

NOTE

OBAMACARS: Applying an Insurance Mandate to Manufacturers of Fully Autonomous Vehicles

*Eric Cheng**

ABSTRACT

Automobile accidents in the United States account for thousands of deaths and millions of dollars in personal injury and property damage claims every year. Because human error is the overwhelming cause of these accidents, the development of autonomous or self-driving vehicles is a valuable and inevitable contribution to the well-being of society.

Tort liability in automobile accident litigation has long been based on legal principles of fault. When computers begin to drive cars, where does the blame fall and who pays for the injuries? Current state liability frameworks for automobile litigation need to be modified and supplemented with federal requirements in order to provide an equitable solution for allocating risks, costs, and responsibilities in a driverless environment. Although the continued use of personal fault-based liability schemes from state to state is ideal in the near future, once self-driving cars share the road with human drivers, certain no-fault liability systems must be removed to avoid abuse and inconsistency.

Outside of personal injury lawsuits, a federal mandate for automobile manufacturers' products liability insurance would balance competing interests in protecting consumer interests and promoting technological and commercial development without the stifling burden of endless litigation.

* J.D. 2019, The George Washington University Law School; B.A., Political Economy, 2013, Georgetown University. I would like to thank *The George Washington Law Review* staff and Professor Katie Bukrinsky for their dedicated review and insights, and Dean Alan B. Morrison for inspiration and early guidance. And most of all, thank you to my parents for their unconditional motivation and support.

TABLE OF CONTENTS

INTRODUCTION	974
I. HISTORY AND DEFINITIONS OF AUTONOMOUS VEHICLE INNOVATION	977
A. <i>The Early Years of Automation</i>	977
B. <i>Modern Developments in Self-Driving Capabilities</i> ..	978
C. <i>Understanding Levels of Automated Vehicle Technology</i>	979
II. CURRENT LIABILITY AND REGULATORY FRAMEWORKS	981
A. <i>Existing Tort Law Principles Applied to Automobile Accidents</i>	982
B. <i>Existing State Laws Vary in Their Application to Autonomous Cars</i>	983
C. <i>Duty of Care: Fault-Based and No-Fault Liability</i> ...	986
D. <i>Products Liability</i>	987
III. A NEW LIABILITY FRAMEWORK FOR AN AUTONOMOUS FUTURE	988
A. <i>State-Level Personal Liability Insurance</i>	989
B. <i>No Fault, No Problem?</i>	990
C. <i>Mandatory Manufacturer Products Liability Insurance</i>	993
CONCLUSION	995

INTRODUCTION

It is another Monday morning in the year 2020. You step outside into the cool mist of approaching showers and with a quick tap on your smartphone, the four-door sedan in your driveway powers on in preparation for the commute to work. A critical presentation with a wealthy client looms over you, and you pull up the major talking points on your laptop as you settle into the plush backseat. The car peels off without a sound, and you spend the next hour fine-tuning the salient points of your proposal while the car, sans steering wheel, flawlessly navigates its way from the idyllic suburbs to the chaotic urban center. A majority of car owners and riders have similar daily routines as the above, whether they are hailing a driverless Uber in New York¹ or carpooling into Los Angeles County. As you near your destination, a faulty light at a busy intersection flashes yellow. Your car begins to

¹ See William Boston, *Volvo Promises Uber Fleet of Self-Driving Taxis by 2019*, WALL ST. J. (Nov. 20, 2017, 1:19 PM), <https://www.wsj.com/articles/volvo-promises-uber-fleet-of-self-driving-taxis-by-2019-1511184730> [<https://perma.cc/6SHQ-W9NU>].

carefully pass through but at the last moment, due to a delay from the torrential downpour, detects a speeding human driver. To avoid a catastrophic collision, your car chooses to swerve² and, in doing so, causes injury to a pedestrian and damage to another parked car.

A hypothetical future scenario such as this one has numerous implications. First, the primary benefit to society of transitioning to self-driving cars would be a much needed and long overdue improvement in automobile safety.³ According to a study by the RAND corporation, a nonprofit global policy think tank, even a marginal increase in driver performance from the implementation of autonomous vehicle technology could save over half a million lives over the next few decades.⁴ In addition to the human cost, the elimination or reduction of motor vehicle crashes has the potential to save Americans over a trillion dollars in economic harm.⁵

Stepping away from sheer numbers and values, the implementation of autonomous vehicle technology could decrease energy consumption,⁶ provide mobility for the disabled and elderly,⁷ improve

² See *Standard Grant: Ethical Algorithms in Autonomous Vehicles*, NAT'L SCI. FOUND. (June 28, 2017), https://www.nsf.gov/awardsearch/showAward?AWD_ID=1734521&HistoricalAwards=false (Professor of Philosophy Nicholas Evans is the recipient of a \$556,650 grant to “address concerns over the expression of ethical values in self-driving vehicle[s] when (for example) the vehicle detects an imminent and unavoidable crash and must select among navigation options, such as colliding with a crowded bus or with a lone motorcyclist”).

³ In 2016, 37,461 lives were lost in America due to automobile accidents with 94% of serious crashes attributable to human choices or error. *USDOT Releases 2016 Fatal Traffic Crash Data*, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN. (Oct. 6, 2017), <https://www.nhtsa.gov/press-releases/usdot-releases-2016-fatal-traffic-crash-data> [<https://perma.cc/D5GW-JPYX>].

⁴ The study found that the immediate deployment of self-driving vehicles even being 10% better in safety performance than the average human driver would cumulatively save more lives than a delayed deployment of self-driving vehicles with 75% or 90% safety increases over the average human. NIDHI KALRA & DAVID G. GROVES, RAND CORP., *THE ENEMY OF GOOD: ESTIMATING THE COST OF WAITING FOR NEARLY PERFECT AUTOMATED VEHICLES*, at x (2017), https://www.rand.org/content/dam/rand/pubs/research_reports/RR2100/RR2150/RAND_RR2150.pdf [<https://perma.cc/42YC-WLYP>].

⁵ The economic costs of motor vehicle crashes in the United States in 2010 amounted to \$242 billion with the total societal harm reaching \$836 billion after accounting for quality of life valuations. LAWRENCE BLINCOE ET AL., NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., *REPORT NO. DOT HS 812 013, THE ECONOMIC AND SOCIETAL IMPACT OF MOTOR VEHICLE CRASHES 1* (rev. 2015), <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812013> [<https://perma.cc/JD3B-X4VQ>].

⁶ See U.S. ENERGY INFO. ADMIN., *STUDY OF THE POTENTIAL ENERGY CONSUMPTION IMPACTS OF CONNECTED AND AUTOMATED VEHICLES 54* (2017), https://www.eia.gov/analysis/studies/transportation/automated/pdf/automated_vehicles.pdf [<https://perma.cc/G527-SNJB>] (“1-2 passenger networked autonomous vehicles have the potential to achieve fuel economies an order of magnitude higher than current cars. Additional research suggests fuel economies of over 500 mpg could be possible . . . with vehicle automation technologies to maximize energy efficiency and safety.”).

productivity,⁸ reduce society's environmental footprint,⁹ allow for better allocation of law enforcement and taxpayer resources,¹⁰ and solve problems of highway congestion and parking scarcity.¹¹ As with any emerging technology, however, the benefits come with a variety of costs. Questions will arise concerning vehicle ownership,¹² long-term effects on the taxi and trucking industries,¹³ cybersecurity and privacy issues,¹⁴ and regulatory and liability frameworks.¹⁵

Although states, Congress, and both the Obama and Trump administrations have addressed developments in safety and testing, questions remain as to the assignment of tort liability in cases involving autonomous vehicles.¹⁶

Usually, tort liability arising from automobile accidents and crashes is in the domain of the states with limited exceptions for federal preemption involving motor vehicle safety standards.¹⁷ This Note argues that the traditional liability systems are not entirely sufficient for providing certainty in the face of emerging autonomous vehicle technology. It then proposes a bifurcated federal and state liability and insurance framework in the form of a products liability individual mandate, in the same vein as the Affordable Care Act, for manufacturers and pure individual liability insurance for resolving future issues of liability arising from this technology.¹⁸

7 See *id.* at 45.

8 See JAMES MANYIKA ET AL., MCKINSEY GLOB. INST., *DISRUPTIVE TECHNOLOGIES* 82 (2013), https://www.mckinsey.com/~/media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/disruptive%20technologies/mgi_disruptive_technologies_full_report_may2013.ashx [<https://perma.cc/64CE-6C5J>].

9 See *id.* at 81 (estimating that carbon dioxide emissions may be reduced by 300 million tons per year).

10 See Jay L. Zagorsky, *Cops May Feel Biggest Impact from Driverless Car Revolution*, CONVERSATION (Mar. 16, 2015, 5:39 AM), <https://theconversation.com/cops-may-feel-biggest-impact-from-driverless-car-revolution-38767> [<https://perma.cc/3FQQ-WYJS>].

11 See U.S. ENERGY INFORMATION ADMINISTRATION, *supra* note 6, at 50–51.

12 See Tim Higgins, *The End of Car Ownership*, WALL ST. J. (June 20, 2017, 10:10 PM), <https://www.wsj.com/articles/the-end-of-car-ownership-1498011001> [<https://perma.cc/4BPM-5XGF>].

13 See JAMES MANYIKA ET AL., *supra* note 8, at 84.

14 See *id.* at 85.

15 See CARY SILVERMAN ET AL., U.S. CHAMBER INST. LEGAL REFORM, *TORTS OF THE FUTURE* 9–12 (2017), https://www.instituteforlegalreform.com/uploads/sites/1/_Torts_of_the_Future_Addressing_the_Liability_and_Regulatory_Implications_of_Emerging_Technologies_April_2017.pdf [<https://perma.cc/3MV7-HK52>].

16 See *infra* Part II.

17 See CARY SILVERMAN ET AL., *supra* note 15.

18 See *infra* Part III.

This Note begins in Part I with a comprehensive discussion of the development of autonomous vehicles as well as legislative and regulatory responses at the state, federal, and international levels. To understand the changes in automobile liability, it is important to explain how new autonomous technology will flip traditional notions of fault and shift the focus in automobile accident litigation.¹⁹ In Part II, this Note further compares various tort liability standards for automobile accident litigation in the context of recent and future autonomous vehicle technological developments. Finally, in Part III, this Note balances competing safety, innovation, and economic interests in proposing an equitable dual liability framework in an autonomous vehicle era.

I. HISTORY AND DEFINITIONS OF AUTONOMOUS VEHICLE INNOVATION

The rapid rise of autonomous vehicle development in recent years has captured the public's attention, but efforts to create self-driving cars and other vehicles have been years in the making. Although the relative simplicity of these early efforts did not raise major concerns over liability, such efforts created a backdrop against which the current reality stands. To better explain the nuances of future automotive liability regimes, this Note begins with a short history of automation and current technological standards.

A. *The Early Years of Automation*

The concept of autonomous vehicles has held a place in the American mind for longer than one would expect. In the years before World War II, car manufacturers and innovators proposed grand ideas for future societies with cities and highways with self-driving cars.²⁰ Initial autonomous vehicle designs centered around connecting the cars with specialized roads through the use of electromagnetic circuits and radio signals—the first autonomous vehicle in the United States was likely tested in 1958, when “the Nebraska Department of Roads fitted electric circuits in the pavement of a 400-foot long section of a public highway” for a radio-equipped Chevrolet car.²¹ The feasibility,

¹⁹ See Automated and Electric Vehicles Act 2018, c. 18 (UK).

²⁰ See Pete, *Self-Drive Cars and You: A History Longer than You Think*, VELOCETODAY.COM (Aug. 5, 2014), <https://www.velocetoday.com/self-drive-cars-and-you-a-history-longer-than-you-think/> [https://perma.cc/4Z8N-6VUJ].

²¹ *Id.*

however, of upgrading vast amounts of infrastructure to facilitate these vehicles was prohibitive.²²

The next steps in autonomous vehicle development sprouted in 1977 in Japan²³ and blossomed in Europe, where massive research and development projects created the first “vision-based robotic guiding system[s],” thus severing the connection between road and car.²⁴ Successful road tests with otherwise indistinguishable autonomous passenger vehicles took place in Germany, France, and Italy from 1980 to 1996.²⁵

Although lunar exploration motivations provided an early boost in American autonomous vehicle innovation in the 1960s and 1970s with the Stanford Cart,²⁶ it wasn’t until the new millennium that the U.S. military began incentivizing the rapid development of self-driving technology.²⁷ In March 2004, the Defense Advanced Research Projects Agency (“DARPA”), an agency under the U.S. Department of Defense, created a congressionally mandated autonomous vehicle off-road race in an effort to develop unmanned “robotic ground vehicles for military applications.”²⁸ Although the first challenge ended in technical failure as no competitors completed the 142-mile course, subsequent challenges saw great improvement, as multiple autonomous vehicles completed off-road and urban courses.²⁹

B. *Modern Developments in Self-Driving Capabilities*

Outside of the military context, the effect of DARPA’s challenges is unquantifiable yet unmistakable.³⁰ In 2017, companies in both Silicon Valley and Motor City, local governments, and even universi-

²² *See id.*

²³ S. Tsugawa of the Tsukuba Mechanical Engineering Laboratory operated the first “truly autonomous car,” one that used cameras and computer processing to navigate. Tom Vanderbilt, *Autonomous Cars Through the Ages*, WIRED (Feb. 6, 2012, 6:30 AM), <https://www.wired.com/2012/02/autonomous-vehicle-history/> [<https://perma.cc/NU92-UCCV>].

²⁴ Pete, *supra* note 20.

²⁵ *See id.*

²⁶ *See* Vanderbilt, *supra* note 23 (describing an early autonomous “buggy” developed for purposes of lunar roving).

²⁷ *See* DEF. ADVANCED RESEARCH PROJECTS AGENCY, DARPA GRAND CHALLENGE, https://archive.darpa.mil/grandchallenge04/overview_pres.pdf [<https://perma.cc/8HNK-HYUF>].

²⁸ *Id.*

²⁹ *See* Press Release, DARPA, The DARPA Grand Challenge: Ten Years Later (Mar. 13, 2014), <https://www.darpa.mil/news-events/2014-03-13> [<https://perma.cc/A82L-DEES>].

³⁰ *See* Jacob D. Walpert, Note, *Carpooling Liability?: Applying Tort Law Principles to the Joint Emergence of Self-Driving Automobiles and Transportation Network Companies*, 85 FORDHAM L. REV. 1863, 1867–68 (2017) (describing how the initial DARPA challenges have led to almost ubiquitous research and development of autonomous vehicle technology).

ties, among many others, have seized upon autonomous vehicle technology as the future of human transportation.³¹ Tesla Motors, as early as October 2016, began producing vehicles with “the hardware needed for full self-driving capability.”³² In November 2017, Volvo and Uber entered into a deal to supply 24,000 autonomous SUV taxis by the beginning of 2019, reflecting an industry-wide confidence in the reality of deploying and operating self-driving vehicles in the near rather than the distant future.³³

C. *Understanding Levels of Automated Vehicle Technology*

Critical to the discussion of the liability and regulatory aspects of vehicle automation are definitions for the varying levels of automation. Playing a key role in defining self-driving vehicle technology is SAE International, the global professional association responsible for formulating technical standards and practice guidelines for engineering professionals in the automobile industry.³⁴ In 2014, SAE International issued guidelines designed to classify six separate degrees of automobile automation and provide clearer guidance across industries.³⁵ In its classification, SAE International generally distinguishes between two actors: the human driver and the automated driving system.³⁶ From levels zero through two, control of the actual driving operations (such as steering, braking, or changing lanes) is completely in the domain of the human driver with certain assistance available (in-

³¹ See Arian Campo-Flores, *Cities Rush to Build Infrastructure—for Self-Driving Cars*, WALL ST. J. (Nov. 9, 2017, 9:00 AM), <https://www.wsj.com/articles/cities-rush-to-build-infrastructure-for-self-driving-cars-1510236002> [<https://perma.cc/EGH9-XRDT>] (describing a variety of investors and participants in autonomous vehicle testing and development, including automobile manufacturers such as General Motors, technology companies such as Waymo and Intel, research institutions such as the University of Michigan and Pennsylvania State University, and cities like Chandler, Arizona and Orlando, Florida).

³² Press Release, The Tesla Team, All Tesla Cars Being Produced Now Have Full Self-Driving Hardware (Oct. 19, 2016), <https://www.tesla.com/blog/all-tesla-cars-being-produced-now-have-full-self-driving-hardware> [<https://perma.cc/R258-S95X>] (detailing technological specifications such as cameras with 360-degree and 250-meter visibility, ultrasonic sensors, and weather-proof radar).

³³ See Boston, *supra* note 1 (“Other car makers have signed smaller, less specific deals to develop and produce autonomous cars, but Monday’s agreement represents one of the most concrete deals between two big players in the field for the production of a large number of real cars. The promised delivery date—as little as two years away—is also one of the first hard, deadlines that a significant auto maker has set for rolling out a working model.”).

³⁴ *About SAE International*, SAE INT’L, <https://www.sae.org/about/> [<https://perma.cc/4KGQ-N4ZE>].

³⁵ See SAE INT’L, AUTOMATED DRIVING (2014), https://cdn.oemoffhighway.com/files/base/acbm/oooh/document/2016/03/automated_driving.pdf [<https://perma.cc/DU6X-K3FH>].

³⁶ See *id.*

cluding anti-lock braking systems or cruise control).³⁷ Beginning at level three, the vehicle is able to operate on its own without human intervention in certain conditions. At levels three and four, a human driver is still expected to intervene when circumstances dictate, while level five vehicles operate fully autonomously, devoid of steering wheels or pedals.³⁸

The federal government has adopted SAE's working definitions in its updated guidance for developing automated vehicle technology across industries and states.³⁹ In the current market, the vast majority of passenger vehicles are categorized under levels zero or one, with some level two systems offered in newer models.⁴⁰ At these levels, driving control and decisionmaking remains in the hands of human drivers.⁴¹

Level three automation is where actual control begins to shift towards the automated system. It is defined by SAE as “[c]onditional [a]utomation: the *driving mode*-specific performance by an *automated driving system* of all aspects of the *dynamic driving task* with the expectation that the *human driver* will respond appropriately to a *request to intervene*.”⁴² At level three automation, the vehicle can take over monitoring and decisionmaking in narrow circumstances. In practice, this is limited to situations involving medium and low speed traffic jams.⁴³ The problem with level three automation, however, is the dynamic between the human driver and system in moments of stress.⁴⁴ In a world where human error is the cause of the vast majority of accidents, is it prudent to expect human drivers to “respond appropriately to a request to intervene”?⁴⁵ Similar questions remain, to a

³⁷ See *id.*

³⁸ See *id.*

³⁹ See Press Release, Nat'l Highway Traffic Safety Admin., U.S. DOT Releases New Automated Driving Systems Guidance (Sept. 12, 2017), <https://www.nhtsa.gov/press-releases/us-dot-releases-new-automated-driving-systems-guidance> [<https://perma.cc/2C88-DGDD>].

⁴⁰ See Justin Hughes, *Car Autonomy Levels Explained*, DRIVE (Nov. 3, 2017), <http://www.thedrive.com/sheetmetal/15724/what-are-these-levels-of-autonomy-anyway> [<https://perma.cc/F2TM-LUU2>]; see also *Super Cruise*, CADILLAC, <http://www.cadillac.com/world-of-cadillac/innovation/super-cruise> [<https://perma.cc/PV2U-7JVB>] (offering “hands-free” driving assistance on a limited number of mapped freeways and limited surrounding conditions); Andrew Hard, *Tesla Model S News Roundup*, DIGITAL TRENDS (Jan. 3, 2018, 11:00 AM), <https://www.digitaltrends.com/cars/tesla-model-s-release-date-price-specs-news/> [<https://perma.cc/56VG-NJUC>] (describing the most well-known level two autonomous vehicles offered by Tesla).

⁴¹ See Hughes, *supra* note 40.

⁴² SAE INTERNATIONAL, *supra* note 35.

⁴³ See Hughes, *supra* note 40.

⁴⁴ See *id.*

⁴⁵ David Silver, *Level 3: The Audi A8*, MEDIUM (July 15, 2017), <https://medium.com/self->

lesser extent, in level four automation, whereas level five automation theoretically erases all notions of human error. This Note takes into account the differences between level three and five automation for purposes of assigning liability in an appropriate regulatory and insurance framework.

II. CURRENT LIABILITY AND REGULATORY FRAMEWORKS

Even in a period of rapid growth and unbounded optimism, new autonomous vehicle technology raises substantial questions in the automotive industry, which has a long history of liability and regulation.⁴⁶ No matter how safe autonomous vehicles prove to be, accidents will still occur as long as human drivers share the roads.⁴⁷ Traditionally, the federal government enforced and governed vehicle performance and design standards through the National Highway Traffic Safety Administration (“NHTSA”), whereas safety regulations and liability regimes for individual drivers were promulgated at the state level.⁴⁸ In the wake of rapid technological advancement involving major players in the tech and auto industries, Congress has contemplated new legislation concerning autonomous vehicles; however, these proposals still leave liability and insurance considerations to the traditional purview of the states.⁴⁹ Proposed bills in both the House⁵⁰ and

driving-cars/level-3-the-audi-a8-c998cd490368 [https://perma.cc/M4KR-839W] (describing concerns from autonomous vehicle developers about relying on human intervention in level three vehicles).

⁴⁶ See *When Did Auto Insurance Become Mandatory?*, AUTOINSURANCE.ORG, https://www.autoinsurance.org/when-did-auto-insurance-become-mandatory/ [https://perma.cc/2WVS-KGVH].

⁴⁷ See Mike Isaac, *Uber Suspends Tests of Self-Driving Vehicles After Arizona Crash*, N.Y. TIMES (Mar. 25, 2017), https://www.nytimes.com/2017/03/25/business/uber-suspends-tests-of-self-driving-vehicles-after-arizona-crash.html [https://perma.cc/GVD7-JC2Q] (“The Uber vehicle, which had a person in the driver’s seat but was in self-driving mode, was not at fault in the accident, according to [police].”).

⁴⁸ See NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., REPORT NO. DOT HS 812 343, THE ROAD AHEAD 8 (2016); see also Timothy B. Lee, *House Passes Law to Accelerate Adoption of Self-Driving Technology*, ARSTECHNICA (Sept. 6, 2017, 1:55 PM), https://arstechnica.com/cars/2017/09/house-passes-law-to-accelerate-adoption-of-self-driving-technology/ [https://perma.cc/ABX3-UD2X] (“[T]raditionally, federal law governs vehicle designs while state law regulates drivers.”).

⁴⁹ The House bill passed, see SELF DRIVE Act, H.R. 3388, 115th Cong. (2017), but the Senate bill remains stalled because of safety concerns, see Tony Romm, *A Bill to Put More Self-Driving Cars on U.S. Roads Is Stuck in the Senate*, RECODE (Jan. 18, 2018, 1:59 PM), https://www.recode.net/2018/1/18/16905964/self-driving-car-testing-roads-congress-senate [https://perma.cc/H547-8LMJ]. Meanwhile, the United Kingdom passed autonomous vehicle legislation with language mandating unique insurance coverage for defined autonomous vehicles. See Automated and Electric Vehicles Act 2018, c.18, Explanatory Notes ¶ 28 (UK).

⁵⁰ See H.R. 3388.

Senate⁵¹ are not the only attempts at regulation; lawmakers in the United Kingdom have passed the Automated and Electric Vehicles Act 2018,⁵² which makes insurance compulsory for defined “automated vehicles.”⁵³

As questions arise, accompanying technological advancement and consumer demand, changes in automobile accident liability will necessarily follow. According to a survey by the American Board of Trial Advocates, a national professional organization of over 6,000 civil litigation attorneys, typical automobile tort cases can require hundreds of hours of legal work, costing tens of thousands of dollars per case.⁵⁴ Two-thirds of all personal injury claims result from automobile accidents.⁵⁵ Consequently, wide varieties of liability frameworks among the states will be tested with the emergence and implementation of increasingly automated vehicle technology. Below, this Note illustrates the existing state tort liability schemes and discusses the potential effects of new driverless technology on their continued application.

A. *Existing Tort Law Principles Applied to Automobile Accidents*

In the context of automobile accident liability, there are generally two tort law principles that govern: strict liability and negligence.⁵⁶ When strict liability is applied, blame is assigned to the party who caused an injury—regardless of fault, intent, or negligence.⁵⁷ Strict liability may be raised against an automobile manufacturer in a manufacturing defect, failure to warn, or design defect claim.⁵⁸ More recently, however, courts have avoided applying pure strict liability standards to defendants by integrating principles of reasonableness in a move toward a hybrid negligence standard.⁵⁹

⁵¹ See AV START Act, S. 1885, 115th Cong. (2017).

⁵² C. 18 (UK).

⁵³ *Id.* § 2.

⁵⁴ See Ulyana I. Bekker, *The Mayhem of Vehicular Autonomy in Accident Litigation*, LAW360 (Nov. 2, 2017), <https://advance.lexis.com/api/permalink/5f39709b-c2bc-4872-bd70-27b42f7448b1/?context=1000516>.

⁵⁵ See Thomas F. Burke, LAWYERS, LAWSUITS, AND LEGAL RIGHTS 103 (2002).

⁵⁶ See Gary E. Marchant & Rachel A. Lindor, *The Coming Collision Between Autonomous Vehicles and the Liability System*, 52 SANTA CLARA L. REV. 1321, 1323 (2012).

⁵⁷ RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM ch. 4, scope note (AM. LAW INST. 2010).

⁵⁸ See Jeremy Levy, *No Need to Reinvent the Wheel: Why Existing Liability Law Does Not Need to Be Preemptively Altered to Cope with the Debut of the Driverless Car*, 9 J. BUS. ENTREPRENEURSHIP & L. 355, 379 (2016).

⁵⁹ See Frank J. Vandall, *Constricting Products Liability: Reforms in Theory and Procedure*, 48 VILL. L. REV. 843, 852 (2003).

Generally, claims based in tort law are brought under a theory of negligence: that a defendant failed to act with the care of an ordinary prudent person under the circumstances.⁶⁰ To establish a case of negligence, the plaintiff must show that the defendant owed a legal duty, the defendant breached that duty, the plaintiff suffered an injury, and that the defendant's breach of duty caused the injury.⁶¹ In automobile accident cases, traditional interpretations of these elements may need to be revisited in the face of changing autonomous vehicle technology. Particularly significant are shifts in legal duties owed and breached.⁶² At levels three through five of driving automation, the elements of negligence will likely be different from the status quo, which contemplates full-time human drivers at levels zero through two.

B. Existing State Laws Vary in Their Application to Autonomous Cars

State liability schemes presume that cars are driven by people, who are responsible for driving safely and prudently in consideration of others. In fact, the United States is a party to the 1949 Geneva Convention on Road Traffic, which sets forth in Article 8 that “[e]very vehicle or combination of vehicles proceeding as a unit shall have a driver.”⁶³ In contrast, no state statute contains a similar requirement that vehicles must have a driver.⁶⁴ While no state explicitly requires a driver, the statutes presume the existence of a driver through a litany of definitions and obligations imposed on “driver[s],” “operator[s],” “owner[s],” or “person[s]” in “actual physical control” of vehicles, among others.⁶⁵

The definitions of a “driver” or “operator” of any vehicle take on significant importance when cars are able to function on their own.⁶⁶ Although a “driver” of a nonautonomous vehicle has a duty to act prudently while driving, does another person who is merely a passenger of a level five car or temporary passenger of a level three car have the same duty of care under the law? Further, would an artificial intel-

⁶⁰ RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 3 cmt. a (AM. LAW INST. 2010).

⁶¹ See, e.g., *Winn v. Posades*, 913 A.2d 407, 411 (Conn. 2007) (quoting *Jagger v. Mohawk Mountain Ski Area, Inc.*, 849 A.2d 813, 822 n.13 (Conn. 2004)).

⁶² See Mark A. Geistfeld, *A Roadmap for Autonomous Vehicles: State Tort Liability, Automobile Insurance, and Federal Safety Regulation*, 105 CALIF. L. REV. 1611, 1619 (2017).

⁶³ Geneva Convention on Road Traffic art. 8, Sept. 19, 1949, 3 U.S.T. 3008, 125 U.N.T.S. 3.

⁶⁴ See Bryant Walker Smith, *Automated Vehicles Are Probably Legal in the United States*, 1 TEX. A&M L. REV. 411, 463 (2014).

⁶⁵ *Id.*

⁶⁶ *Id.*

ligence or automated driving system fit in under the same definitions? A closer examination of representative state statutes suggests the answer is yes to the former, whereas the latter is unclear.

Many state statutes have broad definitions of the terms “driver” or “operator.”⁶⁷ For example, in New York, a “driver” is defined as “[e]very person who operates or drives or is in actual physical control of a vehicle.”⁶⁸ New York courts have extended the reach of this definition beyond immediate mechanical use; a person may be a driver not only through their own personal acts such as handling the steering wheel but also through the agency of other individuals.⁶⁹

Courts in California have given even wider latitude to the definition of “driver.” For example, the term has encompassed individuals who are in the process of opening the front left door of the car,⁷⁰ towing another occupied but inactive vehicle,⁷¹ leaving a vehicle without locking the parking brakes,⁷² and even pushing a broken-down car.⁷³ This spread in interpretation seems to suggest that someone can not only have “actual physical control” without “driving” the car in a traditional sense—steering and accelerating—but may also be considered “driving” without “actual physical control.” In either case, the person falls under the definition of a “driver” for liability purposes.⁷⁴

Additionally, states differ in statutory construction regarding the state of the vehicle: whether it is in motion or idle.⁷⁵ The terms “drive” and “operate” are often construed very expansively but to different degrees.⁷⁶ Wisconsin differentiates between the two terms: “‘Drive’ means the exercise of physical control over the speed and direction of a motor vehicle while *it is in motion*” whereas operate means “the physical manipulation or activation of any of the controls of a motor

⁶⁷ See Walpert, *supra* note 30, at 1886.

⁶⁸ N.Y. VEH. & TRAF. LAW § 113 (Consol. 2015).

⁶⁹ See *Arcara v. Moresse*, 179 N.E. 389, 390 (N.Y. 1932) (“To bind the owner, there must be ‘negligence in the operation’ of the motor vehicle; but the negligent act may be performed either ‘by any person legally using’ the motor vehicle, or by any person ‘operating the same.’ Thus the legal user may be guilty of negligence in ‘operation,’ though not ‘operating’ the car, in the sense that he is driving with his own hands. The clear implication is that, if the legal user at the time be present in the car, still ‘the director of the enterprise,’ still ‘the master of the ship,’ the operation of the car is his operation, though the hands at the wheel are those of a substitute, and the negligent driving will bind the owner, with whose permission the car is used.”).

⁷⁰ See *Adler v. Dep’t of Motor Vehicles*, 228 Cal. App. 3d 252, 258 (Cal. Ct. App. 1991).

⁷¹ See *Fairman v. Mors*, 130 P.2d 448, 450 (Cal. Dist. Ct. App. 1942).

⁷² See *Panopoulos v. Maderis*, 303 P.2d 738, 742 (Cal. 1956).

⁷³ See *Arellano v. Moreno*, 33 Cal. App. 3d 877, 882 (Cal. Ct. App. 1973).

⁷⁴ See *id.* at 883.

⁷⁵ See *Smith*, *supra* note 64, at 468.

⁷⁶ See *id.* at 468, 471.

vehicle necessary to put it in motion.”⁷⁷ Vermont uses a catch-all definition: the operation of motor vehicles is broadly construed “to cover all matters and things connected with the presence and use of motor vehicles on the highway, whether they be in motion or at rest.”⁷⁸

As a result of these broad statutory definitions and judicial interpretations of the term “driver” in the autonomous vehicle context, most people who use self-driving cars will be deemed drivers under the current frameworks. In those states with expansive definitions or interpretations of the terms “driver” or “operator,” people who travel in fully autonomous vehicles (i.e., level five) will still likely be covered under the statutory terms.⁷⁹ For example, in Vermont, although the current definition would probably cover an individual who “operates” a level five vehicle by simply turning it on and inputting a destination, the state legislature would presumably implement new definitions to clarify situations where an individual has no ability to control a fully autonomous vehicle.⁸⁰ Whether it is fair to impute duties of care to individuals who offer little to no input in the operation of a car is yet another question that will lead to litigation or legislation.

Some states with particularly narrow definitions, however, will likely face debate and litigation over coverage of autonomous vehicle users.⁸¹ With bare constructions of the term “operate” or “drive,” it may be ambiguous whether a person who simply sits in the front left seat but does not actively steer, accelerate, or brake becomes a driver and shoulders a tort duty to other drivers. At level three, a person may initiate the movement of the vehicle and represent a “driver” during the initial and terminal stages of a trip, but does he or she shed that title when operation is ceded to the automated driving system mid trip?⁸²

⁷⁷ *State v. Modory*, 555 N.W.2d 399, 401 (Wis. Ct. App. 1996) (quoting WIS. STAT. § 346.63(3)(a)–(b) (2016)).

⁷⁸ *State v. Emmons*, 788 A.2d 24, 26 (Vt. 2001) (quoting VT. STAT. ANN. tit. 23, § 4(24) (2018)).

⁷⁹ See *supra* notes 75–78 and accompanying text.

⁸⁰ See VT. AGENCY OF TRANSP., PREPARING FOR AUTOMATED VEHICLES IN VERMONT 9 (2018) (suggesting the creation of a new entity, “the Automated Driving Provider,” in addition to the existing statutory definitions of “driver” and “operator,” which “would be the person that expressly warrants the automated operation of an associated automated vehicle to be reasonably safe”).

⁸¹ See, e.g., *West v. State*, 22 N.E.3d 872, 875 (Ind. Ct. App. 2014) (interpreting the definition of “operate,” defined by Indiana law as “to navigate or otherwise be in actual physical control of a vehicle,” to include an intoxicated woman sitting in the driver’s seat of a running parked car) (quoting 2013 Ind. Acts 504–05, 3596)).

⁸² See *Audi A8*, AUDI TECH. PORTAL (July 2017), <https://www.audi-technology-portal.de/>

In a level five automated car, theoretically no one ever has actual physical control of the car outside of a destination input.⁸³ In traditional negligence-based frameworks, these distinctions will be crucial in determining a defendant's duty and potential liability.

C. *Duty of Care: Fault-Based and No-Fault Liability*

Once parties or "drivers" are established from statutory definitions, allocation of loss is typically determined through fault-based liability.⁸⁴ In order to determine who is at fault in any automobile collision, each driver's duty must be analyzed under state laws along with any potential breaches of those duties.⁸⁵ Generally speaking, drivers are obligated to drive in a reasonable and prudent manner.⁸⁶ Most statutes impose this obligation in two ways: looking first to the actions of the driver and second to the status of the vehicle in relationship to its surrounding environment.⁸⁷ A baseline duty is the proscription against reckless driving.⁸⁸ In Iowa, it is illegal to "[drive] a motor vehicle in a reckless manner with willful or wanton disregard for the safety of persons or property."⁸⁹ The Iowa Supreme Court further elucidated this prohibition by defining the three elements of reckless driving: "(1) the conscious and intentional operation of a motor vehicle (2) in a manner which creates an unreasonable risk of harm to others (3) where such risk is or should be known to the driver."⁹⁰ The introduction of an autonomous driving system muddies the intent prongs of this standard: the human occupant does not technically drive the vehicle, so he cannot willfully or wantonly disregard others' safety.

Other states raise drivers' duty to prohibit carelessness or unsafe driving instead of recklessness.⁹¹ New Yorkers have the additional

en/electrics-electronics/driver-assistant-systems/audi-a8-audi-ai-traffic-jam-pilot [https://perma.cc/ZYJ2-EFKE].

⁸³ See SAE INTERNATIONAL, *supra* note 35.

⁸⁴ See *No-Fault Insurance and Fault Insurance*, DMV.ORG, <https://www.dmv.org/insurance/fault-and-no-fault-insurance.php> [https://perma.cc/5TFV-WLU7].

⁸⁵ See Marchant & Lindor, *supra* note 56, at 1323.

⁸⁶ See Smith, *supra* note 64, at 487.

⁸⁷ See *id.*

⁸⁸ See, e.g., *State v. Adams*, 810 N.W.2d 365, 368 (Iowa 2012) (quoting IOWA CODE § 707.6A.2 (2019)).

⁸⁹ *Id.*

⁹⁰ *State v. Stewart*, 223 N.W.2d 250, 252 (Iowa 1974).

⁹¹ See, e.g., FLA. STAT. ANN. § 316.1925(1) (West 2017) (requiring people to drive "in a careful and prudent manner"); LA. STAT. ANN. § 32:58 (2017) (providing penalties for careless operation, defined as failure to "drive in a careful and prudent manner, so as not to endanger the life, limb, or property of any person").

common law duty of safe vehicle operation⁹² as well as a statutory duty to “exercise due care to avoid colliding with any bicyclist, pedestrian, or domestic animal upon any roadway and shall give warning by sounding the horn when necessary.”⁹³ In a level five vehicle, it may be impossible for a human to do anything to avoid a collision or sound a horn. Still other jurisdictions have implemented rules with varying degrees of specificity. Given that there is no black and white method of allocating liability and each determination of fault is highly dependent on each particular case of driver behavior, eliminating the basis for that determination (by automating the underlying driving behavior) creates daunting challenges in the current majority of fault-based liability systems.

No-fault insurance, the alternative to a fault-based liability scheme, seemingly removes the challenge of searching for fault in a fully autonomous landscape.⁹⁴ Unlike fault-based liability insurance, where damages and costs for injuries are imputed to the “at-fault” driver, no-fault insurance arranges to pay for a policyholder’s own damages regardless of who was ultimately responsible for the accident.⁹⁵ In exchange for easier access to compensation, policyholders are limited in their ability to sue for further damages above certain monetary threshold levels.⁹⁶ Twelve states have so-called “‘modified’ no-fault auto insurance laws,” where medical costs and lost wages are covered without regard to fault and further lawsuits for noneconomic damages such as pain and suffering are restricted below predetermined thresholds.⁹⁷

D. Products Liability

Compared to standard personal injury claims, products liability litigation can be significantly costlier and more complex.⁹⁸ As an initial matter, the shift from individual to corporate defendants raises

⁹² See *Hodder v. United States*, 328 F. Supp. 2d 335, 341 (E.D.N.Y. 2004) (placing drivers under a duty “(1) to maintain a reasonably safe rate of speed; (2) to have their automobiles under reasonable control; (3) to keep a proper lookout, under the circumstances then existing, to see and be aware of what was in their view; and (4) to use reasonable care to avoid an accident” (citations omitted)).

⁹³ N.Y. VEH. & TRAF. LAW § 1146(a) (McKinney 2015).

⁹⁴ See *No-Fault Insurance and Fault Insurance*, *supra* note 84.

⁹⁵ *Id.*

⁹⁶ See Gary Wickert, *Commentary: The Failure of No-Fault Insurance*, CLAIMS J. (May 12, 2016), <https://www.claimsjournal.com/news/national/2016/05/12/270759.htm> [<https://perma.cc/XXW5-FHH4>].

⁹⁷ *Id.*

⁹⁸ See Bekker, *supra* note 54. The average length of a products liability trial in 2001 took

potential issues of jurisdiction and standing. For example, in Missouri, “[a] defendant whose liability is based solely on his status as a seller in the stream of commerce may be dismissed from a products liability claim” when there is another defendant from whom the plaintiff can fully recover damages.⁹⁹ Suddenly, personal injury cases that typically only involve a few parties may require further analysis, motion practice, and discovery involving individual sellers, car dealerships, and manufacturers.¹⁰⁰

As highly autonomous vehicles become more ubiquitous and it becomes more difficult to assign fault and liability to individual drivers, injured parties will seek out different sources of compensation. In the current automobile accident landscape, it is relatively easy to recover in a majority of cases: either fault is assigned to blameworthy drivers and an insurer pays out, or the no-fault insurer pays out for economic damages.¹⁰¹ Over years of fine-tuning and practice, the legal industry has streamlined the automobile accident litigation process to keep legal fees low, provide a sturdy base of activity for young law firm associates, and generate a reliable set of data for insurers.¹⁰² With the emergence of autonomous vehicle technology, many of the assumptions and precedents underlying this process will be reset. Although the volume of cases will theoretically decrease as cars become safer, the changed nature of each case will raise costs dramatically, at least in the nascent period of driverless technology. In addition to increased legal fees, new expert testimony, research and analysis, and plain uncertainty will raise costs for firms, insurers, and manufacturers.¹⁰³

III. A NEW LIABILITY FRAMEWORK FOR AN AUTONOMOUS FUTURE

This Note argues that by preserving personal liability-based insurance at the state level, eliminating no-fault regimes, and issuing a mandate for manufacturers to maintain sophisticated products liability insurance, the country will achieve an optimal path towards certainty, equity, and development. As society heads toward a future where au-

seven days and resulted in a successful claim for the plaintiff in slightly more than a third of cases but also resulted in higher payouts when successful. *Id.*

⁹⁹ *Gramex Corp. v. Green Supply, Inc.*, 89 S.W.3d 432, 441 (Mo. 2002) (en banc) (quoting MO. REV. STAT. § 537.762 (2000)).

¹⁰⁰ *See Bekker*, *supra* note 54.

¹⁰¹ *See id.* (discussion on fault-based and no-fault liability schemes).

¹⁰² *See id.*

¹⁰³ *See id.*

tonomous vehicle technology represents the next logical step in innovation and everyday life begins to resemble the circumstances of this Note's Introduction, people will demand that certainty and equity accompany these widespread changes.¹⁰⁴ Earlier scholarship has explored the liability issues raised by autonomous vehicle technology and proposed new frameworks based on existing liability theories. As early as 2013, Dylan LeValley concluded that because autonomous vehicles are "similar to common carriers of passengers," such vehicles "owe the public the highest duty of care, liable for even the slightest negligence."¹⁰⁵ Others have proposed various hybrid systems of strict liability, vicarious liability, and no-fault insurance.¹⁰⁶ This Note builds on these prior proposals by critically examining the strengths and weaknesses of each system and proposing a new, optimally balanced liability scheme.

A. *State-Level Personal Liability Insurance*

As an initial matter, this Note proposes maintaining the current state requirements for minimum, fault-based, personal liability insurance for individual drivers. As autonomous vehicle technology creates safer cars and removes dangerous driving from the roads, the number of claims and amount of damages will fall, reducing insurance premiums.¹⁰⁷ Meanwhile, fault-based liability protects users of autonomous technology from abuse by human drivers, who are statistically more dangerous. While this system may appear biased against manual drivers, it incentivizes more cautious driving and ultimately a shift toward increased use of autonomous vehicles.

The liability scheme must be flexible enough to handle the variety of situations likely to arise. For example, between two claimants who both use autonomous vehicles, a comparative fault system should allow for an even split in liability.¹⁰⁸ In certain circumstances, such as if

¹⁰⁴ See Toby Helm, *Budget 2017: UK to Launch Self-Driving Cars on British Roads by 2021*, THE GUARDIAN (Nov. 19, 2017, 5:41 AM), <https://www.theguardian.com/technology/2017/nov/19/self-driving-cars-in-uk-by-2021-hammond-budget-announcement> [<https://perma.cc/VP9T-AHZV>].

¹⁰⁵ Dylan LeValley, Note, *Autonomous Vehicle Liability—Application of Common Carrier Liability*, 36 SEATTLE U. L. REV. SUPRA 5, 6 (2013).

¹⁰⁶ See, e.g., Bekker, *supra* note 54.

¹⁰⁷ See Kyle Campbell, *Automation Nation*, N.Y. DAILY NEWS (Jun. 27, 2017, 10:48 AM), <http://www.nydailynews.com/autos/street-smarts/what-will-self-driving-cars-do-to-car-insurance-article-1.3280495> [<https://perma.cc/N7WQ-GK3H>] (explaining that reductions in accidents and thefts will reduce costs).

¹⁰⁸ See Jeffrey K. Gurney, *Sue My Car Not Me: Products Liability and Accidents Involving Autonomous Vehicles*, 2013 U. ILL. J.L. TECH. & POL'Y 247, 267 (2013).

one driver neglected to respond to a driving system's request to intervene, courts should maintain the option to determine the allocation of liability. Increased one-time litigation costs are likely to be offset by the minimal frequency of such claims.

In anticipation of expanded autonomous vehicle usage and corresponding insurance coverage, it would be wise for state legislatures to update or develop new statutory definitions for the operation and operators of autonomous vehicles. Particularly for semi-autonomous vehicles, where control may shift between the car and the human, clarity will be crucial in determining standards of duty and assigning liability. Broad definitions of "drivers" and "operators," such as those used in California and Vermont, strike the right balance in ensuring certainty and promoting responsible driving behavior.¹⁰⁹

Although insurance costs related to traditional vehicle concerns such as prior accident history and theft may decrease, the emergence of new technology may bring auxiliary costs. In the near future, additional concerns such as cybersecurity, infrastructure, software, and hardware protection may generate new insurance premiums, but as production becomes more efficient and streamlined, these costs are expected to balance out.¹¹⁰

B. No Fault, No Problem?

The imposition of a uniform no-fault insurance system is a theoretically appealing but practically unworkable solution in an environment where drivers have become blameless bystanders in an automobile collision. In a not-so-distant future where most or all vehicles on the roads have reached level five autonomy, a no-fault insurance system offers an appealing solution to issues of risk allocation and compensation.¹¹¹ When traditional "drivers" no longer control their vehicles, it makes sense to forego futile exercises in determining fault and assigning liability. For example, a modified, federal, no-fault system in which manufacturers are covered for personal injury but are immunized from larger products liability suits would have twin benefits of protecting manufacturers from excessive litigation and provid-

¹⁰⁹ See *supra* Section II.B. These broad definitions even include people who may be physically inside a vehicle but not steering or pushing a gas pedal. See *id.*

¹¹⁰ See Press Release, James Murphy, Accenture, Autonomous Vehicles Will Add US\$81 Billion in New Premiums for Auto Insurers by 2025, According to Accenture Report (May 18, 2017), <https://newsroom.accenture.com/news/autonomous-vehicles-will-add-us81-billion-in-new-premiums-for-auto-insurers-by-2025-according-to-accenture-report.htm> [<https://perma.cc/XP9D-L86A>].

¹¹¹ See Walpert, *supra* note 30, at 1895–96.

ing victims with quick and easy access to compensation.¹¹² Legislation that provides similar access to compensation without lengthy determinations of liability, as was proposed in the United Kingdom, would also surely reduce uncertainty and confusion.¹¹³

Several inherent shortcomings limit the usefulness of no-fault insurance. In the litigation-happy landscape of the United States, participants in a no-fault insurance system purportedly enjoy the ability to avoid conflict and receive compensation and satisfaction for injury claims.¹¹⁴ For minor claims, a quick payout and return to the status quo seems ideal for the average consumer. There are, however, major practical issues that emerge from no-fault schemes both in the current automobile landscape and in an autonomous future. First, no-fault insurance is more expensive than liability-based insurance.¹¹⁵ “[B]ecause both the innocent victim and the careless tortfeasor are compensated regardless of fault,” it costs insurers more to pay both parties in an accident than to distribute costs from the innocent victim to the guilty party.¹¹⁶ In many no-fault states, insurance premiums and litigation costs were higher than those of liability-based states.¹¹⁷

Second, no-fault insurance is inherently at odds with basic human behavior on the roads, both in manual and autonomous settings. The general purpose of tort law is to deter wrongdoing and undesirable behavior while compensating those who are hurt by said behavior.¹¹⁸ In a no-fault regime, negligent and reckless driving is not discouraged but instead rewarded. Perhaps a fully autonomous ecosystem would benefit from a no-fault system as there would no longer be any drivers to blame. In a mixed setting, however, autonomous vehicle users would be getting the short end of the stick.

¹¹² See Matthew Blunt, *Highway to a Headache: Is Tort-Based Automotive Insurance on a Collision Course with Autonomous Vehicles?*, 53 WILLAMETTE L. REV. 107, 128–29, 131–32 (2017).

¹¹³ See Automated and Electric Vehicles Bill 2017-19, HC Bill [112] cl. 2 (UK); Simon H. Garbett & Helen E. Cain, *Developments with the UK’s Autonomous and Electric Vehicle Bill*, SQUIRE PATTON BOGGS (2017), <https://www.squirepattonboggs.com/~media/files/insights/publications/2017/09/developments-with-the-uks-autonomous-and-electric-vehicle-bill/developments-with-the-uks-autonomous-and-electric-vehicle-bill.pdf> [<https://perma.cc/DP56-U2RZ>].

¹¹⁴ See Wickert, *supra* note 96.

¹¹⁵ See *id.*

¹¹⁶ *Id.*

¹¹⁷ See *id.* Over the years, multiple states have abandoned no-fault insurance systems and rolled back insurance premiums. See *id.* Additionally, litigation costs have increased as the focus shifted from determining liability to determining damage valuations related to monetary thresholds. See *id.*

¹¹⁸ See RESTATEMENT (SECOND) OF CONFLICT OF LAWS § 145 cmt. c (AM. LAW INST. 1971).

As an illustration, suppose Steve is driving his manual vehicle in the left lane of a highway when he realizes he needs to reach the rapidly-approaching exit ramp. The only vehicle in his way, he notices, is an automated Audi whose passenger is blissfully texting away. Steve hits the gas, forcing the Audi to take automated defensive measures and swerve, but not without clipping its front bumper. In a no-fault system, Steve is immune from suit, and his aggressive behavior goes relatively unpunished. The parties are required to collect from their own insurers rather than the individual at fault, Steve. When faced with the inherently careful and prudent nature of automated driving systems, human drivers have every incentive to drive more aggressively, especially with the knowledge that no-fault insurance bars further monetary punishment.¹¹⁹

Finally, artificial limits on economic damages and noneconomic remedies actually drive up costs of litigation and create an untenable standard if imposed nationwide. Although suits between drivers would be minimized, policyholders tend to raise disputes against insurers over compensation amounts in what is described as first-party litigation. In Michigan, where no-fault insurance is mandated by a 1973 law, insurance rates top the country and automobile accident-related litigation has “surge[d] in recent years.”¹²⁰ In Detroit alone, the average cost of automobile insurance is double the national average, resulting in substantial gaps in driver coverage and a constitutional challenge to the no-fault mandate by the city’s Mayor.¹²¹ Applied broadly to the entire country, where tort jurisprudence, costs of living, and local roadways can vary dramatically, a no-fault system would skyrocket first-party litigation between insurers and policyholders.

For these reasons, eliminating no-fault insurance systems in a semi-autonomous vehicle landscape would be prudent to protect all consumers, streamline and reduce litigation, and promote responsibility and safe driving. The feasibility of no-fault systems in a distant,

¹¹⁹ See Emma Boyle, *Road Rage Drivers Will Bully Self-Driving Cars, Suggests Study*, TECHRADAR (Oct. 18, 2016), <https://www.techradar.com/news/road-rage-drivers-will-bully-self-driving-cars-suggests-study> [https://perma.cc/9NZ2-V24L].

¹²⁰ See JC Reindl, *Detroit Mayor Sues Michigan over High No-Fault Auto Insurance Rates*, DETROIT FREE PRESS (Aug. 23, 2018, 1:30 PM), <https://www.freep.com/story/money/2018/08/23/no-fault-auto-insurance-lawsuit-mike-duggan/1071905002/> [https://perma.cc/CB9L-PG3T]; Steve Carmody, *Lawsuit Challenges Michigan’s No-Fault Insurance Law*, MICH. RADIO (Aug. 23, 2018), <http://www.michiganradio.org/post/lawsuit-challenges-michigans-no-fault-auto-insurance-law> [https://perma.cc/JH7T-VCHB].

¹²¹ Complaint at 2, *Duggan v. McPharlin*, No. 2:18-cv-12639-GCS-SDD (E.D. Mich. Aug. 23, 2018).

fully level five autonomous society requires additional analysis that would be entirely theoretical and thus, ripe for discussion in a different Note.

C. *Mandatory Manufacturer Products Liability Insurance*

Even operating under the theory that autonomous vehicle technology will render human error obsolete and create safer driving conditions, it remains necessary to provide plaintiffs with recourse when malfunctions inevitably arise from the automated driving systems.¹²² Imposing mandatory products liability insurance on manufacturers would strike an equitable balance. To promote progress and technological development, manufacturers would be protected from the onslaught of minor design defect, failure to warn, and manufacturing claims, particularly with respect to individual state statutes.¹²³ A new scheme of mandatory insurance for manufacturers would allow individual claimants to seek compensation directly from insurers in products liability suits, after which the insurers would seek recovery from manufacturers or technology companies.¹²⁴ An added benefit of such a system would be to relieve individual plaintiffs of the enormous burden of products liability litigation costs, which are more easily shouldered by resource-rich insurers and manufacturers.¹²⁵ In extreme circumstances, plaintiffs will be able to bring claims against and collect from manufacturers, not just individuals, if a manufacturer's vehicles are negligently or inherently unsafe.¹²⁶

To the extent that the federal government imposes a mandatory insurance on manufacturers with penalties for a failure to do so, such

¹²² See Blunt, *supra* note 112, at 131–32.

¹²³ See *id.*

¹²⁴ This model would resemble the insurance model in the recent legislation in the United Kingdom. See Automated and Electric Vehicles Act 2018, c. 18 (UK); Garbett & Cain, *supra* note 113; Jim Middlemiss, *Driverless Cars Will Clip Litigators*, CANADIAN LAW. (Mar. 13, 2018), <http://www.canadianlawyermag.com/author/jim-middlemiss/driverless-cars-will-clip-litigators-15359/> [https://perma.cc/4F24-KQLM].

¹²⁵ See Bekker, *supra* note 54.

¹²⁶ See, e.g., Blunt, *supra* note 112, at 132. Blunt provides a clear example of a plaintiff's products liability recourse:

As an illustration, if a glitch in a vehicle's autonomous technology causes a crash, the injured party may not bring a products liability suit against the manufacturer. Instead, the injured party will be compensated through insurance. If, however, a glitch in a vehicle's autonomous technology causes a crash, and due to the unsafe design of the vehicle the gas tank explodes, severely burning the vehicle's occupant, the injured party should be able to bring a products liability suit against the manufacturer to recover for the enhanced injury.

a construction will likely pass muster under Supreme Court jurisprudence. In upholding the insurance mandate of the Affordable Care Act, Chief Justice Roberts also suggested that the penalties under the mandate resembled a tax for several reasons, one of which was that it raised money for the government.¹²⁷ As long as such a requirement for autonomous vehicle manufacturers is not implemented as a punishment for unlawful conduct, but rather as a tax on manufacturers who forego insurance, the mandate would be within Congress's constitutional power under the Taxing Clause.¹²⁸ Unlike the challenges facing the Affordable Care Act, however, the practical consequences of going without products liability insurance here are much more prohibitive than that of healthy individuals foregoing minimum health insurance.¹²⁹ Manufacturers would likely protest the limited choice of a federal insurance policy rather than the need for the policy itself. Real opposition may come from the insurance industry, as it did on the eve of the Affordable Care Act's adoption.¹³⁰

Some may also argue that the imposition of a federally mandated insurance policy on manufacturers may represent a significant expenditure. In actuality, the cost will likely be passed on to consumers in the price of the autonomous vehicle.¹³¹ This price increase is justifiable in light of saved lives, reduced property damage, and lesser insurance costs for vehicle owners.¹³² In any case, as the "cheapest cost avoider,"

¹²⁷ See *Nat'l Fed'n of Indep. Bus. v. Sebelius*, 567 U.S. 519, 563–64 (2012) ("The exaction the Affordable Care Act imposes on those without health insurance looks like a tax in many respects. . . . This process yields the essential feature of any tax: It produces at least some revenue for the Government." (citations omitted)).

¹²⁸ See *id.* at 570.

¹²⁹ *Compare Facts + Statistics: Product Liability*, INS. INFO. INST., <https://www.iii.org/fact-statistic/facts-statistics-product-liability> [<https://perma.cc/7Q27-Q7V8>] (showing average product liability jury awards and legal costs easily surpass seven figures), *with* COMM. ON THE CONSEQUENCES OF UNINSURANCE, NAT'L ACAD. OF SCIS., HIDDEN COSTS, VALUE LOST 42–43 (2003) (explaining that out of pocket yearly expenses for individuals without health insurance only amount to several hundred dollars).

¹³⁰ See Dan Gorenstein, *The Health Insurance Industry Looks . . . Well, Healthy*, MARKETPLACE (Mar. 26, 2015, 5:00 AM), <https://www.marketplace.org/2015/03/26/health-care/health-insurance-industry-lookswell-healthy> [<https://perma.cc/M84W-X8RN>].

¹³¹ See Bekker, *supra* note 54.

¹³² See John Cusano & Michael Costonis, *Driverless Cars Will Change Auto Insurance*, HARV. BUS. REV. (Dec. 5, 2017), <https://hbr.org/2017/12/driverless-cars-will-change-auto-insurance-heres-how-insurers-can-adapt>. Potential new revenue streams to offset rising costs for both insurers and manufacturers will emerge through developments in technology, such as cybersecurity, infrastructure, and analytics. *Id.*

manufacturers bear the weight of minimizing the overall legal and social costs resulting from this technological advancement.¹³³

CONCLUSION

For ages, society has looked with an optimistic eye toward the future, through depictions of space travel, cities in the sky, and driverless vehicles. As the last inches closer to becoming a reality, governments, investors, consumers, insurers, and lawyers have all begun working on developing standards and guidance to provide certainty in an uncertain world. In particular, although frameworks for automotive liability will need to be adjusted to accommodate fundamental changes, the existing tools available are useful for creating an equitable solution. By expanding personal liability insurance, eliminating no-fault policies, and mandating federal products liability insurance on manufacturers, the driverless future can be a bright one.

¹³³ See ANDREA RENDA, *LAW AND ECONOMICS IN THE RIA WORLD* 151 (2011) (quoting GUIDO CALABRESI, *THE COSTS OF ACCIDENTS* 245 (1970)).