## CONNECTED THINKING

#URBANMETRICS #INEQUALITY #BIGDATA



# CITIES BY NUMBERS

Historian **Poornima Paidipaty** studies how the metrics we use to measure society influence the interventions we make. She explains how new data streams could give a more nuanced picture of how cities work, and why they fail

**The Possible: How do we change cities by measuring them?**
**PP:** Measuring the social world is not like measuring something like a table, where nothing much will change as a result. It changes how we see it, based on what we decide to focus on, how we decide to present that information, what we think that information means. It wasn't until the 20th century that we started to measure inequality in terms of income. In the 19th century, it largely meant political inequality, but once we produced the data to look at income, economics became much more dominant. Over time we have come to see the economy as central to whether a society is succeeding or failing. But we can miss out on all kinds of other ways of thinking about what makes an equitable society — issues of gender, race, caste or ethnicity.

Then there are quality of life aspects, like how long it takes to commute to work or how long you sit in traffic exposed to toxic air. Those things get missed entirely by economic measures.

**TP: What could these urban metrics help to tell us?**
**PP:** I think we can use them as a way of complicating the picture, to show us what it means to experience disparity, to be at the bottom rung of rising global inequality. Air quality, for example, has extraordinary health consequences. The quality of air in India, in internal cities especially, is very, very poor. Wealthier residents get to live in spaces where they can be some distance from the city traffic. They might be wealthy enough to run air filters or air conditioners. But people who live close to the streets, in

informal settings and slums, or who work as traffic policeman or have shops that are right on the road, have constant exposure. So you can live in the same space, you might have a decent income in the sense that you might be a city worker who has a salary and a pension, and yet you might be exposed to toxins that affect your life and the lives of your children in really complicated ways. We can now measure some of these things.

**TP: How this does come into play in urban planning and development?**
**PP:** The rise of big data and very complicated new metrics can give us a very nuanced picture of, for instance, growth or sprawl. Earlier what was measured was really the built environment, the fixed structures and their relationships to each other.

Whereas increasingly, we can see not just what exists in a built space but how people interact in real time. What I think is really interesting is that you can take social data and map urban development, whether it's growth or sprawl or shrinkage, as things that happen simultaneously. We know certain cities are growing and other cities are declining and that seems like a very simple picture. But even within those cities it's not like every bit of them is growing at the same rate. In New York, for instance, there are certain neighbourhoods that are growing very rapidly and others that are wealthy but less dynamic.

So you can see much more where people are spending money, which public transport corridors are really well trafficked, how people are getting in and out of cities. I used to live in Chicago
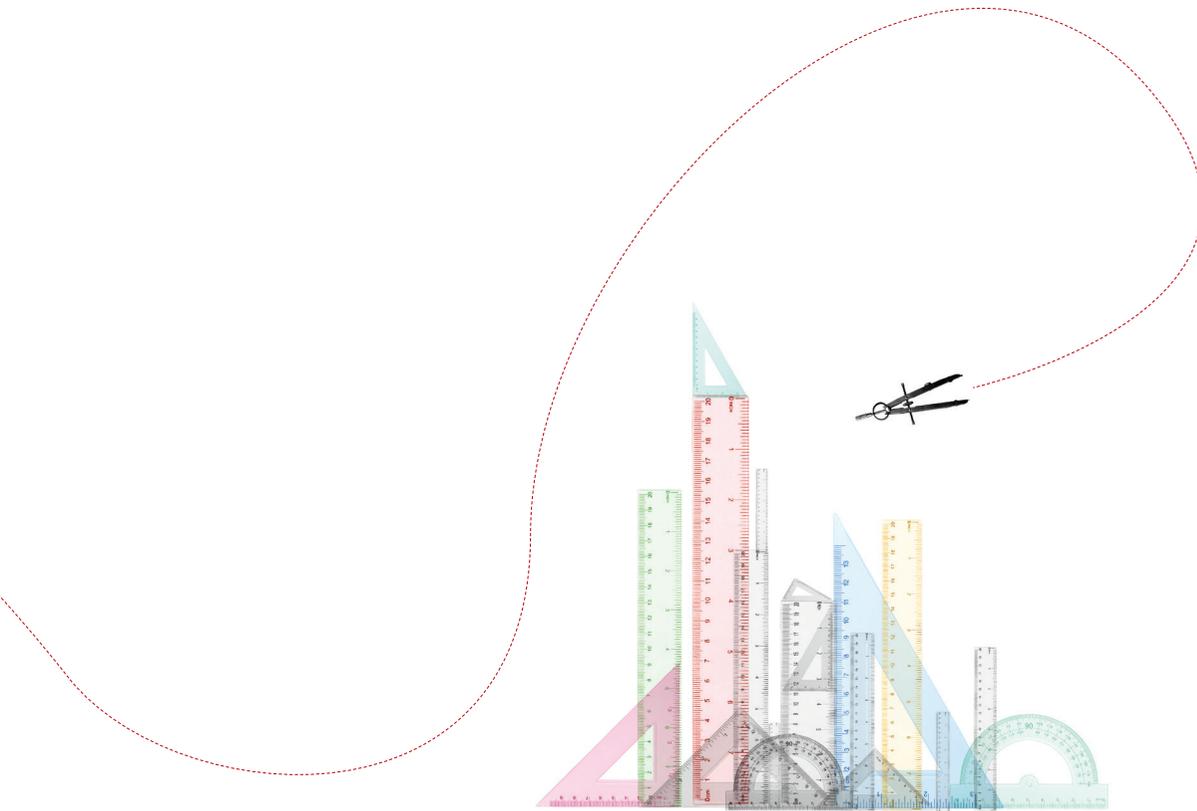
where the centre looks extraordinarily vibrant in the middle of the day because that's where people go to work and to shop and to play. And then they go home and the residential neighbourhoods are not the centre of the city. In the last ten years these neighbourhoods have for the first time developed much more dynamic social spaces in terms of galleries or cafes or events in parks. When you notice that people have to go quite far from their homes to find places to socially interact, you can start to see that need.

**TP: So it changes the investment case for where we put amenities?**
**PP:** I think it does. Once the data starts to show you far more localized pictures, one can intervene at that level in a way that is really fruitful. You can see that, especially as cities grow, the investments that immediately show rewards are things within walking distance. So to have healthcare, schools, parks, libraries close by — those kinds of thing make an extraordinary impact on wellbeing.

**TP: What about the potential negative consequences of big data?**
**PP:** On the one hand we have really good data that we didn't have access to before. But that doesn't mean there aren't blind spots. Some is collected through university work that might require either volunteers or access to larger

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datasets. Some of it might be done by private corporations, some of it requires access to data that's available through Facebook and Google. If you don't have a smartphone, you might not be interacting with these technologies. Especially in the global south, there are people who might not use them at all. That is also true for older people in general globally, also in some parts of rural America. So it could be easy to just not count a lot of different kinds of people.

**TP: So a lot of smartphone data is consumption data, and if you don't consume anything, you get missed?**
**PP:** Yes, so my parents, for instance, don't even have a debit card. They mostly pay for things with cash in stores. If they need something they will drive around to find the store that has it, pay in cash and come home. So it's generational, it's geographical, and it's people who don't have access to technology who we are probably not seeing.

I think we are just starting to think about the inequalities that arise through the use of big data. One of the biggest and most central concerns is who controls the data? Up until very recently, bigger data was held by governments, but now we're in a situation where private corporations hold a lot of data about our activity and we don't yet know what the long-term implications of that are, because they're not necessarily guided by the same legal or ethical strictures that public institutions would be.

**TP: How can we prevent big data skewing our perceptions of cities?**
**PP:** There are a couple of different things. Ananya Roy, who is a professor at UCLA, has spoken a lot about the importance of building in provisions for informality, especially in cities in the global south. The International Labour Organisation estimated that 81% of people in South Asia work in the informal sector in some way or other.

A lot of urban planning historically has missed out on this activity or has just seen it as a blight on urban life. So every once in a while street hawkers need to be cleared out or, at best, formalized. Formalization is sometimes a solution because informal markets are very precarious ones. But it can also mean you are creating new property rights that might be divided unequally — they might be patriarchal, so maybe the men in the family can get a claim to that stall or the income from that stall. One of the ways that big data can really help is that we can measure this activity in a way that we couldn't before and think about ways to help it thrive.

I think it's crucial to include such activity in the development of metrics themselves. In some Brazilian cities, there are really interesting experiments in having community organizing groups centrally involved in collected data but also in thinking about how to use that data as a political tool, an organizing tool. The data is not really useful just as a set of numbers; we need to weave it into our narratives. Is this a story of decline? Is this a story of how human beings hustle? Once we build those narratives, that's when the data becomes useful. ✖

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