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Autonomous Ethics:  
Are Self-Driving Vehicles Ethical?

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CS 310 Professional Ethics of Computing

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29 November 2020

## Autonomous Ethics:

### Are Self-Driving Vehicles Ethical?

Different periods of time are defined by the technological advances that take place within them. For example, the 1950s and 60s were marked by the capabilities of space exploration, culminating in the Apollo 11 mission where Neil Armstrong and Buzz Aldrin became the first humans to step foot on the moon. The 2000s and 2010s were the age of the smartphone (the smartphone was invented before this time and is continuing to be developed; however, the modern concept of the device was created during this period), a technological breakthrough that would have been deemed impossible by the general public even 30 years ago. While it may be too early to tell, it appears like society may be entering a new phase on the technological timeline: the age of autonomous vehicles. The concept of self-driving cars has been around for quite a while now and many companies have been hard at work developing and testing these self-driving sensations; however, they are not quite ready for the general public. That could drastically change very soon. A recent report from Statistia predicts that by the year 2030, “[o]ne in ten vehicles will be self-driving...” [1]. While the idea of cars that drive themselves from Point A to Point B sounds terrific, there are some key factors that need to be considered before this concept should be fully embraced by the public.

### Ethical Issues

One of the biggest debates concerning autonomous automobiles involves the ethics behind how these vehicles handle situations where an accident is inevitable. Regardless of how good the technology in self-driving cars become, they will never be 100% safe [2]. Because of this, there will be circumstances where it is necessary that the autonomous vehicle will be in a wreck. The issue that is debated is whether or not the vehicle will be able to ethically decide the

best action to take in a potentially fatal situation. Analogies have been drawn relating this situation to that of the infamous “trolley problem” in which one must make the decision to save the lives of trolley riders at the expense of an innocent person’s life. Nyholm and Smids argue that although this comparison is often drawn, it does not represent the issue regarding self-driving cars well [2]. Rather than having to make a split-second decision (like in the trolley problem) about an accident, self-driving cars do have the ability to be programmed to respond in various ways beforehand. This begs a follow-up question: will the companies who profit off of self-driving vehicles will really program the vehicles to perform the most ethical decisions, rather than just what protects their technology best? For example, will Google program their vehicles to protect people or protect their technology?

#### Stakeholders

There are several stakeholders involved in self-driving vehicles. For example, the general public wants these vehicles to make their lives easier. Vehicle manufacturers desire this technology because better products equate to higher price tags and higher price tags means larger profits. Additionally, tech companies covet this concept because autonomous vehicles need computers and these companies provide the computers, meaning this technology should provide a large advantage to business.

#### Solutions

As of right now, there does not seem to be any clear solution to how to deal with accidents in autonomous automobiles. There are a lot of voices that cry out for certain “rules” to be in place for self-driving vehicles, yet no one has all the answers. For example, Nyholm and Smids identify a few issues they believe to be paramount in the discussion of “accident-algorithms for self-driving cars” but they do not decide upon a clear solution to the issue [2]. Is

it best to protect the passengers of a self-driving vehicle or protect pedestrians? Is the age of any humans involved in the accident a factor to consider? Should the vehicle attempt to protect itself from damage if possible? Until these issues are ethically figured out, autonomous vehicles will not be truly safe and ethically reliable.

### Ethical Theories

There are multiple ethical theories when it comes to self-driving cars. The three that will be considered are consequentialism/utilitarianism, rights-based morality, and new natural law, as discussed in Richard Spinello's book, *Cyberethics*. The theory of consequentialism asks what action will create the best overall consequences of all affected parties. Rights-based morality asks what will best protect the rights of the individuals who are involved. Finally, new natural law queries about the effect on basic human goods [3]. All three of these theories do seem to offer some use in the consideration of autonomous ethics; however, if one truly considers the conclusions of these theories, none of them seem to quite take care of the problem. There is more to consider in the situation than protecting someone's rights or goods. This then rules out the rights-based and new natural law ideas; however, the theory of consequentialism still does not quite fit the bill. Suppose the vehicle had to crash and some individual(s) was going to be injured. How would the vehicle decide the proper course of action in an accident since, given the current information the computer has, there is no real way of deciding the full consequences in the moment? Therefore, there does not seem to be a very clear theory that can be used for autonomous automobiles.

### Alternatives and Consequences

Obviously, one alternative to having to deal with the ethics of autonomous vehicles is avoiding them completely. Since no one knows how to best train these vehicles, perhaps the best

route is to rid them from society. While this would take care of the current issue, it is only temporary. Clearly, with the technological advances coming out of the 21st century, there will be another time when society will have to face these questions again. So, it is best to nip the situation in the bud and find the solution now. There will be consequences; however. Since the vehicles are not nearly at the point of perfection, they are going to crash. In fact, according to the Insurance Institute for Highway Safety, as they are currently being designed, autonomous vehicles only avoid about 23% of accidents [4]. Hopefully, this number will get a lot higher; however, for now, society has to realize that there is a lot of work that needs to be done before these cars are ready for the general public.

#### Solution/Appropriate Action

In order to program autonomous vehicles with correct ethical standards, committees should be formed between all three sets of the stakeholders. Members of the general public (and perhaps ethics experts), vehicle manufacturers, and technology companies need to band together to find the right answers for the problem at hand. A solution is there, it just needs to be found. Hopefully, autonomous vehicles will soon have clear ethical standards that make life safer and more convenient for everyone.

## References

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