

## Driverless Car Could Defy the Rules of Sprawl: Robert Bruegmann



Illustration by Adam R. Garcia  
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From all reports, the driverless car, once considered in the realm of science fiction, now looms on the transportation horizon. Nevada last week became the first state to issue regulations for the operation of self-driving vehicles, which, one transportation official claimed, are “surely the future of automobiles.”

There has been a great deal of speculation about what effect this technology will have on the way we use automobiles and its implications for safety and legal liability. But how will it change the American city? For example, might it allow drivers to commute even farther in relative comfort and safety and thus accelerate sprawl in our urban areas?

At first glance, this would appear to be a logical conclusion. Each successive breakthrough in transportation technology in the past few hundred years, from the steam railroad and horse-drawn streetcar to

the automobile and airplane, has increased mobility, and this development has accompanied more dispersed, lower-density settlement patterns in almost every urban area in the world. But this outcome is by no means inevitable. In thinking about transportation, it is too easy to become mired in old and inadequate assumptions. One is a belief in technological determinism -- that a given technology will have a specific set of consequences on society. In fact, almost every technological innovation, like almost every new human tool, can lead to strikingly divergent results.

### **Railroad Example**

The railways of the 19th century, for example, were a potent factor in the piling-up of business and population at the center of large industrial cities at exactly the same moment that they allowed a substantial percentage of urban dwellers to live in ever-more-remote suburbs. Although the rise in automobile use has happened in a period that witnessed a vast decentralization of cities and lowering of densities, that result has by no means been inevitable. The Phoenix and Los Angeles urban areas are overwhelmingly dependent on automobile transportation, but their densities have increased substantially in recent decades.

Another obstacle to clear thinking about transportation is a tendency to believe that there is some deep inherent difference between private and public transportation -- the automobile versus the bus, for example -- and that they are radically different and competing modes. This has been an article of faith among those who urge policies that discourage automobile use and encourage public transportation as a way to cut traffic congestion, fuel consumption and greenhouse-gas emissions. But given the technical advances of recent years, trains and particularly buses are no longer necessarily more fuel- efficient per vehicle mile traveled than the automobile. For the vast majority of trips, they are much slower. At best, policies encouraging transit use at the expense of automobiles involve painful trade-offs.

The driverless car might well substantially alter all the equations: the division between public and private, the collective and individual. Transportation policy has never been as clear as the polemics on the subject would suggest. The taxi, for example, has long shared characteristics of each. In recent years, the divide between public and

private transport has been further eroded with the Zipcar (ZIP), Super Shuttle and other on-demand vehicles such as Personal Rapid Transit, a system of small automated vehicles running on guideways. A pioneering and successful example of PRT, constructed in the 1970s, can still be seen in operation in Morgantown, West Virginia.

## **Flexible System**

What the driverless automobile might do is further break down the distinctions. Suppose an individual can summon a vehicle on demand -- a small capsule like a golf cart for doing errands in the city, for example, or something more like a van to transport a track team to another city -- and that vehicle can go directly from starting point to destination. The flexibility this system could provide might well reduce the incentive for owning an automobile, which has to serve all purposes, is expensive to buy and maintain, and in most cases spends most of its time taking up valuable space in a garage or parking lot.

If the driverless car reduces congestion by maximizing the use of existing highways and taking passengers farther and faster with greater comfort, it could lead to even more dispersed cities. But it could also have the opposite effect.

Given the large amount of space devoted to roads and parking in American cities, even minor increases in collective use of vehicles could lead to less need for new pavement and parking and to higher residential and commercial densities. This would reinforce a trend that is already visible, as new development at the far suburban edge of most urban regions is currently being created at higher densities than in the past and there is a great deal of infill in city centers and close-in suburbs.

Although the driverless automobile, like almost every technological advance, will undoubtedly bring on a great many new problems, it could also help ease several existing problems caused by the automobile, notably traffic fatalities and congestion. An important prerequisite for increasing the benefits and reducing the negative side effects is to abandon some of the reflex thinking that currently hobbles transportation planning.

A place to start is the widely held, but dubious, assumption that we should plan our cities around some particular transportation system. To facilitate buses and trains, many people advocate turning the clock

backward and creating a denser urban fabric of the kind that was necessary for 19th-century industrial cities. There is nothing wrong with living in this way if it is what most people choose to do. The arrival of the automobile, however, gave urban dwellers a great deal more mobility and flexibility in how they lived, and a large number opted for more dispersed settlements.

The driverless car could well extend that flexibility in dramatic fashion, combining some characteristics of automobiles and public transportation and allowing people more choice in the way they live, whether it involves more compact, high-density cities, more dispersed low-density settlements -- call it sprawl if you like -- or, perhaps most likely, all of the above.

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