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Cities should take back their parking spaces

By Carlo Ratti March 4

Each week, In Theory takes on a big idea in the news and explores it from a range of perspectives. This week, we're talking about car-free cities. Need a primer? Catch up here.

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Parking is a major component of our driving experience. A large amount of our driving time is spent looking for a free spot, and our cars are parked on average for a staggering 95 percent of their lifespans. Parking infrastructure is so pervasive that for every car in the United States, there are approximately three non-residential spots — amounting to 5,000 square miles, an area larger than Puerto Rico.

Today, however, car-sharing systems such as Zipcar are reducing the need for parking areas. It has been estimated that every collective car removes more than 10 privately owned cars from the street. When a rider has reached his or her destination, the vehicle can be used by another traveler, rather than waiting, parked, in a lot. In Paris — one of the early adopters of car-sharing — it has been estimated that more than 20,000 private cars have already been taken off the road. The trend is accelerating around the world, fueled by the latest generation of platforms that offer a seamless user experience in which cars can be left anywhere and tracked with an app.

Self-driving vehicles are poised to bring the next round of disruptive innovation. At first blush, it seems that the key advantage of an autonomous car is freeing the driver's hands from the steering wheel (and, of course, allowing us to shamelessly text while driving!). The real transformational advantage, however, is that self-driving vehicles might blur the distinction between private and public modes of transportation. "Your" car could give you a lift to work in the morning and then give a lift to someone else in your family — or, for that matter, to anyone else in your neighborhood, social media community or city. Such cars would demand far less parking real estate, because they could remain on the go.

Self-driving technology is nearly ripe for the market. It is already possible to buy limited-series vehicles for campuses or corporate environments. Mass-market car manufacturers have already integrated partial autonomous functionalities (for example, assisted parking or highway autopilot) into vehicles at the high end of their product lines and are supposed to go fully autonomous within a few years.

To keep pace with these developments, Singapore formed a Committee on Autonomous Road Transport (CARTS) in 2014, continuing the city's history of remaining at the forefront of transport innovation. (Note: Ratti sits on the CARTS committee.) Several real-world deployments of semi-controlled fleets are planned in the city-state starting later this year, starting with the area of Gardens by the Bay, the 250-acre park that serves as the city's premier outdoor space. Initial simulations show that, with widespread self-driving, the need for parking lots in Singapore or other urban areas might decrease substantially — by up to 70 percent, according to some initial research done at the Massachusetts Institute of Technology Senseable City Lab.

What could be the consequences? Over time, vast areas of valuable urban land currently occupied by parking lots could be reinvented for a whole new spectrum of social functions. Creative uses are already promoted across the world during Parking Day, a worldwide event held on the third Friday of September, in which artists, designers and citizens transform metered parking spots into temporary public places.

The same dynamic re-purposing could happen tomorrow on a much larger scale and with permanent solutions, leading to a reclamation of a large percentage of the urban fabric. Vacant lots could be populated with green areas, a variety of shared public amenities or "maker space" facilities, providing working tools — 3D printers, CNC machines — for design and fabrication. Potential uses for ubiquitous reclaimed parking area are almost unlimited, and their cost could be covered by the community or by private investors — eventually offsetting the city's lost revenue from traditional metering.

After parking spaces and parking lots, we might also need to deal with garages left unused. With their sloping floors, the latter appear as single-purpose, rigid structures — infrastructure that is difficult to re-purpose. Today's designers, tasked with creating garages, should take as a challenge to introduce flexibility and acknowledge the full life cycle and potential transitions for these structures. This will be a fundamental test for new modes of interaction between citizens and a less car-oriented city of the future. A city where — thanks to autonomous vehicle technology — tomorrow's reclaimed parking lot could become a destination in and of itself.

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