

Commentary



# **What and who counts in smart city knowledge? A feminist epistemology for smart cities. Reflecting with Gillian Rose, Germaine Halegoua and Linda Gustafsson**

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In 1966, by making the provocation: “Technology is the answer...but what was the question?”, architect Cedric Price was inviting the audience at his lecture to reconsider the role of technological progress in architecture and planning. 55 years later, with smart city policies on the rise and technology seen as the privileged answer to ever more complex urban, social and environmental problems, Price’s question is more topical now than ever. Techno-optimism in smart cities, that is, the idea that new technologies, sensors, and the Internet of Things allow us to create real-time databases on which rational decision making can be done, has been questioned and challenged on different fronts. Research has shown, for instance, that the data we are able to collect is far from complete and reliable (Kitchin 2021).

The emerging *data feminism* field provides more fundamental critiques, pointing out that “the narratives around big data and data science are overwhelmingly white, male, and techno-heroic.” (D’Ignazio and Klein, 2020). The perspectives advanced by data feminists, as well as feminist geographers and urban planners, bring the question of epistemology to the fore by not simply interrogating the data, but the processes that produced those data and the power relations these processes are embedded in. A feminist standpoint reminds us strongly that “data science is a form of power. It has been used to expose injustice, improve health outcomes, and topple governments. But it has also been used to discriminate, police, and surveil” (D’Ignazio and Klein, 2020). While it is obvious to feminists (and a growing portion of social scientists) that all knowledge is incomplete, and that better knowledge can only be gained by bringing together multiple partial perspectives, big data today is still treated as objective and unquestioned.

If we want to challenge the reproduction of inequalities embedded in mainstream smart city urbanism, where technology is the prevailing solution to urban problems, we need to ask not only what the questions were that we set out to solve, but also *who* gets to ask the big questions of urban development and on which premises, echoing Price. In other words, if data is the primary way we know and understand the city, it is urgent to deeply interrogate the data epistemology on which we base our decision making.

What counts as data in smart cities? Whose data and knowledge count? Are big data enough? Who understands and produces knowledge about the smart city? With whose benefits in mind? And with what consequences? What is more and more obvious is that if we want to provide *real* smart, socially progressive solutions to urban questions, we need deep understanding about the power structures within cities and the social relations within them.

I present here some highlights from the conversations we had with some smart city experts in preparation of our course *Smart cities for city officials*, some commentaries that, I believe, can help us move towards a feminist epistemology for smart cities.

## **Gillian Rose: embedding in data the partialities, selectivity, messiness, unreliability of data itself**

“In a way, I don’t really think there’s anything wrong with big data per se, or indeed

anything right with it. It's data, like any other kind of data, of course. I would think the question is more: how is that data being understood by the people who are creating it? For example, I think there's often a sense that if you have enough data, and you have sophisticated enough algorithms, then somehow you get an objective truth about the social world that the data has been collected from.

I think it looks like we both agree that that is not a particularly useful way to approach big data. And I think if you're thinking that way, you're setting yourself up to fail, because cities, urban spaces, are so much more complicated than that. And one of the things that I've puzzled around, I don't have an answer to it, but it does seem to me, that one of the distinctive things about cities is social difference, but also social conflict. The right to have conflict. But also the fact that people disagree fundamentally about what cities are, and what they should be, and what they should do. And I don't see how big data can really address those actual political questions about what are the values that a particular city wants. Those are political questions, they're not questions that data can solve or speak to directly.

And I think one of the problems with big data is that it is taken as objective. I think sometimes also, if you have a lot of data, you start to work on tools or devices or apps, that respond to the data, rather than respond to the city. The data starts to drive what you think you can do. And I think that's particularly something that innovation and start-up versions of smart cities struggle with. That they gather all this exciting data, and they make it open access, and they invite all these entrepreneurs, and you end up with people inventing things that actually nobody is really interested in, but that the data is great for. And that's also, I think, a risk with big data.

I think another risk is that lot of the emphasis on big data is not only the scale of it, but also the fact that it's real time. It's constantly about the moment and about being refreshed. That's a particular temporality through which the city then gets seen. It's constantly in the moment. It's a constant series of 'now's or 'five minutes ago', 'ten minutes ago'. And I think that raises some really interesting questions about what happens to senses of place and memory, and longer-term understandings of what the city is.

(...)

I've also been quite interested in work around notions of data feminism in terms of thinking about data itself. And, trying to think of ways of embedding in data the partialities, the selectivity, the messiness, the unreliability of data itself. One of the things I learned in my very brief encounter with trying to learn how to code, was just how much time it takes to clean up the database in order to actually start to use it for these magical AIs. I think if that were made visible, that process, that will be one way, at least, to begin to displace this idea that somehow data reflects the world unproblematically.

Keeping data open and usable. Making it really clear where its sources are. Perhaps enabling lots of people to generate different kinds of data. And I think, trying to bring all these different things together, without trying to build them into a coherent whole. So,

you've got that sense of data being, multiple, fragmented, needed to be worked on in order to become useful in a particular context, I think that might be quite helpful."

**Gillian Rose, Professor in Human geography, Oxford University. Video-interview, 9<sup>th</sup> April 2021**

## **Germaine Halegoua: deconstructing and questioning power structures through technology**

"Feminist critiques of geography and urban planning have presented us with various vocabulary, models, theories, and ways of thinking about power and place. And the differential experiences of urban places, urban environments, urban social interactions, social capital, urban mobilities, that are different based on gender, sexuality, race, class, ethnicity, language, citizenship, status, education, income, and a variety of other sorts of markers of difference. All of which we need to think more intentionally about when evaluating and critiquing the benefits and harms and desired outcomes of smart city initiatives. I think we could also look to black feminist geographers as well. People like Katherine McKittrick, Brandi Thompson Summers, who talk about being black in place. These ways of thinking about cities and urban experience emphasise subaltern, or marginalised, or alternative patterns and lived experiences and ways of knowing cities that are absent in the smart city literature.

What I am referring to is that we have tools, and we have models and methods for thinking about marginalised communities within urban geographies. And we have to look towards that scholarship and those ways of thinking and put them at the forefront of smart city development. Replace efficiency and optimization, to think about the culture of our cities, the social relationships that already exist within our cities, and to think about them through the lens of difference, through the lens of the subaltern or historically oppressed. And questions of equity that haven't really been fore fronted in the ways that we think about epistemology, or ways of knowing the city.

(...)

A feminist smart city would be one that privileges the deconstruction and questioning of power structures through the technologies that are implemented. One that provides technologies – and maybe these aren't digital technologies, maybe these are processes of co-creation, of deliberation, and knowledge sharing – that prioritises accountability. Holding people in power accountable to citizenry, but also, and I think this is the heart of everything I just mentioned, a city that really pluralises and expands what counts as knowledge about urbanism and the city, and that ways of knowing and understanding the city are not limited to numerical values and aren't limited to big data sets. A city that invites in people who experience the city in many different ways, and have various relationships, often contentious, with the public officials, and government structures and institutions that are part of the smart city stakeholders.

I think, a lot more questioning, a lot more inclusiveness of many different ways of knowing, seeing and living in a city. And something that appeals to this democratic

process of co-creation that goes beyond the living lab model, but even works to forefront questions of equity and social justice and questions the institutions that are acting, presumably on behalf of the residents and citizens that they aim to serve.”

**Germaine Halegoua, Associate Professor in Communication and Media, University of Michigan. Video-interview, 8<sup>th</sup> April 2021**

## **Linda Gustafsson: smart solutions may have nothing to do with technology at all**

“Umeå city has over 30 years of experience of working strategically with gender equality, and we know that it’s a difficult thing to change gendered power structures, it’s a difficult thing to challenge, or to change, or to break. I think that the main lesson that the organisation has, is that coming up with a new technical way of, for example, lighting lamps in the street, that’s not difficult, or finding a new way to heat houses, which was something we talked about connected to climate change, that’s not difficult. A technical solution or a digital solution, that’s not difficult. That is something that we can learn from other cities in Europe that have done it before us, and we can have that exchange. But understanding people’s behaviour, understanding how power and privilege play into our possibilities and living conditions as people, that’s really, really difficult. To change that and to change norms, that’s really difficult. And our experience tells us that we need to spend time doing that. I think that’s the main thing, to understand that this is not something that you can add on at the end, this is something that needs to be present from the start when you work with things like urban planning or smart cities.

(...)

There has been a strategy in the city of Umeå for a long time to not use surveillance cameras, as a way of creating feelings of safety and security. Instead, there is more focus on how to build an environment that in itself can create feelings of safety and security.

In the tunnel by the railway, which was built a number of years ago working with gender mainstreaming, there are no cameras. The existence of cameras can also increase the feeling of insecurity. Of not feeling safe, of not feeling secure. That you are being surveilled, and that this is a dangerous space and that’s why there is a camera there. So, there has been more focus on how to create spaces that create feelings of safety and security. For example, in that tunnel, the artwork is really important, which is a famous author from Västerbotten called Sara Lidman. And it’s filled with quotes, and it’s a really long glass artwork. And just creating the sense of a constant presence of a woman in that tunnel creates more feelings of safety and security than a camera. So, trying to make the built environment that gives you that sense.

In Umeå we also talk about those spaces in public space that you can’t choose. Bus stations, bus stops and tunnels for example. Places where you need to move, where you need to be, but it’s not where you would choose to be. But you have to stand there because you’re waiting for the bus, or you have to go through because it’s your way to work. So, parking garages and places like that. People need to make their lives work, so we try to

infuse the spaces with an understanding of gendered power structures and try to think about how we can build them in a way that people, but especially women, lose as little energy as possible when they move through them.”

**Linda Gustafsson, Gender Equality Officer, and coordinator of the Commission for Social Sustainability in Umeå City, Sweden. Video-interview 15<sup>th</sup> April 2021**

## Concluding thoughts

What would a feminist smart city look like? A feminist smart city is aware that data science is a form of power, and it is profoundly social. Data and knowledge can be used to govern and maintain privilege structures, but also to expose, challenge and undermine such structures. A feminist smart city is a city that pluralises and expands what counts as knowledge and that puts co-creation at the forefront, striving for openness, accountability, and transparency of data. It is a city that spends time and effort in challenging norms and does that from the start, not as an afterthought. Feminist critiques of geography and urban planning are constantly developing theories and methodologies for thinking about power in place, and these are the necessary starting points for making our cities more inclusive and equal. Striving for a feminist smart city would be, I believe, striving for nothing less than a smart feminist city.

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