



SUPERBLOCKS



BARCELONA'S PLAN
TO FREE ITSELF
FROM CARS



June 2019
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Kleinman Center
for Energy Policy

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INTRODUCTION

In the 1980s, Salvador Rueda was running the environmental work for Barcelona city council when he did a series of tests. He wanted to determine how to establish a level of noise for residents that fell within the World Health Organization recommendation of 65 decibels or less (2018).

What he found seems, in retrospect, both obvious and profound: cars passing by at 20 mph or faster make it impossible. They are simply too noisy.

In his more than 40 years of urban planning work in the city, Rueda (who founded and still directs the Urban Ecology Agency of Barcelona) has found that the same holds true for air pollution, carbon emissions, green space, active transportation choices, and much else.



Salvador Rueda.
Photo by Maysun for Vox.

Ubiquitous automobiles make a healthy urban environment impossible.

That basic insight is by no means unique to Rueda; with decades of global urbanization in the rearview mirror and decades more to come, it has become clear to a critical mass of city planners across the world (United Nations 2018) (The Fourth Regional Plan 2017). Cars are choking cities, draining budgets, and accelerating climate change. Something must be done.

CARS TAKE TOO MUCH SPACE

At this point, the negative impacts of private vehicles are so familiar as to sound banal: they create enormous demand for oil; they generate air pollution that causes respiratory and circulatory problems; they create noise pollution that causes anxiety and heart ailments; they emit greenhouse gases (transportation emissions are rising, in the United States and globally) that accelerate climate change; they kill thousands of pedestrians, passengers, and drivers in accidents every year; and they *take up room* (Houser and Marsters 2018) (*Planète Énergies* 2017).

If every urban citizen has a private vehicle, the amount of space necessary to accommodate them, in roads and parking, squeezes out other uses of street space. The essential and most constitutive element of urban living—public space—becomes an afterthought.

After decades of highway, road, bridge, tunnel, parking lot, and suburb building, cities are reaching the breaking point. No amount of new highways or highway lanes ever

seems to reduce congestion (Schneider 2019). And the more roads and parking spaces there are, the fewer green and public spaces there are, and the more urban life feels isolating and stressful (Byrne 2018).

Cities need to be wrested away from cars and returned to people. But how?

URBAN PLANNING ISN'T JUST POLICY

To call urban planning a policy problem somewhat undersells it. For one thing, it is not one policy, but many, from energy to zoning to transportation to tourism, which entangle the economy, corporate interests, unions, civic associations, and the daily habits and life experiences of ordinary people. Urban planning involves not just infrastructure and policy but social change—organizing and persuasion of the small-d democratic sort.

A city is a densely interdependent ecosystem, and tugging on one part affects dozens of others. The decision to build a highway or a subway line involves everyone who lives along the route, everyone who commutes on it, businesses in the area, contractors and construction companies, and many others.

It's a delicate business. And when it comes to pushing back cars, most U.S. cities are struggling to even get started. They are burdened with low-density sprawl, huge swaths of strip malls and suburbs that make cars necessary. They lack robust public transit. The faster growing, more successful ones often face organized citizen resistance to density and transit-oriented development; every new apartment building or bike lane is a battle (see: my home city of Seattle, or Berkeley, or Brooklyn).

Most U.S. cities have a great deal of auto-centric development to unwind before they can begin to think

in grander terms about quiet, healthy cities where cars have been relegated to the margins. That's a bit over the horizon, to say the least.

Which is what makes Barcelona so interesting. Rueda's visionary ideas made their way into the city's official urban mobility plan, launching it on a journey of transformation that is already several steps ahead of most American cities and aiming for something beyond what any other city is contemplating (City of Barcelona 2014).

A POST-CAR VISION

I told the story of Barcelona's transformative plan in a five-part series for *Vox* (Roberts 2019). Here, rather than a narrative that starts at the beginning, I'm going to consider Barcelona's efforts conceptually, starting from the end.

In other words, what is the goal? What is the ideal end state? And what changes and policies are necessary to get there?

The goal, to put it simply, is a *post-car city*: not a city without cars, but a city in which the bulk of the street space isn't devoted to cars and most people don't have one. A city in which every citizen enjoys access to clean air, humane levels of noise, walkable green and public spaces, community, and multimodal transportation options (Rueda 2012).

Plenty of cities are pushing back on cars—banning them from the city center, as in Oslo, Madrid, and London (Peters 2019) (Schmitt 2018) (Ibrahim 2018). Or building networks of car-free corridors, as in Montreal, or having regular car-free days, as in Bogotá—but none has laid out a comparably comprehensive vision of a city in which every citizen enjoys car-free space, every day (Schmitt 2017) (Barclay 2017).

It's almost impossible to imagine if you live in, say, the Atlanta suburbs, but it's not that easy in Barcelona either. The city is, even more than most successful cities, choked with cars (City of Barcelona 2019). It boasts 6,000 cars per square kilometer, an auto-density double Madrid's and more than three times London's (City of Barcelona 2019).

And that's on top of the city's already high population density, comparative lack of green space, surfeit of concrete, and abundance of noise and air pollution. A study from the Barcelona Institute for Global Health added up the effects of the city's poor performance on "physical activity, air pollution, noise, heat, and access to green spaces" (Mueller 2016). It found a cumulative impact of roughly 3,000 cases of premature mortality a year.

Rueda doesn't just want to ameliorate those problems. He wants to redesign the city to eliminate them.



Strolling through the superblock in the Gracia neighborhood in Barcelona.
Photo by Maysun for Vox.

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RUEDA'S SUPERBLOCKS

Rueda calls the walkable public spaces to which he would like to offer all citizens access “superblocks” (*superilles* in Catalan).

Imagine a cluster of nine city blocks, three-by-three.

Within the perimeter of the cluster, cars can go no faster than walking pace (roughly 6 mph), can go in only one direction, and can not cut straight through. In effect, only residents' or delivery vehicles have any reason to enter. All through traffic is routed around the perimeter of the cluster. (See Figure 1 on page 5).

Within the superblock, streets become shared public space. Rather than serving just one function—moving vehicles as quickly as possible—they serve many, from transportation (walking or cycling) to entertainment, sports, or social gatherings. Parking is moved underground, so it takes up no surface space. The lack of through traffic reduces noise and pollution and the increase in public space encourages multimodal transportation and sociable street life.

To make a long and complicated story short and simple, Barcelona has adopted Rueda's vision. The city has finished a few superblocks, is in the midst of implementing five more, and ultimately plans to implement—believe it or not—**500**, which would mean superblocks carpeting the city from end to end (Roberts 2019).

If the plan is seen through to completion (there is, not surprisingly, much dispute over whether that will happen), almost 70 percent of Barcelona's total street space would be devoted to shared, mixed-use public space (Rueda 2018).

That would represent a transformation as significant as the arrival of automobiles in the first place. It would demonstrate that a post-car city is possible.

What needs to be in place to reach a utopian endstate like this?

What follows is a rough list, divided into three categories: what Barcelona already has in place (which many cities don't), what it's working on, and what it needs next.

BARCELONA'S UNIQUE ADVANTAGES

When it comes to imagining post-car areas, even a post-car city, Barcelona has two key advantages many other cities lack.

The first is **density**. A certain level of population density is required to bring public spaces alive, to activate them, make them safe, ensure that they are cared for, and establish community norms for their use.

At 16,000 people per square kilometer, Barcelona is the fourth most population-dense city in Europe. Its densest neighborhood boasts 53,000 people per square kilometer, greater than Manila, the world's densest city.

Because it is hemmed in by geographical boundaries (and for centuries was hemmed in by a wall), Barcelona has filled in (Roberts 2019). Rather than the small, central pockets of density many cities have, it has dozens of pockets, a network of dense spaces. More areas are dense than not.

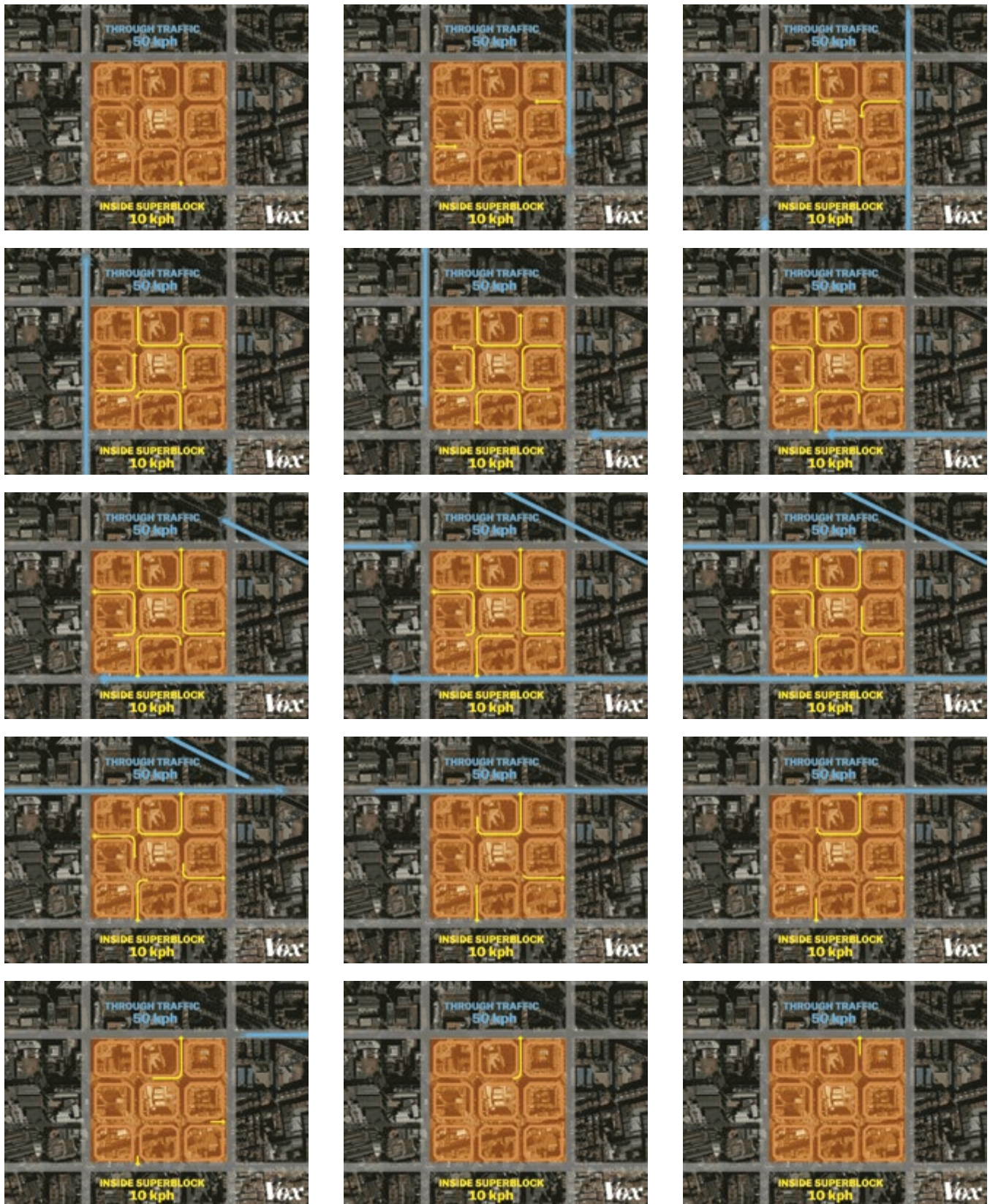
The second advantage is **diversity**—of land use and of people.

In urban form, diversity means mixed-use zoning, with residential, commercial, and civic facilities sharing the same areas; in many cases the same buildings. It's the only way to get people living close enough to the services they need in order to thrive without a car. It is the default across Barcelona.

Diversity also refers to incomes, races, and ages. Barcelona struggles with concentrations of high- and low-income residents like any city, but it has largely avoided the intense demographic sorting that has left racial, cultural, and economic monocrops across U.S. cities—young professionals in dense upscale areas, low-income residents in downscale urban neighborhoods, families in suburbs, and elderly... also stranded in suburbs. In Barcelona, more than in most American cities, incomes, races, and ages mix on the streets.

Both density and diversity are necessary for the full blossoming of superblocks. Rueda ultimately envisions them becoming semi-self-contained communities.

FIGURE 1: BARCELONA'S SUPERBLOCK



Photos by Javier Zarracina for Vox.

For that, they need more than housing, they need shops, laundromats, restaurants, gardens, and health clinics—the ability to provide, within a walkshed, the basics of urban life. And they need enough people, of enough different varieties, to activate street life and form a community.

Diverse density is more rule than exception in Barcelona, but it is the reverse in most cities, especially cities built in the era of automobiles.

Cities like Oslo and London are creating car-free areas where they do have diverse density: in their cores. Some cities can pull off car-free promenades on particularly dense and diverse streets, as New York City did with Broadway (Grynbaum 2010). A few cities, like Copenhagen, can encourage cycling to the point that, in many areas, cars are effectively subordinate.

But not many cities are like Barcelona, which features dense, mixed-use development from end to end. There are few neighborhoods in, say, my home city of Seattle dense enough to maintain a superblock. There are few neighborhoods in Barcelona that aren't.

To get to the point where superblocks are even conceivable (at least beyond city centers), most cities need to do a lot more work upzoning, i.e., allowing for more dense, mixed-use development, and building (Sightline Institute 2019).

MULTIMODAL TRANSPORTATION CHALLENGES

More superblocks means fewer through streets. If all else remains equal—if the same vehicles are simply shifted onto fewer streets—the result could be crippling congestion. That won't be good for the economy or for the poor souls who live on the remaining through streets.

The goal of more walkable space has to be joined with the goal of reducing overall vehicle traffic. At the same time, if urban residents are to give up their cars, it's not enough to give them a local walkshed. They need to be able to access the rest of the city.

The answer, simple in theory but fiendishly complex in practice, is to make it easier to live without a car—i.e., make it easier to get around the city without one. To that end, Barcelona has plans to upgrade all its non-car transportation systems.

For years, Rueda has been pushing a redesign of the city bus system, which was finally completed last year. It's now an "orthogonal" system, with mostly perpendicular routes, designed around the superblocks-to-come (City of Barcelona 2018). It runs fewer routes than the radial system it replaced, but more buses on each route, meaning reduced wait times (averaging two minutes). Service is the same quality in the center and the periphery, with stops roughly every 400 meters. Ninety percent of journeys in the city involve one transfer at most and 95 percent of citizens live within 300 meters of a stop. (Rueda 2018)

The city is also rapidly building out its network of separated cycling lanes, which will eventually, like the bus system, cover the entire city with a roughly equal level of service. The same is true of an envisaged network of walkable "green corridors," part of a plan to get 400 acres of new green space in the city by 2030 (O'Sullivan 2017).

(These mobility networks complement Barcelona's metro, a subway system of electrified underground trains.)



Photo by Javier Zarracina for Vox.

According to Rueda's modeling, a reduction in overall vehicle traffic of 13 percent would allow Barcelona to implement the superblock plan with no net increase in traffic on remaining through streets. If all these mobility networks are fully implemented, he expects them to reduce overall traffic by 21 percent, meaning residents along the remaining through streets will be better off. (Rueda 2018)

What the city aims to show is that it's possible to reduce the street space devoted to cars while also reducing vehicle traffic on remaining streets—a win for health and resilience with no loss of economic activity or convenience. It just requires sustained commitment to a serious city-wide multimodal transportation network.

REGIONAL TRAFFIC AND GENTRIFICATION

One problem ahead for Barcelona is regional traffic. Some 800,000 people live outside its municipal boundaries but work inside them, while just 300,000 do the reverse. That means a net increase of 500,000 people every work day, and at least half as many cars, which is no small thing for a city of 1.6 million.

Reducing regional traffic requires better regional public transportation: improvements in Renfe, Spain's national train system, and the regional Catalan Railways. It also means cooperation among 36 separate city halls in Catalan regional government, which is a bit of cat-herding that no city, not even the biggest in the region, can accomplish on its own.

This is, in microcosm, a problem faced by cities across the world: their fates are subject to forces that lie, at least to some extent, outside their control. They are at the mercy of regional, state/provincial, and national governments.

The other problem that lies ahead for Barcelona's plan is **gentrification**. Already, the city is awash in tourists—it hosted 8.7 million international visitors in 2018, more than five times its population (Mastercard 2018). As the city becomes more popular, it attracts more foreign real estate speculators, who buy up properties and rent them out through Airbnb rather than selling them to residents.

As prices in the nicer areas rise, long-time residents are driven out, apartments are converted to hotels, and neighborhood shops are replaced by chains and boutiques targeted at tourists. That's what happened in the Born neighborhood when it was pedestrianized back in early 1990s. Before then, the area was run down and neglected; now, its narrow alleys are packed with tourists. It has become, as Rueda ruefully calls it, a "theme park."

Any area that becomes desirable faces the same danger. And superblocks are likely to make areas extremely desirable. When offered accessible, walkable, quiet public spaces, where human conversation is audible and the air doesn't stink, people tend to like it. As one resident of the superblock in the Poblenou neighborhood told me, "it's like we've won the lottery." Neighborhoods have begun asking the administration for them (Roberts 2019).

Superblocks will make some areas markedly more attractive than others. There is a risk that as they march across the city, they leave gentrification in their wake, and Barcelona becomes divided more starkly by income.

Rueda's answer to this dilemma is to build the hell out of them, to get them everywhere, across the city, as soon as possible. "Equity is key," he said to me several times.

In the meantime, the only solution to gentrification that seems to succeed at any scale is social housing—rents subsidized in some way by the state. In Vienna, Austria, 30 percent of residents live in social housing and fully 62 percent live in housing with some form of rent control (Forrest 2019). That's an extreme example of an attempt to preserve sociocultural diversity. Barcelona is currently at 1.5 percent social housing, though the administration would like more. Most U.S. cities are below 1 percent.

And it goes beyond social housing. Isabelle Anguelovski, a professor, urban researcher, and director of the Barcelona Lab for Urban Environmental Justice and Sustainability, told me that to truly take on the problem, city officials "have to target the special interests that are driving gentrification, which are real estate speculators from the Middle East, Russia, and China. They have to target the tourism industry, the

port, and Airbnb. And they have to articulate a Spain-wide discourse around the right to housing.”

LESSONS FROM BARCELONA

Suffice it to say, no U.S. city has a plan to turn 70 percent of its street area over to shared, mixed-use spaces. Barcelona’s ambition can seem remote from an American vantage point. I write from Seattle, where a pitched five-year battle over a single bike lane recently ended... in no bike lane (Lloyd 2019).

Yet when Americans visit Barcelona and experience the street life, they love it. We are a social species (Vrticka 2013). We enjoy the energy of mingling with others in public spaces, what Rueda calls “the house of everybody.” The young “creative class” so coveted by U.S. cities wants that street life (Florida 2012). They want walkability, sociability, and sustainability. They don’t want to own cars (Speckhard Pasque 2019).

The cities trying to attract this group of young people can learn from Barcelona. It begins with density and diversity (of land use and of people). If cities want the benefits that come from a connected network of shared, walkable spaces—whether they take the form of superblocks or not—they must find a way to overcome NIMBY (“not in my back yard”) resistance to mixed-use zoning and greater density.

As urbanist Brent Toderian once told me, the best way to overcome NIMBYs is not to make them right (Roberts 2019). Make density pleasant, fill it with amenities, shape it into community, link it with a network of multimodal transportation options, and resistance will fade, as it has



Enjoying the sunlight in the superblock around the Sant Antoni Market in Barcelona. Photo by Maysun for Vox.

in Barcelona. Cars must be made less necessary before they can be made less prevalent.

But that’s not enough. Left to its own devices, the market will ensure that any new walkable, mixed-use area becomes a haven for the wealthy— islands of tranquility amid a city still burdened with cars. Barcelona’s other lesson is that gentrification will only be prevented through active measures.

The answer is to keep equity at the heart of sustainability, to ensure that transit options serve all areas equally, that all neighborhoods receive the benefits of traffic-calming, and that everyone, regardless of income, has access to healthy conditions and public spaces shared by a local community.

In the process, cities will reduce fossil fuel consumption, noise, pollutants, and greenhouse gases from transportation. The result will be healthier, happier cities that better serve their residents.

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