# Softening the Blow: Finding an Alternative Liability Regime for Fully Autonomous Vehicles

*Rose Angelique Dizon*[*]

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## I. INTRODUCTION

Kyushu Motors kicked off its promotions for Artificial Intelligence (AI) Ride, a fully autonomous vehicle marketed as *safe and reliable* and *takes passengers from point A to point B while engaging in activities other than actual driving*. Enticed by the advertisement, Lex, a busy lawyer, decided to purchase one. While doing his last-minute hearing preparations inside his car, Lex's AI Ride suddenly swerved to the other side of the road, hitting Juris' car. Juris sustained simple bodily injuries while his car had a major fender bender. Juris then sues Lex in court for damages. Lex, on the other hand, argues that he was not negligent and thus not liable to pay damages.

[*] '19 LL.M. *cand.*, Kyushu University; '14 J.D., Ateneo de Manila University School of Law. The Author currently serves as in-house counsel at Voyager Innovations, Inc. She was previously an Associate at SyCip Salazar Hernandez & Gatmaitan.

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Instead, Lex puts the blame on Kyushu Motors for introducing a defective product in the market and falsely inducing the consumers to believe that AI Ride is safe and reliable.

With the rollout of fully autonomous vehicles on the road, this scenario might actually be a common narrative for future road traffic accidents. When that time comes, who will be responsible for the accident? Who will be liable to compensate the victim? Is it the driver or passenger who is not paying attention to the road while his or her car is driving? Is it fair to make the driver or passenger liable when he or she has a reasonable expectation to be driven to his or her destination safely without causing any accident? Or will it be the car manufacturer for putting an *unsafe and unreliable* self-driving car in the market? Better yet, is there a better alternative?

This Article examines current rules on liability and proposes an alternative solution to answer for the liability caused by fully autonomous vehicles in a road traffic accident. Part I will provide a background on road traffic accidents; Part II will briefly discuss autonomous vehicles; Parts III and IV will outline existing liability regimes in the Philippines and autonomous vehicle legislation in other jurisdictions; and Part V will briefly touch upon legal personhood and discuss the proposed victim compensation fund.

## II. IMPETUS FOR AUTONOMOUS VEHICLES

Target 3.6 of the United Nations Sustainable Development Goals calls for the reduction of the number of global deaths and injuries from road traffic accidents by 2020.[1] With the target date fast approaching, the statistics appear to be inauspicious.[2] The recent World Health Organization Report on Road Safety reveals that there are 1.35 million casualties from road traffic accidents, making it the eighth leading cause of death amongst all age groups, and the leading cause of death for children and young adults aged five to 29 years of age around the world.[3] This number is more than the number of those who die of HIV/AIDS, tuberculosis, or diarrheal diseases.[4]

1. World Health Organization, Global Status Report on Road Safety 2018 at 2, *available at* https://www.who.int/violence_injury_prevention/road_safety_status/2018/English-Summary-GSRRS2018.pdf (last accessed May 5, 2019).

2. *Id.*

3. *Id.* at 2-3.

4. *Id.* at 3.

In 2017, 10,767 deaths in the Philippines were attributed to road accidents.[5] Most of these fatalities were caused by human error.[6] The circumstances are no less different from technologically advanced nations such as the United States (U.S.), which recorded 37,133 fatalities from motor vehicle crashes,[7] 94% of which were caused by human drivers[8] who were either intoxicated, distracted, sleepy, or excessively speeding.[9] It appears that one of the solutions to prevent these driver-related accidents is to totally remove the human element in driving. Hence, car manufacturers all over the world are now dead set in developing vehicles that function without a human driver.[10]

## III. AUTONOMOUS VEHICLES

Autonomous systems are "[computer-controlled] systems that make important choices about their ... actions with little or no human intervention."[11] Parenthetically, fully autonomous vehicles are "capable of driving from one location to another completely on [their] own, without ...

5. World Health Rankings, Philippines: Road Traffic Accidents, *available at* https://www.worldlifeexpectancy.com/philippines-road-traffic-accidents (last accessed May 5, 2019).

6. Metro Manila Development Authority, Metro Manila Accident Recording and Analysis System, Traffic Accident Report January to December 2016 at 11, *available at* https://archive.org/details/MMARASAnnualReport2016 (last accessed May 5, 2019).

7. U.S. Department of Transportation National Highway Traffic Safety Administration, Police-Reported Motor Vehicle Traffic Crashes in 2017 at 1, *available at* https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812696 (last accessed May 5, 2019).

8. U.S. Department of Transportation, Preparing for the Future of Transportation Automated Vehicles 3.0 at 3, *available at* https://www.transportation.gov/sites/dot.gov/files/docs/policy-initiatives/automated-vehicles/320711/preparing-future-transportation-automated-vehicle-30.pdf (last accessed May 5, 2019).

9. *Id*.

10. *See* M. Mitchell Waldrop, *Autonomous vehicles: No drivers required*, 518 NATURE 20, 20-21 (2015) & Alex Davies, The WIRED Guide to Self-Driving Cars, *available at* https://www.wired.com/story/guide-self-driving-cars (last accessed May 5, 2019).

11. Harry Surden & Mary-Anne Williams, How Self Driving Cars Work at 5, *available at* https://ssrn.com/abstract=2784465 (last accessed May 5, 2019). (follow the hyperlink "Download This Paper" to access the cited page) (citing Bruce T. Clough, Metrics, Schmetrics! How The Heck Do You Determine a UAV's Autonomy Anyway? at *1, *available at* https://apps.dtic.mil/dtic/tr/fulltext/u2/a515926.pdf (last accessed May 5, 2019)) (emphasis omitted).

human intervention."[12] All driving decisions, such as "steering, braking, speed, distance between vehicles, lane-choice, following traffic rules, routing, and avoiding obstacles[,]"[13] are done by the vehicle, and the only role left to a human being is turning the car on and inputting his or her destination.[14] In lieu of human senses, autonomous vehicles rely on various sensors and sophisticated computer software that allow it to collect "internal conditions, such as speed and direction, and external conditions, such as the environment and vehicle location" to navigate its way through the road.[15]

Not all autonomous vehicles, however, are created equal. In fact, the Society of Automotive Engineers (SAE) International, a global association of engineers, developed a taxonomy for motor vehicle automation or SAE J3016.[16] In her article, emerging technology scholar Tracy Hresko Pearl provides the following description of each SAE levels of automation:

> Level 0 — No Automation: In Level 0 vehicles, *a human driver is in total control of the primary vehicle controls* (brake, steering, acceleration) at all times and is responsible for monitoring both the road and the vehicle. ... [A] car without cruise control capabilities would be considered a Level 0 vehicle.
>
> Level 1 — Driver Assistance: Vehicles at this level have *automation options for* '*either steering or acceleration/deceleration* using information about the driving environment and *with the expectation that the human driver perform*[*s*] *all remaining aspects of the dynamic driving task*.' ...

12. Surden & Williams, *supra* note 11, at 7 (citing Gillian Yeomans, Autonomous Vehicles Handing Over Control: Opportunities and Risks for Insurance (A Report Published Online by Lloyd's) at 7, *available at* https://www.lloyds.com/~/media/lloyds/reports/-emerging-risk-reports/autonomous-vehicles-final.pdf (last accessed May 5, 2019)).

13. Surden & Williams, *supra* note 11, at 7 (citing Bryant Walker Smith, *Automated Vehicles Are Probably Legal in the United States*, 1 TEX. A&M L. REV. 411, 419 (2014)).

14. *Id.*

15. Tracy Hresko Pearl, *Fast & Furious: The Misregulation of Driverless Cars*, 73 NYU ANN. SURV. AM. L. 19, 24 (2017) [hereinafter Pearl, *Fast & Furious*] (citing Kyle L. Barringer, *Code Bound and Down ... A Long Way to Go and a Short Time to Get There: Autonomous Vehicle Legislation in Illinois*, 38 S. ILL. U. L.J., 121, 122 (2013)).

16. SAE International, Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles, *available at* https://www.sae.org/standards/content/j3016_201806/ (last accessed May 5, 2019).

> Level 2 — Partial Automation: Level 2 vehicles have '*automation of at least two primary control functions* designed to work in unison *to relieve the driver of those functions*' ... The *driver*, however, '*is still responsible for monitoring the roadway ... and is expected to be available for control at all times and on short notice*.' ...
>
> Level 3 — Conditional Automation: Vehicles at this level '*enable the driver to cede full control of all safety-critical functions under certain traffic or environmental conditions and in those conditions to rely heavily on the vehicle to monitor for changes in those conditions requiring transition back to driver control*.' While the *driver must be available for* '*occasional control*,' the vehicle is *designed to both ensure safe operation during automated driving and to provide the driver with a* '*sufficiently comfortable transition time*' *to reassume control over the vehicle*. ...
>
> Level 4 — High Automation: Level 4 vehicles are 'designed to *perform all safety-critical driving functions and monitor roadway conditions for* [*the*] *entire trip*' ... *The entire responsibility for safe operation falls on the vehicle*. However, 'the *automated system can operate only in certain environments and under certain conditions*.' ...
>
> Level 5 — Full Automation: In Level 5 vehicles, '*the automated system can perform all driving tasks, under all conditions that a human driver could perform them*.' *A human being is not needed to supervise, monitor*[,] *or control the vehicle in any setting, and is not needed as a 'fallback' option in the event of system failure*.[17]

The taxonomy illustrates that as the level of autonomy increases, the level of human control on the vehicle decreases. "Autonomous vehicles are projected to be controlled by a complex computer system that uses radar, laser, lidar, ultrasonic sensors, video cameras, global positioning systems, and maps."[18] This shift in control on the operation of the vehicle ushers in the

17. Pearl, *Fast & Furious*, *supra* note 15, at 27-29 (citing SAE International, Automated Driving Levels of Driving Automation Are Defined In New SAE International Standard J3016 at *1, *available at* https://www.sae.org/binaries/content/assets/cm/content/news/press-releases/pathway-to-autonomy/automated_driving.pdf (last accessed May 5, 2019); National Highway Traffic Safety Administration, Preliminary Statement of Policy Concerning Automated Vehicles at 5, *available at* https://www.nhtsa.gov/staticfiles/rulemaking/pdf/Automated_Vehicles_Policy.pdf (last accessed May 5, 2019); & National Highway Traffic Safety Administration, Federal Automated Vehicles Policy at 9, *available at* https://www.hsdl.org/?view&did=795644 (last accessed May 5, 2019)) (emphases supplied and omitted).

18. Jeffrey Gurney, *Imputing Driverhood: Applying a Reasonable Driver Standard to Accidents Caused by Autonomous Vehicles*, *in* ROBOT ETHICS 2.0: FROM AUTONOMOUS CARS TO ARTIFICIAL INTELLIGENCE 53 (Patrick Lin, et al. eds., 2017) [hereinafter Gurney, *Imputing Driverhood*] (citing Sophia H. Duffy &

shift of the responsibility for accidents from human drivers to self-driving cars.[19]

## IV. EXISTING LIABILITY REGIMES

### *A. In General: Tort and Product Liability*

Road traffic accidents are caused by either one or a mix of the following:

(1) negligent acts of a driver;

(2) negligent acts of a person responsible for some object that the driver collided with (e.g., pedestrian, cyclist, etc.);

(3) mechanical failure, which can be traced from a problem caused by the manufacturer or the maintenance of the vehicle; and

(4) a problem arising from road architecture or infrastructure (e.g., street lamps, dirt roads, unclear signage, etc.).[20]

In common law systems such as that of the U.S., the injured party has to file a tort action in order to recover damages from these accidents. The plaintiff has to show the concurrence of the following elements:

(1) a duty owed by the defendant to the plaintiff;

(2) a breach of that duty by the defendant;

(3) a causal link between the defendant's breach and the plaintiff's harm; and

(4) the plaintiff sustaining damages due to defendant's breach.[21]

And since the plaintiff is not in a position to restore himself or herself to his or her original physical condition, tort law creates an obligation for the defendant to compensate the plaintiff for the harm caused by his or her

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Jamie Patrick Hopkins, *Sit, Stay, Drive: The Future of Autonomous Car Liability*, 16 SMU SCI. & TECH. L. REV. 453, 455 (2013)).

19. Gurney, *Imputing Driverhood*, *supra* note 18, at 53.

20. Roderick Bagshaw, *The development of traffic liability in England and Wales*, *in* THE DEVELOPMENT OF TRAFFIC LIABILITY 35 (Wolfgang Ernst ed., 2014).

21. Gurney, *Imputing Driverhood*, *supra* note 18, at 53-54 (citing DAVID G. OWEN & MARY J. DAVIS, OWEN & DAVIS ON PRODUCTS LIABILITY § 2:1 (4th ed. 2016)).

breach.[22] Along with its corrective justice component, tort law also intends to deter the defendant and others from committing the same negligent conduct in the future.[23]

In case road traffic accidents are caused by a defect in the car's moving parts or its software, the car owner may have a claim under product liability laws against the manufacturer.[24] Aside from providing compensation to the victim, product liability laws also intend to deter the manufacturer from making unsafe products for the benefit of the public.[25] A product is defective when there is: (1) a manufacturing defect; (2) a design defect; or (3) a warning defect.[26] A manufacturing defect exists "when a product fails to meet the manufacturer's specifications."[27] Defective designs, on the other hand, can be shown by using either the consumer expectation test or the risk utility test.[28] Under the consumer expectation test, a product is defective when the dangers posed by the product are "beyond the contemplation of the consumer."[29] Under the risk-utility test, "a product 'is defective when the foreseeable risks of harm posed by the product could have been reduced or avoided by the adoption of a reasonable alternative design by the [manufacturer] ... and the omission of the alternative design renders the product not reasonably safe.'"[30] Lastly, a warning defect exists "when a

22. Gurney, *Imputing Driverhood*, *supra* note 18, at 52 (citing Tony Honoré, *The Morality of Tort Law: Questions and Answers*, *in* PHILOSOPHICAL FOUNDATIONS OF TORT LAW 79 (David G. Owen ed., 1995)).

23. Gurney, *Imputing Driverhood*, *supra* note 18, at 52 (citing F. PATRICK HUBBARD & ROBERT L. FELIX, THE SOUTH CAROLINA LAW OF TORTS (2d ed. 1997)).

24. Gurney, *Imputing Driverhood*, *supra* note 18, at 53.

25. *Id.* at 52 (citing HUBBARD & FELIX, *supra* note 23).

26. Gurney, *Imputing Driverhood*, *supra* note 18, at 54 (citing OWEN & DAVIS, *supra* note 21, §§ 7:1, 8:1, & 9:1).

27. Gurney, *Imputing Driverhood*, *supra* note 18, at 54 (citing OWEN & DAVIS, *supra* note 21, § 7:1).

28. Gurney, *Imputing Driverhood*, *supra* note 18, at 54 (citing Nidhi Kalra, et al., Liability and Regulation of Autonomous Vehicle Technologies (A Research Report by the California Partners for Advanced Transit and Highways) at 28, *available at* http://www.dot.ca.gov/newtech/researchreports/reports/2009/prr-2009-28_liability_reg_&_auto_vehicle_final_report_2009.pdf (last accessed May 5, 2019)).

29. Gurney, *Imputing Driverhood*, *supra* note 18, at 54 (citing RESTATEMENT (SECOND) OF TORTS § 402A (1998)).

30. Gurney, *Imputing Driverhood*, *supra* note 18, at 54 (citing RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2 (b) (1998)).

manufacturer fails to inform the purchasers of the hidden dangers or fails to inform consumers how to safely use its products."[31] Additionally, the consumer can also pursue a case against the manufacturer by showing that the product malfunctioned during proper use.[32]

### *B. The Philippine Context: Civil Code Provisions on Quasi-delict and The Consumer Act of the Philippines*

In the Philippines, negligent acts are regulated by the civil law concept of quasi-delict.[33] Quasi-delict is limited in scope as compared to the common law concept of tort.[34] Tort, which is Anglo-American in origin, covers negligent, intentional, and malicious acts.[35]

Philippine jurisprudence defines negligence as "the failure to observe for the protection of the interest of another person that degree of care, precaution, and vigilance which the circumstances justly demand[ ] whereby such other person suffers injury."[36] The test is whether the defendant, in doing the alleged negligent act, used reasonable care and caution which a man of ordinary intelligence and prudence would have in the same situation.[37] Article 2176 of the Civil Code sets forth the general remedy for negligent acts, as follows: "[w]hoever by act or omission causes damage to another, there being fault or negligence, is obliged to pay for the damage done. Such fault or negligence, if there is no pre-existing contractual relation between the parties, is called a quasi-delict[.]"[38] The Civil Code also provides a specific provision dedicated to motor vehicle accidents. Article 2184 of the Civil Code stipulates that

> [i]n motor vehicle mishaps, the owner is solidarily liable with his [or her] driver, if the former, who was in the vehicle, could have, by the use of due diligence, prevented the misfortune. It is disputably presumed that a driver was negligent, if he [or she] had been found guilty of reckless driving or

31. Gurney, *Imputing Driverhood*, *supra* note 18, at 54 (citing RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2 (c) (1998)).

32. Gurney, *Imputing Driverhood*, supra note 18, at 55 (citing David G. Owen, *Manufacturing Defects*, 53 S.C. L. REV. 851, 865, & 873 (2002)).

33. An Act to Ordain and Institute the Civil Code of the Philippines [CIVIL CODE], Republic Act No. 386, art. 2176 (1950).

34. Gashem Shookat Baksh v. Court of Appeals, 219 SCRA 115, 127 (1993).

35. *Id.*

36. Guillang v. Bedania, 588 SCRA 73, 85 (2009).

37. Picart v. Smith, 37 Phil. 809, 813 (1918).

38. CIVIL CODE, art. 2176.

> violating traffic regulations at least twice within the next preceding two months.
>
> If the owner was not in the motor vehicle, the provisions of Article 2180 are applicable.[39]

Article 2180 of the Civil Code allows certain individuals, such as an employer or a guardian, to be liable not for their own acts or omissions but for the acts or omissions of people under their care, such as their employee or their ward, respectively.[40] This attribution of vicarious liability is explained by the Philippine Supreme Court in the case of *Metro Manila Transit Corp. v. Court of Appeals*,[41] to wit —

> 'The responsibility imposed by this article arises by virtue of a presumption *juris tantum* of negligence on the part of the persons made responsible under the article, derived from their failure to exercise due care and vigilance over the acts of subordinates to prevent them from causing damage. Negligence is imputed to them by law, unless they prove the contrary. Thus, the last paragraph of the article says that such responsibility ceases if it is proved that the persons who might be held responsible under it exercised the diligence of a good father of a family (*diligentissimi patris familias*) to prevent damage. It is clear, therefore, that [it is] not representation, nor interest, nor even the necessity of having somebody else answer for the damages caused by the persons devoid of personality, but it is the non-performance of certain duties of precaution and prudence imposed upon the persons who become responsible by civil bond uniting the actor to them, which forms the foundation of such responsibility.'[42]

Based on the foregoing, it can be deduced that responsibility for road-traffic accidents falls on the driver, but liability can either be attributed to the driver for his or her own negligent acts or to the car owner for his or her failure to exercise the necessary precaution and prudence in supervising his or her driver or employee who caused the damage.

To secure the cost of future liability, vehicle owners in the Philippines are required to secure a compulsory motor vehicle liability insurance before

39. *Id.* art. 2184.

40. *Id.* art. 2180.

41. Metro Manila Transit Corp. v. Court of Appeals, 223 SCRA 521 (1993).

42. *Id.* at 538 (citing 5 ARTURO M. TOLENTINO, COMMENTARIES AND JURISPRUDENCE ON THE CIVIL CODE OF THE PHILIPPINES, at 519 (1959 ed.)).

they can register or renew the license of their motor vehicle.[43] Section 391 of the Insurance Code of the Philippines, as amended, provides that

> [a]ny claim for death or injury to any passenger or third-party pursuant to the provisions of this [C]hapter shall be paid without the necessity of proving fault or negligence of any kind: *Provided*, That for purposes of this [S]ection:
>
> (a) The total indemnity in respect of any person shall not be less than Fifteen thousand pesos (₱15,000.00);
>
> (b) The following proofs of loss, when submitted under oath, shall be sufficient evidence to substantiate the claim:
>
> (1) Police report of accident; and
>
> (2) Death certificate and evidence sufficient to establish the proper payee; or
>
> (3) Medical report and evidence of medical or hospital disbursement in respect of which refund is claimed;
>
> (c) Claim may be made against one motor vehicle only. In the case of an occupant of a vehicle, claim shall lie against the insurer of the vehicle in which the occupant is riding, mounting[,] or dismounting from. In any other case, claim shall lie against the insurer of the directly offending vehicle. In all cases, the right of the party paying the claim to recover against the owner of the vehicle responsible for the accident shall be maintained.[44]

On the other hand, if a vehicle is found to be defective, a consumer can claim against the manufacturer or importer through the Consumer Act of the Philippines (Consumer Act).[45] The Consumer Act makes

> [a]ny Filipino or foreign manufacturer[ ] ... [or] any importer[ ] ... liable for redress, independently of fault, for damages caused to consumers by defects resulting from design, manufacture, construction, assembly and erection, formulas and handling[,] and making up, presentation or packing of their

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43. Office of the President, Ordaining and Instituting an Insurance Code of the Philippines, Presidential Decree No. 612, Series of 1974 [The Insurance Code], § 390 (Dec. 18, 1974) (as amended) & An Act Strengthening the Insurance Industry, Further Amending Presidential Decree No. 612, Otherwise Known as "The Insurance Code", as Amended by Presidential Decree Nos. 1141, 1280, 1455, 1460, 1814 and 1981, and Batas Pambansa Blg. 874, and for Other Purposes, Republic Act No. 10607, § 1 (2013).

44. The Insurance Code, § 391 (as amended) & Republic Act No. 10607, § 1.

45. The Consumer Act of the Philippines [Consumer Act], Republic Act No. 7394 (1992).

> products, as well as for the insufficient or inadequate information on the use and hazards thereof.[46]

It characterizes a defective product as something that "does not offer the safety rightfully expected of it."[47] The regulator is given a wide latitude to see if a product is defective and may take into account the "presentation of product," the "use and hazards reasonably expected of [the products]," and "the time it was put into circulation."[48] Nonetheless, a defective product is not considered defective just "because another better quality product has been placed in the market."[49] It is, however, important to underscore that not all cars plying Philippine roads are manufactured locally.[50] Thus, the Consumer Act also makes the importer equally liable for the defects of consumer goods.[51] Moreover, a seller can also be liable to the consumer when it is not possible to identify the manufacturer, builder, producer, or importer or the product is supplied, without clear identification of the manufacturer, producer, builder, or importer.[52]

The Philippine Lemon Law also protects purchasers of brand new vehicles that contain "any defect or condition that substantially impairs the use, value[,] or safety of a brand new motor vehicle which prevents it from conforming to the manufacturer's or distributor's standards or specifications, which cannot be repaired[.]"[53] This protection, however, is not applicable when the consumer did not comply with his or her obligations under the warranty, has installed modifications not authorized by the manufacturer or distributor, has found to abuse or neglect the vehicle, or when the damage was due to an accident or *force majeure*.[54]

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46. *Id*. art. 97, para. 1.

47. *Id*. art. 97, para. 2.

48. *Id*. art. 97, para. 2 (a)-(c).

49. *Id*.

50. Oxford Business Group, Auto manufacturing in the Philippines expanding as demand grows, *available at* https://oxfordbusinessgroup.com/analysis/pole-position-auto-manufacturing-set-take-demand-grows (last accessed May 5, 2019).

51. Consumer Act of the Philippines, art. 97, para. 1.

52. *Id*. art. 98 (a)-(b).

53. An Act Strengthening Consumer Protection in the Purchase of Brand New Motor Vehicles [Philippine Lemon Law], Republic Act No. 10642, § 3 (k) (2014).

54. *Id*.

*C. Autonomous Vehicle Legislations*

Although laws cannot always keep up with the pace of technology, it is nonetheless necessary to legislate with the times in order to promote public acceptance of these technologies. Thus, it is no surprise that the frontrunners in the race for devising autonomous vehicle legislations are the nations with robust car manufacturing industries like the U.S., United Kingdom (U.K.), and Germany.[55]

1. United States

In 2018, the U.S. Congress failed to pass the American Vision for Safer Transportation through Advancement of Revolutionary Technologies Act, which would have created a comprehensive federal legal framework for autonomous vehicles.[56] Nevertheless, individual U.S. states have actively enacted legislations on the subject matter.[57]

As early as 2011, the state of Nevada pioneered the first state legislation that allowed the licensing and testing of autonomous vehicles.[58] Chapter 482A of the Nevada Revised Statutes went through a series of amendments to further refine the definitions and the corresponding rights and obligations of the stakeholders.[59] The most recent amendments were introduced in 2017 through Assembly Bill 69.[60] Chapter 482A, as amended, defines a fully autonomous vehicle as "a vehicle with an automated driving system[,] which

55. John Bell Rae & Allan K. Binder, Automotive Industry, *available at* https://www.britannica.com/technology/automotive-industry (last accessed May 5, 2019).

56. Shang Kong, Autonomous Vehicle Federal Regulation, *available at* https://www.natlawreview.com/article/autonomous-vehicle-federal-regulation (last accessed May 5, 2019).

57. *Id.* (citing National Conference of State Legislatures, Autonomous Vehicles | Self-Driving Vehicles Enacted Legislation, *available at* http://www.ncsl.org/research/transportation/autonomous-vehicles-self-driving-vehicles-enacted-legislation.aspx (last accessed May 5, 2019)).

58. Jann Stinnesbeck, Research Brief on Autonomous Vehicles (A Research Brief Published by the Nevada Legislative Counsel Bureau) at *1, *available at* https://www.leg.state.nv.us/Division/Research/Publications/ResearchBriefs/AutonomousVehicles.pdf (last accessed May 5, 2019).

59. Nevada Department of Motor Vehicles, Autonomous Vehicles, *available at* http://www.dmvnv.com/autonomous.htm (last accessed May 5, 2019).

60. *Id.*

is designed to function at a level of driving automation of level 4 or 5 pursuant to SAE J3016."[61]

The statute recognizes that an "automated driving system of a fully autonomous vehicle shall, when engaged, be deemed to fulfill any physical acts which would otherwise be required of a human driver except those acts which[,] by their nature[,] can have no application to such a system."[62] It allows fully autonomous vehicles to be tested and operated in highways, provided that the self-driving car "is capable of achieving a minimal risk condition if a failure of the automated driving system occurs which renders the automated driving system unable to perform the dynamic driving task relevant to its intended operation design domain."[63] A minimal risk condition is a "condition in which an autonomous vehicle operating without a human driver, upon experiencing a failure of its automated driving system that renders the autonomous vehicle unable to perform the dynamic driving task, achieves a reasonably safe state which may include, without limitation, bringing the autonomous vehicle to a complete stop."[64]

The Nevada statute also has a couple of provisions dealing with car crash and liability. Within 10 business days after a motor vehicle crash that resulted in a "personal injury or property damage estimated to exceed $750[,]" the person responsible for the testing has the duty to report the incident to the Department of Public Safety.[65] The law also impliedly recognizes the liability of the manufacturer for product defects, to wit —

> (1) The original manufacturer of a motor vehicle that has been converted by a third party into an autonomous vehicle is not liable for damages to any person injured due to a defect caused by the conversion of the motor vehicle by the third party unless the defect that caused the injury was present in the vehicle as originally manufactured.
>
> (2) The original manufacturer or developer of an automated driving system that has been modified by an unauthorized third party is not liable for damages to any person injured due to a defect caused by the modification of the automated driving system by the third party unless the defect that caused the injury was present in the

61. NEV. REV. STAT. § 482A.036 (2017) (U.S.).

62. *Id.* § 482A.200.

63. *Id.* § 482A.080 (2) (b).

64. *Id.* § 482A.044.

65. *Id.* § 482A.095.

> automated driving system as originally manufactured or developed.[66]

The Nevada Administrative Code also defined an operator as someone who "causes an autonomous vehicle to [be engaged] regardless [ ] whether [he or she] is physically present in the vehicle while it is engaged."[67] Other states such as Florida, California, Texas, and New York all have similar provisions.[68] Operators of autonomous vehicles are held liable for vehicular accidents because they are deemed to have accepted all the consequences that may arise from engaging such technology. Simply put, "'operator' provisions make all autonomous vehicle-related traffic or driving infractions strict liability offenses[.]"[69]

2. United Kingdom

In February 2019, the U.K. Government announced its plan to move forward with advanced trials for automated vehicles in light of its "commitment to have fully self-driving vehicles on U.K. roads by 2021."[70] Prior to this announcement, the U.K. Parliament enacted the Automated and Electric Vehicles Act (AEVA) last 19 July 2018 with the view of extending the coverage of insurance law to cover automated vehicles "when the car is the driver and the 'driver' is sometimes [the] passenger."[71] According to the U.K. Government, "answering the insurance questions

66. *Id.* § 482A.090.

67. NEV. ADMIN. CODE, § 482A.020 (2017) (U.S.).

68. Pearl, *Fast & Furious*, *supra* note 15, at 49 (citing FLA. STAT. ANN. § 316.85 (West 2016) (U.S.); CAL. VEH. CODE, § 38750 (a) (4) (West 2015) (U.S.); An Act to Amend the Vehicle and Traffic Law, in Relation to Control of Steering Mechanism, S.B. No. S7879, 2015 Leg., 238th Sess. (N.Y. 2016) (U.S.); Assemb. 31 Leg., 238th Reg. Sess. (N.Y. 2015) (U.S.); & H.R. 2932, 2013 Leg., 83d Reg. Sess. (Tex. 2013) (U.S.)).

69. Pearl, *Fast & Furious*, *supra* note 15, at 52 (citing Jeffrey K. Gurney, *Driving into the Unknown: Examining the Crossroads of Criminal Law and Autonomous Vehicles*, 5 WAKE FOREST J.L. & POL'Y 393, 409 (2015) [hereinafter Gurney, *Driving*]) (emphasis omitted).

70. U.K. Department for Transport, et al., Government moves forward on advanced trials for self-driving vehicles, *available at* https://www.gov.uk/government/news/government-moves-forward-on-advanced-trials-for-self-driving-vehicles (last accessed May 5, 2019).

71. Louise Butcher & Tim Edmonds, Automated and Electric Vehicles Act 2018, *available at* https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8118 (last accessed May 5, 2019).

sooner rather than later will encourage manufacturers to develop transport technology in the U.K. with the confidence that they can exploit market opportunities."[72]

At the onset, the AEVA did not provide a definition of an autonomous vehicle.[73] Instead, the AEVA directed the Secretary of State for Transport to prepare a list of motor vehicles which, in his opinion, are designed or adapted to be capable of safely driving themselves.[74] Section 2 of the AEVA provides that when an insured person or any other person suffers damage from an accident caused by an automated vehicle when driving itself on the road or other public place and that the said vehicle is insured at the time of the accident, the insurer will be liable for the accident.[75] On the contrary, if the vehicle is not insured at the time of the accident, the owner of the vehicle will be liable for the accident.[76]

Damage under the AEVA can mean: (1) "death or personal injury[;]"[77] and (2) "any damage to property other than [ ] the automated vehicle, goods carried for hire or reward in or on [the] vehicle[,]"[78] or "property in the custody[ ] or under the control[ ]of [ ] the insured [party] ... or the person in charge of the [autonomous] vehicle at the time of the accident[.]"[79] The AEVA underscores that "the imposition ... of liability on the insurer or vehicle owner does not affect any other person's liability in respect of the accident."[80] The AEVA, therefore, recognizes the concept of contributory negligence wherein if "the accident or damage resulting from it[,] was to any extent caused by the injured party[,] the amount of the liability is subject to whatever reduction under [the relevant laws.]"[81]

The AEVA also protects the insurer from any liability caused by accidents resulting from the insurer's unauthorized software alterations or his

72. *Id.*

73. *See* Automated and Electric Vehicles Act 2018, 2018 Chapter 18, pt. 1, § 1 (4) (2018) (U.K.).

74. Automated and Electric Vehicles Act 2018, pt. 1, § 1 (1) (a).

75. *Id.* pt. 1, § 2 (1).

76. *Id.* pt. 1, § 2 (2).

77. *Id.* pt. 1, § 2 (3).

78. *Id.* pt. 1, § 2 (3) (a)-(b).

79. *Id.* pt. 1, § 2 (3) (c).

80. Automated and Electric Vehicles Act 2018, pt. 1, § 2 (7).

81. *Id.* pt. 1, § 3 (1) (b).

or her failure to update or install safety-critical software.[82] When the amount of the insurer's or vehicle owner's liability is settled through a judgment or decree, an arbitral award or an enforceable agreement,[83] "any other person liable to the injured party in respect of the accident is under the same liability to the insurer or vehicle owner."[84]

3. Germany

The *Straßenverkehrsgesetz* or the Road Traffic Act (StVG) also went through a series of amendments to accommodate the development of autonomous vehicles in Germany.[85] Section 1 (a) (1) of the StVG allows "the operation of a motor vehicle by means of highly or fully automated driving function[.]"[86] Section 1 (a) (4) of the StVG defines a driver as "one who

82. *Id.* pt. 1, § 4 (1) (a)-(b) & (4) (a)-(b).

83. *Id.* pt. 1, § 5 (2) (a)-(c).

84. *Id.* pt. 1, § 5 (1) (b).

85. Markus Burianski & Christian M. Theissen, *An important milestone as Germany permits automated vehicles: Market impact and outlook*, BUS. L. MAG., Sep. 7, 2017, at 4.

86. Krzysztof Czarnecki, English Translation of the German Road Traffic Act Amendment Regulating the Use of "Motor Vehicles with Highly or Fully Automated Driving Function" from July 17, 2017 at 2, *available at* https://www.researchgate.net/profile/Krzysztof_Czarnecki3/publication/320813344_English_Translation_of_the_German_Road_Traffic_Act_Amendment_Regulating_the_Use_of_Motor_Vehicles_with_Highly_or_Fully_Automated_Driving_Function_from_July_17_2017/links/59fbbe680f7e9b9968bb5a0f/English-Translation-of-the-German-Road-Traffic-Act-Amendment-Regulating-the-Use-of-Motor-Vehicles-with-Highly-or-Fully-Automated-Driving-Function-from-July-17-2017.pdf (last accessed May 5, 2019).The law provides —

> *Straßenverkehrsgesetz (StVG), § 1a Kraftfahrzeuge mit hoch-oder vollautomatisierter Fahrfunktion:*
>
> (1) *Der Betrieb eines Kraftfahrzeugs mittels hoch- oder vollautomatisierter Fahrfunktion ist zulässig, wenn die Funktion bestimmungsgemäß verwendet wird.*

Road Traffic Act [StVG], § 1 (a) (1) (2017) (Ger.). The English translation is as follows —

> § 1a Motor vehicles with highly or fully automated driving function
>
> (1) The operation of a motor vehicle by means of a highly or fully automated driving function is permissible provided the function is used for its intended purpose.

Czarnecki, *supra* note 86, at 2 (emphasis omitted).

activates a highly or fully automated driving function ... even if he [or she] does not control the vehicle by himself [or herself] within the context of the intended use of this function."[87] When using a highly or fully automated vehicle, the driver may turn away from the traffic, but he or she must remain perceptive so that he or she can fully take control over the vehicle immediately.[88] Section 7 of the StVG[89] provides that

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87. *Id.* The law provides —

> *Fahrzeugführer ist auch derjenige, der eine hoch- oder vollautomatisierte Fahrfunktion im Sinne des Absatzes 2 aktiviert und zur Fahrzeugsteuerung verwendet, auch wenn er im Rahmen der bestimmungsgemäßen Verwendung dieser Funktion das Fahrzeug nicht eigenhändig steuert.*

StVG, § 1 (a) (4). The English translation is as follows —

> [A] [d]river is also the one who activates a highly or fully automated driving function referred to in paragraph (2) and uses such a function for vehicle control, even if he [or she] does not control the vehicle by himself [or herself] within the context of the intended use of this function.

Czarnecki, *supra* note 86, at 2.

88 *Id.* at 3. The law provides —

> *Straßenverkehrsgesetz (StVG), § 1b Rechte und Pflichten des Fahrzeugführers bei Nutzung hoch- oder vollautomatisierter Fahrfunktionen*
>
> *(1) Der Fahrzeugführer darf sich während der Fahrzeugführung mittels hoch- oder vollautomatisierter Fahrfunktionen gemäß § 1a vom Verkehrsgeschehen und der Fahrzeugsteuerung abwenden; dabei muss er derart wahrnehmungsbereit bleiben, dass er seiner Pflicht nach Absatz 2 jederzeit nachkommen kann.*
>
> *(2) Der Fahrzeugführer ist verpflichtet, die Fahrzeugsteuerung unverzüglich wieder zu übernehmen,*
>
> *1. wenn das hoch- oder vollautomatisierte System ihn dazu auffordert oder*
>
> *2. 2.wenn er erkennt oder auf Grund offensichtlicher Umstände erkennen muss, dass die Voraussetzungen für eine bestimmungsgemäße Verwendung der hoch- oder vollautomatisierten Fahrfunktionen nicht mehr vorliegen.*

StVG, § 1 (b) (1)-(2). The English translation is as follows —

> § 1b Rights and responsibilities of the driver when using highly or fully automated driving functions
>
> (1) The driver of the vehicle may turn away his [or her] attention from the traffic and the vehicle control when the vehicle is controlled by means of highly or fully automated driving functions according to § 1a; he [or she] must remain sufficiently

responsive that he [or she] can fulfill his [or her] duty under paragraph (2) at any time.

(2) The driver is obliged to take over the vehicle control immediately,

1. when the highly or fully automated system asks him [or her] to do so or
2. if he [or she] recognizes or, on the basis of obvious circumstances, realizes that the prerequisites for the intended use of the highly or fully automated driving functions no longer exist.

Czarnecki, *supra* note 86, at 3 (emphasis omitted).

89. The law provides —

*Straßenverkehrsgesetz (StVG), § 7 Haftung des Halters, Schwarzfahrt*

(1) *Wird bei dem Betrieb eines Kraftfahrzeugs oder eines Anhängers, der dazu bestimmt ist, von einem Kraftfahrzeug mitgeführt zu werden, ein Mensch getötet, der Körper oder die Gesundheit eines Menschen verletzt oder eine Sache beschädigt, so ist der Halter verpflichtet, dem Verletzten den daraus entstehenden Schaden zu ersetzen.*

(2) *Die Ersatzpflicht ist ausgeschlossen, wenn der Unfall durch höhere Gewalt verursacht wird.*

(3) *Benutzt jemand das Fahrzeug ohne Wissen und Willen des Fahrzeughalters, so ist er anstelle des Halters zum Ersatz des Schadens verpflichtet; daneben bleibt der Halter zum Ersatz des Schadens verpflichtet, wenn die Benutzung des Fahrzeugs durch sein Verschulden ermöglicht worden ist. Satz 1 findet keine Anwendung, wenn der Benutzer vom Fahrzeughalter für den Betrieb des Kraftfahrzeugs angestellt ist oder wenn ihm das Fahrzeug vom Halter überlassen worden ist. Die Sätze 1 und 2 sind auf die Benutzung eines Anhängers entsprechend anzuwenden.*

StVG, § 7. The English translation is as follows —

§ 7 Liability of the owner, unauthorized vehicle operation

(1) If, during the operation of a motor vehicle or a trailer intended to be carried by a motor vehicle, a person is killed, the body or health of a person is injured or a property is damaged, the owner shall be obliged to the injured person to replace the resulting damage.

(2) Compensation is excluded if the accident is caused by *force majeure*.

(3) If someone uses the vehicle without the knowledge and will of the vehicle owner, he [or she] is obliged to compensate the damage instead of the owner; in addition, the holder remains obliged to compensate for the damage if the use of the vehicle has been made possible through his [or her] fault. Sentence (1) does not apply if the user is employed by the vehicle owner for the

> If, [in] the operation of a motor vehicle or a trailer intended to be carried by a motor vehicle, a person is killed, the body or health of a person is injured or a [good] is damaged, the [keeper] shall be obliged to the injured person to replace the resulting damage.[90]

However, if "someone uses the vehicle without the knowledge and will of the vehicle owner, he [or she] is obliged to compensate the damage instead of the owner."[91]

## V. INADEQUACY OF EXISTING LIABILITY REGIMES

David Barnes and Lynn Stout submit that almost every human pursuit is open to risk of accidents, which, in turn, imposes cost on victims, and that society will be in a better position, both in terms of utility and wealth, if these risks are prevented.[92] Thus, risk allocation of unintentional destruction of property or injury to person is necessary in order to continue with these activities.[93] In the same vein, "liability is a tool to share social costs among those that have suffered damage and other participants of [ ] society."[94] Existing liability regimes may not fairly allocate the cost of accidents among the following stakeholders:

(1) *Driver or Vehicle Owner.* A driver or a vehicle owner, depending on the circumstances, can be held liable for a road traffic accident. In case the accident is caused by a fully autonomous vehicle, the traditional tort or quasi-delict regime appears to be inadequate. Self-driving cars will most likely be marketed as vehicles that can take you from point A to point B while doing something else. This illustration presupposes that a driver of a fully autonomous vehicle is not negligent when he or she does something else aside from watching the road and taking control

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> operation of the motor vehicle or if the vehicle has been left to him [or her] by the owner. Sentences (1) and (2) apply accordingly to the use of a trailer.

Czarnecki, *supra* note 86, at 4 (emphases supplied and omitted).

90. *Id.*

91. DAVID W. BARNES & LYNN A. STOUT, THE ECONOMIC ANALYSIS OF TORT LAW 27 (1992).

92. *Id.*

93. *Id.*

94. Shinto Teramoto, Professor, Kyushu University, *Lawyers' views on Autonomous Driving*, Remarks at the 20th Congress of the International Academy of Comparative Law (July 26, 2018).

of his or her car. Without negligence, the driver or the vehicle owner cannot be held liable for a road traffic accident. Likewise, there is an absence of the required standard of care in relation to the use and operation of fully autonomous vehicles.

(2) *Operator*. Although operator provisions can address the gap in traditional tort or quasi-delict regimes, imposing strict liability on an operator is problematic. According to Tracy Hresko Pearl, making an operator liable may deter users from using fully autonomous cars because it may be viewed as too risky because operators may be charged for an accident or a violation caused by a vehicle that they do not have the ability to control and they may not have been present in at the time of the accident.[95]

(3) *Manufacturers, Importers, or Sellers*. These actors may be held liable in case an accident is caused by a defect in their product. In fact, Volvo, Google, and Mercedes Benz are already assuming responsibility for road traffic accidents caused by their autonomous vehicles.[96] Although this appears to be a marketing strategy to promote the safety of their products, it is also a recognition of the transfer of control and responsibility from human drivers to manufacturers who created these autonomous systems.[97] The problem with this blanket assumption of liability is that "manufacturers of autonomous technology and cars may incur more liability than they are currently accustomed" to which may result in higher cost of production. [98] As a consequence, these vehicles will be sold at a higher price in the

95. Pearl, *Fast & Furious*, *supra* note 15, at 54 (citing Gurney, *Driving*, *supra* note 69, at 417).

96. Mark A. Geistfeld, *A Roadmap for Autonomous Vehicles: State Tort Liability, Automobile Insurance, and Federal Safety Regulation*, 105 CAL. L. REV. 1611, 1629–30 (2017) (citing Keith Naughton & Margaret Cronin Fisk, Driverless Cars Give Lawyers Bottomless List of Defendants, *available at* https://www.insurancejournal.com/news/national/2015/12/22/392781.htm (last accessed May 5, 2019)).

97. Gurney, *Imputing Driverhood*, *supra* note 18, at 53.

98. Tracy Hresko Pearl, Compensation at the Crossroads: Autonomous Vehicles & Alternative Victim Compensation Schemes at 18, *available at* https://ssrn.com/abstract=3148162 (last accessed May 5, 2019) [hereinafter Pearl, Compensation] (follow the hyperlink "Download This Paper" to access the cited page) (citing Kyle Colonna, *Autonomous Cars and Tort Liability*, 4 CASE W. RES. J.L. TECH. & INTERNET 81, 117 (2012)).

> market, which may limit customer demand, and worse, close down the market for these vehicles altogether.[99]

Admittedly, existing liability regimes can still be used to allocate the cost of road traffic accidents caused by fully autonomous vehicles. Nevertheless, the following implications are also worth considering: *First*, civil cases litigated under these liability regimes are costly and time-consuming.[100] Due to the nature of evidence to be presented and the need to present expert witnesses, huge costs will be incurred in pursuing a case. Civil cases also take months, or even years, to resolve, thus imposing an undue burden on the plaintiff before one can even claim from the accident. *Second*, exposure of the manufacturers to huge claims and prolonged litigation may result in stifling the development of these innovations.[101] *Finally*, exposure of drivers or vehicle owners to unwarranted risks can deter them from patronizing these technologies.

## VI. Alternative Liability Regimes

### *A. Establishing Legal Personhood*

In 2017, the European Parliament expressed its concern on the insufficiency of ordinary rules on liability as applied to autonomous robots and called for new rules, which focus on how a machine can be held responsible for its acts or omissions.[102] However, autonomous systems *per se* cannot be legally responsible unless they have "a degree of legal personality and a certain acceptance of a legal position to perform legal actions with legal effect."[103]

Legal Personhood is characterized as "the ability to have rights and obligations under the law, such as the ability to enter contracts, sue or be

99. *See* Pearl, Compensation, *supra* note 98, at 18-19 (citing Colonna, *supra* note 98, at 117).

100. Pearl, Compensation, *supra* note 98, at 19.

101. *Id.* at 20.

102. European Parliament, Committee on Legal Affairs, *Report with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103 (INL))*, at 6-7, A8-0005/2017 (Jan. 27, 2017).

103. Robert van den Hoven van Genderen, *Do We Need New Legal Personhood in the Age of Robots and AI?*, *in* Robotics, AI and the Future of Law 49 (Marcelo Corrales, et al. eds., 2018).

sued, and be held liable for one's actions."[104] Legal liability, on the other hand, flows from the existence of a legal personhood.[105] Thus, the question of whether a self-driving car *per se* can be held liable becomes the question of whether it merits personhood.

F. Patrick Hubbard, the Ronald L. Motley Distinguished Professor Emeritus of Tort Litigation at the University of South Carolina School of Law, proposes a three-point criteria that would test if an entity would be regarded as a conscious being that can have the capacity for personhood, to wit —

> [A]n entity [should] exhibit behavior demonstrating: (1) the ability to interact with its environment and to engage in complex thought and communication[;] (2) a sense of being a self with concern for achieving its plan [ ] or purpose in life[;] and (3) the ability to live in a community based on mutual self-interest with other persons. An entity that passes this test[ ] is[,] unlike animals, entitled to at least a *prima facie* right to be treated as a person rather than property.[106]

Additionally, Robert van den Hoven van Genderen, the director of the Center for Law and Internet at Vrije Universiteit University of Amsterdam, opined that

> to hold a robot liable will only be efficient if the act cannot be tracked back to the original actor or 'master' and to see what legal capacity this robot is performing a task, just as a representative of a legal person. In that case, and maybe other cases when it is not completely clear, obligatory insurance, financed by a general fund could provide a solution[.][107]

Although a self-driving car can autonomously perform its driving tasks without human intervention, it appears that it falls short of Hubbard's three-point criteria. As of this writing, a fully autonomous vehicle does not have a sense of self. It is still engaged or operated by a human being.[108] In case it causes an accident, the victim can still recover from the operator and/or the

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104. Trevor N. White & Seth D. Baum, *Liability for Present and Future Robots Technology*, *in* ROBOT ETHICS 2.0 FROM AUTONOMOUS CARS TO ARTIFICIAL INTELLIGENCE, *supra* note 18, at 70.

105. *Id.*

106. F. Patrick Hubbard, *"Do Androids Dream?": Personhood and Intelligent Artifacts*, 83 TEMP. L. REV. 405, 419 (2011).

107. van Genderen, *supra* note 103, at 46.

108. *See* Alex Davies & Aarian Marshall, Are We There Yet? A Reality Check on Self-Driving Cars, *available at* https://www.wired.com/story/future-of-transportation-self-driving-cars-reality-check/(last accessed May 5, 2019).

manufacturer. Better yet, the victim can recoup from a victim compensation fund that may be established for fully autonomous vehicles.

*B. Establishing a Victim Compensation Fund*

A victim compensation fund works like an immunity and compensation system, which grants immunity to a potential defendant and creates an alternative compensation system for victims.[109] Such a compensation regime can be modeled after successful funds instituted in the U.S., like the National Childhood Vaccination Injury Act of 1986 (NCVI) and the Price Anderson Act of 1954.[110] These legislation created victim compensation funds with the intent to stabilize a volatile market and foster market entry of vaccines and nuclear power plants.[111] In the Philippines, a similar mechanism was created through Republic Act (R.A.) No. 7309 to compensate individuals who were unjustly imprisoned or detained.[112]

The proposed victim compensation fund will be created through an act of Congress. The proposed statute will institutionalize a board of claims which can be annexed under the Department of Transportation. The board will be tasked to administer and manage the compensation fund. Likewise, it shall promulgate implementing rules and regulations which will serve as the fund's operating guidelines on adjudication and awarding of claims. In principle, the law, as well as its implementing rules and regulations, shall have the following parameters:

(1) The scope of the fund will cover claims from victims who have suffered injuries or deaths caused by fully autonomous vehicles (Level 4 or 5).[113]

109. Gurney, *Imputing Driverhood*, *supra* note 18, at 57.

110. *Id.* (citing Caitlin Brock, *Where We're Going, We Don't Need Drivers: The Legal Issues and Liability Implications of Automated Vehicle Technology*, 83 UMKC L. REV. 769, 785-86 (2015); Julie Goodrich, *Driving Miss Daisy: An Autonomous Chauffeur System*, 51 HOUS. L. REV. 265, 284 (2013); Gary E. Marchant & Rachel A. Lindor, *The Coming Collision between Autonomous Vehicles and the Liability System*, 52 SANTA CLARA L. REV. 1321, 1337-38 (2012); & Colonna, *supra* note 98, at 85 & 118-19)).

111. *Id.*

112. An Act Creating a Board of Claims Under the Department of Justice for Victims of Unjust Imprisonment or Detention and Victims of Violent Crimes and for Other Purposes, Republic Act No. 7309, § 3 (a)-(c) (1992).

113. Pearl, Compensation, *supra* note 98, at 38.

(2) In order to prevent the funds from depleting, an award ceiling should be set. Property damage may also be excluded at the initial stage, but may be considered in the future should the initial stage of the fund's implementation be successful. In the meantime, property damage may be covered by the owner's private insurance.[114]

(3) The source of funding will come from a small tax imposed on every sale of fully autonomous vehicles, which will be levied from both the manufacturers, importers, sellers, and consumers.[115]

(4) All victims who are injured by a fully autonomous vehicle or his or her heirs, in case of death or incapacity of the victim, are required to initiate a claim against the fund. A reasonable timeline shall be provided for the resolution of claims. As a benchmark, the proposed fund can adopt the timeline in R.A. No. 7309, which provides a 30-working day period to resolve the application.[116]

(5) "Victims who intend to bypass the fund and pursue [a] suit in the tort system [are] still [ ] required to file a claim with the fund and receive a decision as to the amount of compensation to which they would be entitled [to] before being able to reject the fund option and pursue litigation."[117]

(6) Victims who accept the fund's decision and obtain fund compensation will be required to waive their right to pursue litigation against the manufacturer, designer, programmer, importer, seller, or user of the fully autonomous vehicle that caused the injury or fatality issue.[118] In turn, the victim will receive a compensation package, which includes personal injury compensation, loss of consortium, wrongful death, and other standard forms of economic loss associated with the injury or death.[119]

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114. *Id.*

115. *Id.* at 38-39.

116. Republic Act No. 7309, § 7.

117. Pearl, Compensation, *supra* note 98, at 42.

118. *Id.*

119. *Id.* at 43 (citing Mike Steenson & Joseph Michael Sayler, *The Legacy of the 9/11 Fund and the Minnesota I-35W Bridge-Collapse Fund: Creating a Template for*

(7) Recovery of non-economic loss is possible but must be deliberated upon.[120]

As with every liability regime, the victim compensation fund also has its disadvantages. *First*, the fund is uncharted territory. Although the fund can be modeled after existing funds, novel issues such as liability of fully autonomous vehicles *per se* require creating a new blueprint for operating procedures and policies[121] — which is an enormous, complicated, and time-consuming task for administrators.[122] *Second*, the fund cannot fully redress the grievances of a victim. Since the fund is a non-adversarial and a non-public approach in compensating the victim, [123] it may undermine transparency[124] because victims typically do not have the venue to air their grievances and defend their case [125] just like how it is in a normal litigation.[126] *Finally*, the fund cannot cover all kinds of loss or damage. Incidents for claims are most likely pre-determined. Incidents outside the pre-determined incidents are not compensable.[127] Due to this limitation, victims may just resort to civil litigation.

Nevertheless, a victim compensation fund is still a fast and alternative solution to address the liability of manufacturers, importers, sellers, and users of fully autonomous vehicles. It targets the issue on who the proper person liable for an autonomous vehicle accident is because it distributes the cost of liability to all the relevant actors. It is non-litigious; hence, the victim can recover faster and in an inexpensive manner.[128] Claiming from the fund is inexpensive because the victim does not have to go to the courts and participate in complex and protracted litigation just to claim from the person

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*Compensating Victims of Future Mass-Tort Catastrophes*, 35 WM. MITCHELL L. REV. 524, 529 (2009)).

120. Pearl, Compensation, *supra* note 98, at 43.

121. *Id.* at 24 (citing Steenson & Sayler, *supra* note 119, at 531).

122. Pearl, Compensation, *supra* note 98, at 24.

123. *Id.* at 24-25.

124. *Id.*

125. *Id.* at 25-26 (citing Tracy Hresko, *Restoration and Relief: Procedural Justice and the September 11th Victim Compensation Fund*, 42 GONZ. L. REV. 95, 131 (2007)).

126. Pearl, Compensation, *supra* note 98, at 25-26.

127. *Id.* at 43.

128. *See* Pearl, Compensation, *supra* note 98, at 22-24 (citing Gillian K. Hadfield, *Framing the Choice Between Cash and the Courthouse: Experiences with the 9/11 Victim Compensation Fund*, 42 LAW & SOC'Y REV. 645, 645-46 (2008)).

liable.[129] It is also faster because a reasonable timeline is set for board to investigate and release the claim.[130] But the most important aspect of the fund is that it can promote user acceptance and development of these new technologies because it minimizes the exposure of both the users and manufacturers to civil suits.[131] Manufacturers need not worry about costly and prolonged litigation, and can just focus on making more cutting edge and safer products at lesser cost.[132] With the lower cost and promise of safety and convenience, more consumers will prefer fully autonomous vehicles over conventional ones.

## VII. CONCLUSION

It has been said that justice delayed is justice denied. A long drawn-out and expensive civil litigation under the quasi-delict or product liability law regime may not be the best option for a car crash victim who was already traumatized by a vehicular accident. Hence, a fast and more effective way to compensate a victim is always a welcome solution.

Moreover, with the introduction of self-driving cars, manufacturers may be confronted with more liability than they are accustomed to.[133] A chilling effect is created due to this uncertain exposure to liability.[134] This uncertainty leads to higher insurance cost, which may increase cost of production and lower product demand from consumers.[135] Eventually, low demand may force manufacturers to shut down their operations altogether.[136] In order to prevent this from happening, a practical and fair

129. *See* Pearl, Compensation, *supra* note 98, at 22 & 24.

130. *See, e.g.*, Pearl, Compensation, *supra* note 98, at 23 (citing Steenson & Sayler, *supra* note 119, at 544).

131. Pearl, Compensation, *supra* note 98, at 28 (citing Colonna, *supra* note 98, at 84).

132. *Id.* at 26-28 (citing Paul Heaton, et al., *Victim Compensation Funds and Tort Litigation Following Incidents of Mass Violence*, 63 BUFF. L. REV. 1263, 1265-66 (2015)).

133. *Id.* at 18 (citing Colonna, *supra* note 98, at 117).

134. *See* Pearl, Compensation, *supra* note 98, at 20 (citing Bryant Walker Smith, *Automated Driving and Product Liability*, 2017 MICH. ST. L. REV. 1, 15 (2017) & Colonna, *supra* note 98, at 114)).

135. Pearl, Compensation, *supra* note 98, at 27 (citing Robert G. Berger, *The Impact of Tort Law Development on Insurance: The Availability/Affordability Crisis and Its Potential Solutions*, 37 AM. U. L. REV. 285, 300 (1988)).

136. *Id.*

solution should be introduced to soften the blow on this promising technology.

It is submitted that a victim compensation fund provides a workable solution to address the liability issues posed by fully autonomous vehicles because it balances the interests of the victim, the manufacturer, and the user. It provides a no-fault indemnity, the cost of which is shared by relevant stakeholders such as the manufacturer, importer, seller, or vehicle owner. It also provides a faster and cost-effective way for victim reparation and removes the chilling effect on the manufacturers, which can allow them to develop safer, cheaper, and more innovative technologies.

With its congested roads and unreliable mass transport system, transportation in the Philippines has always been a perennial problem.[137] Thus, new platforms that ease these dilemmas have always been embraced by the Filipinos with open arms. This is apparent with the boom of the Transport Network Vehicle System in the country.[138] In the future, self-driving cars can be the next big thing in the Philippines, provided that it is safe, convenient, and affordable. And when that time comes, Philippine laws can properly and fairly address the issue of liability through a victim compensation fund.

137. *See* ASIAN DEVELOPMENT BANK, PHILIPPINES: TRANSPORT SECTOR ASSESSMENT, STRATEGY, AND ROAD MAP 8 (2012) & Reicelene Joy Ignacio, *No final solution to PH traffic congestion*, MANILA TIMES, Jan. 1, 2018, *available at* https://www.manilatimes.net/no-final-solution-ph-traffic-congestion/371555/ (last accessed May 5, 2019).

138. *See* Ehda M. Dagooc, *Nearly half of Pinoy netizens prefer TNVS*, FREEMAN, June 7, 2018, *available at* https://www.philstar.com/the-freeman/cebu-business/2018/06/07/1822248/nearly-half-pinoy-netizens-prefer-tnvs (last accessed May 5, 2019) & Regine Cabato, Get to know the new transport network companies, *available at* https://nine.cnnphilippines.com/news/2018/04/23/new-tnc-grab-golag-hirna-hype-micab-owto-uhop.html (last accessed May 5, 2019).