**AUTO SAFETY AND TECHNOLOGY SCHOLARSHIP ESSAY**
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The first Model T rolled out of Henry Ford's manufacturing plant in Detroit in 1908.[1] There were other cars made before 1908, but they were not mass produced like the Model T. Ford's Model T had gasoline powered internal combustion engines that had to be hand cranked to start. It consisted of an open air cab that had seating for four passengers. There was a vertical windscreen mounted in front of the cab with rudimentary headlamps. The windshield wipers were operated by the occupant's hand. There were no seatbelts, airbags, or engineered front-end crumple zones of any kind. By today's standards they were dangerous vehicles that, if manufactured today, would not be registered by the motor vehicle department.

Fast forward to 2020 and our modern automobiles are equipped with technology that Ford would have marveled at. Technological advancements have allowed us to manufacture cars with halogen headlamps, seat belts, airbags, safety glass, and anti lock braking systems. The cars of today also have cameras, collision warning sensors, seatbelts, and front, rear and side airbags. Some even have entertainment systems with DVD players, Bluetooth, wifi, lane-keep assist and more. Many car manufacturers and technology companies have developed self driving technology.

The National Highway Traffic Safety Administration (NHTSA) has created regulations for minimum safety requirements for vehicles and are known as Federal Motor Vehicle Safety Standards (FMVSS). The FMVSS details minimum requirements of motor vehicle safety and technology to prevent unreasonable risk of a crash, and unreasonable risk of injury or death

should an accident occur.[2] The FMVSS covers everything from window defrosters to seatbelts and vehicle lighting to side impact protection.

Have technological advancements in motor vehicles made it safer for the driving public? The NHSTA says *yes*, and newer cars are safer than ever before. Let's leave Henry Ford behind and focus on a more recent era. According to the NHSTA, a car on the road in 2012 had a 56% lower fatality risk compared to a car built in the 1950's.[3] The NHSTA attributes this reduction in fatality risk to improved safety technologies. The number of estimated lives saved as a result of the technological advancements is over 600,000 since 2012.[3]

The NHSTA data shows an overall decrease in auto accidents and fatalities that correspond to the onset and acceleration of motor vehicle safety technology advancement over the years, and encompasses that technology as a whole. I think it's necessary to look at it from a different perspective – one that categorizes technology into a 1) strictly motor vehicle safety equipment group, and 2) an entertainment and ancillary safety equipment group.

For the purposes of this essay, group 1, the strictly motor vehicle safety equipment group consists of standard and optional equipment that does not distract the driver while operating the motor vehicle by requiring input, providing entertainment or enabling communication. It consists of antilock braking systems, traction control, airbags, electronic stability control, adaptive headlamps, lane departure warning, and the like. It includes safety technology to prevent an accident *and* to keep the passengers safer if an accident does happen. The NHSTA data discussed above supports the notion that this technology makes roads safer for the driving public.

Do drivers rely on these technologies to the point of complacency and increase the risk? Let's examine statistics from two pieces of safety technology: blind spot monitoring, and forward collision warning with emergency braking. Approximately 80% of drivers who owned cars equipped with blind spot monitoring and 40% of driver with cars equipped with forward collision warning and automatic emergency braking, were unaware of the technology limitations associated with the equipment.[4] Approximately 25% of drivers who had cars equipped with this technology felt comfortable not checking blind spots manually or doing other tasks while driving.[4] Data shows drivers have a false sense of security when operating motor vehicles equipped with these technologies, thus increasing the potential for accidents. Understanding the technologies capabilities and using them correctly are as important as the technology itself.

Group 2, the entertainment and ancillary safety equipment group, consists of automobile technology that requires input from the driver and provides a cognitive distraction. It includes technology such as voice operated and LCD touch screens with navigation and totally hands free texting applications. They are designed to prevent distracted driving, but can still divert attention from driving. There was a 12% decrease in fatalities in distracted driving accidents from 2017 to 2018[6], the third consecutive annual decrease in fatalities. This follows many years of increases. I argue the data is inconclusive and *could* be due to anti distracted driving campaigns, public service announcements, driver education classes, high school pledges etc. It could also be due to the underreporting of distracted driving at the time of the accidents. Additional studies, with more in-depth data collection, would need to be conducted to determine what the decrease is attributable to.

Technological advancements in automobiles have made it safer for the driving public overall. Collective data shows a reduction in automobile accidents and less fatalities when an accident occurs. Understanding the intended use and limitations of automobile safety technology is critical to ensuring a downward trend in automobile accidents, serious injury and fatalities. Technology has made driving safer but ultimately, we have to count on humans to make the right decisions about what constitutes proper use while driving.

References

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