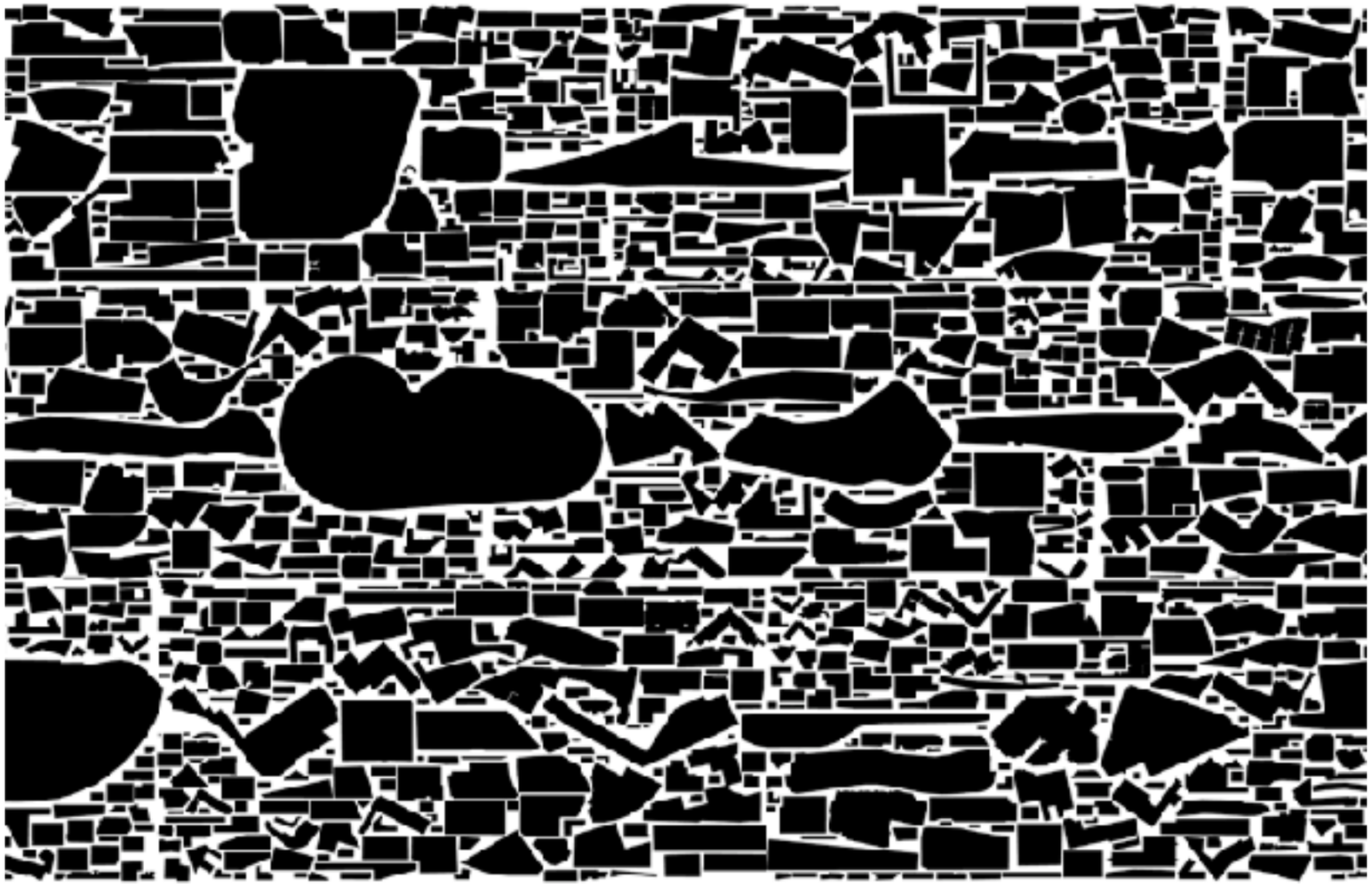
Understanding wasted mobility space with crowdsourced urban data

Copenhagen, May 23, 2019



Michael Szell
ITU Copenhagen
@mszll

with: Stephan Bogner, Benedikt Gross, Tobias Lauer, Anagrama, Tilman Häuser, Raphael Reimann, Daniel Schmid, Joey Lee, Johannes Wachs, Thibault Durand

2016 September: Starting a mobility project in Stuttgart

moovellab

Come to Stuttgart.
Joey will be there too!

And a new guy: Stephan

Our "plan": Let's visualize some urban data!

Visualizing the impact of integrated car sharing

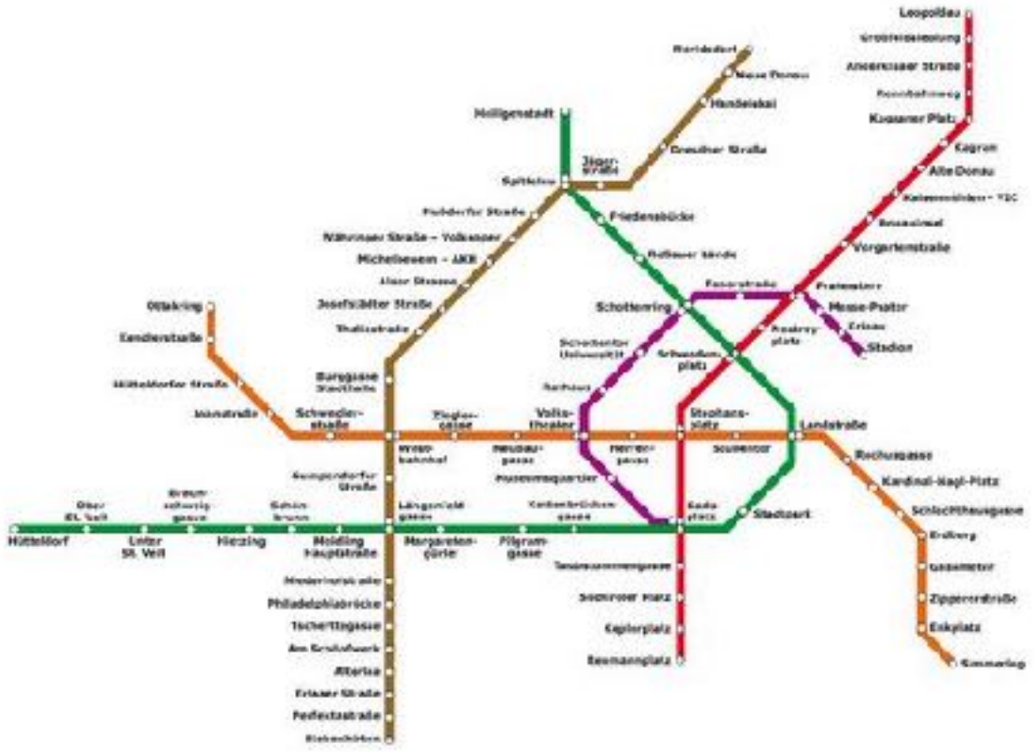
Project plan by Michael Szell

Various studies have shown that in their conventional use, cars are parked around 95% of the time [1]. This inefficient use of resources has fundamental implications on how we use space in cities, where a large number of parking spots occupy valuable public space. The introduction of wide-spread car sharing has the potential to re-appropiate large areas of this public space, for new parks, bike lanes, etc., decreasing the wasteful use of space, and significantly increasing quality of life in cities.

Despite these well-known benefits of car sharing, the transition from traditional use of individualistic car ownership to car ownership as a public shared good [2] is delayed due to the collective nature of the benefits that are hidden from individuals, and due to the continuous

Sorted Cities

Hans Hack

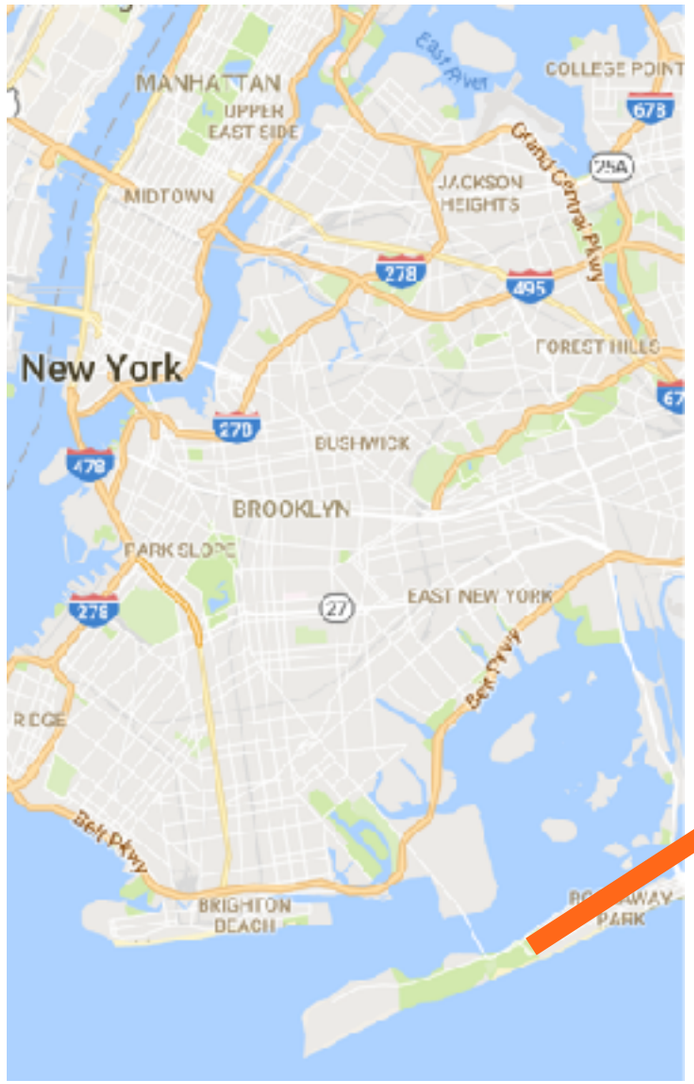


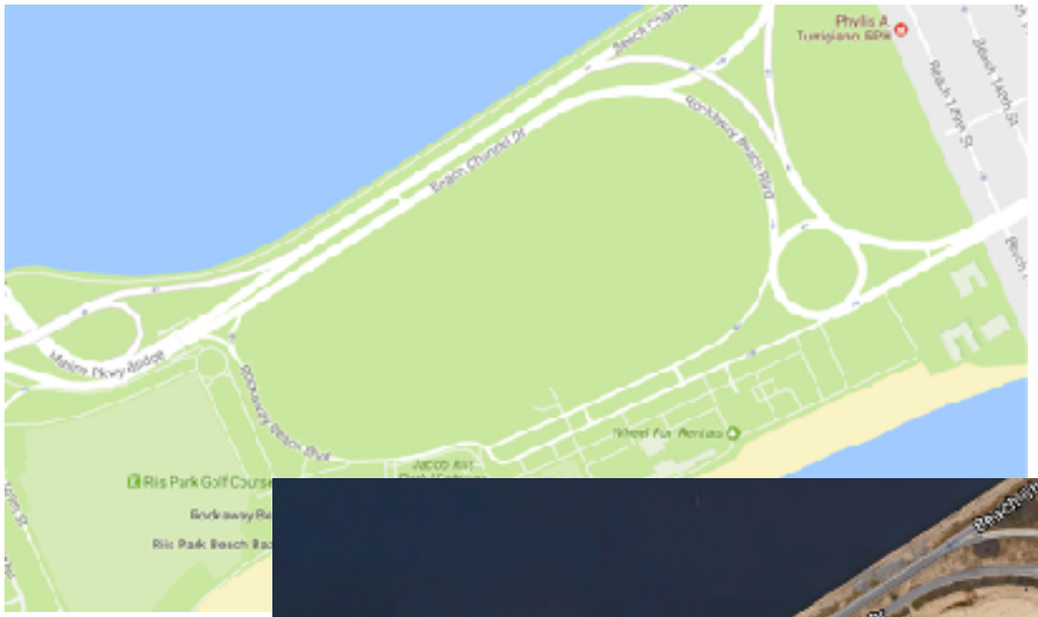
Ursus Wehrli

After 6 weeks of brainstorming

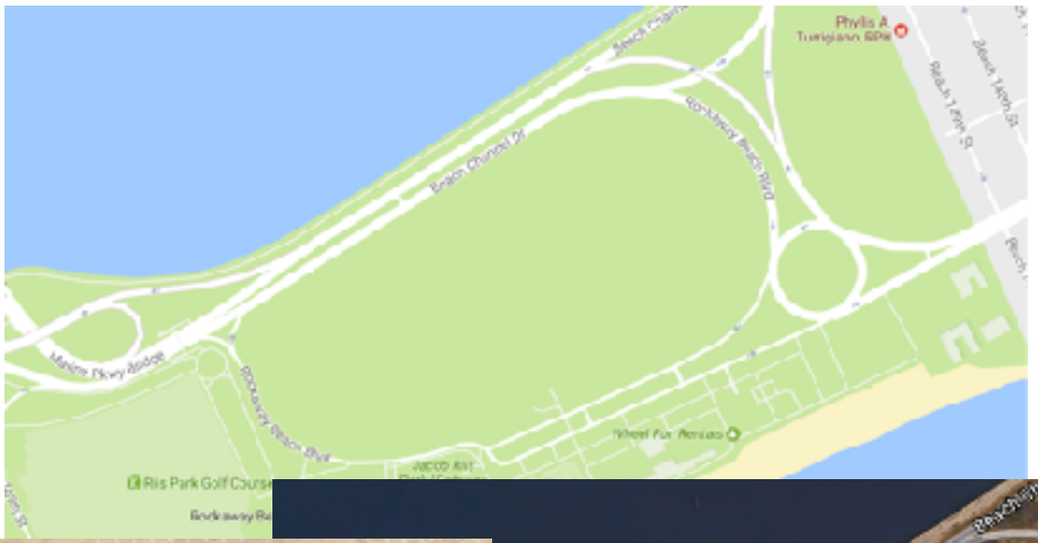
What a lovely green..

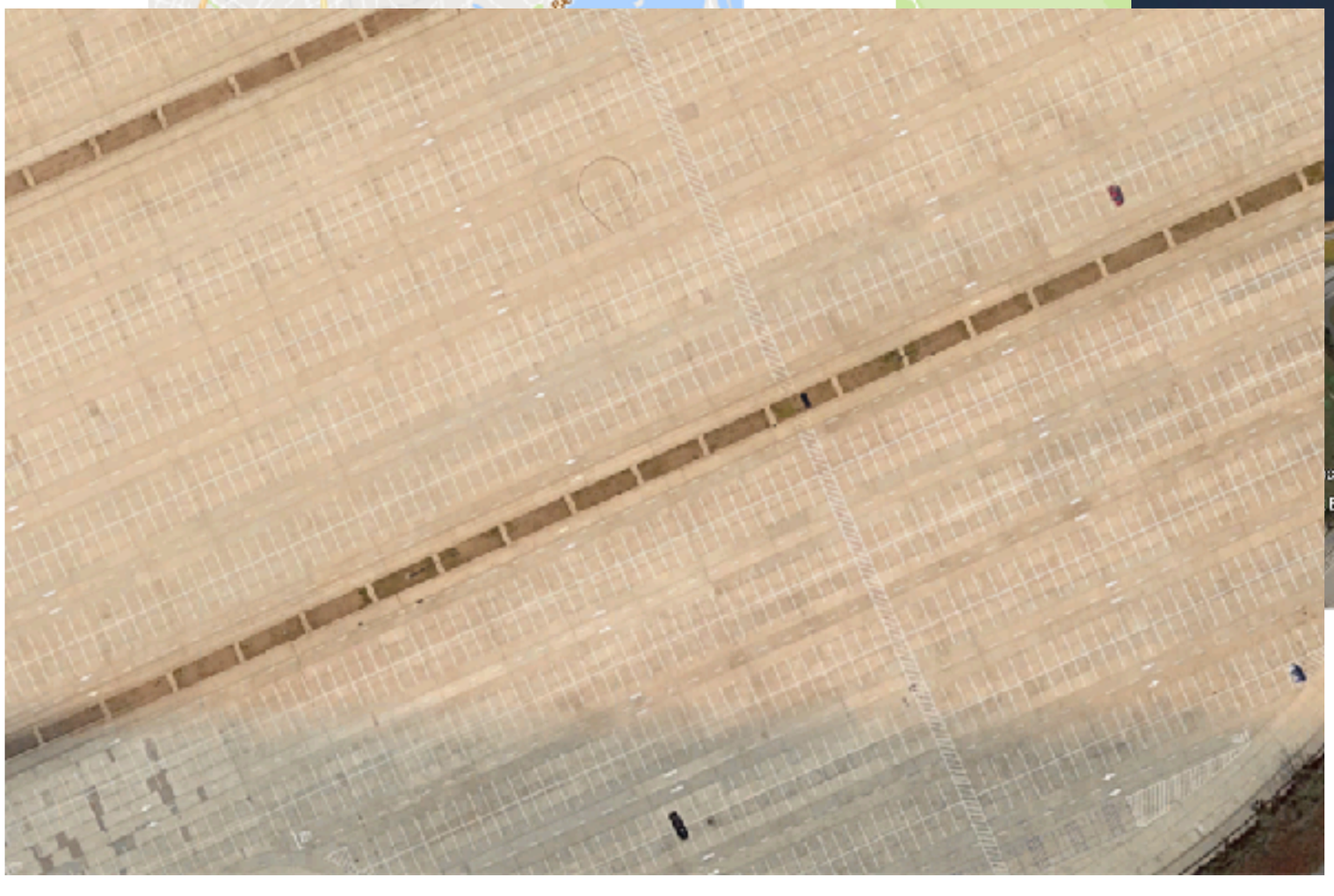
What a lovely ~~green~~..





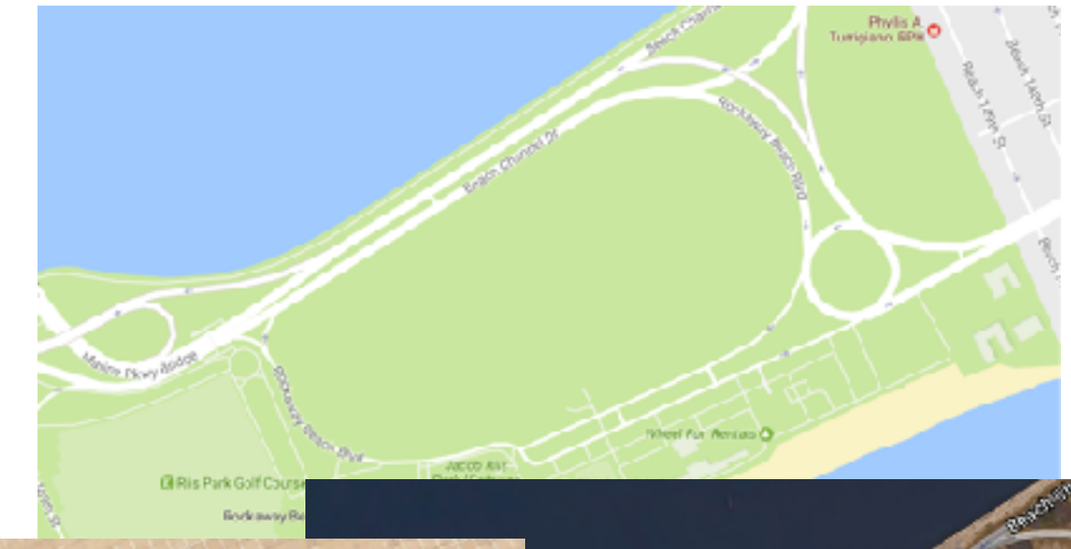
What a ~~lovely~~ ~~green~~.. MONSTER

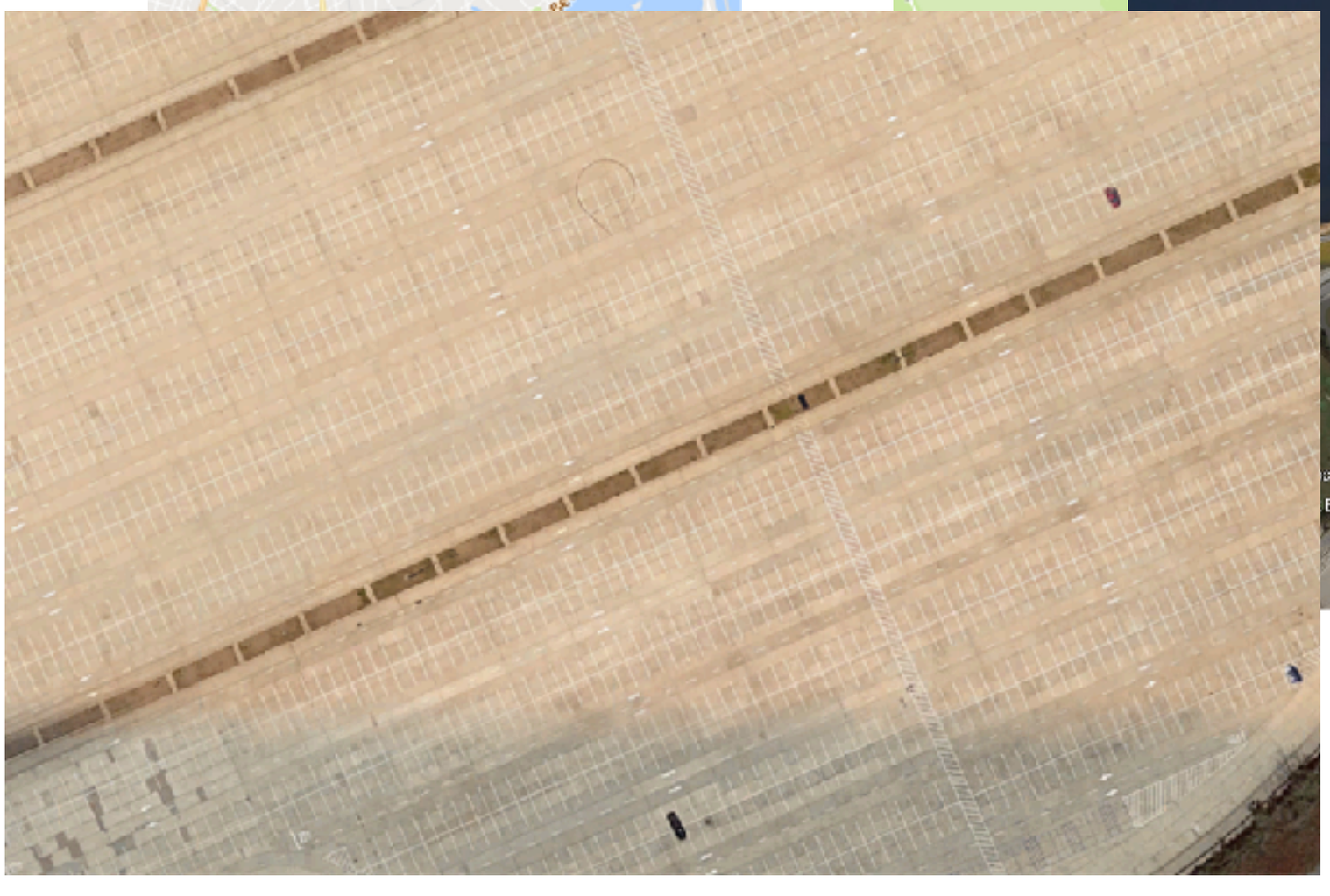




800m x 500m

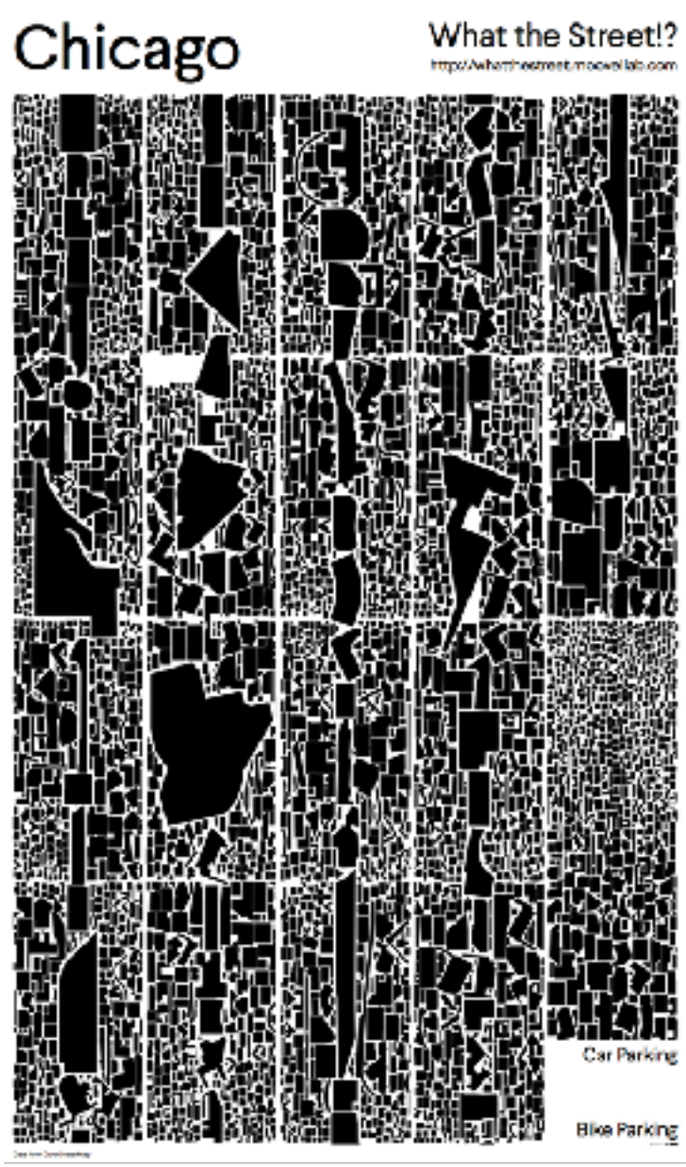
MANHATTAN
UPPER EAST SIDE
East River
COLLEGE POINT
MIDTOWN
JACKSON HEIGHTS
Grand Central Pkwy
New York
FOREST HILLS
BUSHWICK
BROOKLYN
PARK SLOPE
EAST NEW YORK

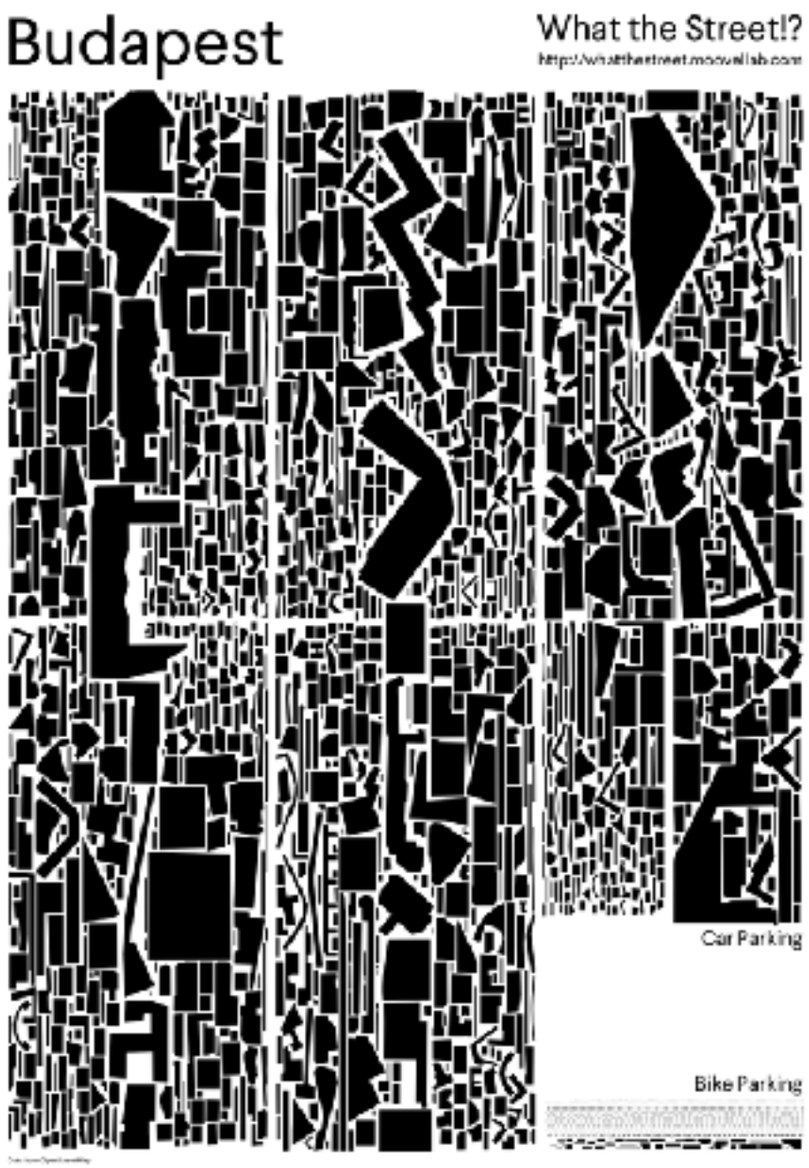


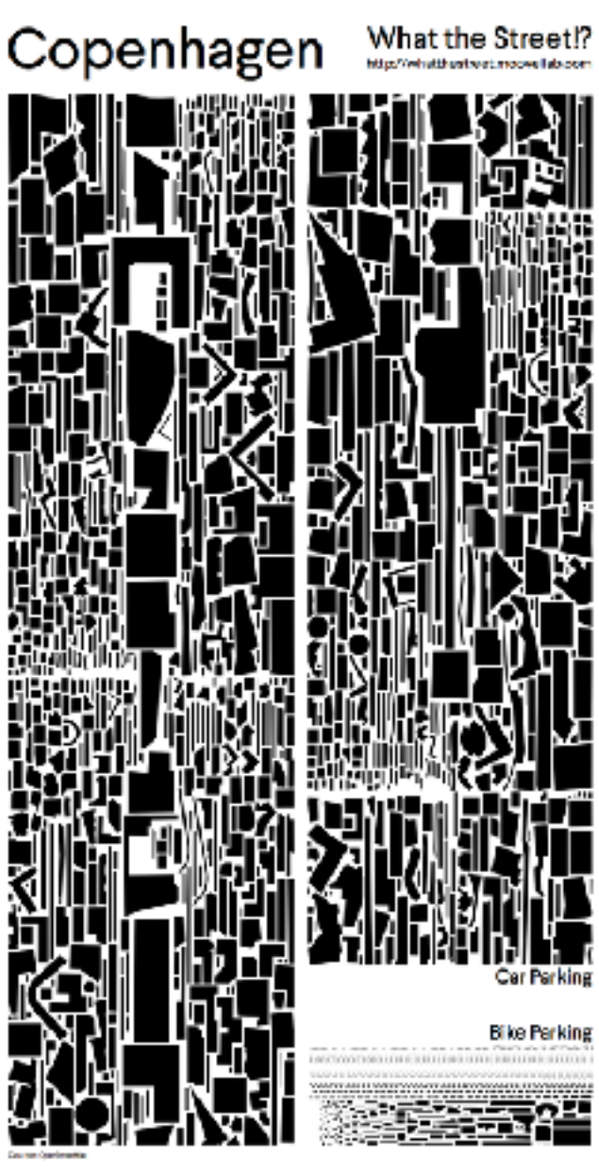


We used polygon packing to visualize ALL parking spaces

Huge differences in Car vs Bike space!



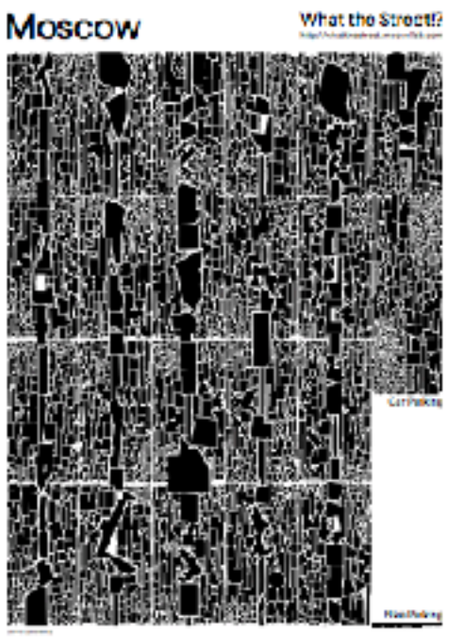


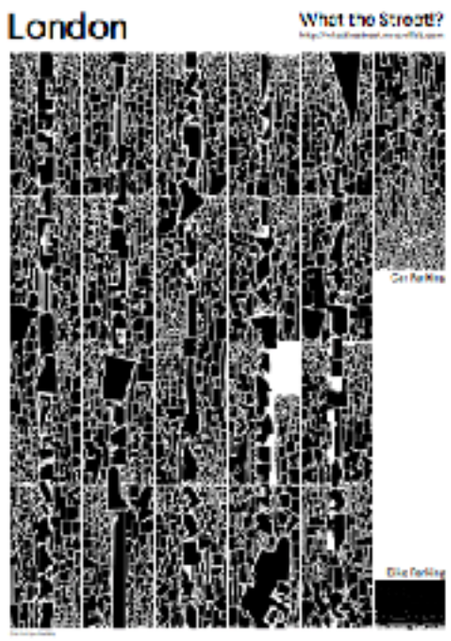


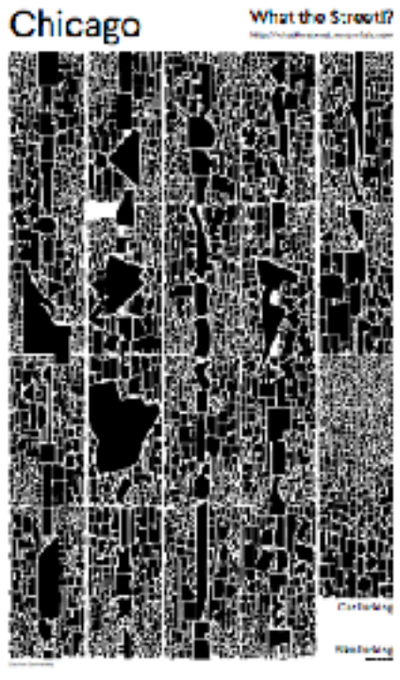
Huge differences in Ca

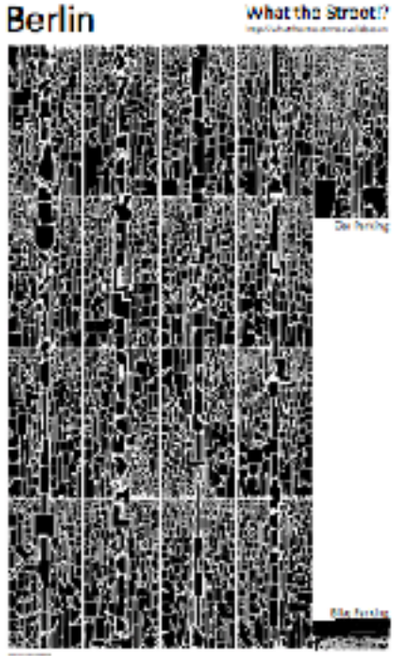
Parking

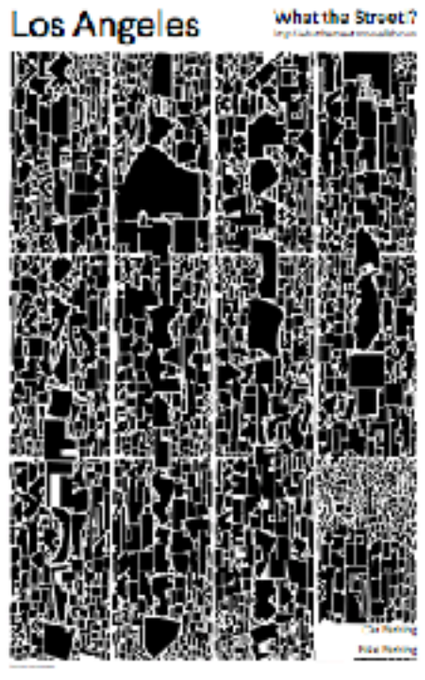
What the Street!? covers 23 world cities

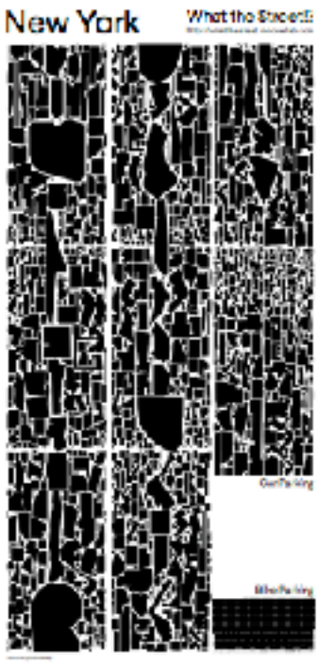


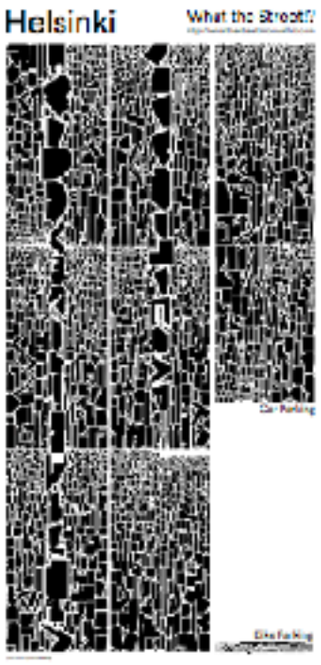


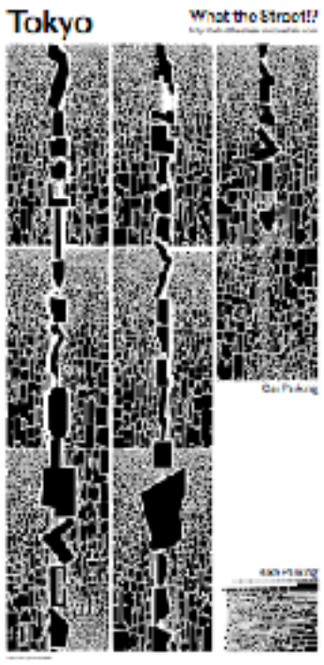


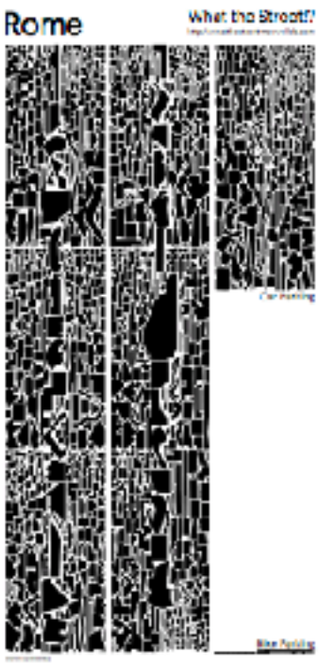


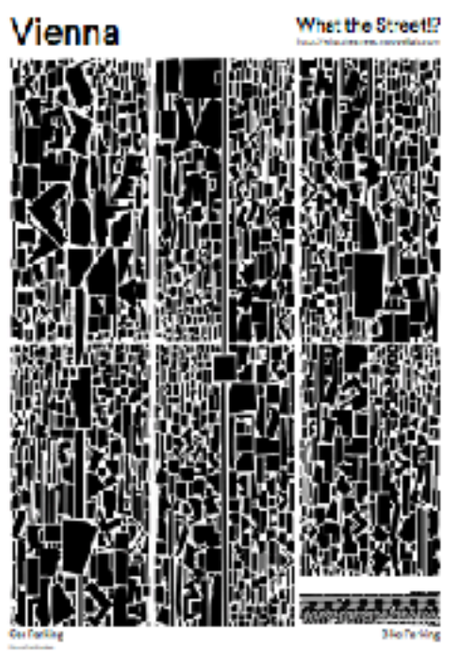












Open-sourced at https://github.com/moovel/lab-what-the-street

Cars are used 36 min per day

Cars are not used 1404 min per day

Civity (2016)

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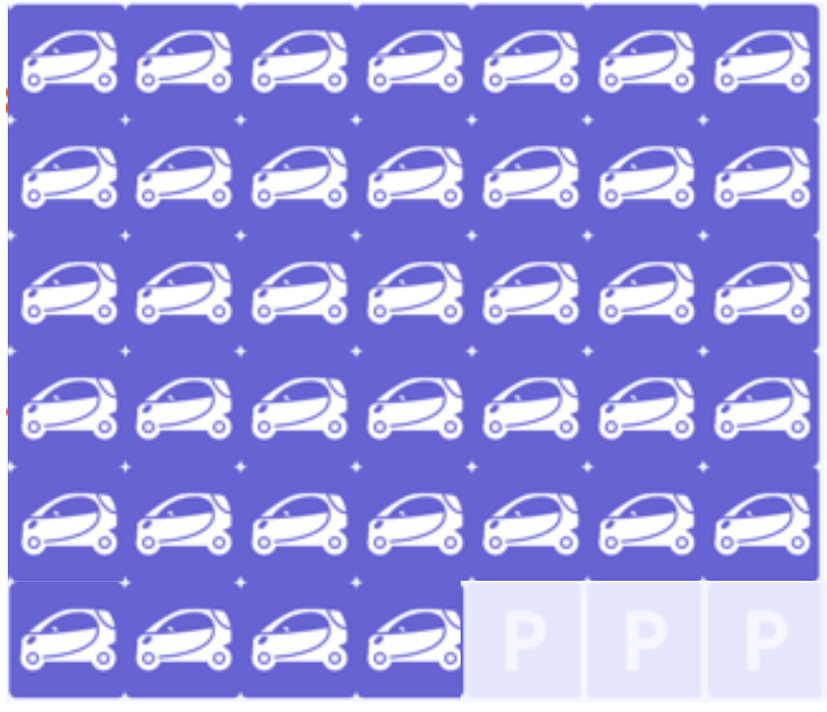
Cars are not used 1404 min per day

A typical snapshot of
Copenhagen

5,500 cars moving

250,000 cars parked



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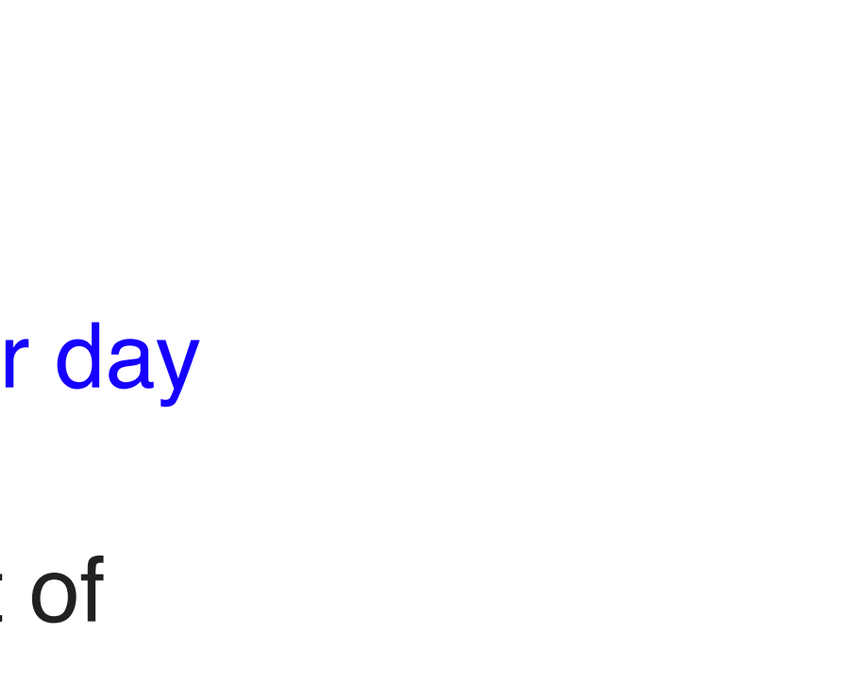
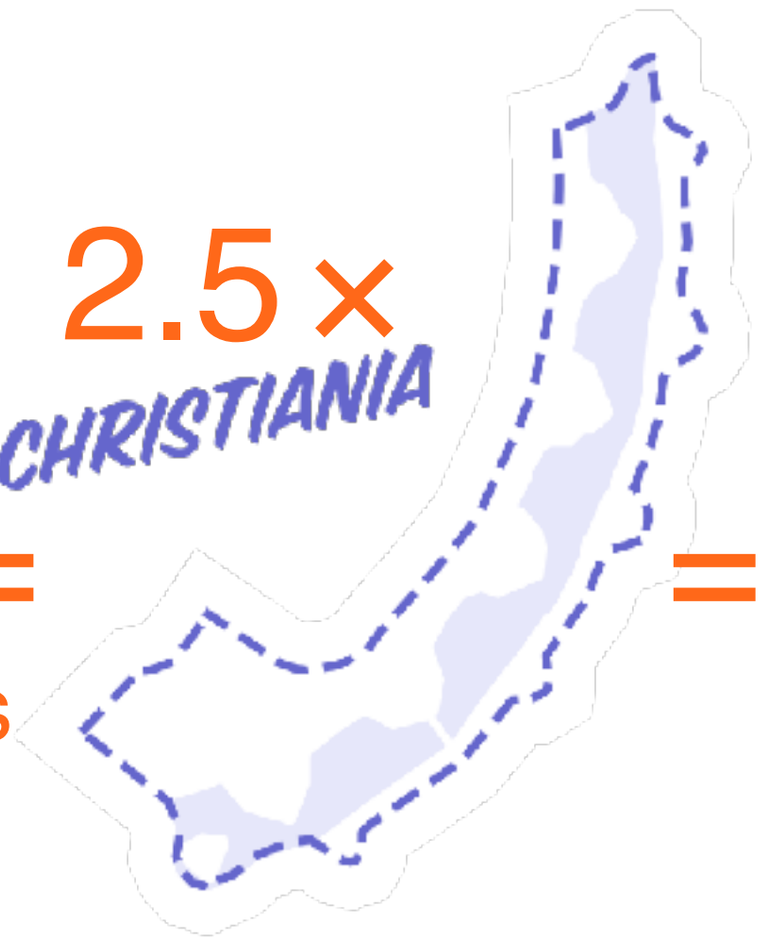


6,000 Playgrounds =

2.5 × CHRISTIANIA



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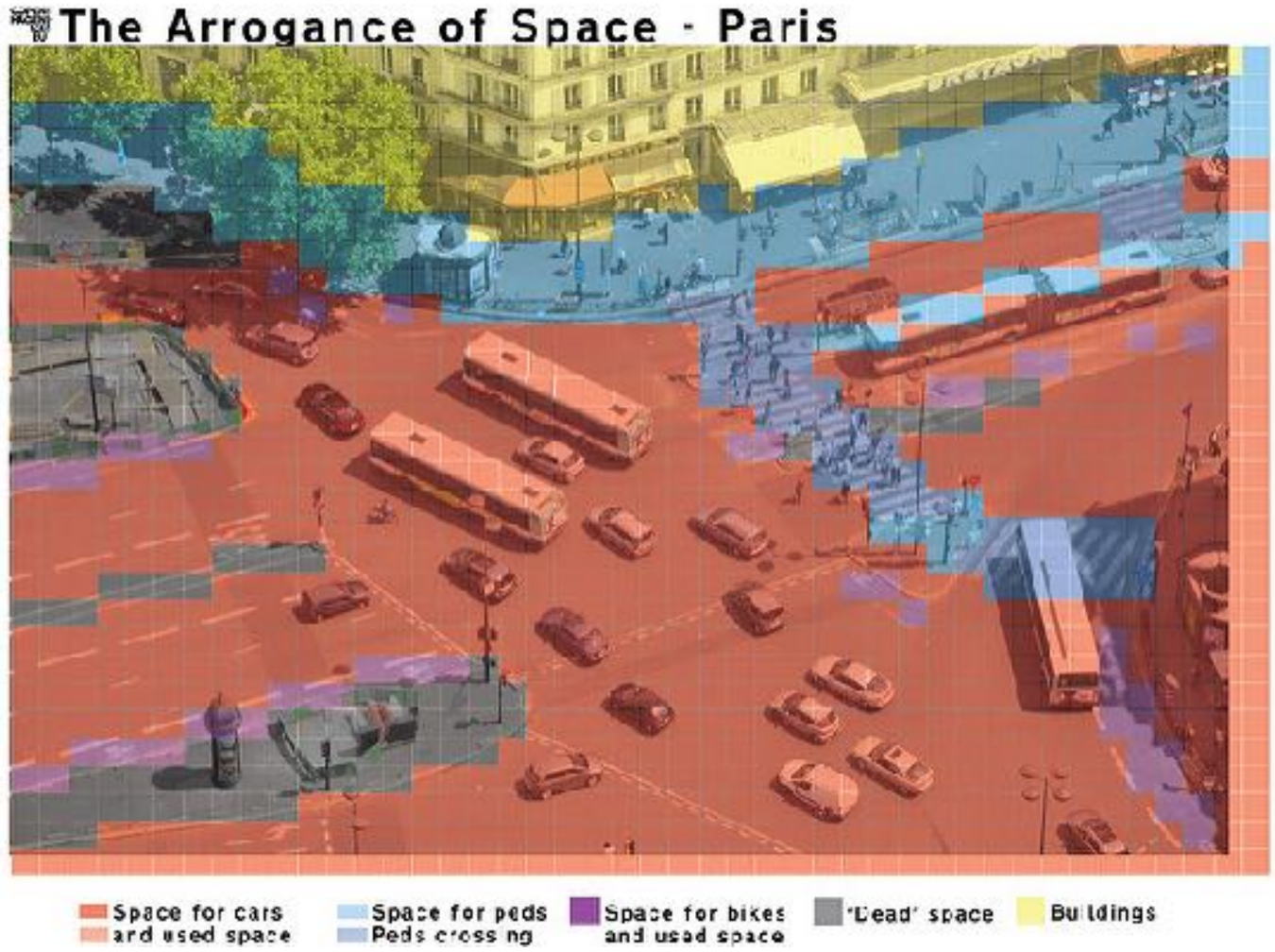
The arrogance of space

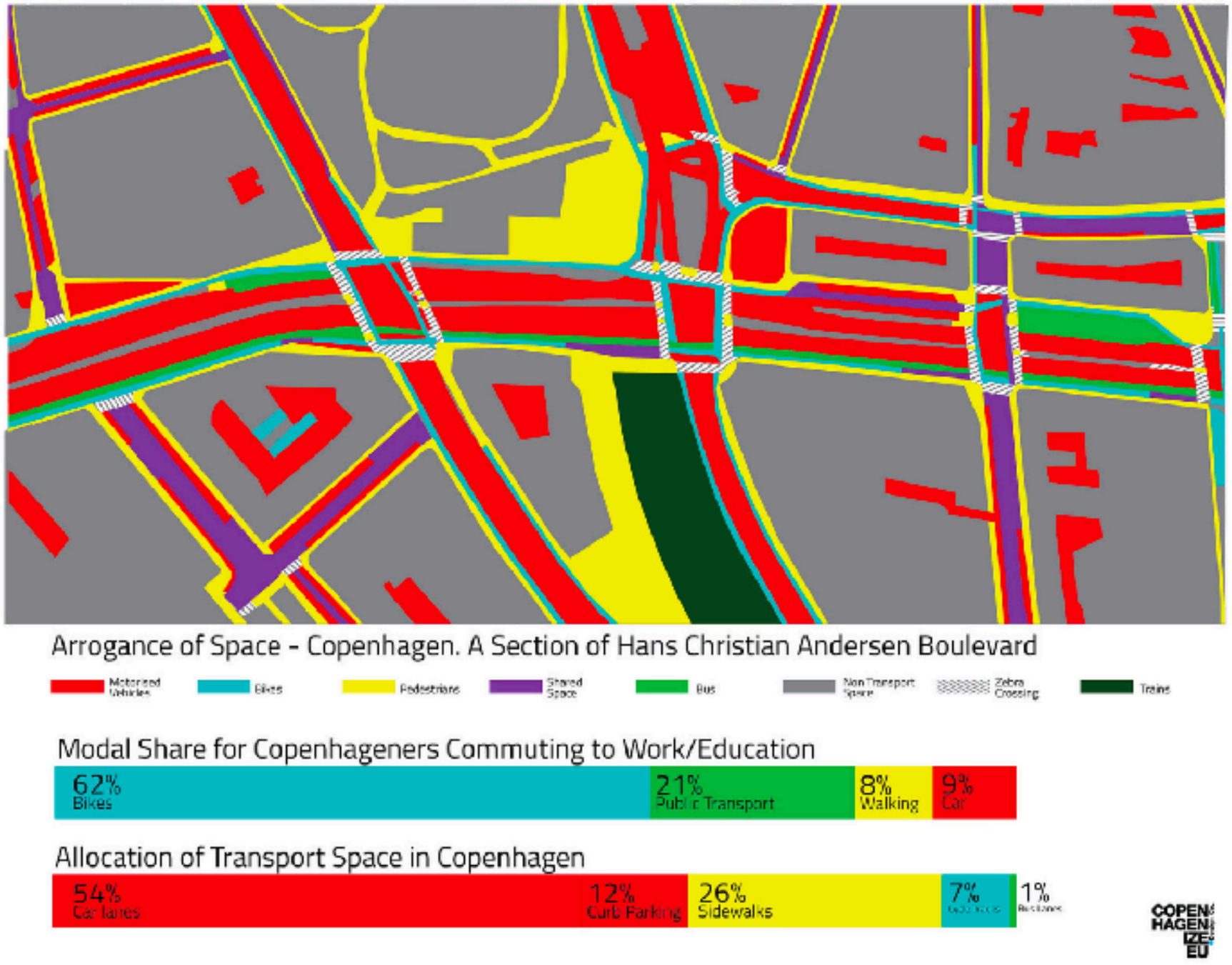
Space is not distributed fairly between modes of transportation



http://www.copenhagenize.com/2014/09/the-arrogance-of-space-paris-calgary.html

The arrogance of space

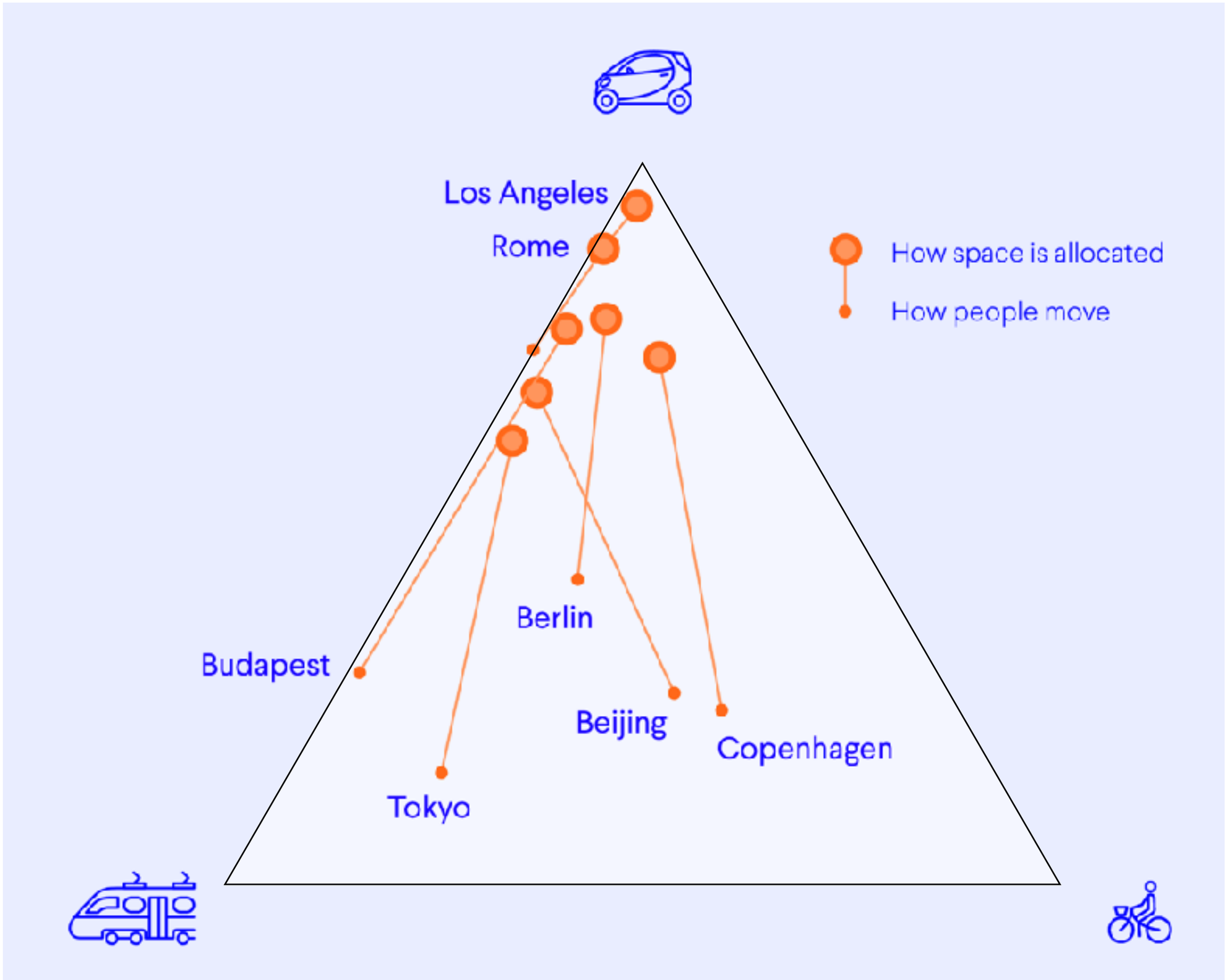
Case study:
Copenhagen



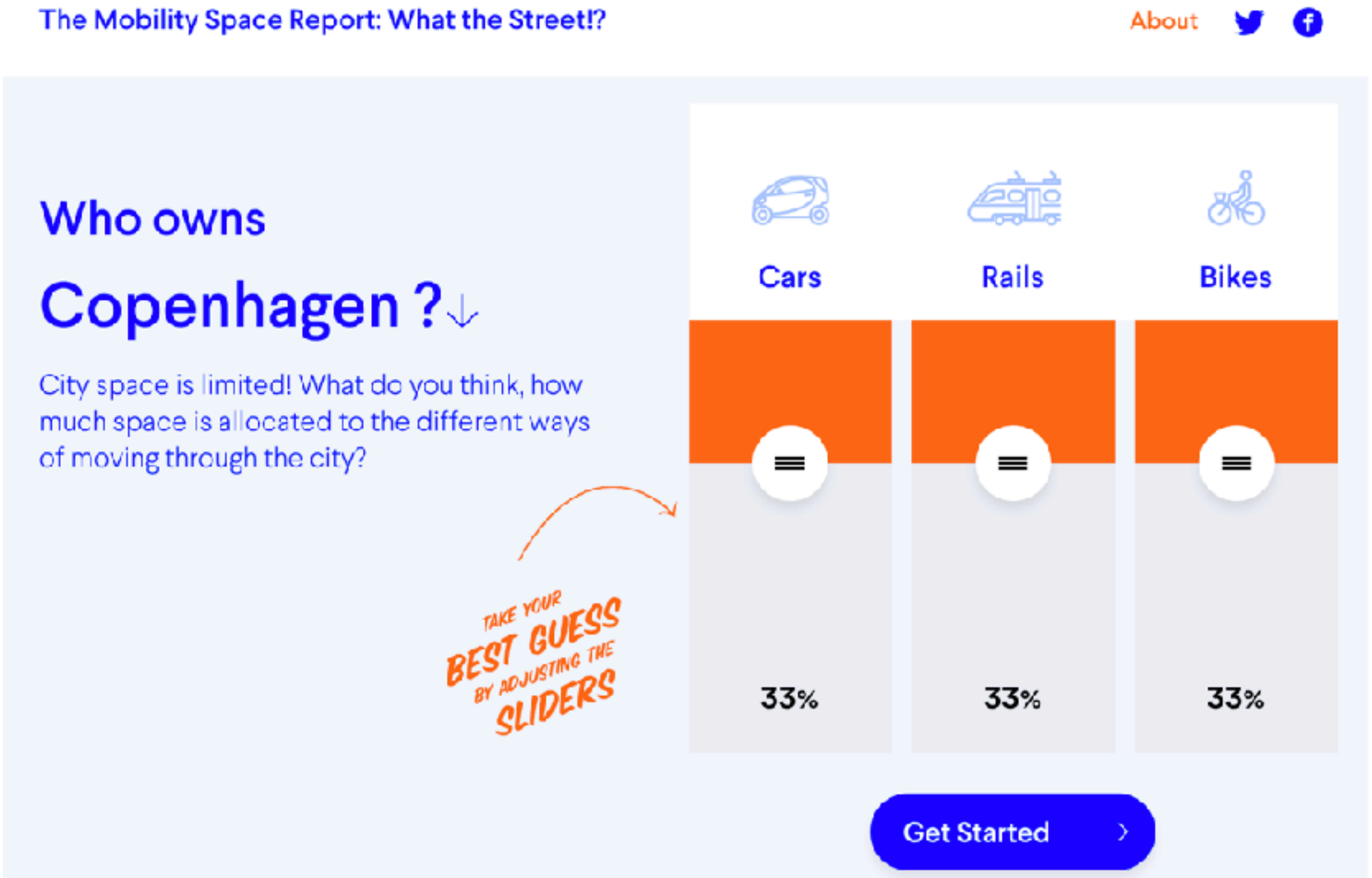
And this is the best place in the world for bikes!

Gossling, Schroder, Spath and Freytag, Transport Reviews 36, 659-679 (2016)
http://www.copenhagenize.com/2017/05/arrogance-of-space-copenhagen-hans.html

The mobility triangle shows the arrogance of space in two data points

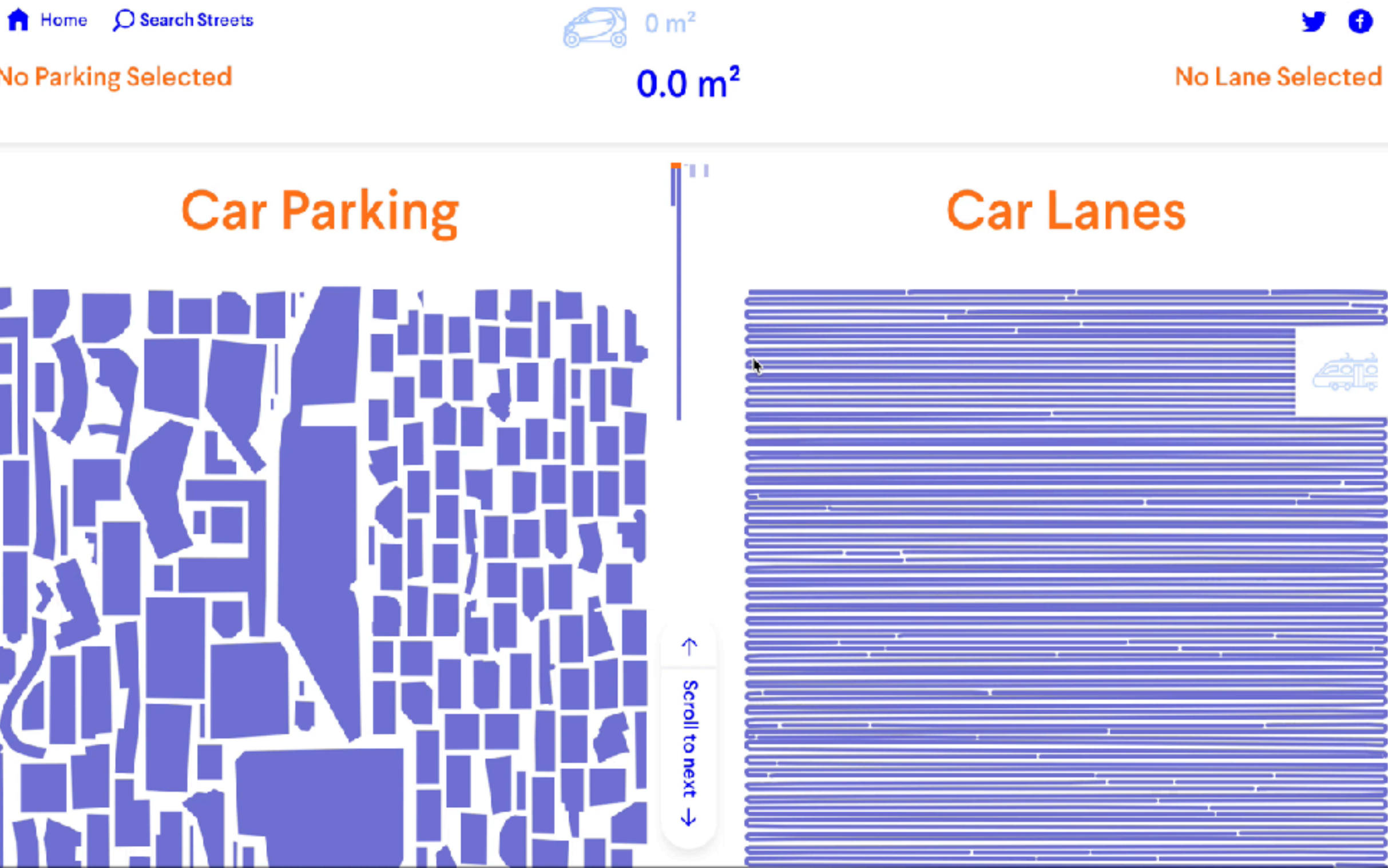


whatthestreet.moovellab.com



Szell, Bogner, Groß, Lauer, Hauser, Reimann, Schmid, Lee, Wachs, Durand & Anagrama

What the Street!? is interactive

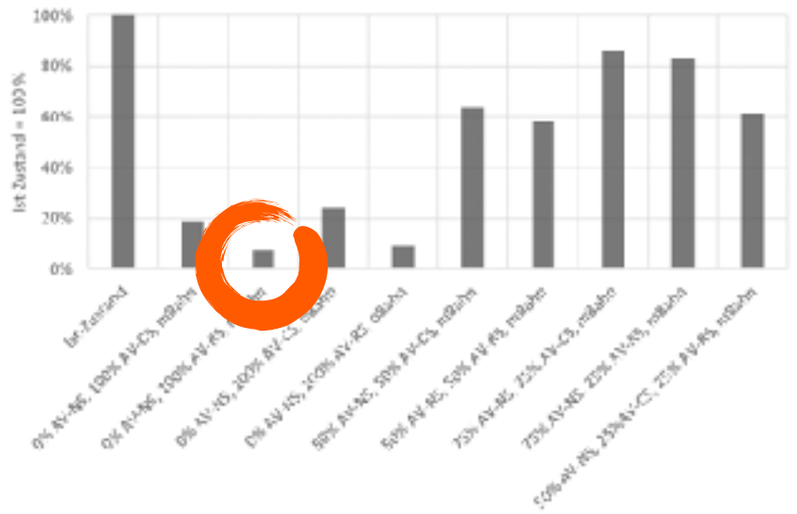


How can we get back the space?

10% of self-driving cars can deliver same mobility

OECD, International Transport Forum (2015)

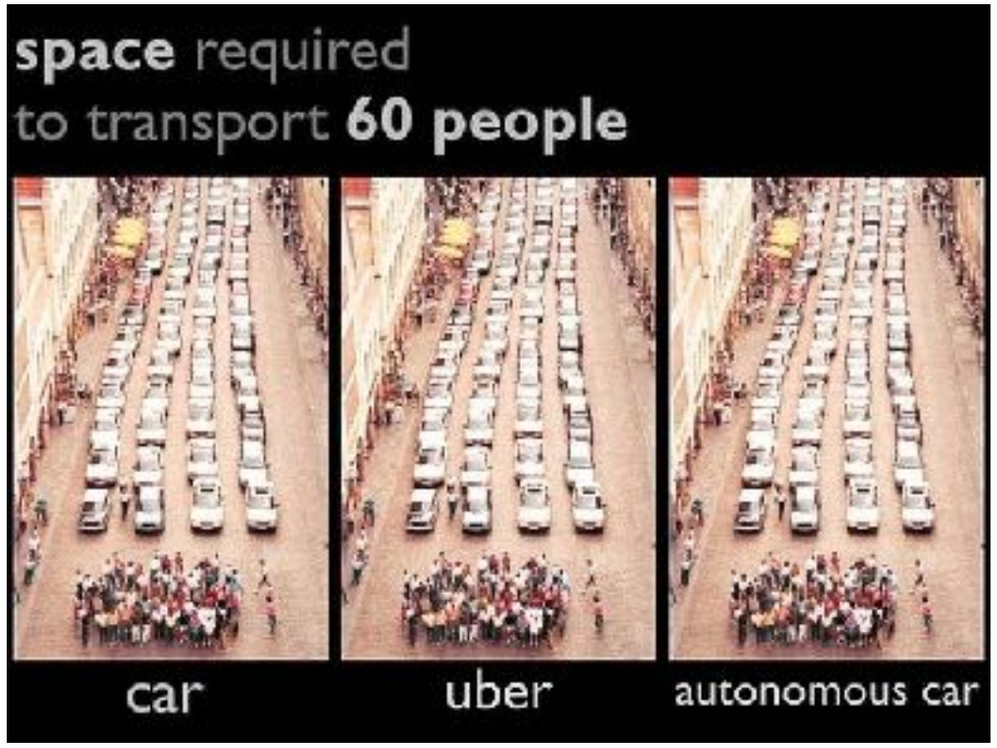
93% of parking spaces could be saved by autonomous, shared vehicles

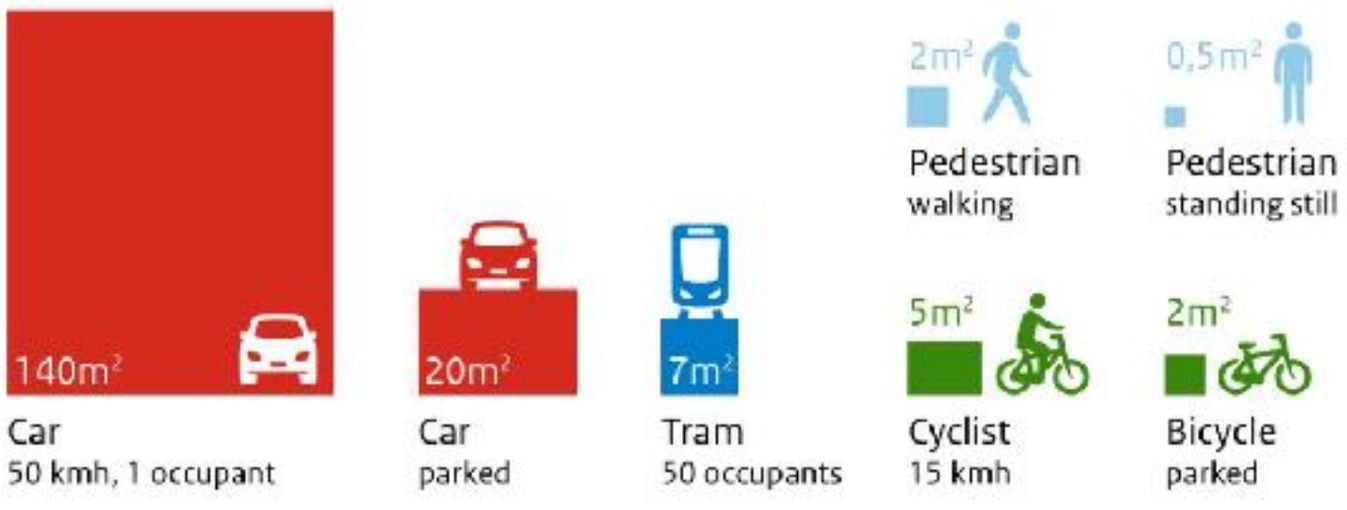


Friedrich & Hartl, Univ. Stuttgart (2016)

Autonomous, shared cars sound nice, but are NOT the ultimate solution

Autonomous, shared cars sound nice, but are NOT the ultimate solution





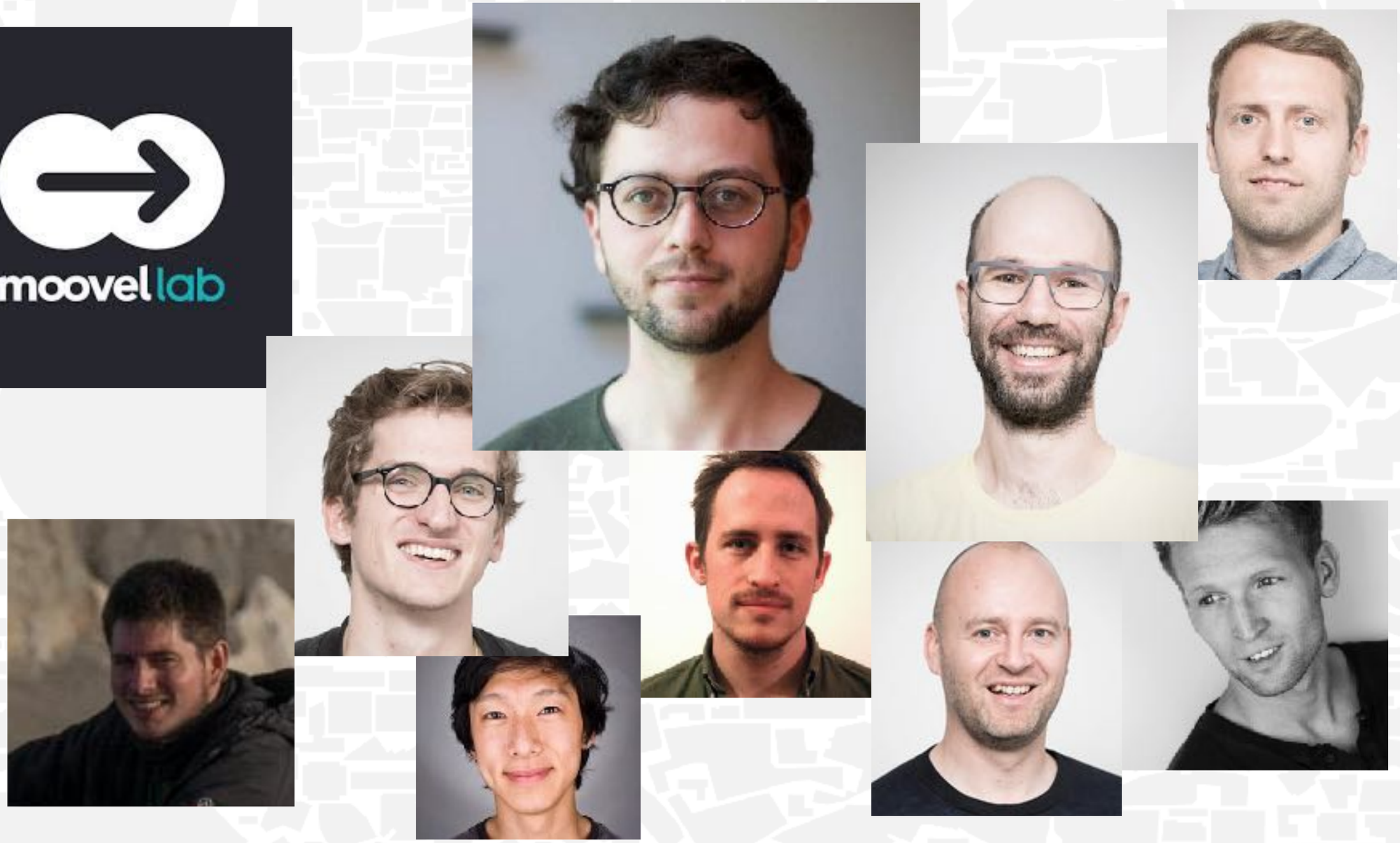
We know the solution. It is simple geometry.

Euclid (300 BC)

Harms and Kansen, Netherlands Institute for Transport Policy Analysis (2017)

Szell, Urban Planning 3, 1-20 (2018)

moovel lab



Thx to OpenStreetMap for all the data!

Cheers!

Michael Szell
ITU Copenhagen
@mszll