

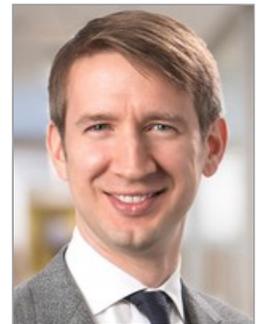
# Manufacturers Won't Bear All Liability For Driverless Vehicles

By **Geoffrey Wyatt** (August 26, 2019, 3:40 PM EDT)

The anticipated impact of autonomous vehicles on driver safety cannot be overstated. According to federal data, roughly 37,000 people died and another 2.7 million were injured in car accidents in the United States in 2017 alone.[1]

The United States Department of Transportation estimates that 94% of crashes involve driver-related factors, such as impaired driving, speeding or illegal maneuvers.[2] These striking numbers are a driving force behind the enthusiasm for autonomous vehicles, which are expected to substantially diminish or eliminate accidents caused by human error.

Such a shift would not only improve safety, but also transform the litigation landscape. Most obviously, a substantial reduction in accidents would likely produce a correspondingly substantial reduction in accident-related litigation. But commentators have suggested that the character of the remaining litigation would also likely shift.



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If human factors are largely eliminated from car accidents, the supposition has been that liability for accidents would shift almost entirely to car manufacturers, removing or severely restricting the availability of comparative fault defenses.[3] Indeed, a number of automobile manufacturers have previously stated that they would assume liability for accidents involving self-driving technology in their automobiles, while also noting that the anticipated liability for such accidents is likely to be very small or nonexistent, due to the safety improvements that the technology is expected to confer.[4]

This approach also appears to reflect the assumption of potential regulators of autonomous vehicles. For example, in a white paper authored this month by the Governors Highway Safety Association — which is a nonprofit group that represents state highway safety offices — a panel of experts commissioned by the association noted that while some have suggested that owners could remain liable for autonomous vehicles involved in accidents, “[o]thers have suggested that the [autonomous vehicle’s] manufacturer [would] be responsible under product liability law.”[5]

In reality, such statements — while broadly correct, in noting that autonomous driving technology is likely to alter the shape of litigation — likely oversimplify things significantly. Already, what little litigation there has been over alleged defects in autonomous driving technology has involved allegations of fault by human parties to the accidents at issue, a trend that is likely to continue at least during the likely long transition period during which autonomous, semi-autonomous and non-autonomous vehicles coexist.[6]

Moreover, even assuming there is a shift away from driver liability, it is not clear that liability will shift entirely to automobile manufacturers — especially in light of the trend toward outsourcing the multiple necessary components for an autonomous driving system to a diverse array of third-party vendors. Computerization of the driving function also opens potentially new frontiers for liability that were previously confined to other fields — such as hacking, which traditionally has threatened informational rather than physical harm.

This article explores these three potential complications to the assumption that manufacturers

necessarily would assume most or all liability for car accidents as autonomous vehicles are introduced.

### **Defining the Scope of the Duty to Anticipate and Prevent Accidents**

One question that complicates liability questions is what standard autonomous vehicles will have to meet in terms of anticipating and preventing accidents. Needless to say, a relatively high standard of safety is likely to be imposed, especially in light of the expectation noted above that autonomous vehicles will ultimately prove to be much safer than traditional, human-driven automobiles.

But the law of product liability also generally recognizes that no product can be made completely safe, and (in many states) liability generally will not be imposed where a manufacturer has exercised reasonable care and the product meets state-of-the-art standards for safety. Thus, at least absent alteration of these ground rules by courts or legislatures seeking to set forth unique rules for self-driving cars (which is always a possibility), each accident holds the potential to raise the question whether the circumstances that led to the accident should have been anticipated and avoided under standards of reasonable care, or state of the art.

Both the advance of technology and the facts of the case will likely play heavily into this analysis. As to technology, the degree of vehicle autonomy will almost certainly be a relevant factor. Of note, vehicle autonomy is not strictly a "yes/no" question. The Society of Automotive Engineers has created a six-level scale, from zero to five, to classify how autonomous a vehicle is, with zero being entirely human-controlled in all situations, and five requiring no human input in any driving situation. This scale has been adopted by the National Highway Traffic Safety Administration.[7]

Level 0 is a traditional car with no automation, while Level 1 refers to limited automated safety features, such as crash-avoidance braking technology that is already available in many cars. Levels 2 and 3 transfer greater responsibility to the car — acceleration and lane-centering at Level 2, for example, or full self-driving capability under certain circumstances at Level 3 — but still require monitoring and intervention by a human driver to ensure safety. Levels 4 and 5 represent true autonomy — Level 4 for normal driving conditions, and Level 5 for all driving conditions, including specialized applications such as off-road driving.[8]

Experience already indicates that assignment of fault for an accident will remain a difficult question at some degrees of semi-autonomous driving, especially Levels 2 and 3, which rely on continued driver attention, even though the driver is not necessarily expected to be making driving decisions on a continuous basis. In the case of the first person to die in a self-driving car, for example, the driver of a Tesla that collided with a tractor-trailer at 74 miles per hour was determined to be at fault by NHTSA for abdicating his responsibility to monitor the car while it was in self-driving mode.

As one article describing the accident explained, the Tesla system was only semi-autonomous — it was "intended to aid, not replace, human drivers." [9] But the driver had diverted his attention entirely from the driving task, and missed a seven-second window to avoid collision.[10] This fact suggests that the contributory or comparative fault of the driver in accidents involving semi-autonomous vehicles will remain a live issue.

It appears that plaintiffs will attempt to circumnavigate these express limitations on the capabilities of semi-autonomous systems, by alleging that such systems lull drivers into a false sense of security. In *Hudson v. Tesla Inc.*, for example, a Tesla driver alleged that the automated driving system on his car was defective because it failed to identify a car left parked on the highway, with which his car collided at full speed. Although the Tesla system at issue was the same semi-autonomous system described above — i.e., it was not fully autonomous and not intended to replace human drivers — the complaint alleged that the system or the marketing around it "misleads drivers into believing they can rely upon the autopilot system ... with minimal driver input." [11]

Similar theories have been raised in the past with respect to new automobile technologies. For example, a similar claim was raised in the context of keyless ignition systems, which differ from the transmission interlock systems of older cars that required a physical key to start the engine. At the time of that case, federal regulations mandated that manufacturers design cars in such a way that it was impossible to remove the key from the ignition unless the transmission was in the "park" setting, in order to prevent the vehicle from rolling away.

The car manufacturer had designed a car with an electronic key fob, obviating the need for a traditional ignition system in the wheel. Despite that, the car contained a holster in the wheel where the driver could place the electronic key fob while driving. But the car would still allow the driver to take the fob out of the holster when the engine was off, regardless of whether the car was in park.

The thrust of the plaintiffs' argument was that this departure from the traditional physical transmission interlock system removed an important prompt to drivers to remember to put their car in park before exiting the vehicle. The theory was ultimately unsuccessful, because the court determined that the electronic key fob was not governed by federal regulations, and because any prudent person should know to put their car in park before exiting the car.[12] But it stands as an example of how litigation theories may shift as old-fashioned prompts for driver attention are phased out or replaced.

The facts of individual cases will also potentially shape the law on the scope of duty, even as to fully autonomous vehicles. Again, existing cases provide some clues about how these questions might arise. In *Hudson v. Tesla Inc.*, noted above, the driver alleging that the automated driving system in his Tesla failed to identify a car left parked on the highway sued not only Tesla but also the owner of the parked car, claiming he was negligent in failing "to properly remove his vehicle from the roadway." [13]

These allegations against two different defendants — the car manufacturer and the owner of the parked vehicle — directly implicate the question of which party is at fault (or more at fault) in such circumstances. Put differently, it raises the issue whether (and to what extent) the manufacturer has a duty to account for the acts of third parties when those acts are unlawful. In this instance, the plaintiff alleged that an abandoned roadside vehicle is a "foreseeable roadway hazard[]," which offers one potential factor to consider in deciding such issues.[14]

But foreseeability becomes more difficult in other settings because it puts the focus on potentially very technical questions regarding what self-driving technology realistically is, or should be, capable of. In March 2018, for instance, a pedestrian was struck and killed by a self-driving car in Arizona, in what "appears to be the first time an automobile driven by a computer has killed a human being by force of impact." [15] The ensuing investigation suggested that "the pedestrian might have been at fault" by stepping out "from the shadows" while jaywalking.[16]

Of course, jaywalking is also "foreseeable" in the broad sense — but even the fastest computer and the sharpest cameras may fail to identify a pedestrian who enters the roadway a split second before an approaching car speeds by. Similar scenarios involving collisions with other cars rather than pedestrians (either as a result of human error or other factors such as road conditions or wildlife entering the roadway) are easily imagined. This category of cases highlights that it will not be sensible to impose liability on manufacturers in every accident involving fully autonomous vehicles — it will depend on the facts.

In short, the few incidents of accidents involving self-driving cars already supply ample ground to conclude that a wholesale shift of liability from drivers to manufacturers is unlikely anytime soon, or perhaps ever. Liability will remain fact-bound, and depend on the type of technology involved, the warnings regarding its use and the actions of other parties — including drivers, as long as they still have a role to play, even if that role is reduced by the emergence of semi-autonomous driving features.

### **Identifying the Relevant Manufacturer**

Another issue that might emerge in litigation against manufacturers of autonomous vehicle technology is the identification of the relevant manufacturer. Increasingly, automobile manufacturers have outsourced certain component parts to third-party manufacturers, and autonomous vehicle technology is no exception.

Fully autonomous vehicles require a number of systems working together in order to successfully "see" the road and drive the vehicle safely. Because autonomous vehicle technology comprises many constituent parts — which are likely to be provided by different suppliers — the issue of identifying the relevant manufacturer or manufacturers could be a complex matter, especially in light of the fact

that the many of the components must work together in order to function.

Among other things, autonomous vehicle systems require processors (i.e., computer hardware), sensors of various sorts (e.g., cameras, radar and lidar, a sensor that operates like radar using lasers), communications systems, mapping systems (including failsafe systems that can continue to operate if communications are interrupted) and software algorithms (i.e., programs that synthesize all of the data from the sensors and the vehicle in order to safely drive it).[17]

These systems implicate different sets of expertise, including areas of expertise that have no prior application in the automobile space — which is driving suppliers such as semiconductor companies to enter the market, “even if they did not previously have a presence in the automotive sector.”[18] The result is that it is a near certainty that automobile manufacturers will not be designing or fabricating every aspect of these systems in house.[19]

The question thus arises: Which manufacturer would bear responsibility in the event of an accident resulting from alleged defects in an autonomous driving system? To some extent, such questions would not really be new. Auto accident litigation has already played host to cases involving alleged defects in components supplied by third parties, which are often named along with the automobile manufacturers as co-defendants.[20]

And here, too, the first lawsuits involving semi-autonomous vehicles suggest that this trend would continue. In *Lommatzsch v. Tesla Inc.*, for example, the plaintiff sued after her Tesla collided with cars stopped on a highway, alleging that the autopilot system failed to brake. The plaintiff sued Tesla, but also sued a third-party service center that had replaced a sensor in the car prior to the crash, alleging that the co-defendant had negligently serviced the car.[21]

But the complexity and integrated nature of autonomous driving systems are likely to complicate these inquiries significantly. As noted above, these systems require numerous components that are likely to be supplied by numerous manufacturers. Such arrangements portend potentially difficult and complex causation issues in certain accident scenarios where locating (or excluding) the cause of failure in an integrated autonomous driving system is complicated and open to dispute.

Even governmental entities maintaining roadways may be subject to litigation under novel theories of liability. In one recent case in which a driver was killed when the car he was driving struck a crash attenuator on the side of a highway, the plaintiff sued not only the manufacturer but also the state of California, arguing that the crash attenuator was improperly maintained and contributed to the severity of the car accident.[22]

The allegations raise questions of what duty highway authorities may have to account for the emergence of self-driving vehicle technology in implementing traditional highway safety measures, and whether they have any duty to adopt new technologies to ensure the safe operation of such vehicles. In these respects, too, it may be premature to assume that liability will inevitably shift to automobile manufacturers in accidents alleged to result from failures in autonomous driving systems.

### **Dealing With Hacking and Informational Failures**

Finally, hacking and other informational failures also pose unique risks in the new world of autonomous vehicles. Autonomous driving systems vitally depend on information services in multiple forms — for example, in the mapping information and GPS data that inform navigation, and in the data such cars are expected to trade among each other in real time.

In particular, multiple companies have been experimenting with vehicle-to-vehicle, or V2V, communication, and the DOT has already proposed rules to make V2V communication mandatory in some situations.[23] Through V2V communication, vehicles could potentially send information — such as speed, position and direction — to a cloud which would be available to all vehicles.[24] Other vehicles would then be able to read that data, using it to prevent crashes through coordination and advanced knowledge of incoming vehicles that a human driver would not necessarily be able to see.

While V2V communication has the potential to unclog traffic and reduce accidents, it also faces vulnerabilities from hackers, who could potentially read private passenger information, edit data to confuse autonomous vehicles or even send commands to vehicles on the road. Such developments

implicate a potentially new frontier of liability for hacking and informational injury — which in this context could have profound physical consequences.

One critical question would be the applicable legal doctrines.[25] Arguably, and depending on context, the data or software targeted by hacking might not be a “product” within the meaning of existing product liability law.[26] The answer to that question could have important consequences if, for example, a state had sought to limit or enhance product liability in certain situations, but hacking-caused accidents were determined to fall outside those legal reforms.

Whatever body of law would govern, hacking is also another area where identifying the appropriate defendant could prove difficult and fact-bound. Principal liability would presumably lie against the hacker, assuming one could be identified. The same component issues noted above could also be in play if there were a colorable claim that one or more components failed to provide needed data security.

A third-party provider of cloud services could also have exposure if the data breach occurred in its platform — although its potential liability might not insulate component manufacturers from claims that autonomous driving systems should be able to detect and adjust for problems in V2V systems. Owners of the vehicles (who may increasingly be parties other than the passengers, as the profusion of autonomous vehicles is expected to be accompanied by a shift away from individual car ownership toward on-demand and ride-sharing services) could also face potential exposure in the event that they fail to update the vehicle’s software with security patches rolled out by the manufacturers.

In short, the unique reliance of autonomous vehicles on data suggests novel avenues of exposure in accidents, and these new roads may not all lead to the manufacturer of the car.

## **Conclusion**

The expected safety advantages to be gained by a shift to autonomous vehicles are extensive, and will likely transform the litigation landscape relating to car accidents, which hopefully will be greatly diminished. As detailed above, however, the changing shape of litigation is unlikely to result in monolithic liability for automobile manufacturers in all cases. Rather, autonomous vehicle technology is poised to transform liability questions in multiple dimensions that are difficult to predict and will depend on factual circumstances.

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[1] Nat’l Highway Traffic Safety Admin., Traffic Safety Facts Annual Report, at 1 (Apr. 23, 2019), available at <https://cdan.nhtsa.gov/tsftables/tsfar.htm>.

[2] United States Dept. of Transp., Preparing for the Future of Transportation: Automated Vehicles 3.0, at 3 (Oct. 2018), available at <https://www.transportation.gov/av/3>.

[3] See, e.g., James M. Anderson et al., Autonomous Vehicle Technology: A Guide for Policymakers 118–28 (RAND Corp. ed., 2016), available at [https://www.rand.org/pubs/research\\_reports/RR443-2.html](https://www.rand.org/pubs/research_reports/RR443-2.html); David King, Putting the Reins on Autonomous Vehicle Liability: Why Horse Accidents Are the Best Common Law Analogy, 19 N. Carolina J. of L. & Tech. 127, 156–58 (2018).

[4] E.g., Clifford Atiyeh, Volvo Will Take Responsibility If Its Self-Driving Cars Crash, Car & Driver, Oct. 8, 2015, <https://www.caranddriver.com/news/a15352720/volvo-will-take-responsibility-if-its-self-driving-cars-crash/> (citing statements to this effect from Volvo, Mercedes-Benz and Google).

[5] Governors Highway Safety Association, Automated Vehicle Safety Expert Panel: Engaging Drivers and Law Enforcement, Aug. 2019, [https://www.ghsa.org/sites/default/files/2019-08/AV%20Safety%20White%20Paper\\_FINAL.pdf](https://www.ghsa.org/sites/default/files/2019-08/AV%20Safety%20White%20Paper_FINAL.pdf).

[6] So far at least four lawsuits have been filed against autonomous car manufacturers alleging products liability claims. Complaint for Damages, Nilsson v. Gen. Motors LLC, No. 3:18-cv-00471-KAW (N.D. Cal. Jan. 22, 2018); Complaint, Hudson v. Tesla Inc., 2018-CA-011812-O (Fla. Cir. Ct. Oct. 30, 2018); Complaint, Lommatzsch v. Tesla Inc., 2:18-cv-00775 (Utah D. Ct. Sept. 4, 2018); Complaint for Damages, Huang v. Tesla Inc., No. 19-cv-346663 (Super. Ct. Santa Clara County April 26, 2019). The Hudson matter expressly alleges fault against a third party for abandoning a car on the highway that was allegedly struck by the plaintiff's vehicle. See Hudson Compl. ¶¶ 44, 97. And in Nilsson, the plaintiff was a motorcyclist who alleged he was struck when an autonomous driving feature caused a vehicle manufactured by the defendant to suddenly switch lanes, but the defendant suggested in a statement to a state regulatory authority that the plaintiff put himself in harm's way by driving between lanes of traffic. R.J. Vogt, GM Settles First-Known Suit Over Self-Driving Car-Crash, Law360, June 1, 2018, <https://www.law360.com/articles/1049776/>.

[7] United States Dept. of Transp., supra note 2, at vi; Hope Reese, Updated: Autonomous Driving Levels 0 To 5: Understanding The Differences, TechRepublic, Jan. 20, 2016, <https://www.techrepublic.com/article/autonomous-driving-levels-0-to-5-understanding-the-differences/>.

[8] See, e.g., Reese, supra (summarizing and providing examples for the six levels).

[9] Steven Seidenberg, Who's To Blame When Self-Driving Cars Crash?, ABA J., July 1, 2017, [http://www.abajournal.com/magazine/article/selfdriving\\_liability\\_highly\\_automated\\_vehicle](http://www.abajournal.com/magazine/article/selfdriving_liability_highly_automated_vehicle).

[10] Id.

[11] Nathan Hale, Tesla Sued Over Fla. Driver's Crash While Using Autopilot, Law360, Oct. 30, 2018, <https://www.law360.com/articles/1097240/>.

[12] *Taragan v. Nissan N. Am. Inc.*, No. C 09-3660 SBA, 2010 WL 3491000 (N.D. Cal. Sept. 2, 2010) (dismissing plaintiffs' class claims which were based on the federal regulations), *aff'd*, 475 Fed. App'x 221 (9th Cir. 2012); *Taragan v. Nissan N. Am. Inc.*, No. C 09-3660 SBA, 2013 WL 3157918, at \*9 (N.D. Cal. June 20, 2013) (dismissing plaintiffs' claims, inter alia, "the purported rollaway risk is completely avoidable by placing the automatic transmission in park and/or applying the parking brake — all of which a driver should do as a matter of common sense and prudence").

[13] Hudson Compl. ¶¶ 44, 97.

[14] Hudson Compl. ¶ 3.

[15] Ian Bogost, Can You Sue A Robocar?, The Atlantic, Mar. 20, 2018, <https://www.theatlantic.com/technology/archive/2018/03/can-you-sue-a-robocar/556007/>.

[16] Id.

[17] Seunghyuk Choi et al., McKinsey & Co., Advanced Driver-Assistance Systems: Challenges And Opportunities Ahead, Feb. 2016, <https://www.mckinsey.com/industries/semiconductors/our-insights/advanced-driver-assistance-systems-challenges-and-opportunities-ahead>.

[18] Id.

[19] See, e.g., Chuck Tannert, Could iPhone-Style Contract Manufacturing Come To The Car Industry?, Ars Technica, Aug. 13, 2018, <https://arstechnica.com/cars/2018/08/could-iphone-style-contract-manufacturing-come-to-the-car-industry/>.

[20] Richard E. Kaye, American Law of Products Liability § 8:9 (3d ed. 2019).

[21] Lommatzsch Compl. ¶¶ 12, 44-48.

[22] Huang Compl. ¶¶ 51-70.

[23] Hope Reese, US DOT Proposes V2V Mandate to Make Roads Safer, TechRepublic (Dec. 13, 2016, 8:51 AM), <https://www.techrepublic.com/article/us-dots-proposed-rule-mandates-v2v-to-make-roads-safer-by-letting-cars-talk-to-each-other/>; 6 Vehicle-to-Vehicle (V2V) Communication Startups, nanalyze (April 28, 2017), <https://www.nanalyze.com/2017/04/6-vehicle-v2v-communication-startups/>.

[24] See Rick Blaisdell, Connected Cars and V2V Communication, Rick's Cloud (March 4, 2016), <https://rickscloud.com/connected-cars-and-v2v-communication/>.

[25] See Sunghyo Kim, Crashed Software: Assessing Product Liability For Software Defects In Automated Vehicles, 16 Duke L. & Tech. Rev. 300, 311-12 (2018).

[26] Id.