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### **Autonomous Vehicle Manufacturers: Applying a Common Carrier Liability Scheme to Autonomous Vehicle Manufacturers—and Why Elon Musk Will Be Haunted by His Words**

Alejandro Monarrez

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# Autonomous Vehicle Manufacturers: Applying a Common Carrier Liability Scheme to Autonomous Vehicle Manufacturers—and Why Elon Musk Will Be Haunted by His Words

*Alejandro Monarrez\**

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## INTRODUCTION

In 2013, Dylan LeValley, then a third-year law student at Seattle University School of Law, authored a publication proposing and encouraging courts to conclude that autonomous vehicle manufacturers, similar to common carriers of passengers, owe the public the highest duty

\* J.D. Candidate, Seattle University School of Law, 2021. Alejandro is a first-generation, Mexican-American student having graduated cum laude from Loyola University Chicago with a B.S. in Criminal Justice & Criminology and minors in Sociology and Pastoral Leadership. Before law school, Alejandro served on active duty with the United States Marine Corps as a legal services specialist and court reporter having attained the rank of Sergeant and awarded the National Defense Service Medal, the Global War on Terrorism Service Medal, the Good Conduct Medal, and the Navy & Marine Corps Achievement Medal. Alejandro is currently a Summer Compliance Associate with JPMorgan Chase & Co. and has practice interests ranging from corporate and business to privacy and cannabis law.

of care and thus should be liable for even the slightest negligence.<sup>1</sup> LeValley asserted such a conclusion was premised on the fact that autonomous vehicles share similar characteristics to common carriers of passengers, and policy rationales for holding common carriers to the highest standard of care are similarly applicable.<sup>2</sup> When such a proposal was made, the future of autonomous vehicles was still in the early stages of development without much known regarding the utility of the technology.<sup>3</sup>

However, in 2016, autonomous vehicle manufacturers like Tesla announced all vehicles manufactured moving forward would have self-driving capabilities.<sup>4</sup> Such a pronouncement by Tesla and other similarly situated autonomous vehicle manufacturers raises today the same concerns identified by LeValley in 2013: How should liability be assessed when autonomous vehicles are involved in vehicular accidents, including when assessed liability involves a real cost to human life and not just property damage?

Since 2016, there have been several fatalities involving autonomous vehicles, including most notably the death of Elaine Herzberg, a pedestrian in Tempe, Arizona, on March 18, 2018.<sup>5</sup> Ms. Herzberg died when an autonomous Volvo owned by Uber failed to detect her crossing a major thoroughfare, striking Herzberg at 38 miles per hour—and by some conflicting reports at 40 miles per hour—resulting with Uber suspending all autonomous vehicle testing thereafter.<sup>6</sup> This is a pressing issue for which courts and society at large have yet to determine a consistent and particular liability scheme to use in addressing this issue in spite of the public safety need.

For purposes of this Comment update, I will: (I) provide a brief background on autonomous vehicles and principles of common carrier

1. Dylan LeValley, *Autonomous Vehicle Liability—Application of Common Carrier Liability*, SEATTLE U. L. REV. SUPRA 5, 6 (2013).

2. *Id.*

3. Tony Genua & Sam Mitter, *A Setback in the Move Towards a Driverless World*, AGF (Mar. 31, 2018), <https://www.agf.com/ca/en/insights/market-commentaries/articles/article-a-driverless-world.jsp> [https://perma.cc/JTD3-B9W9].

4. Jordon Golson & Dieter Bohn, *All New Tesla Cars Now Have Hardware for 'Full Self-Driving Capabilities'*, THE VERGE (Oct. 16, 2016), <https://www.theverge.com/2016/10/19/13340938/tesla-autopilot-update-model-3-elon-musk-update> [https://perma.cc/6PJN-HNX4].

5. Ryan Randazzo, *Who was Really at Fault in Fatal Uber Crash? Here's the Whole Story*, AZ CENTRAL (Mar. 17, 2019), <https://www.azcentral.com/story/news/local/tempe/2019/03/17/one-year-after-self-driving-uber-rafaela-vasquez-behind-wheel-crash-death-elaine-herzberg-tempe/1296676002> [https://perma.cc/CT6E-KGBU].

6. *Id.*; see also Patrick Sisson & Alissa Walker, *Uber's Fatal Crash: Are Self-Driving Tests Endangering Pedestrians?*, CURBED (Mar. 21, 2018), <https://www.curbed.com/2018/3/19/17140922/uber-crash-tempe-fatal-driverless-car> [https://perma.cc/F3M6-KJJM] (video of accident embedded in article).

liability; (II) provide reasons why such application of common carrier liability principles to autonomous vehicle manufacturers is appropriate; and (III) provide public policy justifications for such an application based on developments since publication of the original Comment in 2013.

## I. BACKGROUND

In 2015, Tesla Chief Executive Elon Musk declared “the Model S [is] a very sophisticated computer on wheels . . . Tesla is a software company as much as it is a hardware company. A huge part of what Tesla is, is a Silicon Valley software company.”<sup>7</sup> Industry analysts agreed with such assessment based on Tesla’s vehicle design approach akin to smartphones.<sup>8</sup> Redefining and reimagining a vehicle as now just being a sophisticated phone-like platform on which various software applications may exist and be periodically updated remotely by the manufacturer is understandably innovative for the average consumer. However, such redefining and reimagining, even if seemingly innovative, raises complex issues of liability, specifically: how should liability be assessed when a vehicle is in autonomous operation mode and subsequently involved in an accident?<sup>9</sup> The answer: fashion a liability scheme based on common carrier principles, and then apply it to autonomous vehicle manufacturers (AVMs).

### *A. Autonomous Vehicle History, Development, and Automation Levels*

Almost within years of the creation and development of the first mass produced vehicle by Henry Ford, the Model T,<sup>10</sup> individuals began experimenting and developing autonomous vehicles or “phantom autos” controlled by a system using radio waves.<sup>11</sup> In the 1990s, researchers, controlling for speed and braking, traveled 2,797 miles hands-free in a self-driving minivan from Pittsburgh to San Diego, and the early 2000s brought self-parking systems.<sup>12</sup> However, the biggest thrust in development of autonomous vehicle technology came with Google’s self-driving project, Waymo, in 2009.<sup>13</sup> By the end of 2014, Google reported

7. Jerry Hirsch, *Elon Musk: Model S Not a Car but a ‘Sophisticated Computer on Wheels,’* L.A. TIMES (Mar. 19, 2015), <https://www.latimes.com/business/autos/la-fi-hy-musk-computer-on-wheels-20150319-story.html> [<https://perma.cc/FKA7-ABHV>].

8. *Id.*

9. LeValley, *supra* note 1, at 6.

10. *Model T*, HISTORY (Apr. 26, 2010), <https://www.history.com/topics/inventions/model-t> [<https://perma.cc/5EY3-E9GY>].

11. *Id.*

12. *Id.*

13. *Id.*

over two million miles driven by Google's autonomous vehicle, all computer controlled.<sup>14</sup> Major vehicle manufacturers took notice, including Mercedes Benz which began developing semi-autonomous vehicle features like self-steering, lane assist, and accident avoidance.<sup>15</sup> Not long after, Tesla announced in 2016 that all of their vehicles manufactured moving forward would have "full self-driving capabilities."<sup>16</sup>

Meanwhile, the Society of Automotive Engineers (SAE),<sup>17</sup> an international association of engineers and related technical experts within aerospace, automotive, and commercial vehicle industries, developed a set of modes and levels to understand vehicle automation, which are used by the National Highway Traffic Safety Administration (NHTSA).<sup>18</sup> These six levels are: no automation; driver assistance; partial automation; conditional automation; high automation; and full automation.<sup>19</sup> No automation means "zero autonomy [and] the driver performs all driving [related] tasks."<sup>20</sup> Driver assistance is when the vehicle is designed with driving assist features but primarily controlled by the driver.<sup>21</sup> Partial automation is when the vehicle combines driver-controlled actions with automated functions like acceleration or steering.<sup>22</sup> Conditional automation still requires a driver, but the driver is not required to monitor the environment.<sup>23</sup> High automation is when the "vehicle is capable of performing all driving functions under certain conditions" with the option of driver control.<sup>24</sup> Lastly, full automation is when the "vehicle is capable of performing all driving functions under all conditions" with the option of driver control remaining.<sup>25</sup>

14. *Id.*

15. *Id.*

16. Golson & Bohn, *supra* note 4.

17. *About SAE International*, SAE INT'L, <https://www.sae.org/about/> [<https://perma.cc/9VHG-YJTT>].

18. *Automated Vehicles for Safety*, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., <https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety> [<https://perma.cc/DA54-F4PA>] [hereinafter NHTSA].

19. *Id.*

20. *Id.*

21. *Id.*

22. *Id.*

23. *Id.*

24. *Id.*

25. *Id.* It is interesting to note that the varying levels of automation likely coincides with the development of autonomous vehicle technology over the last two decades. Although the NHTSA favorably provides information on the benefits of autonomous vehicles generally, the agency interestingly does not posit a determinative position for assigning liability when autonomous vehicles crash. Instead, the response to the question is "beyond the technical considerations that policymakers are working to address before automated vehicles are made available." *Id.*

*B. Common Carrier Factors: Control and Care*

“A common carrier is one who holds itself out to the general public as engaged in the business of transporting persons or property from one place to another.”<sup>26</sup> Although AVMs do not fit the characteristics of common carriers generally, AVMs do share two categories: control and care.<sup>27</sup> When determining whether an entity is a common carrier, courts will consider several factors, including: “(1) whether an operator controls the manner of transportation; and (2) whether a passenger is placed in the operator’s care.”<sup>28</sup> Although AVMs do not fall squarely within the characteristics and classification of a common carrier, the aforementioned factors create a starting point—an opportunity to fashion and develop a new liability scheme for autonomous vehicles and their manufacturers—and hopefully advance the law forward to begin grappling with the complexity of the legal issues raised by such rapid development in the technological space.

II. WHY APPLICATION OF A COMMON CARRIER LIABILITY SCHEME TO  
AVM’S IS APPROPRIATE

AVMs are not in the traditional enterprise of “transporting persons or property from one place to another” in order to be considered common carriers because AVMs design and manufacture the *means* of transporting persons or property from one place to another.<sup>29</sup> However, the application of common carrier principles to AVMs as a liability scheme is appropriate because AVMs control the *manner of transportation* when autonomous vehicles are engaged in full automation mode, thus placing passengers subsequently in their care.<sup>30</sup>

First, AVMs control the manner of transportation because autonomous vehicles in a fully automated state use the AVM-developed software and hardware incorporated into the design of the vehicle.<sup>31</sup> When full automation mode is engaged, the software takes over the functions and decisions associated with driving without a need for human input. In other words, software and hardware developed and incorporated into autonomous vehicles by AVMs work in unison to effectively pick from an internal cache of *predetermined* judgment calls—algorithms of calculated

26. *Bennett Truck Transp., L.L.C. v. Williams Bros. Constr.*, 256 S.W.3d 730, 733 (Tex. App. 2008).

27. *LeValley*, *supra* note 1, at 23.

28. *Id.* (citing *Hunt ex rel. Gende v. Clarendon Nat. Ins. Serv., Inc.*, 691 N.W.2d 904 (Wis. Ct. App. 2004)).

29. *Bennett*, 256 S.W.3d at 733.

30. *LeValley*, *supra* note 1, at 23.

31. *Id.*

risks and consequences associated with a particular course of action—without practically considering human passengers’ input.<sup>32</sup> For example, these complex algorithms dictate when to safely change lanes, accelerate and decelerate, or engage in collision avoidance maneuvers.<sup>33</sup> This is admittedly innovative and has the propensity to generally lower vehicular collisions and associated human fatalities.<sup>34</sup> However, it reasonably follows that because AVMs develop and implement such software and hardware in autonomous vehicles to engage in such a decision-making process, AVMs are effectively in control of the manner of transportation—a factor used by courts in assessing whether an entity is a common carrier.<sup>35</sup> And because AVMs are effectively in control of an autonomous vehicle, AVMs should reasonably be liable for harms associated with failures arising in autonomous vehicles while engaged in full automation mode.

Additionally, it is unfeasible and unconvincing to assert that once autonomous vehicles are sold in commerce, AVMs should remain responsible for providing periodic general maintenance and upkeep of the autonomous vehicle like tire rotation, windshield wiper replacement, battery charging needs, etcetera. However, even when general maintenance and upkeep of an autonomous vehicle is reasonably imputed to autonomous vehicle owners, it is nevertheless unreasonable to impute responsibility to autonomous vehicle owners to provide the necessary software maintenance and upkeep in the autonomous vehicle.<sup>36</sup> In other words, aside from the likely impractical reasons, it is unreasonable to expect an autonomous vehicle owner to provide general maintenance and upkeep on proprietary AVM-designed software.

In fact, AVMs like Tesla periodically provide over-the-air updates to “mak[e] your car safer and more capable” and thus exhibit some degree of responsibility to provide software maintenance without shouldering it on owners.<sup>37</sup> It then reasonably follows that because AVMs periodically push software updates and provide general maintenance on their proprietary autonomous vehicle software, AVMs acknowledge control of the *means* of transportation.<sup>38</sup> AVMs acknowledge their role and responsibility to ensure autonomous vehicle software is updated and working as designed

32. *See id.*

33. *Id.*

34. NHTSA, *supra* note 18.

35. *Bennett Truck Transp., L.L.C. v. Williams Bros. Constr.*, 256 S.W.3d 730, 733 (Tex. App. 2008).

36. *Id.*

37. *Support-Software Updates*, TESLA, <https://www.tesla.com/support/software-updates> [<https://perma.cc/8CX5-EF6P>].

38. *Bennett*, 256 S.W.3d at 733.

because they effectively control the manner of transportation—the autonomous vehicle.<sup>39</sup>

Furthermore, AVMs effectively encourage consumers to relinquish control over their vehicles and place “themselves in the care of the manufacturers that design those systems[;]”<sup>40</sup> that is, AVMs are implicitly assuming care over passengers in autonomous vehicles when AVMs actively equip all future vehicle models with full automation level capabilities.<sup>41</sup> Actively purporting features in which numerous, complex algorithms alleviate the need for human input to decide when to change lanes, accelerate and decelerate, engage in collision avoidance maneuvers, or even provide an overall reduction in the likelihood of accident, demonstrates an assumption of care on the part of AVMs generally.<sup>42</sup>

Again, as innovative and seemingly possible to lower vehicular collisions and human fatalities associated with such generally, is it logically unreasonable for AVMs to be held liable when their actions strongly suggest a willingness to assume care over passengers in autonomous vehicles?<sup>43</sup> The answer: it is logically reasonable for future courts to conclude that when AVMs encourage consumers to use autonomous vehicles and install such a technological capability, this demonstrates a AVMs willingness to place consumers in the operator’s care.<sup>44</sup>

### III. PUBLIC POLICY JUSTIFICATIONS FOR APPLYING A COMMON CARRIER-LIKE LIABILITY SCHEME TO AUTONOMOUS VEHICLE MANUFACTURERS

Many technology, economic, and business experts<sup>45</sup>—even 2020 Presidential candidates<sup>46</sup>—agree we are now in the beginning of the “Fourth Industrial Revolution,” a massive advance in the way we use sophisticated technologies to live, work, and relate to others.<sup>47</sup> This

39. See LeValley, *supra* note 1, at 23.

40. *Id.* at 23.

41. Hirsch, *supra* note 7.

42. *Id.*; see also Tristian Greene, *Consumer Groups Ask FTC to Investigate “Deceptive” Tesla Autopilot Marketing*, THE NEXT WEB (May 24, 2018), <https://thenextweb.com/artificial-intelligence/2018/05/24/consumer-groups-ask-ftc-to-investigate-deceptive-tesla-autopilot-marketing/> [https://perma.cc/LQR6-RWHT].

43. NHTSA, *supra* note 18.

44. See Bennett, 256 S.W.3d at 733.

45. Bernard Marr, *The 4th Industrial Revolution Is Here—Are You Ready?*, FORBES (Aug. 13, 2018), <https://www.forbes.com/sites/bernardmart/2018/08/13/the-4th-industrial-revolution-is-here-are-you-ready/#64898efc628b> [https://perma.cc/RCN6-RQD4].

46. Jordan Weissmann, *Andrew Yang Keeps Talking About the Fourth Industrial Revolution. What the Heck Is That?*, SLATE (Oct. 18, 2019), <https://slate.com/business/2019/10/andrew-yang-fourth-industrial-revolution.html> [https://perma.cc/38X3-K85K].

47. *Id.*



revolution has and will continue disrupting practically every industry, including the automotive industry. The major promise of the Fourth Industrial Revolution is to improve the quality of life and raise incomes in developing countries while continuing to create efficiencies and conveniences in fully developed countries.<sup>48</sup> However, there is increasing demand for corporate entities to provide necessary accountability where governments have yet to create adequate and consistent regulatory frameworks within the tech space.<sup>49</sup> Pierre Nanterme, former Chairman and CEO of Accenture, a multiservice company with a strategic consulting practice in the digital and technological spaces,<sup>50</sup> stated “The Fourth Industrial Revolution demands that CEOs take responsibility for the massive transformation of their businesses and for the extraordinary impact that this transformation will have on wider society.”<sup>51</sup>

Recently, the NHTSA investigated the twelfth accident involving an autonomous vehicle while engaged in Tesla Autopilot.<sup>52</sup> Although the accident resulted in only physical damage to a Tesla and a Connecticut State Trooper vehicle,<sup>53</sup> other accidents have unfortunately resulted in the actual loss of human life. In Delray Beach, Florida, a 50-year-old Tesla driver was killed when Autopilot was engaged for mere seconds before colliding with a semi-trailer, ending underneath it and the impact shearing the roof off.<sup>54</sup> The National Transportation Safety Board (NTSB) concluded neither the driver or the Autopilot “executed evasive maneuvers” to avoid the collision.<sup>55</sup> The NTSB further concluded that a “lack of safeguards” contributed to the victim’s death and declined to impose blame on anyone.<sup>56</sup> Meanwhile, AVM CEO’s like Elon Musk instead publicly comment, “Our vehicle autonomy reduces the probability

48. See Marr, *supra* note 45.

49. *Id.*

50. *How We Work with Our Clients*, ACCENTURE, <https://www.accenture.com/us-en/about/company-index> [<https://perma.cc/US7M-3K62>].

51. Pierre Nanterme, *Digital Disruption Has Only Just Begun*, WORLD ECONOMIC FORUM (Jan. 17, 2016), <https://www.weforum.org/agenda/2016/01/digital-disruption-has-only-just-begun/> [<https://perma.cc/ASF9-NFYF>].

52. Bill Howard, *Another Tesla Crash, Another Investigation into Autopilot*, EXTREMETECH (Dec. 17, 2019), <https://www.extremetech.com/extreme/303538-another-tesla-crash-another-investigation-into-autopilot> [<https://perma.cc/J4N6-44BR>].

53. *Id.*

54. Scott Sutton, *Tesla Driver Killed After Crash Involving Semi in Western Delray Beach*, WPTV (Mar. 2, 2019), <https://www.wptv.com/news/region-s-palm-beach-county/serious-crash-investigated-on-u-s-441-in-southern-palm-beach-county> [<https://perma.cc/N8X2-G9L4>].

55. Andrew J. Hawkins, *Tesla’s Autopilot Was Engaged When Model 3 Crashed into Truck, Report States*, THE VERGE (May 16, 2019), <https://www.theverge.com/2019/5/16/18627766/tesla-autopilot-fatal-crash-delray-florida-ntsb-model-3> [<https://perma.cc/TQN7-JSJB>].

56. *Id.*

of a death by 30% . . . [t]he statistics are unequivocal that Autopilot improves safety.”<sup>57</sup>

As a result, if governments have yet to develop regulatory frameworks to address the “lack of safeguards” and AVMs are unwilling to accept responsibility for the adverse impacts their technologies may bear on society—while AVM CEO’s claim the complete opposite of what is actually occurring—is the consumer and public at a loss? The answer is no because courts are in a vital position to feasibly do something about it. Although AVMs are not considered common carriers in the traditional sense, they do likely satisfy two factors: control and care. And because AVMs likely satisfy these factors generally shared with common carriers, the argument is strengthened to conclude that AVMs should be held to similar heightened standard of care as common carriers.<sup>58</sup>

Courts have determined common passenger carriers are held to a higher standard of care since passengers have little to no control over the means of conveyance.<sup>59</sup> Passengers “turn over control of their own safety and rely on the carrier for their safe delivery.”<sup>60</sup> In the context of autonomous vehicles, passengers have control over the when and where to go but lack the necessary expertise to determine the *how to go*.<sup>61</sup> The “how” is practically left up entirely to an AVM to determine using their expertise to develop and implement the software found in autonomous vehicles.

Additionally, the manner in which AVMs are fulfilling the *how* aspect is likely having the effect of incentivizing passengers to engage in conduct that distracts and lessens passengers from being attentive to their surroundings while an autonomous vehicle is engaged in full automation.<sup>62</sup> For example, there have been reports of passengers in Tesla’s reading, sleeping, shooting lewd films, or even checking on pets in the back seat while the vehicle is full automation mode.<sup>63</sup> Although AVMs designed and implemented the ability for human operators to override and reengage driving tasks manually, a passenger would likely make a situation worse by interfering; that is, by having been passive and inattentive to

57. Michael J. Coren, *Tesla’s First Accident Report Claims It’s Four Times Safer Than the US Average. Maybe.*, QUARTZ (Oct. 5, 2018), <https://qz.com/1414132/teslas-first-accident-report-claims-its-four-times-safer-than-the-us-average/> [https://perma.cc/65EJ-A5ZY]; *Q3 2018 Vehicle Safety Report*, TESLA (Oct. 4, 2018), <https://www.tesla.com/blog/q3-2018-vehicle-safety-report> [https://perma.cc/2DRJ-H2CY].

58. LeValley, *supra* note 1, at 23–24.

59. *Id.* at 24. (citing *Indianapolis Traction & Terminal Co. v. Lawson*, 143 F. 834, 837 (7th Cir. 1906)).

60. *Id.*

61. *Id.*

62. LeValley, *supra* note 1, at 25.

63. *See* Howard, *supra* note 52.

surroundings, an autonomous vehicle passenger may attempt to reengage and override the autonomous vehicle system in an emergency with an incomplete awareness of the situation to their peril.<sup>64</sup> It is reasonably foreseeable that when AVMs developed and implemented autonomous vehicle technologies into their vehicles, passengers would up the ante by substituting the “computer” for their own alertness and attentiveness. Even if AVMs did not intend for such behaviors and do heavily disclaim against them, AVMs cannot deny they have responsibility for the unintended consequences of the technology they are introducing into commerce and society as a whole.

#### CONCLUSION

Elon Musk claimed “Tesla is a software company as much as it is a hardware company”<sup>65</sup> with likely emphasis on *software*. However, this is a veiled attempt by an AVM to persuade future courts to not apply the same legal approaches to ascribing fault and liability as courts currently do with traditional vehicle manufacturers because AVMs are in a new category. Nonetheless, even if AVMs arguably should be treated differently because using approaches like products liability would be generally inadequate, recognizing AVMs share vital commonalities with common carriers would likely suffice. While imperfect, using a liability scheme that draws from common carrier liability principles recognizes the desired conformity and adequacy AVMs seek when courts assess and determine potential liability to be assigned. Such a liability scheme would be accurate to demonstrate AVMs control the manner of transportation through autonomous vehicles while encouraging passengers to place their sense of care in proprietary, autonomous vehicle technology over themselves. As a result, if such a liability scheme were to be fashioned and adopted by courts when dealing with situations involving autonomous vehicles, then AVM CEO’s like Elon Musk will likely be haunted and mourn the day they made such public characterizations of their autonomous vehicle technologies as more software than hardware.

<sup>64</sup> *Id.*

<sup>65</sup> Hirsch, *supra* note 7.