14. Creative Urban Methods for the Datafied City

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Abstract
Datafied and smart cities produce some challenges for inclusive, resilient, and sustainable urban futures. How can creative methods contribute to thinking and designing ways to imagine and co-create datafied cities with and for participatory citizenship and values for inclusion and sustainability? This question is central to the agenda of the research group [urban interfaces] and their collaboration in interdicisplinary and transdisciplinary partnerships. Working with and around the concepts of participation, criticality and imagination, the group brings cultural inquiry into datafied cities together with a methodological inquiry into creative urban methods. In the following, we sketch this agenda and approach and some recent examples of what such creative methods may yield.

Keywords: Datafied Cities, Creative Methods, Civic Participation, Criticality, Imagination

Cities today are datafied cities. Digital data and algorithms—and their primary interfaces in the form of platforms, apps, wearables, and urban dashboards—shape almost every aspect of urban life: commercial transactions, public governance, mobility, and everyday interactions between people. The proliferation of (big) urban data spurs a research and policy agenda aiming to improve the management of so-called "smart cities." Less attention goes to the question of how to involve citizens in shaping the future of the datafied smart city (see for instance Powell 2021). This is especially urgent, as the power relations and the values embedded in urban infrastructures, systems, and interfaces have a major impact on how inclusive cities are. The logics of optimization and efficiency that

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underpin datafied systems tend to benefit some but not others. Parking apps, for example, promote car mobility at the expense of other forms of travel. Algorithmic sorting has been shown to exacerbate existing divisions in society (O'Neil 2016), as is the case with predictive policing (van Schie and Oosterloo 2020) and tax office fraud detection systems (Oosterloo and van Schie 2018). Even something as apparently inconspicuous as a real estate website may ultimately serve to push out lower income home renters from old established neighborhoods while benefiting other tenants and homeowners (Loukissas 2019).

A key challenge that we want to respond to is how to make sure that datafication in practice does not promote the interests of the few but instead supports collective and diverse interests of citizens and their ability to participate in an inclusive urban society.[1] How can data strengthen civic participation and public values in the smart city? How can the use of data lead to more equitable outcomes for citizens? Moreover, the future of urban life itself is contingent on dealing with the climate crisis and whether we can co-exist with other species and our natural environment. Hence, we also feel it is important to ask: how might we develop and expand a notion of more-than-human "data justice" (Dencik, Hintz, and Cable 2016) that is not limited to human dwellers only? How can our cities become more sustainable—socially, ethically, and ecologically—by considering the diverse interests, stakes, and perspectives from other living organisms and species, aside from and beyond humans (Wakkery 2021), and how does this also concern (responses to) urban datafication? In other words: what can and should be the role of datafication in supporting sustainable and liveable cities, now and in the future?

Situating Urban Data

These challenges ask for critical and creative responses and approaches for thinking, debating, and engaging with data. Much of the research related to datafied cities is either solution-oriented and applied (e.g., much of the smart city scholarship in fields like engineering, policy, and computer science) or tends to assume a critical but thereby also disengaged position. Recently however, several scholars in critical data

1 In the Faculty of Humanities at Utrecht University, we organize the research group [urban interfaces], and we participate in the interdisciplinary Open Cities platform of Utrecht University's strategic theme Institutions for Open Societies and the focus area Governing the Digital Society.

studies have addressed data with more experimental and affirmative approaches (see Kitchin 2022, 127–41 for an overview), often in urban contexts. In this vein, our research group activities have taken on the question of how we can start "doing things with data" in ways that shed a critical light on urban datafication while at the same time allowing for creative and future-oriented speculation on how this could be different and better. For example, in line with the growing attention on informal urban practices as part of academic so-called action research, we ask how we can investigate the myriad daily urban data practices—practices on a "street level," so to speak. And consequently: how can we develop situated and hence cultural perspectives on data that allow us to move beyond the self-contained and purged datasets as the primary unit of analysis? Or: how can we build on the insight that data are always already situated and intertwined with various cultural and social practices, experiences, narratives, identities, systems of meaning, power dynamics, politics, and so on? And, specifically, what critical, yet productive, role can urban media, art, and performance play in teasing out and shedding new lights on those entanglements?

To address these questions, we work with concepts of *participation*, *criticality*, and *imagination*. These underpin our search for ways to foster more equitable citizen engagement with datafied urban life. Specifically, we ask how debates about societal frictions and controversies around data and algorithms can contribute to the development of urban imaginaries for more inclusive and sustainable futures. These are not only questions central to our research agenda but also inform our methodological inquiry into creative urban methods that bring together a cultural inquiry into datafied and algorithmic cities; citizen engagement; and the aims and strategies of critical, speculative, and value-based design.

Creative Urban Methods

To engage scholars, designers, and local citizens in shaping the present and future of the datafied city, we believe methods are needed that construct knowledge and awareness of the presence, (dis)functioning, and generative power and performativity of data in relation to urban realities and our own position within these datafied processes and infrastructures. Such methods can reveal the underlying layers of datafication and the actual powers that mobilize it and that it mobilizes (Karimnia 2019). Furthermore, we need methods that are inter- and transdisciplinary, given that the complexity of

the datafied city and how datafication shapes subjects and society at large cannot be understood or approached from an isolated disciplinary vantage point (Verloo and Bertolini 2020). Indeed, we need approaches that allow for practical and theoretical engagement with data and processes of datafication, with different stakeholders in specific, situated social environments as well as within interdisciplinary research and education contexts. A productive approach to the datafied city is ideally not only analytical (what are data, how does datafication manifest) and critical (what do these data "do," i.e., unpacking how data do not merely represent but also performatively produce reality) but also actionable (how can we act with, co-shape, or (re) design data and data systems). This combination could inform what Teli et al. in line with Kelty (2008) call recursive engagement: "the capability of a public of being able to take care of the infrastructure that allows its existence as a public" (2015, 20).

In this respect, we believe particularly in the potential of creative methods, with their focus on embodiment, exploration, experimentation, and intervention. Creative methods have shown to be productive for participatory, community-based, and action-based research, as they reflect the multiplicity of meanings that exist in social contexts, allowing for different stakeholders to participate in debate and collaborate in (practical) research (Hjorth et al. 2019; van der Vaart, van Hoven, and Huigen 2018). Creative methods can play an important role in bringing different perspectives and knowledges together, providing fresh and alternative approaches (Kara 2020; Dunn and Mellor 2017), as well as raising awareness and generating questions around complex subtleties (Eisner 2008). Moreover, creative methods value situational specificity (Kara 2020) and can provide access to emotional aspects of people's experiences not easily accessed by mainstream methods (Dunn and Mellor 2017).

Today, in the humanities (van der Tuin and Verhoeff 2022) as well as in urban planning, we observe an increasing interest in creative urban research methods, for instance in collaborative approaches to (smart) city making (Foth, Bryskov, and Ojala 2015; de Lange and de Waal 2019). These comprise methods such as data walking, performative mapping, experimental ethnography, interface analysis, action-based research, research by design, and critical making; these are methods that can be characterized as mapping methods, performative methods, and/or making methods (see also Verhoeff, Merx, and De Lange 2019). Below, we have included three short vignettes with specific projects to illustrate the situated character of these methods. These cases all share a perspective toward material, relational, performative, and affective structures of urban environments that

is sensitive to dynamics of change and has a phenomenological emphasis on embodied experiences of the (citizen/academic) researcher. Together, they demonstrate strategies for reflecting on and rethinking the datafied city. They show how creative methods can offer tools for alternative ways of collecting and presenting urban data and (co)creating or (re)imagining urban data or data infrastructures, which in turn might lead to finding new insights, raising further questions, and calling for alternative scenarios for the future of the datafied city.

Co-Creating Alternative Zero-Waste Imaginaries

Co-creating alternative "zero-waste" imaginaries is a research project that addresses the participation of citizens in imagining and shaping sustainable urban futures, focusing on issues and infrastructures of waste.[2] The project was initiated and led by two members of [urban interfaces] and aims to develop and test creative and transdisciplinary methods that can support the co-creation of alternative and more inclusive "zero-waste" imaginaries. The first test in November 2020 was a data walk. Small groups (students, researchers, designers, and local residents) explored "Het Werkspoorkwartier," a former industrial area in Utrecht, now transformed into a hub for creative making and circular entrepreneurship. Guided by a set of questions, participants were challenged to closely observe the environment and look for material glimpses of what a zero-waste future might look like. While walking, they collected objects, materials, images, and sounds—"relics of the future"—that were then used to create a map presenting different meanings of and perspectives on waste. A follow-up workshop in December 2020 built upon these analogue maps, inviting participants to combine them with visualizations of existing open data sets and citizen-science mappings of the area. Working through and with these different mappings, participants were invited to locate "fertile" starting points and pathways for potential zero-waste futures in the area and to creatively shape, share, and "sow," as the organizers called it, visions of these futures. Finally, participants discussed the relation between these visions and the "soil" that might be needed to ensure their growth and sustainability over time.

2 The project *Co-Creating Alternative "Zero-Waste" Imaginaries* started in 2021 at Utrecht University and is led by Corelia Baibarac-Duignan (University of Twente) and Tamalone van den Eijnden (University of Amsterdam) in collaboration with Creative Coding Utrecht. It received seed funding from the Transforming Cities Hub of the Focus Area Pathways to Sustainability.

Data-West 2021

Data-West 2021 was a local, public art project in the district of Woensel-West in the city of Eindhoven in the Netherlands that aimed to reconnect inhabitants of the neighborhood with their data. The [urban interfaces] research group was invited to contribute to the project as an academic partner through analysis and critical reflection. Art is used, here, to address and repair the loss of sensible and sensual access to, and ownership of, local data for urban citizens.[3] A group of young artists and designers from different disciplines, working with diverse media and methods (e.g., photography, film, audio, interactive installations, screens, animation, cooking, poetry), were invited to collaborate with local residents and stakeholders in the neighborhood to collect various forms of data and translate these into artistic data interfaces, ranging from multimedia, audio-visual experience design and installations to algorithmic wanderings, interactive animation, a recipe collection, and computer-generated poetry. The mission was to address local data as a social challenge and to use art and design to arrive at new insights, solutions, and connections. For this, the artists partnered with the local community, in all its diversity, to examine how data art can help to reclaim their local, environmental, and embodied bio-social data and to explore how data can regain expressive and experiential qualities and meanings. Art and design, here, are the methods to give data a "personal touch," as the organizers put it.[4] The project is both critical and creative, as it experiments with a variety of artistic methods to gather, reflect on, and mediate data. It is programmatic in how it makes a claim for participatory and on-site approaches to raise awareness about the situated and performative presence of data on a street level.

***Frictional Urban Interfaces*: A Pressure-Cooker Workshop**

In 2018, the [urban interfaces] research group organized a two-day pressure cooker workshop as part of the Research MA program Media, Arts and Performance at Utrecht University and in collaboration with Creative Coding Utrecht.[5]

3 The project *Data West* was organized by Gaia van Egmond, Arjanne Bode, and Lisette Aarnink of the social design collective Tante Netty, located in Woensel-West in Eindhoven. A first iteration was presented during the Dutch Design Week in 2020. Participating artists and designers in 2021 were: Cas de Rooij, Jannie Guo, Sandipan Nath, Studio Antwan, Julia Luteijn, and Tom Jacobs.

4 https://ddw.nl/en/programme/5858/data-west-2021.

5 See the documentation on https://urbaninterfaces.sites.uu.nl/workshops/2017-2018-workshop-critical-making-of-frictional-urban-interfaces and Shannon Mattern's description (2021, 49).

The workshop was attended by students, coders, and municipal workers. The challenge was to "reverse engineer" existing datasets in order to unearth the underlying frictions and contestations that went into the production of what often has the appearance of a comprehensive, objective dataset. The intended goal was to develop a speculative and imaginative interface that would narrativize these frictions around the datafication of urban life. Examples of frictions include urban data giving rise to new processes of social sorting (think of crime maps), the further encroachment of commercial interests onto urban public space (e.g., customer loyalty cards, personalized marketing, tracking), and the militarization of urban space (e.g., surveillance, facial recognition, risk analysis). The workshop was inspired by the critical making approach (Ratto and Hertz 2019) and the idea of data dramatization (Akten 2015). In an iterative set of steps, participants had to 1) imagine the underlying story in the making of an urban dataset, 2) consider friction as a way to bring drama into the reconstruction of the dataset, 3) develop the narrative setting of the friction, 4) imagine an urban interface to mediate the frictions imagined in the dataset and to allow people to engage with it, and finally 5) situate this interface in an urban intervention in order to make it public. This workshop has been a fruitful way to experiment in an interdisciplinary way with critical and creative interfaces that acted as discussion pieces by highlighting frictions.

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