Department of civil law

Faculty of law

Self-driving car and law

(legislation-responsibility-liability)

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Civil law

Introduction

This month, Ford Motors announced that it is planning to invest $1 billion in Argo Al, an artificial intelligence start-up that focuses on self-driving vehicle technology. The automaker is joining a group of companies, including General Motors, Uber and Google, who are developing self-driving cars. The time and money being spent on self-driving vehicle technology is a testament to these companies' vision that self-driving cars are the future of the automotive industry. At the same time, critics have been outspoken about the downfall of self-driving cars. The focus of criticism has mainly been safety concerns and whether these cars are truly safe for consumers. Nonetheless, these companies are speeding through to get to the finish line and develop the best possible self-driving car.(30)

Laws and Self-driving cars

Laws and self-driving cars

"A few states, though, are working to put themselves at the forefront of autonomous technology development. These states see the potential impact of welcoming the companies, research facilities and testing programs that go along with self-driving cars. Some states have passed legislation that explicitly makes the use of self-driving cars legal, although the conditions in each state vary. Other states have passed more measured legislation aimed at autonomous vehicles. Below you can read about the states that have passed self-driving car laws. For a detailed look at all state legislation regarding autonomous vehicles, visit the National Conference of State Legislature's Autonomous Vehicles page." (28)

"Florida has allowed the operation of autonomous cars on its public roadways since 2012, and it passed a law in 2016 that specifically addressed several issues related to self-driving cars to attempt to make the state an even more desirable testing location. This new legislation clarifies that licensed drivers can operate autonomous cars on public roads in Florida; states that certain screens are permitted in self-driving cars being operated in autonomous mode; requires an alert system telling the driver when he or she needs to take control; and beings to open the door towards testing driver-assisted truck platooning. This 2016 law also specifically requires autonomous vehicles to meet applicable federal standards, which could have implications for cars that vary from traditional designs. You can read an analysis of Florida's latest law." (28)

"Tennessee has taken a different approach to autonomous car legislation, passing a law prohibiting local governments from banning the use of cars with self-driving technology. Further, Tennessee has passed a law specifically allowing an electronic display to be used when a car is in autonomous mode. Most importantly, a 2016 law

established a certification program through the Department of safety through which car manufactures must apply before autonomous vehicles can be tested or operated in the state." (11)

"Michigan has loosened its autonomous vehicle laws more quickly than most states, aiming to be at the forefront of this technology. In late 2016, the Michigan House and the full safety benefits of autonomous cars will not be realized until humans are taken out of the equation. Further, requiring a licensed driver will curb the benefit of allowing more people access to transportation, such as the elderly and those with disabilities. In late 2016, California **passed a law** allowing a Self-driving vehicles with no operator, no brakes, and no steering wheel to operate on public roads under certain very specific conditions. These vehicles must mot travel faster than 35 miles per hour, can only be tested in certain designated areas, and must meet certain insurance requirements. This law was passed so that an autonomous shuttle could being testing, as the testing route mostly looped through a private campus but also required the shuttle to cross a public road." (28)

"In the absence of federal action, what often happens is that California establishes the standard as an early mover with a huge market. This was the case with date breach legislation, where California's stringent requirements established the industry standard. With revenge porn liability, California moved first and other states followed, so diversity of state action is not in itself necessarily a persistent problem. What is most troublesome about the autonomous vehicle laws is not how they differ, but how they are alike. They all fit the new paradigm of self-driving vehicles into century-old licensing regimes, without really dealing with what makes autonomous cars so different."(34)

So what else is in this new rulebook? The Department of Transportation and the National Highway Traffic Safety

Administration have included a set of model regulations for states to adopt. This is to avoid a "patchwork" of regulation where some states allow for the deployment of self-driving cars, while other do not. This policy governs how to inspect and license self-driving cars, as well as law enforcement and insurance consideration. (20)

The government is seeking basic details on how these cars function, as well as how they record data, what happens when they crash, how they protect themselves against malicious hacking, and most intriguingly, "how vehicles are programmed to address conflict dilemmas on the road." They play on publishing the responses they receive in an annual report.(20)

WASHINGTON (Reuters) – An influential U.S House committee on Thursday approved a revised bipartisan bill on a 54-0 vote that would speed the deployment of self-driving cars without human controls and bar states from blocking autonomous vehicles.

The bill would allow automakers to obtain exemptions to deploy up to 25,000 vehicles without meeting existing auto safety standards in the first year, a cap that would rise to 100,000 vehicles annually over three years. (15)

The Bill also lays out instances where the owner will be at fault, even after engaging autonomous made. If the owner has decided to modify the software on their vehicle or has failed to install important update when their policy instructs them to, they will be made liable for any damages. It'll be down to Secretary of State, by way of the department for transport, to decide which cars are covered by the new laws. (37)

Although true driverless cars are perhaps a few years away, the government believes that by acting quickly, car makers and developers of driverless technology will position the UK a leader in autonomous transportation. The bill will now pass throw parliament,

where ministers and third parties like insurers and vehicle makers can share their thoughts on how the UK's autonomous infrastructure should be built and maintained. (37)

Wisconsin's Governor Scott Walker signed an executive order in May 2017 creating the governor's Steering Committee on autonomous and Connected Vehicle Testing and Deployment the Committee is tasked with advising the governor "on how best to advance the testing and operation of autonomous and connected vehicles in the State of Wisconsin." The order specifies the members of the committee, including six legislators from the state. The duties of the committee include identifying all agencies in the state with jurisdiction over testing and deployment of the vehicles coordinating with the agencies to address concerns related to issues such as "vehicle registration, licensing, insurance, traffic regulations, equipment standards and vehicle owner operator responsibilities and liabilities under current law, " and reviewing current state laws and regulations that may impede testing and deployment, Along with other tasks. The state department of transportation is required to submit a final report to the governor by June 30,2018. (29)

Nevada bill AB 69 (2017) Defines terms including "driver-assistive platooning technology," "fully autonomous vehicle" and "autonomous driving system." Allows the use of driver-assistive platooning technology on highways in the state. Preempts local regulation. Requires the reporting of any crashes to the department of motor vehicles within 10 days if the crash results in personal injure or property damage greater than $750. Allows a fine of up to $2,500 to be imposed for violations of laws and regulations relating to autonomous vehicles. Permits the operation of fully autonomous vehicles in the state without a human operator in the vehicle. Specifies that the original manufacturer is not liable for damages if a vehicle has been modified by an unauthorized third party. Allows the DMV to

adopt certain regulations relating to autonomous vehicles. Defines "driver," for purposes of an autonomous vehicle, to be the person who causes the automated driving system to engage. Specifies that the following distance requirement does not apply to a vehicle using platooning technology. Imposes an excise tax on the connection of a passenger to a fully autonomous vehicle for the purpose of providing transportation services. Specifies requirements for autonomous vehicle network companies, including a permitting requirement, prohibitions on discrimination, and addressing. (29)

That said, there is some concern that government regulators who don't fully understand the technology-let alone the vision to see where it might lead-will muck it up. "We see a danger of actions taken too early to govern piloted driving 10 to 20 years into the future, "says Audi spokesman Brad Stertz. "such laws would have little application to initial levels of piloted driving that research needs. "Google's on the same page. "It's really hard to try and anticipate how the technology might be used in the future and write laws for every eventuality. We think policymakers should learn about the technology and see how people want to use it first before putting a ceiling on innovation," a spokesperson says. (26)

The National Highway Traffic Safety Administration (NHTSA) has addressed the question of automated vehicles, largely by announcing, almost two years ago, that it is studying the issue and will decide "whether it should encourage and/or require application of the most promising crash avoidance technologies through regulation. "It hasn't said when that decision will come.

"Washington should not be an impediment to technology improving our overall system, "Secretary of Transportation Anthony Foxx said this week. "We want to encourage the work that's going on here, we want to assist in the innovation that is underway". (26)

Penned by the UK's Department for Transport, with help from the center for the Protection of National Infrastructure, and launched by transport minister Lord Callanan, the principles suggest all participants in the auto industry's long supply chains must work together on security both in the design process and for years after vehicles hit the roads.

The eight principles follow:

*Organizational security is owned, governed and promoted at board level;

*Security risks are assessed and managed appropriately including those specific to the supply chain;

*Organizations need product aftercare and incident response to ensure systems are secure over their lifetime;

*All organizations, including sub-contractors, suppliers and potential 3rd parties, work together to enhance the security of the system;

*Systems are designed using a defence-in-depth approach;

*The security of all software is managed throughout its life time;

*The storage and transmission of data is secure and can be controlled;

*The system is designed to be resilient to attacks and respond appropriately when its defences or sensors fail. (38)

The goal here is to solve a chicken-and-egg problem : regulators don't want to establish final self-driving car regulations until they have more data on how self-driving cars perform in the real world and what kinds of problems they encounter. But regulators can't get data about this unless there are some cars on the road being tested.

Under current law, the feds can allow manufacturers to put up to 2,500 cars on the road each year even if they don't comply with every federal regulation. The SELF-DRIVE Act dramatically raises this cap, allowing up to 100,000 vehicles per exemption. (14)

Germany has drafted the world's first set of ethical guidelines for self-driving car programming. The guidelines were developed by the Ethics commission at the German Ministry of Transport and Digital Infrastructure. The report stipulates 15 rules for software designers, to make "safety, human dignity, personal freedom of choice and data autonomy," apriority, according to professor Udo Di Fabio, chairman of the authoring ethics committee. (10)

While the guidelines cover easy decisions like prioritizing the life of the driver over that of a squirrel or mailbox, other more nuanced questions are still left to human purview. "Genuine dilemmatic decisions, such as a decision between one human life and another, depend on the actual specific situation, incorporating "unpredictable" behavior by parties affected," says the report." They can thus not be clearly standardized, nor can they be programmed such that they are ethically unquestionable." (9)

On June 14,2017, the George Washington University Law School, through its innovation and Internet Initiative Program, hosted a full day discussion bringing together

*Industry representatives;

*Federal and state officials with experience in regulation of motor vehicles;

*Auto safety advocates;

*Workers whose jobs may be displaced by these vehicles;

*Experts on legal liability, cyber-security, data privacy and antitrust law.

*Ralph Nader will also deliver special remarks at lunch. (8)

The catch? Self-driving cars are programmed to obey all traffic laws, regardless of the situation. So whether it's merging onto high-speed traffic on the highway or rolling into a four-way intersection in Farmington, a self-driving car makes no concessions.

Human drivers, meanwhile, bend the rules of traffic law with abandon Most drivers are guilty of rolling through the occasional stop sign, speeding through that yellow light or driving "with the flow of traffic" on the highway _ even if traffic's running 15 over the speed limit. (27)

DATA PROTECTION ACT

18. Under section 55 of the Data Protection act 1998 it is an offence knowingly or recklessly to obtain or disclose personal data without the consent of the data controller. In the case of a mobile phone voicemail message, the "data controller" may be the sender of the message or its intended recipient. The maximum penalty for an offence is a fine. (5)

The criminal law

It is only recently that mobile telephones have become an essential tool of modern life. This means that, although there is a body of legislation which deals with unauthorized interception of mobile phone calls or messages, there is little case law.

The House of Commons Home Affairs Select Committee announced on 7 September 2010 that it would carry out an inquiry into the law relating to unauthorized tapping into or hacking of mobile communications.[6] On 4 February 2011, the committee published the evidence received to data.[7] At the time of preparing this Report, the Home Affairs Committee had yet to announce a timetable for

completion of its inquiry. It will be for that committee, not this, to recommend any changes to the criminal law that appear to it to be necessary or desirable and we have not sought in this Report to anticipate what our colleagues' conclusions may be. (5)

Civil remedied

20. Possible civil remedies for hacking include actions for breach of confidence (also known as breach of privacy); breach of data protection; and copyright violation.[17] Of these, the first appears to offer the best chance of success, it being well established that where the nature of a communication implies that it is private, the obtaining or publication of it without consent may give rise to an action for breach of confidence. The standard of proof in civil cases (balance of probabilities) is lower than that which applies in criminal trials (beyond reasonable doubt). (4)

Self-driving car

and

The responsibility and law suit

Responsibility of manufacturers for self-driving car accidents.

These first few accidents raise the question of who exactly is at fault. Accidents involving the Tesla model S are already more complex than typical car accidents, as both the driver and autopilot software have the ability to operate the vehicle.

Along a similar vein, the National Highway Traffic Safety.

Administration recently recognized Google software as the "driver" in their self-driving cars. If a passenger lacks the ability to take over the wheel of their car, then we will likely see more cases of manufacturers at fault for automobile accidents. (18)

The first lawsuit in China

A U.S. House Panel on Wednesday approved a sweeping proposal by voice vote to allow automakers to deploy up to 100,000 self-driving vehicles without meeting existing auto safety standards and bar states from imposing driverless car rules.

Representative Robert Latta, a Republican how heads the Energy and Commerce Committee subcommittee overseeing consumer protection, said he would continue to consider changes before the full committee votes on the measure, expected next week. The full u.s. House of Representatives will not take up the bill until it reconvenes in September after the summer recess. (6)

The **notice of appeal** was filed a week after US District court Judge William Alsup, the presiding judge in the case, **denied uber's motion** and referred the matter to federal prosecutors for possible criminal investigation.

Waymo called the appeal an attempt by Uber to hide its alleged theft of trade secrets from the public. (35)

"In full view of the court, Waymo has presented strong evidence that Uber has stolen our trade secrets and used our confidential information." a Waymo representative said in a statement. "Uber's appeal is a blatant attempt to hide their misconduct from the public."

A federal judge has rejected Waymo's request to prevent Uber from using allegedly stolen self-driving technology, which is sure to come as a relief to the embattled ride-hailing company. Under the ruling, Uber can continue to operate its fleet of autonomous cars on public roads in Pennsylvania, Arizona and California, but it still faces a criminal case ahead about allegation that it stole Google's self-driving secrets.

In rejecting Waymo's main request, judge William Alsup did grant the Google spinoff a partial injunction against Uber as part of its ongoing lawsuit. The court has now officially barred Anthony Levandowski, who recently recused himself from Uber's self-driving program, from working on the LIDAR program. It has also ordered the return of all stolen documents to Waymo. As such, the court has granted Waymo "further expedited discovery of aid of possible further provisional relief.(36)

In July 2016, Gao Jubin filed the first lawsuit for the model S autopilot in Beijing. His son, Gao Yaning, was killed when his Tesla model S crashed in January. He filed a lawsuit against the Tesla dealer who sold his son the car, arguing that Tesla needs to be more cautious when marketing the autopilot feature and should let owners and potential buyers know that it has defects.(17)

But in May 2016, the model S autopilot failed to avoid a collision with an 18-wheeler in Florida. The car didn't detect the truck because of its height and a glare from the bright sky. Joshua Brown, the Tesla owner, was killed. This is first confirmed death caused by Tesla's autopilot.

In September, Tesla issued a software update to Model S vehicles that improves its radar technology. Tesla believes this update would have prevented the accident in Florida. Unfortunately, the update comes far too late for Mr. Brown. (32)

The driver will bear responsibility for accidents that take place under his or her watch, under the legislation, but if the self-driving system is in charge and a system failure is to blame, the manufacturer will be responsible. (10)

The new legislation allows them to road-test vehicles in which drivers will be allowed to take their hands off the wheel and their eyes off the road to browse the web or check e-mails while the vehicle handles steering or braking autonomously.

The legislation requires that a black box record the journey underway, logging whether the human driver or the car's self-piloting system was in charge at all moments of the ride. This will be crucial for apportioning blame in accidents. (9)

Aside from the obvious safety and liability concerns posed by self-driving vehicles, the technology employed may also create other concerns in areas such as privacy. The California law requires that autonomous vehicle technology manufacturers disclose the information they collect while the vehicle is in use (such as GPS coordinates, destinations, times, etc.). This date could obviously be useful to investigators in the future when looking in to a criminal's whereabouts, but could also be an invasion of one's privacy and make it virtually impossible to move about without someone being aware of your activities. The Nevada law, on the other hand, requires that autonomous vehicle operators have a special driver's license endorsement, obviously recognizing the still experimental nature of the technology. (24)

Other Manufacturers Are In The Race, Too

The other issue that's facing Tesla is that there is a good possibility that another, larger car company, will beat it to the autonomous driving punch. Many manufacturers including Audi, Mercedes-Benz, and Volvo all have highly advanced autonomous features in their new cars. You can even get some of these cars used right here on Instamotor-in fact-here are seven affordable semi-autonomous cars you should look for. Most of those system use Lidar, a system that Tesla has chosen to forego and most of them are actually already fully autonomous already. There are safety features in place like the requirement in a Mercedes-Benz that you put your hand back on the steering wheel once every few seconds to ensure that drivers don't abuse the autopilot system. Mercedes could technically make the car completely autonomous if it wanted to but it hasn't done so yet because the legal lay of the land is so murky. (39)

Self-driving car

and

safety and insurance

"Nobody wants to let unsafe technologies on the road, but we also don't want to prevent vehicles that improve safety from reaching consumers easier," said Rep. Debbie Dingell, D/ Michigan. But Dingell said crash fatalities would be a "public health epidemic" if it were any other industry.

More than 35,000 people were killed in U.S. auto crashes in 2015. About 9 of 10 of crashes are caused by human error.(3)

Nidhi Kalra, co-director of the RAND Center for Decision Making Under Uncertainty, said a "lower threshold of safety might be OK" in controlled environments. She said Washington needs to develop a "flexible, adaptable regulatory framework" reflecting that autonomous vehicles are entering the equivalent of a teenager's years in driver's education.

"We may need similar policies for autonomous vehicles in their teenage years," she said. (9)

The SELF DRINE Act also includes a couple of important requirements. The markers of self-driving cars would be required to have a written cyber security plan that addresses how they identify and address cyber security problems and hoe they control access to security-sensitive code. It also requires companies to develop and publish privacy policies that detail what they will do with the reams of data that self-driving cars will collect.

The big question now is what will happen in the Senate. The unanimous approval of the legislation will certainly give it a sense of momentum as it moves to the upper chamber. But Senate leaders have not yet released an official companion bill for the House legislation, and the crowded Senate floor calendar could make it a challenge to get quick consideration for the House bill. (14)

But customer and safety groups say they remain concerned the bill will weaken safety standards and undermine public acceptance of the vehicles if a defect led to crashes and fatalities.

"Unfortunately, this legislation takes an unnecessary and unacceptable hands-off approach to hands-free driving," leaders of seven groups wrote lawmakers.

Automakers say safety standards requiring things like steering wheels and brake pedals don't make sense. But consumer and safety groups say the bill could permit the government to exempt self-driving vehicles from occupant protection and crashworthiness standards as well.

"Exposing motorists to the dangers of crashes without proven and needed protections is a wanton disregard for public health and safety," the groups said.

The bill doesn't apply to commercial vehicles , which were carved out after labor unions expressed concern that self-driving trucks would eliminate jobs. (13)

And again, these regulations don't address information privacy and cyber security – matters way outside the FAA's competence. Into this vacuum has stepped the Department of commerce, whose advisers have convened various interested groups to discuss drone privacy, and in May came up with a voluntary guide to best practice. Yet some of those groups, including the Electronic Frontier foundation, criticized

the process for being too dominated by industry, and refused to sign on. (41)

The federal government released its first rule book governing the manufacture and sale of self-driving cars everything from nearly autonomous Teslas to Google cars without steering wheels or foot pedals. Under the new rules, companies that are building and testing self-driving cars will be required to share extensive amounts of date with federal regulators. But it's unclear that companies will do so without a fight.

Tech companies and automobile manufacturers will have to address a 15-point "safety assessment" including details on how a car's software will address ethical and conflict situations on the road to determine whether or not their driverless vehicles are safe for public use.

The big question is whether manufacturers will willingly share information about their technology and safety record with the feds, or whether regulators will need to be more aggressive in getting companies to disclosed this information. A spokesperson for the National Highway Traffic safety Administration said the guidelines will likely be made mandatory through regulations. (20)

Security concerns about connected vehicles prompted the filing of a class action complaint in 2015 in Cahen, et. Al., v. Toyota Motor Corp, et. al., No. 3:15-cv-01104 WHO against Toyota Motor Corp., Ford Motor Co., and General Motors LLC, alleging fraud, false advertising, and violations of consumer protection laws based on a purported failure to disclose their vehicle's lack of electronic security and a susceptibility to hacking.

The district court dismissed the complaint, that the plaintiffs lacked standing because they had not suffered an actual injury and possessed only a speculative risk of future harm. The plaintiffs appealed and the

case is currently pending before the Ninth Circuit. The Electronic Privacy Information Center (EPIC) has filed an amicus curiae brief, requesting that the Ninth circuit reverse the dismissal. The EPIC alleges that connected vehicles without authentication or encryption are inherently vulnerable and pose more than a speculative risk of harm. (22)

"Insurance is a data-based effort to really predict the future based on the past, and when you have dramatically different technologies and new applications for automated driving, it makes predicting the future much harder because you don't have those reliable data about the past and present," he says. (40)

An accident last month in Tempe, Ariz, involving a self-driving Uber car highlighted some novel new issues regarding fault and liability that experts say will come up more often as autonomous vehicles hit the road.

And that will have an increasing impact on an insurance industry that so far has no road map for how to deal with the new technologies. (25)

This issue came into focus when a Tesla driver died in a fatal accident while his Model S was operating in Autopilot.

At the time of the May 2016 accident, a Tesla Model S failed to brake when a truck was making a left turn in front of it. The car passed under the truck and, ultimately, drove off the road into a power pole, killing the driver.

Tesla wrote in a blog post following the May accident that the Autopilot system did not notice "the white side of the tractor trailer against a brightly lit sky, so the brake was not applied."

NHTSA conducted a six-month investigation into the accident and determined Tesla Autopilot was not at fault because the driver had enough time (7 seconds) to brake. NHTSA also said Autopilot shouldn't have been expected to detect traffic crossing in front of the car.

Insurers are already preparing for the ripple effects of that reality. Insurers like Cincinnati Financial and Mercury Genera have already noted in SEC filings that driverless cars have the potential to threaten their business models.

Tesla isn't wrong to argue that insurance premiums should be adjusted to account for its cars being safer – the National Highway Traffic Administration found that crash rates for Tesla vehicles have plummeted 40% since Autopilot was first installed in 2015.

Tesla's quiet experiment shows how the insurance industry will need to change as self-driving cars hit the road. The general consensus is if self-driving cars reduce the number of collisions, there should be a reduction in the risk premium. (33)

The UK government said the Bill is designed to "help the UK to become a world leader in these technologies by breaking down some of the barriers that could limit companies from testing them here", the UK government said. Insurance industry body the Association of British Insurers (ABI) has backed the plans.

Under the proposals, the UK government would be responsible for keeping a list of all automated vehicles in the UK. Motor vehicles that "are or might be used on roads or in other public places in Great Britain" and which the UK government believes are "designed or adapted to be capable, in at least some circumstances or situations, of safely driving themselves without having to be monitored by an individual", will be listed.

Under the Bill, insurers would be free to exclude or limit liability for damages caused by automated vehicles if "alterations to the vehicle's operating system" have been made by the insured owner of the vehicle, or with their knowledge, where those alterations are prohibited under the terms of the insurance policy.

In addition, exclusions or limitations on liability would be permitted where the insured owner of a driverless car has failed to "install software updates to the vehicle's operating system" that their insurance policy requires to be installed.

According to the Bill, insurers will be default liable for death, personal injury or damages to certain property which stem from accidents caused by "automated vehicles" in self-driving mode where the vehicle is insured at the time of the accident.

Insurers would be free to try to recover the cost of damages pay-outs from vehicle manufacturers.

The extent of an insurers' liability could be limited if an injured party is responsible in any way for the accident of the damage caused by it, and insurers would not be liable at all if an accident involving a driverless car was caused by the owner's "negligence in allowing the vehicle to drive itself when it was not appropriate to do so". (21)

The 2016 Queen's Speech included a "Modern Transport Bill" that set out what needed to be done to support the introduction of driverless cars in the coming years. The document, which called for new and updated legislation, has now been worked on and finalised as the Vehicle Technology and Aviation Bill. In it, the government lists a number of proposals regarding how self-driving cars should be insured and suggests new rules requiring petrol stations (like Shell) and businesses to install more charging points for electric and hydrogen-powered cars. (37)

The privacy implications of the driverless car are significant. The data that such a vehicle could collect and the potential uses of that data could be extraordinarily intrusive. Driverless cars could provide both historic and real-time, continuous geolocation data. Companies could utilize this data to determine not only your current location and destination but also every place that you have been. This data could lead to commercially valuable, but extremely sensitive and intimate information about individuals being discovered. Advertisers may be able to discern the purchasing patterns of individuals by tracking what stores they frequent. Insurers may be able to determine what the lifestyle of individuals like by following their daily activities (e.g., constant trips to the gym) and dining habits (e.g., persistent trips to fast food restaurants). (22)

How much control will owners have the privacy settings in their vehicle? Will you be able to "clean" the database of a visit to a location that you do not want others to know you visited? Will you be able to create false data about where you were at a certain date in time, in an attempt to provide an alibi for criminal activities that you do not want others to know about? Will you be able to change the route you actually took to a different route, thereby giving you plausible deniability for where you were and when you were there?

An additional privacy concern is raised by the presence of cameras. If there are any cameras that look into or can angle into the interior of the car, riders may be concerned with the privacy of their images. Would the cameras record? If so, where would these images be stored, and who would own the rights to such images? (23)

The US Department of Transportation (USDOT) has just issued its eagerly-awaited "guidance" for self-driving and "highly automated" vehicles – and you sense its as pumped about these technologies as any Tesloid, Uberite, or Googler.

The government's stated goal is: to "accelerate the revolution," ensuring that "these technologies are safely introduced… provide safety benefits today, and achieve their full safety potential in the future."

If they succeed, millions of people will be placing their lives in the "hands" of some stunningly data and software-intensive devices: their own, the vehicles they use for on-demand transportation, and the cars and trucks they'll share the roads with. So it's worth considering what the Policy has to say about information security and privacy. (19)

"For companies like Google and Uber, privacy issues are very important," said Amnon Shashua, a co-founder of Mobile Eye, which makes machine-vision technology for self-driving cars. "That could kill a business, if you don't handle privacy properly."

Simpson, from Consumer Watchdog, doesn't believe that privacy being important means tech giants will do the right thing. "Sometimes it's just that the people who are designing the gizmo don't even think in terms of privacy, "he told me. "They just think: More data is always better. In their minds, it's just, "We may not know what we're going to do with that data."

But that's not good enough, Simpson says. "It's inappropriate."(16)

More critical thought about mobile phones and their rights' implications is urgently needed; the risk that development initiatives unknowingly create legacy systems to aid impermissible surveillance or other rights-limiting regimes is significant. The New America Foundation's recent report Dialing Down Risks: Mobile Privacy and Information Security in Global Development Project south lines core principles to guide development funders and practitioners in

incorporating privacy protections into their projects. These principles provide an excellent starting point for a border discussion around the risks that come along with the opportunities that the use of mobile phones offer for development initiatives and the need to develop more robust practices and standards in this area. (2)

California has draft regulations that do address the informational privacy issues, if only glancingly. These require notice and consent before information can be collected from operators other than what's needed to operate the vehicle. (41)

- Consumers should get "accessible, clear, meaningful data privacy and security notices," with choices about "collection, use, sharing, retention, and deconstruction of data, including geolocation, biometric, and driver behavior data that could be responsibly linkable to them personally".
- Data inproduction vehicles should be used "only in ways… consistent with the purposes for which [it] originally was collected".
- Manufacturers should collect and keep "only for as long as necessary the minimum amount of personal data require to achieve legitimate business purposes," de-identified "where practical".
- Manufacturers should be ready to share event reconstruction data to promote safety throughout the industry, but that data should be stripped of personal identification. (19)

The only major protection for consumers is a set of Fair Information Practice Principles that a group of automakers adopted in 2014. These principles include providing consumers with transparency and requiring heightened protections for sensitive types of consumer information. While these principles sound promising, they do not do much. The problem with these principles is that their terms are ambiguous enough that various automakers can have their own standards for what is " sensitive information." This can result in one consumer having greater or lesser protection than a consumer who owns a self-driving car by another company. Furthermore, consumers who own a self-driving car by a company such as Google that has not adopted the Fair Information Practice Principles might not have any protection at all. (31)

Automakers praised committee passage, while Consumer Watchdog privacy director John Simpson said preempting state laws "leaves us at the mercy of manufacturers as they use our public highways as their private laboratories. (15)

Seventeen states Arkansas, California, Colorado, Connecticut, Delaware, Main, Montana, Nevada, New Hampshire, New Jersey, New York, North Dakota, Oregon, Texas, Utah, Virginia, and Washington and the District of Columbia have enacted statutes relating to the data privacy issues of data retrieval from event data recorders ("EDRs").1 EDRs capture driver behavior information, such as the speed of a vehicle, braking pattern, and collision information. These states require obtaining the consent of the vehicle owner or policyholder before one can download data collected from a motor vehicle's EDR. Although these seventeen states have addressed issues relating to data privacy by regulating data retrieval from EDRs, only North Dakota has enacted legislation that specifically mentions "data privacy." That legislation requires the department of transportation to study the data and information stored and gathered by the use of self-driving vehicles. (7)

Privacy Principles enacted by the Alliance of Automobile Manufacturers and the Association of Global Automakers:

1) Transparency – Members should provide owners and registered users with ready access to clear, meaningful notices about the member's collection, use, and sharing of covered information.
2) Choice – Members should offer owners and registered users with certain choices regarding the collection, use, and sharing of covered information.
3) Respect for Context – Members should use and share covered information in ways that are consistent with the context in which the covered information was collected, taking account of the likely impact on owners and registered users.
4) Data Minimization – Members should collect covered information only as needed for legitimate business purposes and retaining covered information on longer than they determine necessary.

5) Data Security Members should implement reasonable measures to protect covered information against loss and unauthorized access or use.
6) Integrity and Access – Members should implement reasonable measures to mention the accuracy of covered information and give owners and registered users reasonable means to review and correct personal subscription information.
7) Accountability – Members should take reasonable steps to en sure that they and other entities that receive covered information adhere these Privacy Principles. (7)

The Regulation of Investigatory Powers act 2000 (RIPA) is the main statute pearing on hacking. Section 1 of the Act creates the offence of unlawful interception of A communication. In summary, the offence under section1 is committed by a person who, intentionally and without lawful Authority, intercepts any communication "in the course of its transmission" by means of public (or private) telecommunications system. [8] An offender may be sentenced on indictment to A term of imprisonment of up to two years. (5)

In the rush to spread the information revolution, digital development agendas pose and increasing threat to privacy. But are also unknowingly facilitating new surveillance capabilities? Humanitarian Actors often forsake the right to privacy in favour of promoting programmes utilising phones to deliver services, either through A lack of understanding or wilful ignorance as to the risks involved.

In an age of widespread communications surveillance by both state and non – state actors, using mobile networks to transmit sensitive data is inherently risky, disseminating information to beneficiaries by mobile can have unforeseen consequences; and gathering and analysing big data sets mobile phone activity presents a serious challenge to individuals' rights. (1)

Despite all the attention and money being poured into mobile health, it is this area in particular in which serious privacy concerns arise. For starters, health data contains some of the most sensitive pieces of information about us. Consequently, extra care needs to be taken with the transmission and storing of data in mobile health programmes. However, a recent report by Trust law, in collaboration with the

mHealth Alliance, recognized that the lack of comprehensive data protection and privacy protections in developing countries has impeded the effective expansion of mHealth initiatives. It is startling that the UN would promote these programmes despite knowing how perilous the privacy implications are in countries with limited legal protections.

Outside the dissemination or collection of information from particular individuals, there are a range of initiatives designed to use the data generated or collected by mobiles to conduct analysis about trends and events that might inform future development and humanitarian initiatives. 'Big data' – the amassing and analysis of high volumes of digital data to uncover new correlation – is taking the development world by storm.

Crisis mapping, where incidences of violence or disasters are mapped, is one area in which the use of mobile phone data has been lauded. In Haiti, for example, researchers conducted analysis of cell tower data to plot the location of population feeling from a cholera outbreak. A prominent example of a crisis mapping platform is Ushahidi in Kenya, funded by, among others, the Ford Foundation and MacArthur. (2)

This level of data collection is a natural extension of a driverless car's functionality. For self-driving cars to work, technologically speaking, an ocean of data has to follow into a lattice of sophisticated sensors. The car has to know where its, where its going, and be able to keep track of every other thing and creature on the road. Self-driving cars will really in high-tech cameras and ultra-precise GPS data. Which means cars will collect reams of information about the people they drive around like the data Uber has a massed about its customers, s transportation habits but down to a level of detail that's astonishing. The more personalized these vehicles get-or the more conveniences they offer-the more individual data they'll incorporate into their service. The future I described might be a ways off, yet, but there's no reason to believe it's especially far-fetched. (16)

Wednesday night, however, Tesla announced that, going forward it would include autonomous hardware into all new cars. That's not that Big of a deal-but what is that, in theory, those cars will be capable of level 5 driving. Musk said that all model X (the weird looking egg-

shaped crossover thing) and model S vehicles would come equipped with the technology package as an $8,000 add on and include eight cameras 12 update sensors, and a radar system that has faster processing. What's more is that Musk has said that Tesla will be able to drive from LA to New York completely autonomously by 2017. That's an ambitious Goal that code get mired down in A lot of issues given the rather patchwork nature of autonomous driving laws in various states across the country. (39)

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