27 October 2022

Self-Driving Cars and the Rhetoric of Inevitability

As technology has advanced at a seemingly increasing rate, people's expectations of it have ranged vastly in optimism and certainty. Some people believe that technology is certain to progress in a specific way while others think it could go in many different ways, and there are many different opinions on whether that advancement is something to look forward to or to be cautious of, or both to some degree. Historically the concept of cars in general has been the subject of this discussion, but they have since become a commonly accepted technology. However, one technology related to cars has become the subject of similar discussions; that of self-driving (or driverless) cars, which would not require constant human input like traditional cars do. I think that while both the potential benefits and drawbacks of self-driving cars are meaningful, the current push for them is not a good way to solve the problems they seek to address because it does not consider the potential of other technologies that could serve the same transportation purposes.

Many of the arguments in favor of driverless cars exist in comparison to issues of the human-driven cars they hope to become alternatives to or outright replace. Possibly one of the clearer issues of human-driven cars that driverless cars intend to improve on is that of safety risks caused by human error. They are described as having the potential to be "the perfect driver" (How Does Google's Driverless Car Work 0:07), without the limited attention span and ability to become distracted that human drivers have. Although they are not yet fully self-drivable, many consumer cars have already begun using automated safety features, such as self-centering within

a lane and automatically breaking when too close to another car (How Does Google's Driverless Car Work 3:30). Another aspect of cars that self-driving technology would attempt to improve on is that of time spent driving, which could be spent doing other things instead. Some are experimenting with allowing a passenger to get off their car before it automatically searches for a parking spot, without requiring them to wait inside the car until one is found (How Does Google's Driverless Car Work? 3:45). Even in the time someone spends inside the car, not needing to manually drive it would allow someone more time to do other things they might have to do or want to do, such as a parent tending to their child without having to focus on traffic (A First Drive 1:40). But even though these promises seem beneficial, they alone are not enough to justify self-driving cars.

An essential factor in this argument is whether the promises made by proponents of selfdriving cars can actually be fulfilled by the technology that exists now or is likely to exist soon. Despite the prominence of this point in the discussion around self-driving cars, it cannot be said to clearly work in favor or in opposition to them. As of the present day, technology is not advanced enough for a car to be able to fully drive itself (The state of self-driving cars 0:17); despite some cars with more advanced self-driving features being tested on public roads, none of these are yet allowed to operate without a qualified human to 'chaperone' it in case their systems encounter complications (6:40). However, it is important to note that driverless car technology has advanced significantly within the last decade (Urmson). In this situation, it is important to be aware of the 'Rhetoric of Inevitability', the assumption that technology is on an 'inevitable' path that can be accurately predicted and cannot be altered (Nardi & O'Day Ch2). It might seem counterintuitive to consider technological possibility as a neutral point in the discussion around driverless cars, doing otherwise would require assuming that one can accurately predict future technological developments and challenges; predictions can be made, but they cannot be treated as the only possibility. While recent technological advancements in this field can justify optimism for further progress, it cannot be guaranteed, and simultaneously the technology's limitations in the present will not necessarily be permanent obstacles that cannot be overcome. But just as the potential of technology does not counteract the hopes placed on self-driving cars, it also does not invalidate the criticisms against them.

Even assuming that technology will take the most optimistic possible path and selfdriving technology will match and surpasses the abilities of human drivers, there are still valid reasons to oppose self-driving cars. These reasons would be related not specifically to selfdriving technology but to cars as a whole, and particularly to societies built to be reliant on cars. Many of the problems of traditional cars that driverless cars aim to solve could be lessened with technology that has been common for decades, by facilitating the use of alternatives to cars. Methods of transport such as trains and buses allow passengers to travel longer distances without needing to focus on more than on which stations they must use to reach their destination. Even while they are controlled by people, they increase safety by having reduced opportunities for human error. Proportionally a much smaller amount of people traveling in a train or bus need to know how to conduct or drive it, and doing so is a dedicated job for which someone can be much more thoroughly trained; more focus and precaution can be demanded of a few people whose occupation is to safely drive a bus or train, than of the many more people who have to drive cars as part of their daily lives. As of 2012, a significantly lower proportion of rail and bus passengers were injured or killed, compared to car and truck passengers (Litman 114). Not only do other transport methods already surpass traditional cars in ways driverless cars hope to eventually, but they also do so with an issue of traditional cars that driverless cars would not seek to address:

Efficiency. Specifically, the cost of continuing to use a proportionally large and complex machine for a proportionally small number of people. Both trains and buses can carry more people while using proportionally much less energy per person than a car (Personal Transportation Factsheet), while for a single person traveling short distances a motorized scooter could carry them using less energy and less physical space than a car. The large and dense amount of cars present in roadways relates to a significant struggle for both human drivers and automated driving systems; the "chaos of the roadway" is an issue which driverless cars hoped to overcome by communicating with each other (The state of self-driving cars 7:18), but it is uncertain that driverless cars could communicate with each other efficiently enough to avoid issues such as traffic jams and bottlenecking, particularly when they would still have to account for older non-automated cars still sharing the same roadways. Some might propose providing driverless cars exclusive roadways where all vehicles in them can communicate, but if a society was prepared to invest the resources needed for such a significant change to transport infrastructure, it should ask why so much is being done to adopt a technology that does not meaningfully improve on many of its' predecessor's problems.

Considering all these factors, I would oppose the current attitude towards self-driving cars, not due to the self-driving technology in itself but rather because they attempt to solve some problems inherent to cars without questioning the role cars have in modern society. If all that changed was all cars being able to self-drive better than humans could drive them, it would not solve the problems of the many people who live in car-centric cities and cannot afford a car; they would still suffer as "de facto second-class citizens" (Dietrich), having to navigate a space not built to accommodate their presence. I think that to affordably and efficiently solve the problems driverless cars' proponents care about, it would be most essential embrace alternatives to car-

centrism. I am personally optimistic about the self-driving technology that is at the center of this discussion, but I think much of its potential is being squandered by only considering its implementation on cars within car-centric cities and towns; its attempts at reducing accidents caused by human error seem potentially beneficial to rail transport, and its use of sensors to understand and navigate environments could be implemented in personal mobility devices to benefit people with visual impairments. I also think that cars can be useful in some contexts, particularly for transport in more isolated or rural regions where people are too spread out to justify costlier infrastructure like paved roads or rails. Ultimately it is essential to keep in mind that the Rhetoric of Inevitability is just that, rhetoric. It makes sense that people would assume the 'next step forward' would be limited to modifications to an already commonplace technology, but to do so ignores the weaknesses inherent to it and benefits of other alternatives. Cars' prevalence in the modern world does not mean that they were the best possible alternative in all situations they are used in, enabling them to drive themselves is not the only possible path for improving these situations, and deciding that there are other paths which could be taken does not mean rejecting the potential benefits of technology.

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