

Self-driving cars might be "a coming congestion disaster"

Lloyd Alter (@lloydalter)
Transportation / Cars
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via *A future lost in time*

In most of TreeHugger's discussions about the future of our cities in the era of the self-driving car, I have taken the position that "The autonomous car will likely be shared, smaller, lighter, slower, and there will likely be about a tenth as many of them." That's because our current cars are parked 90 percent of the time, which is unnecessary with a self-driving car, it can just to serve someone else. However transit expert Jarrett Walker sees the opposite happening in his post [Self-Driving Cars: A Coming Congestion Disaster?](#)

He doesn't think they will necessarily be shared, because "The ownership model is closer to the status quo, and the status quo always has enormous power." He also thinks that these cars will be very busy indeed, and will not just be sitting around parked 90 percent of the time like our current cars are. He describes a nightmare scenario posited by the [University of Washington's Mark Hollenbeck](#):

A suburban father rides his driverless car to work, maybe dropping his daughter off at school. But rather than park the car downtown, he simply tells it to drive back home to his house in the suburbs. During the day, it runs some other errands for his family. At 3 pm, it goes to the school to bring his daughter home or chauffeur her to after-school activities. Then it's time for it to drive back into the city to pick up


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Dad from work. But then, on a lark, Dad decides to go shopping at a downtown department store after work, so he tells his car to *just circle the block for an hour* while he shops, before finally hailing it to go home.

And of course this is perfectly logical- why pay for downtown parking when you can just send the car home- meaning there are twice as many trips.



© KPMG

Walker also mentions a KPMG report that predicts that a lot more people might be on the road, including the older ones who otherwise might have given up the keys, or the younger ones who cannot yet drive. The numbers are huge; **According to KPMG:**

These increases in personal miles traveled (PMT) can ripple to even larger fluctuations in vehicle miles traveled (VMT) as vehicle occupancy rates change. For example, if more people started to select new self-driving options in the future—then we could see twice as much demand. And if we moved into a scenario occupancy rates fell below one person per car—for example, many self-driving cars without passengers—then the increase could be a staggering **three to four trillion additional miles** by 2050.

Unfortunately, Walker makes total sense here, calling this "really easy and obvious behavior for a driverless car owner," especially when roads are essentially free, why would anyone pay for parking? Why own two cars when you can send one back and forth to get the kids?

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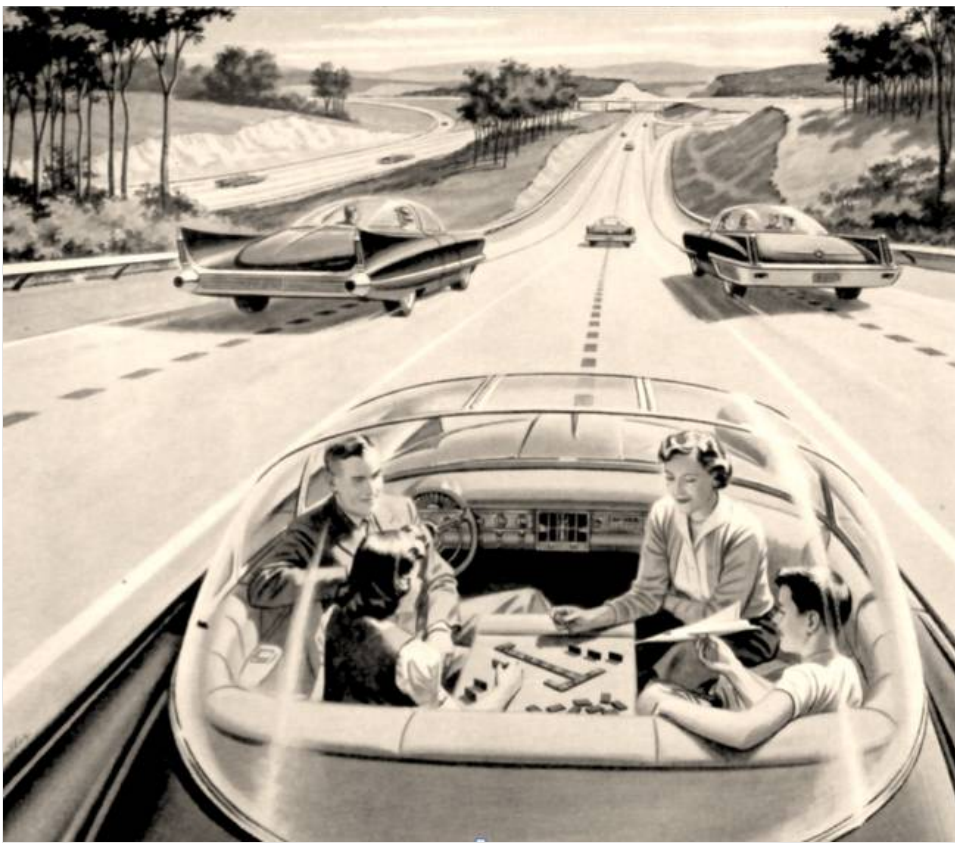
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Tom Vanderbilt/via

I used to think that **the self-driving car might make our cities better and greener**. Then Allison Arieff convinced me that they will lead to **massive urban sprawl**: "If you can read your iPad, enjoy a cocktail or play a video game while commuting, time spent in the car becomes leisure time, something desirable." Now Jarrett Walker points out that they won't lead to wide empty open roads but will actually increase congestion. Time to get back on the bike.

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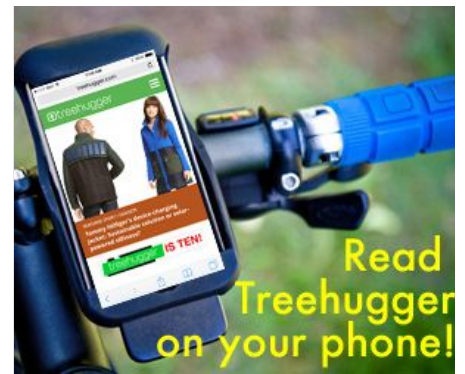
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KGovers · an hour ago

Simple solution. Make all roads toll roads and price them in direct relation to the traffic density at the time of travel. We have that technology already (407 for those near Toronto). This way we can finally have user pay for roads. If your decision is to send the car home after dropping off at the office the cost of doing so is measurable and can be balanced against parking cost and other costs.

And unlike the 407, which is a private for profit consortium with a long and tortuous history, the tolls should go to local government earmarked for all transit related expansion and maintenance, so that low impact travellers (pedestrian, bicycle, transit users) also benefit.

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Mark Chapmon · 2 hours ago

Love all the talk in TreeHugger about everyone happily living in the utopia of the modern city. Where I live, many people commute 35 miles each way to the neighboring sprawled out city that has noticably better paying jobs. They don't move there due to the price of housing, the comparative difference in schools and crime rates.

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spr8364 · 11 hours ago

Couldn't governments just make it illegal to have a self driving car drive without occupants?

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Ian Watson → spr8364 · 3 hours ago

Why would you want to do this? It would prevent one of the huge benefits of self-driving cars: the complete elimination of parking lots.

^ | v · Reply · Share ›



Jackson Ngo · 14 hours ago

Autonomous vehicles have the potential to revolutionize both public and private transport.

In Sydney, to travel a driving distance of 20 km or so can take up to an hour and a half by public transport. An autonomous vehicle would create either: a) a decline in public transport commuters or b) give sufficient need to improve our archaic system.

However, addressing the points raised in this article, car ownership may be a symbol of status, but I see autonomous vehicles being an opportunity. Why make your car drive around the block when you go shopping when for those two-three hours (duration of free parking at centres here) you can lease it out via an app like Uber?

This may create more vehicles on the road but automation is more efficient than humans could ever dream to be. Imagine at the traffic lights and there are ten cars queued up on a red signal; human drivers will have to wait for the vehicle in front to move before they can accelerate, but in a world of autonomous vehicles, communications exchange between vehicles and the traffic signals at the intersection can significantly reduce or even eliminate the time lag between the first vehicle and the tenth one moving off.

1 ^ | v · Reply · Share ›



tarawabrat · 16 hours ago

I'm still looking forward to self driving cars because then I can tell it to spend the night driving from Seattle to Missoula while I sleep. That way I won't have to pay for rent or mortgage and I can use the awesome showers at the Flying J truck stop before heading back to work in Seattle after midnight. It'll be a whole new lifestyle!

2 ^ | v · Reply · Share ›



DavidHH → tarawabrat · 21 minutes ago

Why not get a self-driving motor home; don't forget the hot tub, bar and a friend.

We don't need self-driving anything, we need drastically improved public transportation, like elevated continuous looping monorails. Maybe even solar/wind powered.

^ | v · Reply · Share ›



WiselinePRT · 19 hours ago

I especially agree with Arieff. Maybe the new congestion will be so bad that it increases, rather than undercuts, support for limiting sprawl and building urban rapid transit networks.

^ | v · Reply · Share ›



scotty Ø · 21 hours ago

i've long thought that autonomous cars would worsen sprawl and congestion for the same reasons illustrated in the piece above. people who spend an hour or two or three per day in their cars commuting might be inconvenienced by this, and actually consider living even farther from work! why not, especially if you can spend the time in your car working, consuming entertainment media, etc. I also think that if in the future people move toward an auto subscription type model where they pay a flat fee for autonomous car rides (kind of like mobile phone access), they might use such vehicles MORE often.

2 ^ | v · Reply · Share ›



Roland Beinert · 21 hours ago

Self-driving cars are only part of the story here. This technology will hopefully change transit, too, and make it more appealing. Buses could act more like trains, following each other closely like train cars when they need to and then splitting off when they need to. Stops and routes could be based on demand rather than having a fixed location and route. If you only focus on self-driving cars, I can see how things might look bad. I think a lot more people could be lured onto transit, though.

I also think self driving cars would allow more social interaction for passengers, and people might want to carpool more.

Maybe that's all just wishful thinking. It depends on the vision of the people making and selling these vehicles, as well as the apps and software that goes along with them. If it

causes more congestion, its our fault, not the technology's fault.

2 ^ | v · Reply · Share ›



Shroomer · a day ago

This analysis is very weak. What about the fact that parking would be cheaper with less cars around? Also the cost of driving in circles as compared to the now lower parking costs? How about programs that make sharing a vehicle more efficient, lining up customers that tend to take the same routes at the same time? The use of bicycles in densely populated areas instead of "circling automated empty cars"?!? Surely this can be easily avoided. The whole analysis seems really bunk, especially when started with an assumption that we basically can't adapt.

5 ^ | v · Reply · Share ›



lugger11 · a day ago

I think a better evaluation of the causes of congestion would be a good starting place. I do the suburban commute every day by GO bus in Toronto (an express coach bus, not like a city bus). I spend my time on my phone or computer, etc. It costs more than driving/parking and takes longer, but it is far far less stressful than driving. I do drive to work sometimes, and my evaluation of the causes of traffic jams is not that it is necessarily caused by having a lot of cars on the road, but poor driving. The number one reason for a slowdown is a lane merger, either from an on-ramp or just fewer lanes. If you leave enough distance between cars and practice the zipper method, traffic might slow down a bit, but it won't grind to a halt. Instead, I see so many people get out of their lanes in to the empty lane to their right, zoom ahead 3 cars, then try to merge back in to traffic. I mean, I see this a lot! In some cases, this is the only cause for the slowdown in the first place. Anyways, if your autonomous car took those selfish idiots out of the equation, then it could drive faster and safer, even when there are many cars on the road.

2 ^ | v · Reply · Share ›



Tenio Latev · a day ago

Self driving cars will come with a set of new regulations. This is why the proposed nightmare scenario wont happen:

1. young people find status in other things than cars. In Europe the statistics prove this pretty nice. Less people are even getting a drivers license because the lack of incentives for car ownership. In big cities in Germany car sharing has taken over the game. Just do some research.
 2. the big cities in Europe will restrict car access within the next 10 years, making it impossible to just drive around town for no reason.
 3. most people in Europe do not need to commute more than 10 km per day. Suburbia is an American phenomena, that is nonexistent in Europe.
 4. Many people in Europe already use the public transport options
 5. Riding a taxi will be a lot cheaper in the future, so car ownership will not make sense at all. A good example of this is Hong Kong. The predominant car on the street is the Taxi, followed by light Vans that transport goods. The rest of the cars tend to be luxury sedans and sports cars owned by the rich kids and dads in HK.
 6. Self driving cars will communicate with each other and avoid traffic jams.
- One thing I pessimistic about is the vulnerability of these cars in terms of computer hacks. A hacker collective can hack and abuse cars to kill people.

4 ^ | v · Reply · Share ›



BobTheMad → Tenio Latev · 2 hours ago

Going to disagree with you one one point of yours (#4):

"Suburbia is an American phenomena, that is nonexistent in Europe"

I spent a significant amount of time in Germany - Bavaria specifically. A large percentage of my co-workers commuted in cars anywhere from 10 to 30 minutes to the office. This hardly counts as "nonexistent"

^ | v · Reply · Share ›



Ian Watson · a day ago

His argument is based on the assumption that people will stick to owning their cars, and I think that assumption is totally flawed (and makes the rest moot). I'm sure for a while people will cling to the idea of owning their own car, and the elite may continue to own cars as a status symbol far into the future, but for the general public owning a car will phase out over time. Uber is already wildly popular wherever it is available. Self-driving cars make it possible to have an Uber-like service available everywhere and at a much

reduced cost because you eliminate the cost of human labour. Why deal with vehicle registration, maintenance, needing a parking space at home, buying winter tires, etc. etc. when a car model of your choice will pop up at your door and drop you off anywhere for a low cost?

We also have to look at the fact that Mr. Walker is a transit guy. He is in fact a transit guy I respect very much. That being said, if you look at self-driving cars rationally, they're a threat to short-haul transit. Why take a bus when you can have your own pod for cheaper? Now that doesn't mean we shouldn't invest in transit in the short-term as some politicians would assert (it could be 20 years before self-driving cars are fully viable), but I imagine it does play into Mr. Walker's feelings about the subject.

There is no doubt that self-driving cars are going to turn our cities on their head and greatly upset the status quo. There is going to be an adjustment period. But as we go through that adjustment period I believe self-driving cars will show themselves to be a huge improvement on current transportation systems.

2 ^ | v · Reply · Share ›



rooster1957 · a day ago

Unconvinced. Proper carbon tax would disincentivize such behavior, and a national ridesharing policy could make uber and lyft style services a viable alternative to busses.

Autonomous driving technology is a far greater threat to those employed as professional drivers than it is to gridlocking road infrastructure.

1 ^ | v · Reply · Share ›



KAI! → rooster1957 · a day ago

"...lyft style services a viable alternative to busses." Wrong and wrong. A full diesel bus is getting near 300 mpg, electric self driving cars with one person in each one would release more CO2 and take up 50x the amount of road that bus needs.

1 ^ | v · Reply · Share ›



rooster1957 → KAI! · a day ago

1. Apparently you are unaware of the Proterra bus.

2. A full diesel bus gets 4-6 mpg.

That may translate to 300mpg per person for the 4 hours a day it runs full. Averaged out over 12 hours in service/day, much lower. How about 100 mpg passenger equivalent at best?

3. I live in the northwest where our electricity is overwhelmingly renewable dams/wind. As my local grid is very green, my EPA 84 MPGe Tesla actually delivers 94MPGe carbon footprint. 4 passengers in my car is a lower carbon footprint than the best case scenario with your cherry picked and inaccurate statistics.

4. Diesel fuel and exhaust are FILTHY.

5. Fox has a job waiting for you.

1 ^ | v · Reply · Share ›



This comment was deleted.



rooster1957 → Guest · a day ago

I used to take public transit to the airport regularly until Portland's brilliant public transit agency added a half hour to the trip last year.

I can certainly afford drive my car to the airport and park it. I chose not to because the carbon footprint from flying is bad enough without driving to the airport.

Those of us who've been adequately successful to buy current generation Teslas have made the \$35000 model 3 available to the middle class in 2 years.

I suppose you think better of those who spend that kind of money on internal combustion?

Your judgmentalism does not excuse your lack of any actual knowledge. Nice try, though.

1 ^ | v · Reply · Share ›



KAI! [rooster1957](#) · 17 hours ago

I know more about Teslas than 90% of people that own them!

^ | v · Reply · Share ›

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