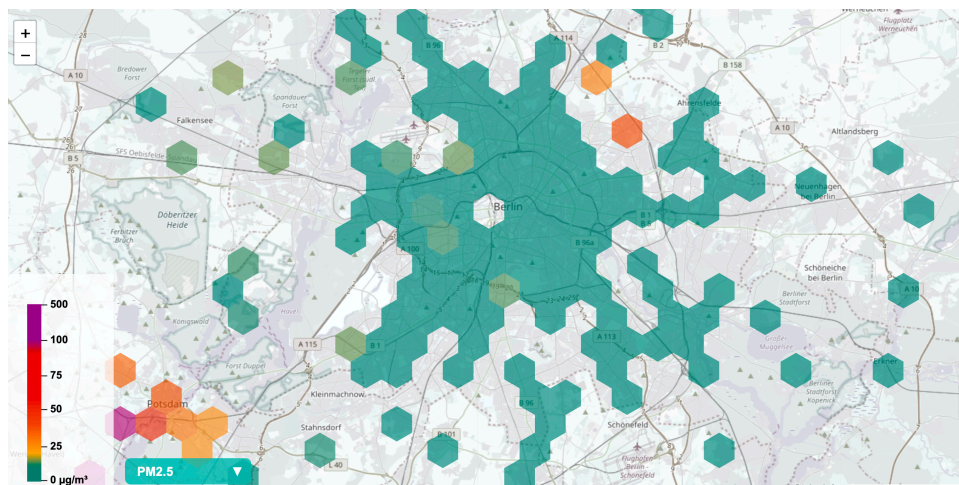


Figure 1: Screenshot taken from <https://maps.luftdaten.info>

Worlding Smart Cities: A View from Latin America

Claudia Fonseca Alfaro

Institute for Urban Research, Malmö University
claudia.fonseca@mau.se

Lorena Melgaço

Institute for Urban Research, Malmö University
Lorena.melgaco@mau.se

The potential and challenges triggered by the increasing use of digital technology in cities, the appearance of technology-driven models of urban development, and the growing popularity of the smart city paradigm have caught the attention of critical scholars—such as Marvin, Luque-Ayala and Kitchin—seeking to study the phenomenon from a sociopolitical perspective. There is a growing sense of urgency to both expand the understanding of what *smart* entails in the global South (as foregrounded by work of scholars such as Datta, Odendaal and Watson) and investigate the ‘actually existing smart city’. Drawing on postcolonial urban theory and decolonial scholarship, this paper explores two cases in Mexico and Brazil to interrogate the smart city from a Latin American perspective and deploy the practices of what Aihwa Ong and Ananya Roy refer as ‘worlding.’ With this our aim is to contribute to decentring the ‘locus of enunciation’ of urban theory.

Thinking geologically about smart cities

Vlad Niculescu-Dincă (✉)

v.niculescu-dinca@fgga.leidenuniv.nl

Assistant Professor. Institute of Security and Global Affairs. Faculty of Governance and Global Affairs
Leiden University. Turfmarkt 99, 2511 DP. Den Haag, The Netherlands.

Common to many of the smart city visions are thick digital infrastructures, seamlessly gathering and communicating large amounts of data and enabling dynamic and efficient governance of urban ecosystems. In the last decade, critical scholarship in sociology, urban geography, science and technology studies, philosophy of technology and more have engaged in “unearthing” the premises and implications of these smart cities visions. This paper argues for a new dimension of investigations by proposing a set of insights from geology and sedimentology to understand and reimagine smart urban ecosystems. Firstly, the paper makes the argument for a geological approach to digital infrastructures. Geology cannot be understood as a domain outside social, political and ethical influences, thus warranting the conceptual undertaking to bring these disciplines closer. Secondly, the paper places the approach in the STS tradition and shows its added value to the understanding of digital infrastructures. I have shown elsewhere how the layers of software code in policing profiling algorithms can present phenomena of settling, debris, deposition, accumulation, sedimentation or volcanism with significant potential for privacy harms and the erosion of presumption of innocence (Niculescu-Dinca 2018). Thirdly, the paper offers a step in this direction by developing, clarifying and adapting the notion of *sediment traps* in a descriptive, methodological and normative sense. I argue that the notion of sediment traps taps into the conceptual reservoir of geology, sedimentology and civil engineering to offer a rich set of insights, knowledge, practices, and principles that can be translated and engaged in unearthing deep-seated assumptions as well as in radical reimagining of smart cities.

Proposed abstract for the expert symposium "Beyond Smart Cities Today"

Krisztina Varró*

Assistant Professor in Human Geography and Spatial Planning

Utrecht University, Department of Human Geography and Spatial Planning

k.varro@uu.nl

Provincializing critical smart urbanism from the Global East

Criticism of smart cities as neoliberal urban entrepreneurialism in a new disguise and de-politicizing public discourse (Hollands, 2008; 2015; Vanolo; 2014) has recently been nuanced by calls for developing a situated understanding of actually existing smart urbanisms (Kitchin, 2015; Shelton et al., 2015; Luque-Ayala & Marvin, 2016). Yet, interpretations of the smart city as a globalizing, neoliberal policy discourse remain compelling (Joss et al., 2019; Sadowski & Bendor, 2019). Informed by research on smart city building in Hungary, this paper aims at advancing critical scholarly engagement with smart cities by addressing three interrelated – ontological, epistemological and normative – issues in mainstream smart city research. First, despite sporadic accounts on the 'Global South' (Datta, 2015; Ho, 2016), smart city research tends to foreground that 'the urban' is the same across contexts, rather than recognizing it as a product of relations, and that the politics of the smart city is interlinked with struggles about what the urban is (and should be). Second, while critics' focus on discourse helps showing how (knowledge on) the smart city has become taken-for-granted, a discourse-theoretical approach (Glynos & Howarth, 2007) including the Lacanian notion of fantasy allows for a better grasp of the persisting appeal of smart city narratives. Third and finally, it is suggested that rather than pursuing a 'radical imaginary' (Swyngedouw, 2011) of 'the good smart city', we should aim more modestly for 'better' smart cities and, to this end, acknowledge how in actual practice, actors might be simultaneously engaged in (de-/re)politicization.

Alternative imaginaries for the smart city

Proposed panel presentation at Beyond Smart Cities Today symposium (EUR)

Roy Bendor (Industrial Design, TU Delft) & Jan Misker (V2_, Lab for the Unstable Media)

The rise of the smart city as a dominant urban development paradigm has raised concerns about the public's capacity to make sense of the technologies and policies involved. Accordingly, most efforts to engage the public with the smart city tend to focus on demystifying urban technologies – opening up the technological “black box” for public scrutiny. But what if we consider the smart city not only as a collection of intelligent technologies but as a *social imaginary* – a set of collectively held beliefs about the world and how we can act on it? What new opportunities for art- and design-led interventions emerge if instead of concentrating on the technologies we have, we focused on the city we want – on what urban scholar Saskia Sassen calls “cityness”?

In this presentation we will illustrate some of the possibilities, challenges and benefits of engaging with the smart city as a social imaginary, with an eye on translating the SHARED principles for public engagement into concrete activities. We will discuss several current and upcoming Dutch art and design-led interventions that aim to disclose, problematize and pluralize the social imaginaries that guide the development and deployment of urban technologies. We will do so while drawing a distinction between interventions that imagine alternative smart cities *for*, and those done *by*, the public.