

Engineering social justice into self-driving vehicles?

Self-driving vehicles will soon be a central part of our transportation system. Their introduction promises several benefits, including improved traffic safety, mitigated fuel consumption, congestion, and pollution, and enhanced mobility for persons unable to drive. The introduction of these vehicles also raises important ethical issues, including issues of safety, privacy, and trust in technology. Another important ethical issue is how the introduction of self-driving vehicle technology might impact social justice. This paper focuses on part of this issue: how we should ethically evaluate new technological possibilities for determining the right-of-way at an intersection for self-driving vehicles.

It may not seem obvious that determining the right-of-way at an intersection is a matter of justice. If you are delayed by traffic, you are more likely to experience frustration, rather than the feeling of injustice. However, consider an example: some people approaching an intersection might be going to a holiday, while another person might be traveling to the hospital to treat a broken leg. A traffic control system that could give priority to the injured passenger would thereby better serve justice, because the injured passenger's delay is much worse for her than another's slight delay in reaching his holiday destination. Or consider a second example: one important goal for any traffic control system is allowing the efficient movement of traffic through the intersection. One proposal for achieving this goal is to institute real-time auctions for priority access to intersections. But this proposal fails to guarantee that access to intersections is granted fairly. Even if you had a broken leg, Bill Gates could always afford to outbid you for the right-of-way.

Since monetary auctions leave the question of social justice unaddressed, we proposed a system where an individual can select a priority level for her trip. In turn, this priority level is used to determine the right-of-way between vehicles. However, the priority levels are supported by the use of non-monetary priority credits, which are lost or gained based on the priority level selected. For the sake of equality, all users receive the same initial amount, and with uniform rules for spending and gaining credits. The aim of this proposal is to mimic the efficiency gains of the real-time auction approach, while protecting a central human right – freedom of movement – from simply being sold to the highest bidder.

Self-driving vehicles will be everywhere in the very near future. Our paper introduces one significant ethical issue prompted by this new technology. We hope it also encourages wider public discussion of fundamental ethical questions about how mobility can be ethically structured in light of new technologies.

Publication

[Engineering Social Justice into Traffic Control for Self-Driving Vehicles?](#)

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Sci Eng Ethics. 2015 Aug 1