

Interview with Rob Kitchin



*Interview by Joan Fitzgerald, Editor-in-Chief, Regions and Cities Book Series
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I am excited about my new role as editor-in-chief of the Regions and Cities Book Series with Routledge and humbled to be following in the footsteps of my friend, the late Susan Christopherson. With this premier issue of the RSA Regions E-zine, we begin a regular feature—interviews with recent authors in the series.

My first interview is with Rob Kitchin, co-editor of *Data and the City* (2018) and *Code and the City* (2016).



He is Professor and European Research Council Advanced Investigator at Maynooth University, Ireland. In addition, he is co-principal investigator of the Programmable City Project. A lesser known interest of Rob's is writing crime fiction—he has authored four crime novels and a collection of short stories in addition to his 25+ academic books. How's that for prolific?

These edited volumes “analyse the ways in which code and data are produced and framed within socio-technical systems.” They critically examine the relationship between data, algorithms, and the city, and how we come to know, understand and govern cities through data and software. If you want to understand, conceptualize or manage data-driven urbanism and the smart city development, these volumes are essential reading.

Joan Fitzgerald (JF): Big data and its contribution to “smart cities” is a hot topic. Would you provide our readers with a definition of what we're talking about?

Rob Kitchin (RK): Yes, there's a lot of confusion. Big data has three elements: large volume, variety and velocity. Velocity is key—that means real-time data that is streamed. There's a lot of it—cameras, aerial surveys, public administration records, transponders, and meters embedded into urban environment.

JF: Can you give us an example?

RK: Traffic control in Dublin and many other cities is a good one. We have a bank of screens depicting data from 800 induction loops embedded in roads; 380 cameras; all the pedestrian crossing buttons, real-time location of buses through transponders; social media and mobile phone data reporting accidents. There is a wide range of public and private actors generating fine-scale data —weather, utility usage; pollution, flood monitoring, bikes in bike stands, waste management, emergency services—it's a lot. Dublin, like many cities, has 8-9 control rooms monitoring other areas, as well such as emergency services, energy, and telecommunications infrastructure.

JF: *Data and the City* examines ethical issues associated with collecting data—often with people unaware. What are the ethical issues you address?

RK: We've got very fine-grained location data coming in, which raises a lot of privacy issues. It is now possible to track user movements through apps on a

smart phone by monitoring GPS location and Wi-Fi connection, or the phone being pinged by sensor embedded in the environment, or through tap-ins and outs on public transport, or the user of private transport such as Uber. And how we use that data presents concerns as well. Data collected on individuals can be used for predictive profiling that anticipates what they may or may not do. Predictive policing uses real-time data to estimate where crime might happen, sending patrols based on algorithms. It can also be used to identify potential future criminals. Data can be used to influence individual behavior, to nudge them, in several areas—when and how to use energy, which route to take, or whether to use public transit.

JF: How is big data improving the lives of urban residents?

RK: With respect to the traffic control room it is tackling congestion and improving flow. The principle arguments for big data systems are that they make service delivery more efficient and cost effective, they can be used to optimize performance, they can improve safety and security, and they improve transparency and accountability of service providers. If the data are made available via apps or city dashboards they also help inform citizen decision and choice making - for example, having access to real-time passenger information helps citizens plan journeys in real-time based on present conditions.

JF: Any down sides besides those you mentioned above?

RK: Hacking the city. People can hack into city computers and take over different bits such as traffic lights, public transport, water treatment plants. For example, an attack on traffic lights in Haifa, Israel gridlocked the city for 8 hours, and a ransomware attack on San Francisco's light rail took ticket machines off line for a day in 2016. There is also a tendency to control creep; that is, a system designed for one purpose being used for others, exposing people to ever-more surveillance.

JF: Who should read *Data and the City*?

RK: To a large degree it is written for academics—it makes academic arguments with respect to the nature of data-driven urbanism (part 1), issues of data access, ontology, quality, provenance, how data is transformed and moves between institutions (part 2), the nature of urban digital technologies and the technical and social aspects of their associated data infrastructures (part 3), and how changes in the volume and velocity of data generation and use has consequences

for society and citizenship (part 4). It also has an audience among urban practitioners seeking to use data to run their cities more effectively and companies seeking to get into smart city development. In our own research we have found that because data-driven urbanism is unfolding so quickly, those developing and deploying the technologies are often keen to find critical engagement and reflection on their work which they can contemplate and react to as they refine their product and use them to manage urban life.