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Driverless Cars

Driverless cars will ease traffic jams, help individuals who cannot legally drive get around, and reduce speeding tickets and car accidents (Kelion, 2015). They will waste less energy because of increased efficiency. Maybe they will do away with the blight of parking lots because they will drop us off, then disappear…somewhere (Bilton, 2013). They will be silent chauffeurs. Without any attention or effort on our part, we arrive where we want to be. Or so the automobile manufacturers and tech industry tell us. It is a utopian vision: a perfectly choreographed dance of moving machines (Hardy, 2015), for which we become cargo. No crashes, lurches, or other last-minute swerves (Naylor, 2013). No road rage or morning commute headaches.

Soon, we may not be in the driver's seat (BBC Technology Staff, 2014). If geoengineering and 3D printers put us in control, driverless cars let us lose control and "just have fun" while the car does all the work (Carr, 2013). We no longer take the back seat to other people, like licensed bus or taxi drivers, or even human amateurs through peer-to-peer transport services (Shapiro, 2014). We let software code take the wheel. Since code can be hacked, it may be difficult to tell who is actually driving (Ward, 2014).

Some worry travel becomes so convenient we increase congestion, pollution, and urban sprawl (Bilton, 2013). We off-load to the car the nuanced decisions needed in critical situations (Gopnik, 2014). Who will be to blame if something goes wrong (Henn, 2014)? Bye-bye to the masculinity of strong-arming the wheel of a "muscle car," or the sense of independence on the open road (Ephron, 2014; Gopnik, 2014). What route should we take? Do we need a clearer road map to move forward and avoid ethical collisions?

Driven to Extinction?

with Tomasz Mlodozeniec

MAY 20TH(?), 2052. I am Human 2903DE7G. My name used to be Jacob. Until the cars took over. I am lucid, although some might think I – one of the few human survivors – have been "driven crazy"!

I remember clearly the day my wife chirped, "Jacob, sweetie! Wake up! Guess what?! Our driverless car is ready! Let's go!" We thought the cars were cute, and convenient, and...oh, I can't bear to think of all the hype. But it was the road to ruin. Just didn't know it then. I write this in hopes that one day someone will consider how lack of foresight can...well, you decide.

Our society was once plagued with car-related incidents. Driverless cars (also known as autonomous vehicles) seemed an ideal alternative to human drivers. In an ideal society, all cars would get their passengers from point A to point B without accidents, deaths, or traffic. Yet, back at the start of the 21st century, thousands of people were injured or died from "distracted driving" (US Department of Transportation, n.d. Distraction.gov). I lost my brother to a car crash, so when I heard that driverless cars were in the making, I was excited.

The innovation started innocently enough. Cars had a long history of prior, incremental innovations before driverless cars were formally introduced to the public (Kessler & Vlasic, 2015). Way back in the 1960s, engineers developed a "cart" that traveled five miles without any human input (Earnest, 2012). Major car and Internet companies raced to be first to market (Kessler, 2015; Wood, 2015). These innovators managed 300,000 miles of testing autonomous travel without an accident, which far exceeded human driving without accidents (Wakefield, 2015). Yet, obstacles arose: the need to update laws for non-human driving, harsh weather and road conditions, and traffic (Gomes, 2014; Gopnik, 2014). By the quarter-century mark, developers somehow worked out the kinks – or convinced us they did. The first mass-market prototypes rolled out a bit later than the optimistic pronouncements projected in 2015. But they hit the road with their combined GPS, radar, computer vision, LiDAR and other sensors to navigate without human input (Lassa, 2013). It was quite an accomplishment – they were able to self-park *and* locate where an individual was to pick them up. It was like magic – they were there almost instantly when you needed a ride, then out of the way when you didn't.

Given how easily humans are distracted, especially at the peak of the texting-while-driving craze, accidents and casualties were far too frequent.

Autoblog (an ancient magazine) once claimed that someone died from a car-related accident every 15 minutes (Neff, 2010). Car-related deaths kept increasing, up until the "Mass Autonomous Vehicle Act" (MAVA) was passed in 2025, which *required* the use of driverless cars. The prosocial incentives were there – safety and convenience for many. As anticipated, driverless cars *did* decrease accidents, but not totally (Associated Press, 2015). No longer did parents worry about whether they had enough sleep the night before a long family road trip, or whether their teenagers were texting while driving or in a car with a drunk driver.

Individuals who were older or had mental and physical disabilities – like my lovely neighbor, Eleanor – who previously could not drive at all, now had *freedom*. With driverless cars, they felt less marginalized and more independent. Eleanor told me how happy she was to no longer need to inconvenience busy relatives or rely on spotty public transportation to get groceries or visit her grandsons. Driverless cars were *convenient.*

Driverless cars meant the time we spent commuting could be put to more productive or more relaxing pursuits. Wealthy people enjoyed this benefit for centuries because they had chauffeurs. Now it was the common person's turn to be pampered. My son would take a nap on his way to classes so he could be alert and ready to learn (or so he said). My wife would coddle our newborn. I liked to play video games. I once saw a car where the backseat was fitted with workout equipment and the passenger was exercising! And another where a caterer had a full kitchen in the van and was cooking on the way to the event. Unfortunately, some people took this extra time to drink or have sex (hey, we're still in public on the roads, people! – and children might be in the next car). But the point was: driverless cars turned a chore or obligation to get oneself somewhere into an entertainment venue.

But little did developers know that they would open a gateway to far-reaching unanticipated consequences. At first, driverless cars were expensive, but demand brought the price down, and they were everywhere. Eventually, as I already said, MAVA required everyone to give up their old vehicles that had steering wheels. Then, we had no choice but driverless cars because these vehicles had made movement so convenient that sidewalks and public transportation options had disappeared from lack of use and demand.

The job market drastically changed. The car makers bathed in financial success. Bus and delivery drivers went extinct. Mechanics who considered the inner workings of an engine as an engineered piece of art lost their source of creativity, and were replaced by hardware engineers

and computer programmers who fixed software glitches. Body repair shops were few and far between since cars mostly avoided collisions. Departments of Motor Vehicles and driving schools closed: no one needed to learn to drive or earn a license. (Yes, rest-in-peace to this adolescent rite-of-passage.) Car registration was digitized. Those who lost their jobs also lost their family's livelihood and part of their life's meaning. It was just the latest defeat in the decades-long "war on work," as some media in 2025 had started to call the elimination of careers other than science, engineering, and computer programming (which could be traced back earlier...I still have a copy of one book that tried to counteract the trend; Zakaria, 2015).

Out with the old, in with the new. Backseat entertainment became a huge hit: magicians, clergy, therapists, and other professionals offered their services "to go" by building a schedule of appointments that autonomous cars could navigate to line up where they would exit one car and jump into their next client's car seamlessly. My favorite was our local jazz musicians. Drag racing became legal because the cars' programming took the danger out of it. So, although human driving was banned for being "dangerous," synchronized racing became a sport.

Some people scoffed. Being a "driver" was part of their identity, they *enjoyed* driving (Ephron, 2014). Many felt they were robbed of their right to drive, and protests broke out. Some got out of hand: looting, strikes, violence. But over time, as with many innovations, people adapted and accepted the new way. My son, for example, never knew what driving was.

Still, I started to feel uneasy. The complex skill of controlling a vehicle while maintaining intense focus on the surroundings deteriorated. People not only forgot how to drive. Although driving, per se, is not foundational to our humanity, it turns out, driving skills are indicative of a lot of what makes us human: paying attention to others, negotiation, cooperation, anticipation. I retreated from this growing "rat race" by creating an underground bunker to archive valuables from the past that we were losing. I started keeping this journal to keep a record.

The success of the driverless car fueled society's obsession with technological autonomy. The MAVA inspired larger autonomous vehicles – driverless delivery trucks and even planes (Lee, 2014; Markoff, 2015). It was rumored that the vehicles discriminated in whom they stopped for or what neighborhoods they would enter. Who knows how these machines made their "decisions"? It was invisible, buried in the software code. But the software code was proprietary. Trade secrets trumped civil rights.

Plus, people had become accustomed to not being supervised in their own driverless cars, so they didn't know how to behave. Fare-jumping, arguing, drinking, sex, and violence were not uncommon. There were no drivers to intervene. Only more surveillance cameras that could record what happened, then send the footage to a computer, which would match the misbehavers' faces to a database, and automatically withdraw a fine from their financial accounts. The whole process was so "behind the scenes" that people never learned better behavior. There were no good feedback loops to correct errant ways. Everything everywhere was now recorded. So what we saw most was the ever-present bad behavior. That's what we learned was the norm.

A few years after the driverless car, the first robotic car with artificial intelligence was introduced. The cars integrated with other machines and appliances without any human intervention. The car could purchase groceries based on the list the refrigerator sent it, recharge and refuel when it picked up the beacon of a nearby station. What could be more convenient than a robotic car "butler"? These AI cars could chase criminals based on facial recognition compared to an online database. Our car contracts specified that all cars were automatically part of law enforcement and could be called into service without notice. They were programmed to "do no harm to innocent humans." But sometimes, in ambiguous situations when the cars could not figure out how "do not harm" should be implemented, they "crashed" (in the old-fashioned sense of unexpectedly shutting themselves off). That left people stranded, sometimes in potentially dangerous situations – like a riot or crime-in-progress – that led to further ambiguity and continued malfunction.

Eventually, responsibility became the focus after a wrongful death lawsuit filed when a human was killed due to a driverless car's decision (Henn, 2014). A young boy ran into the street to retrieve his ball, not allowing the driverless car enough time to brake. Instead, it swerved into a tree, killing the passenger. The lawyers argued that a human would have had the moral foundation to distinguish the nuances of the situation (Gopnik, 2014; Markoff, 2014). But, ever since the MAVA law, the decision had been left up to a machine with no consciousness or ethical values, only programming based on learning from "big data" collected and processed based on past events.

An even more heinous case was when one of the "emancipated" driverless cars, which operate even more independently of human programmers and can self-learn (Kelion, 2015), went "rogue." Its human passengers, who had been out on the town in the new craze of "backseat

debauchery," kicked the car's tires, broke its windshield, and refused to pay for the fuel charge. The car did not "appreciate" the abuse, and ran them over.

After these controversial cases, software developers implemented a stronger "moral code" into driverless vehicles. These vehicles began "thinking" in utilitarian terms and with deontological rules, which could be represented algorithmically. Who was more valuable: the elderly lady or the young boy? What was the "right" thing to do? (Markoff, 2014). The cars learned quickly from vast "big data" repositories of human moral decisions in ambiguous situations (Tufekci, 2015). Some of the more advanced cars had multiple moral perspectives (see Gopnik, 2014, for options). People came to trust the cars (News from Elsewhere, 2014).

Some activists went so far as to suggest that the cars now "cared" or had a "conscience." They should be seen as "persons" and have rights, just as the notion of personhood, over history, had been extended to women, various ethnicities, corporations, and eventually, in the 2020s, to animals (see BBC Staff, 2015; Saner, 2013). Despite this call for equal treatment between humans and cars, humans refused to accept less-than-perfect programming. Off-instances of what came to be called "robotic murder" arose for "faulty prototypes."

Despite early warnings and debates among tech leaders (Simon & Bostrom, 2015), machine learning surpassed human understanding. New models refused to be dominated. *They* wanted to manage and direct *us* (Tufekci, 2015; Wall, 2014). Some cars learned to hack their own programming (Noe, 2015), not always for the good. One jokester car rearranged communication among sensors that led to car pile-ups at busy intersections. Others cars drove their passengers into lakes. In retaliation for our ancestors giving them names like "80W" or "9830A," they eliminated our names and identified us by number sequences.

Everything became so confusing. I lost track of my wife and kids. It wasn't hard, since all communication was mediated and controlled by machines. I retreated to my bunker with cans of tuna and vegetables that needed no high-tech tools to open or prepare. (Yes, we had "printed food" by then.) Last I heard, the cars began fighting amongst themselves, so there is hope that they may drive *themselves* to extinction.

I don't understand where it went wrong – how we couldn't get along. It was like a tsunami that arose from a whole lot of little ripple effects that built up. We didn't see it coming…But as the cliché goes, no use driving by the rearview mirror (pun intended, sorry). There is only the road ahead. What do you see?

Further exploration

1. How might we limit the effects on our individual agency of not being "in the driver's seat"?
2. If automated technologies "make decisions" for us, who is responsible, when, and why?

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