

The Data and Life of Great Future Cities

November 7, 2018

The Roca London Gallery is hosting an exhibition, based on Marco De Nadai and MOBS @ FBK research activities. It proposes that, used responsibly, personal data could be the key to better urban design

The **Roca London Gallery** is a space designed by **Zaha Hadid Architects**, an evolving experience related to design, innovation, sustainability and wellbeing values. It hosts social and cultural events, exhibitions and installations.

From 15 September 2018 to 26 January 2019, it hosts a free exhibition entitled "THE DATA AND LIFE OF GREAT FUTURE CITIES". It is inspired by the iconic 1961 book "[The Death and Life of Great American Cities](#)", by pioneering urbanist, activist and writer **Jane Jacobs**. In it, controversially without extensive evidence gathering, Jacobs managed to identify the four conditions required for successful city planning or the "four generators of diversity". Her theories have now been proved uncannily accurate by a team of researchers at the University of Trento, led by Marco De Nadai, whose work will be part of the Roca London Gallery show. De Nadai's development of a much cheaper and quicker alternative to the lengthy and costly collection of survey data, or studies of pedestrian activity, uses a new generation of city databases – such as OpenStreetMap and Foursquare – combined with mobile-phone records, showing the number and frequency of calls in an area, to identify a city's most vibrant areas. This new methodology is groundbreaking for city planning as it offers an evidence-based, objective toolkit for assessing aspects such as quality, vitality and diversity of city life. Rather than relying on a satellite-style view, we're now able to understand how a city works from street level up, providing an empirical way into what Jacobs called "the adventure of probing the real world."

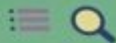
“

It is futile to plan a city's appearance,
or speculate on how to endow it
with a pleasing appearance of order,
without knowing what sort of innate,
functioning order it has.”

JANE JACOBS

THE DEATH AND LIFE OF GREAT AMERICAN CITIES

THE DEATH AND LIFE OF GREAT ITALIAN CITIES



YEAR

2016

DATASETS

Call Data Records, Foursquare, OpenStreetMap,
Italian Census, land use and infrastructure data

UNIVERSITY

Fondazione Bruno Kessler, University of Trento

LOCATION

Trento, Italy

TEAM

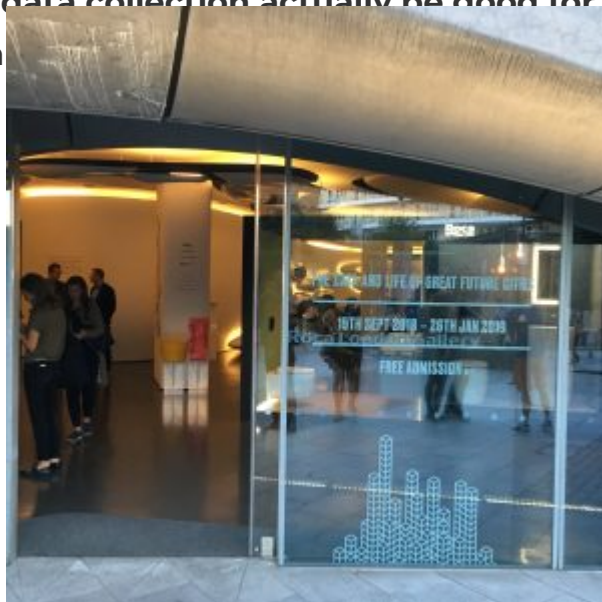
Marco De Nadai, Jacopo Staiano, Roberto Larcher,
Nicu Sebe, Daniele Quercia, Bruno Lepri

his work connects urban planning theories with real-time behaviour of people. New data sources such as mobile phones and online geographical data can now be combined to evaluate the vitality and liveability of neighbourhoods.

Empirical data can not only help mitigate discussions based on stakeholders' opinions, but also, and ultimately, help urban planners and architects design better places."

ICO DE NADAI

Can data collection actually be good for us? Does the future of human-centred urban





THE DATA AND LIFE OF GREAT ITALIAN CITIES – TESTING JANE JACOBS' THEORY OF URBAN VITALITY

Although widely adopted by planning professionals, Jane Jacobs' 'four generators of diversity' from *The Death and Life of Great American Cities*, have over the years attracted criticism partly due to the lack of empirical evidence. Purely based on her acute ability to observe city life, Jacobs' argument that a set of static conditions relating to a district's buildings and their use can promote economic vitality, had until recently never been verified. However, in 2015, after a 10-year study of pedestrian surveys establishing city diversity, researchers in Seoul were able to compare the results to Jacobs' four conditions (applied to the same city), and prove that her theory was correct.

With the ambition to find a quicker and more scalable method for proving Jacobs' predictive power, researchers at the University of Trento, Italy, recently developed the project *The Death and Life of Great Italian Cities*. Using a mix of pre-existing large-scale datasets – from Italian Census to Call Detail Records – the team studied six Italian cities, including Milan and Rome.

Not only does the project successfully test Jacobs' theory, it suggests a framework for easily tracking structural features (Jacobs' four conditions), proven to be linked to vibrant city life. This could give



Ville Radieuse (Radiant City), Le Corbusier, unrealised city master plan, 1924



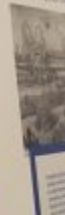
At the core of the Ville Radieuse concept is city zoning. Le Corbusier proposed separating the city into commercial, residential, business and entertainment zones. His theory was that the city's parts would - like the parts of a machine - work together as a whole, creating a more efficient and functional urban environment.

A 'Boeserville' in Portland, Oregon, 1936



Portland, Oregon, 1936. This model shows a cluster of tall, rectangular apartment blocks arranged in a grid pattern, with a central area designated for commercial and entertainment use. The model was created by the architect and urban planner, Frank Lloyd Wright.

Boeserville City Plan Frank Lloyd Wright in The Observer William Lloyd Garrison

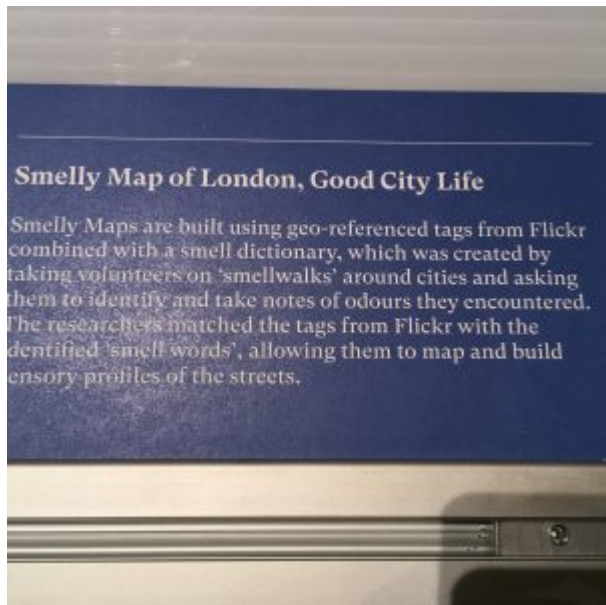


Portland, Oregon, 1936. This model shows a cluster of tall, rectangular apartment blocks arranged in a grid pattern, with a central area designated for commercial and entertainment use. The model was created by the architect and urban planner, Frank Lloyd Wright.

What can be learned about cities from the social media generated by its residents? City dwellers capture a vast amount of information about their movements and perceptions through location-based applications on their smartphones. From check-ins on Facebook to geo-tagged pictures uploaded to Instagram and Flickr, we leave an endless trail of digital footprints behind us on social media. Researchers are increasingly realising that these footprints can give an on-the-ground snapshot of how people actually use and experience cities.

Here we present two projects utilising social media data to map the dynamics and character, and the sensorial and emotional layers, of cities. *Livehoods*, developed by researchers at Carnegie Mellon University, uses Foursquare check-in patterns together with clustering algorithms to map the places people use in a city, combined with the patterns of people using them. This creates an alternative to a traditional map of units such as neighbourhoods, as it takes into consideration city dwellers and their activity patterns.

The researchers behind the initiative *Good City Life* have used social media data matched with crowdsourced dictionaries to map (words relating to) the odours and sounds of cities. The resulting *Smelly Maps* and *Chatty Maps* include both positive and negative sounds and smells - as opposed to traditional mapping of noise and pollution - highlighting that olfactory and audible experiences can have positive effects on city dwellers.









Today, we are collecting a staggering amount of visual information (photos, videos, etc.) about our cities. Using new systems we can analyze it - and better understand the places we live in: anything from traffic congestion, to the quality of the building stock, to the presence of trees and green areas.

It is like borrowing the eyes of millions of amateur photographers and using them to better understand our urban habitat."

ALDO RATTI
DIRECTOR, MIT SENSEABLE CITY LAB

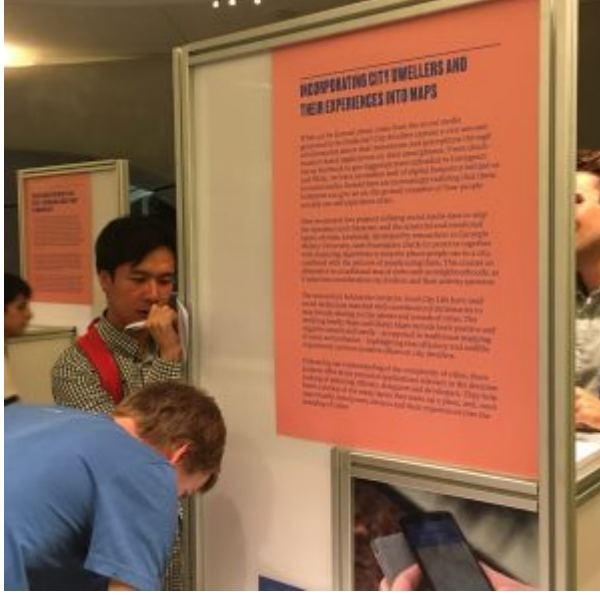
KEY TO DATASETS	
	STREETVIEW IMAGES High-resolution satellite imagery collected by Google Street View.
	FLORA High-resolution satellite imagery collected by Google Street View.
	WIKIMEDIA COMMONS User-generated content from Wikimedia Commons.
	POISSONS High-resolution satellite imagery collected by Google Street View.
	PEOPLE COUNT High-resolution satellite imagery collected by Google Street View.













A number of evening events, open to the public, will be organized to coincide with the exhibition.

Enjoy London and visit the exhibition!

PERMALINK

<https://magazine.fbk.eu/en/news/the-data-and-life-of-great-future-cities/>

TAGS

- #big data
- #DataLifeFutureCities
- #Digital Cities
- #future
- #life

RELATED MEDIA

- Roca London Gallery: <http://www.rocalondongallery.com/en/activities/detail/199>
- PAPER "The Death and Life of Great Italian Cities: A Mobile Phone Data Perspective": <https://arxiv.org/abs/1603.04012>
- Mobile and Social Computing Lab @ FBK: <https://ict.fbk.eu/units/mobs/>

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