AUTONOMOUS VEHICLES AND DRIVING UNDER THE INFLUENCE: EXAMINING THE AMBIGUITY SURROUNDING MODERN LAWS APPLIED TO FUTURE TECHNOLOGY

I. INTRODUCTION

According to the U.S. Department of Transportation’s National Highway and Traffic Safety Administration (“NHTSA”), in 2017, 10,874 people were killed in drunk driving related accidents, meaning one person was killed every forty-eight minutes in the United States.1 In 2018, liquor industry groups began supporting the acceleration of the production of self-driving vehicles in the hopes of eradicating drunk driving related deaths while simultaneously increasing sales in liquor.2

Self-driving or autonomous vehicles are vehicles that do not require human intervention.3 Although fully autonomous vehicles are not yet available to consumers, Tesla and other companies are routinely testing technology for such vehicles.4 Elon Musk, Tesla’s Chief Executive Officer, stated that Tesla cars will be self-driving by 2020; unfortunately, despite Musk’s optimism and recent rise in stock prices, Tesla has yet to release a fully self-driving vehicle.5 Regardless of the exact date of release to consumers, the transition to fully autonomous vehicles remains inevitable.6

3. “[B]rewers and distillers say autonomous vehicles could reduce drunk driving. Without the need to drive home after a night at the bar, drinkers could also consume far more. And that will boost alcohol sales, one analysis predicts, by as much as $250 billion.” Id.
7. See Surden & Williams, supra note 3, at 125 (stating that “[d]ue to the safety and efficiency benefits that [autonomous vehicles] are expected to bring, many experts
Autonomous vehicles may notably provide a solution to the devastating societal costs of driving under the influence. However, the legality of using or operating a self-driving vehicle must be considered. Under current statutes, it remains unclear whether an intoxicated person operating an autonomous vehicle would be guilty of driving under the influence (“DUI”). Although fully autonomous vehicles do not require human intervention, an intoxicated person may be charged with a DUI for maintaining actual physical control (“APC”) over the vehicle. Some states recently amended the definition of operator, thus creating potential liability for the person engaging the technology despite having no actual control over driving functions. The possibility for operators of autonomous vehicles to be charged with DUI offenses not only contradicts current public policy surrounding DUI statutes, but it also prevents states from experiencing the revolutionary safety benefits. Creating exemptions in DUI statutes for operators of autonomous vehicles will legally allow and consequently encourage the use of self-driving vehicles.

This Note will begin by differentiating the levels of autonomy and explaining the emerging technology behind autonomous vehicles. Next, this Note will examine recent foreign, national, and state legislation regarding autonomous vehicles. This Note will then discuss the potential safety benefits of using autonomous vehicles. Then, this Note will examine DUI statutes specifically in regards to APC over a vehicle. This Note will further consider different tests applied by courts in the United States for determining APC. Then this Note will argue that, under current laws, whether an intoxicated person operating an autonomous vehicle is guilty of DUI remains ambiguous. This Note will claim that such ambiguity creates a barrier in achieving the safety benefits of autonomous vehicles by making it unlawful to use an autonomous vehicle regardless if an intoxicated per-
son never exercises the driving functions. This Note will suggest that states should enact legislation that creates exemptions for autonomous vehicles from statutes that penalize a human driver under the presumption that a human is in control of the vehicle. Then this Note will acknowledge the potential issue of adopting legislation for fully autonomous vehicles without distinguishing between Level 4 and Level 5 vehicle capabilities. Finally, this Note will consider the possibilities of permitting an intoxicated person to operate a Level 4 vehicle equipped with Driver Alcohol Detection System for Safety ("DADSS") technology.

II. BACKGROUND

A. THE TECHNOLOGY AND CAPABILITIES OF AUTONOMOUS VEHICLES DETERMINE THE LEVEL OF AUTONOMY

Engineers apply the term autonomous to computer-controlled systems that determine choices about their own actions and are therefore able to direct their own activity. Autonomous vehicles are essentially self-driving, requiring virtually no human intervention or input. Autonomy in motor vehicles began in the 1930s and has progressed throughout the decades from no level of automation to a level of no human involvement.

Self-driving or autonomous vehicles are classified by the level of autonomy. Currently, the U.S. Department of Transportation recognizes six distinguished levels of autonomous vehicles ranging from Level 0 to Level 5. The lowest level, Level 0, does not entail any automation; whereas, Levels 1, 2, and 3 including increasing levels of 

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20. See infra notes 198-201 and accompanying text.
21. See infra notes 202-19 and accompanying text.
22. See infra notes 220-24 and accompanying text.
23. See infra notes 225-31 and accompanying text.
25. Id. at 125.
26. Griffin, supra note 4, at 83-86.
27. Surden & Williams, supra note 3, at 132; Griffin, supra note 4, at 86.
autonomy. These levels are referred to as semi-autonomous. Semi-autonomous vehicles feature technology such as cruise control, anti-lock brakes, lane-keeping, weather alerts, and assisted steering. The current level of autonomy for vehicles available to consumers is Level 3.

Achieving Level 3 automation remains a significant technological milestone from the capabilities of Level 2 vehicles. The autopilot technology in Level 2 vehicles provides features enabling the vehicle to brake, steer, accelerate, and correct lanes without human intervention. In comparison, Level 3 vehicles embody a degree of autonomy characterized by decision-making that allows the vehicle to change lanes and successfully pass other vehicles.

Levels 4 and 5 are considered fully autonomous vehicles, because their operation would not require any human intervention or input. Fully autonomous vehicles would only require a human to choose the destination. The difference, however, between Level 4 and Level 5 is the ability of a human driver to maintain or regain control of the vehicle. Level 4 vehicles include fallback capabilities notifying a human

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29. Griffin, supra note 4, at 86, 96.
30. Id. at 86. See also Surden & Williams, supra note 3, at 132 (stating that “there are partially or ‘semi’ autonomous systems, in which some important actions are decided by humans, and others by computers”); Pearl, supra note 7, at 24 (noting that “[s]emi-autonomous vehicles, however, only direct ‘some aspects of safety-critical control function . . . without driver input,’ but require supervision from a licensed driver”).
31. Surden & Williams, supra note 3, at 133-34. Advanced Driver-Assistance Systems (“ADAS”) is a technology that automatically takes control of certain driving functions. Id.
32. See e.g. TESLA, https://www.tesla.com/autopilot (last visited Oct. 26, 2019) (stating that Tesla’s current “Autopilot enables your car to steer, accelerate and brake automatically within its lane”); Boudette, supra note 5 (noting that the latest version of Autopilot can “navigate to a specific destination and change lanes without prompting by a human driver”).
33. See Griffin, supra note 4, at 96 (stating that Level 3 autonomy takes Level 2 technology “a step further by making decisions to change lanes or pass another vehicle”) (emphasis added).
34. AUTOMATED VEHICLES 3.0, supra note 28, at iv; Griffin, supra note 4, at 96.
35. Griffin, supra note 4, at 96; Boudette, supra note 5 (reporting Tesla’s Autopilot can “navigate to a specific destination and change lanes without prompting by a human driver”).
36. Griffin, supra note 4, at 86.
37. Surden & Williams, supra note 3, at 133.
38. See e.g. U.S. DEPT. OF TRANSP., AUTOMATED DRIVING SYSTEMS 2.0: A VISION FOR SAFETY, 8 (2017) [hereinafter AUTOMATED VEHICLES 2.0] (stating that vehicles should have fallback provisions in which “ADS should be able to notify the human driver of such events in a way that enables the driver to regain proper control of the vehicle or allows the ADS to return to a minimal risk condition independently”); AUTOMATED VEHICLES 3.0, supra note 28, at iv (noting that Level 4 vehicles are considered high automation opposed to Level 5 vehicles which are full automation performing “all aspects of the dynamic driving task under all roadway and environmental conditions that can be managed by a human driver”).
operator of malfunctions and enables the operator to regain manual control of driving functions.\textsuperscript{39} Level 5 vehicles do not include the fallback features necessary for human intervention such as a steering wheel or driver controls.\textsuperscript{40}

The technology required for autonomous vehicles depends on the vehicle manufacturer and the desired level of autonomy.\textsuperscript{41} Most semi-autonomous vehicles operate through subsystems and Automated Driving Systems (“ADS”).\textsuperscript{42} Subsystems are separate systems that control specialized driving functions such as steering, braking, anti-lock brakes, and traction control.\textsuperscript{43} ADS is a form of emerging technology found in advanced semi-autonomous vehicles that controls lane-keeping, parking, and adaptive cruise control.\textsuperscript{44} Tesla’s Autopilot system on its most recent model features similar capabilities.\textsuperscript{45}

Fully autonomous vehicles operate through numerous technological systems that allow vehicles to react to changing conditions and make decisions absent human intervention.\textsuperscript{46} Many fully autonomous vehicles rely on pre-built maps, Global Positioning Satellite (“GPS”), annotated digital maps, and a computer coordinating system.\textsuperscript{47} The position of the vehicle, routes, traffic signals, and objects around the vehicle are determined by the computer coordinating system.\textsuperscript{48} In addition, vehicle-to-vehicle technology provides a network of data shared from vehicles within close proximity regarding speed, positions, and

\textsuperscript{39} Automated Vehicles 2.0, supra note 38, at 4.
\textsuperscript{40} Griffin, supra note 4, at 86 (stating that, “Level 5 vehicles do not have a steering wheel or driver controls”); Pearl, supra note 7, at 29 (distinguishing that “[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” in a Level 5 vehicle).
\textsuperscript{41} See infra notes 42-53 and accompanying text.
\textsuperscript{42} Automated Vehicles 3.0, supra note 28, at 45 (defining ADS or Automated Driving System as “the hardware and software that are collectively capable of performing the entire Dynamic Driving Task on a sustained basis, regardless of whether it is limited to a specific operational design domain” used to specifically describe the automation system in Level 3, 4, and 5 vehicles); see Surden & Williams, supra note 3, at 133-34 (referring to ADS as Advanced Driver Assistance System (ADAS)); see also DADSS, https://www.dadss.org/ (last visited Oct. 26, 2019) (discussing the compatibility of Driver Alcohol Detection System for Safety technology with ADS).
\textsuperscript{43} Surden & Williams, supra note 3, at 133-34.
\textsuperscript{44} Id. at 134 (noting that ADAS or ADS features “include lane-keeping systems (that automatically correct steering to keep a driver within lane boundaries), automatic parking, and adaptive cruise control systems (that automatically accelerate, brake, and maintain a safe distance behind another vehicle on the highway by detecting distances and adjusting speed)”).
\textsuperscript{45} Tesla, supra note 32 (stating that Tesla’s current autonomy technology “enables your car to steer, accelerate and brake automatically within its lane”).
\textsuperscript{46} Surden & Williams, supra note 3, at 131.
\textsuperscript{47} Griffin, supra note 4, at 96-98; Surden & Williams, supra note 3, at 137-43.
\textsuperscript{48} Surden & Williams, supra note 3, at 141-43.
driving conditions.49 Several companies including Ford, Amazon, and Google primarily use Light Detection and Ranging ("LIDAR") technology, claiming that LIDAR is a critical aspect of autonomous vehicular safety.50

All autonomous vehicles rely on a coordinating computer system which combines data retrieved from sensors, cameras, and radars.51 The computer system uses algorithms to determine the safety and legality of the vehicle’s next movement.52 Although the same technology operates in Level 4 and 5 vehicles, the distinction is merely the ability for a driver to regain or maintain actual control of the vehicle.53 This distinction, however, bears significant potential legal implications.54

B. LAWMAKERS IN THE UNITED STATES SUPPORT THE DEVELOPMENT AND USE OF AUTONOMOUS VEHICLES TO INCREASE HIGHWAY SAFETY BY REDUCING THE NUMBER OF DEATHS AND ACCIDENTS CAUSED BY HUMAN ERROR

KPMG International released an Autonomous Vehicle Readiness Index which ranks twenty-five countries based on policy and legislation, technology and innovation, infrastructure, and consumer acceptance of autonomous vehicles.55 The United States, although ranking fourth overall, was ranked ninth in regards to policy and legislation.56 Some nations ranking below the United States overall have recently

49. Griffin, supra note 4, at 97.
50. Griffin, supra note 4, at 96-97; Matt McFarland, Most Self-Driving Companies Say This Tech Is Crucial. Elon Musk Disagrees, CNN (June 18, 2019), https://www.cnn.com/2019/06/17/tech/lidar-self-driving-tesla/index.html (reporting that “companies with the most experience developing self-driving cars — including Alphabet’s Waymo, Ford (F), and Amazon-backed Aurora — believe lidar is critical for safety”).
51. Surden & Williams, supra note 3, at 141.
52. Id.
53. Compare Griffin, supra note 4, at 96 (noting that “the ultimate goal of Level 5 autonomous vehicle is no driver intervention required — that means no steering wheel, no pedals, and full capacity to navigate the roads to any requested destination”), with Pearl, supra note 7, at 29 (stating that in Level 5 vehicles “[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”).
54. See infra notes 139-97 and accompanying text.
56. Readiness Index, supra note 55, at 17.
enacted legislation to increase readiness for the use of autonomous vehicles by consumers.57

In 2016, the U.S. Department of Transportation’s National Highway and Transportation Safety Administration (“NHTSA”) announced a commitment of approximately four billion dollars over a period of ten years to accelerate the development of autonomous vehicles.58 The NHTSA released guidelines in September 2017 for the safe testing and development of autonomous vehicles.59 The guidelines provide the technical assistance needed for states and best practices for policymakers to follow.60 The NHTSA released new guidelines in October 2018 to include all surface on-road transportation systems.61

Both state and federal governments have expressed continued support for the development and use of autonomous vehicles.62 Over the past two years, Congress attempted to pass legislation encouraging the testing and deployment of highly automated vehicles and ensuring the safe production thereof by applying safety exemptions and testing standards.63

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57. READINESS INDEX, supra note 55, at 3, 19, 21, (noting that the “[Finish] government has recently passed two new laws that enable [the use of] AVs,” and in Germany the “[g]overnment passed an action plan on the report by an Ethics Commission on Automated and Connected Driving”); Sandeep Gopalan, Legal lessons for Australia from Uber’s Self-driving Car Fatality, THE CONVERSATIONALIST (Mar. 20, 2018), https://theconversation.com/legal-lessons-for-australia-from-ubers-self-driving-car-fatality-93649 (reporting that “[i]n Australia, the governments of New South Wales, Victoria, and South Australia have passed laws on the subject. NSW adopted legislation in 2017 – the Transport Legislation Amendment (Automated Vehicle Trials and Innovation) Act 2017”; see AUSTL. NAT’L TRANSP. COMM’N., CHANGING DRIVING LAWS TO SUPPORT AUTOMATED VEHICLES 2 (2018) (outlining policy suggestions for lawmakers); Asha Barbaschow, Australia to Draft New Laws Allowing Autonomous Vehicles, ZDNet (May 30, 2019), https://www.zdnet.com/article/australia-to-draft-new-laws-allowing-autonomous-vehicles/ (“NTC chief executive Paul Retter said the legislation, to be in place by 2020, is expected to help automated vehicle manufacturers, as well as the public, understand the legal framework they are operating in, and accelerate the introduction of autonomous vehicles in Australia.”).


60. Id. (stating that the updated guidance provides support for the automotive industry and stakeholders “as they consider and design best practices for the safe testing and deployment of ADS levels 3 through 5. It also provides technical assistance to states and best practices for policymakers regarding ADS”).

61. Id.


63. SELF DRIVE Act, H.R. 3388, 115th Cong. (2017). In September 2017, the Safety Ensuring Lives Future Development and Research in Vehicle Evolution Act (“SELF DRIVE Act”) passed the U.S. House of Representatives. Specifically, the Act provided that the U.S. Department of Transportation must proscribe safety assessment
Likewise, state governments have demonstrated support for the safe production, testing, and use of autonomous vehicles. As of March 2019, twenty-nine states have enacted legislation and governors from eleven states have issued executive orders regarding autonomous vehicles; however, most current driving and highway safety laws are based on the assumption that there is a human driver.

Some states have enacted laws distinguishing the human operator of autonomous vehicles. California defines an operator as the person located in the driver’s seat or the person who initiates the autonomous technology. Notably, California’s laws are strictly for the approved testing of autonomous vehicles. Florida, in comparison, is the only state to explicitly permit the use of autonomous vehicles beyond testing. Florida laws consider the automated driving system to be the operator of an autonomous vehicle while the driving system is engaged, regardless of whether a human is physically present. Florida Statutes section 316.85(3)(b) stipulates that traffic laws may not be construed to require a human operator and may not prohibit designating the automated driving system as the operator. Although more states are addressing the emergence of autonomous tech-

certifications of the development of an autonomous vehicle. In addition, the Act required manufactures to develop cybersecurity and privacy plans for autonomous vehicles available to consumers. However, the U.S. Senate did not pass the SELF DRIVE Act. In September 2018, the American Vision for Safer Transportation Through Advancement Revolutionary Technologies Act (“AV START Act”) was introduced to the U.S. Senate. The Act encouraged testing and deployment of “highly automated vehicles” by proscribing safety exemptions, the U.S. Department of Transportation’s role, and the conditions under which vehicles may be introduced into interstate commerce.  

64. Self-Driving Vehicles Enacted Legislation, supra note 58.
65. Id.; Pearl, supra note 7, at 43 (claiming laws must be amended “because they are based on the underlying assumption that human beings are operating the vehicle”).
66. Pearl, supra note 7, at 49 (noting that Nevada, California, Florida, Oregon, Texas, New York, and the District of Columbia have passed legislation to define the operator of autonomous vehicles).
67. Cal. Veh. Code § 38750 (West 2019) (defining operator as “the person who is seated in the driver’s seat, or, if there is no person in the driver’s seat, causes the autonomous technology to engage”).
69. Pearl, supra note 7, at 45 (stating that “no state other than Florida has, as of yet, passed a law explicitly permitting the use of fully driverless vehicles for anything other than testing by manufacturers”).
70. Fla. Stat. § 316.85(3)(a) (2019). “[T]he automated driving system, when engaged, shall be deemed to be the operator of an autonomous vehicle, regardless of whether a person is physically present in the vehicle while the vehicle is operating with the automated driving system engaged.” Id.
71. Id. § 316.85(3)(b).
nology, many states have not considered the implications of such technology in regards to current motor vehicle laws.\footnote{72. Self-Driving Vehicles Enacted Legislation, supra note 58; see Pearl, supra note 7, at 48-55 (discussing the implications of current state statutes that presume a human is driving).}

Federal and state governments remain supportive of autonomous vehicle legislation to increase highway safety and subsequently reduce driving-related deaths and accidents.\footnote{73. See Self-Driving Vehicles Enacted Legislation, supra note 58 (outlining the federal government’s and states’ efforts in passing legislation to promote using autonomous vehicles); see also AUTOMATED VEHICLES 3.0, supra note 28, at 1 (stating that “[a]utomated vehicles that accurately detect, recognize, anticipate, and respond to the movements of all transportation system users could lead to breakthrough gains in transportation safety”).} Approximately ninety percent of vehicular accidents are caused by human error including, but not limited to the following dangerous driving risks: driving under the influence, distracted driving, not wearing seatbelts, and excessive speed.\footnote{74. AUTOMATED VEHICLES 3.0, supra note 28, at 3; Griffin, supra note 4, at 88; Surden & Williams, supra note 3, at 128.} Experts determined that if fifty percent of motor vehicles in the United States were autonomous, there would be 9,600 fewer deaths and two million fewer accidents each year.\footnote{75. Pearl, supra note 7, at 39.} The use of autonomous vehicles would prevent a significant number of accidents caused by driving while under the influence.\footnote{Accordingly, researchers believe that if even just 10% of the motor vehicles used in the United States were autonomous, 1,100 fewer people would die in car accidents each year. At a 50% market penetration, 9,600 lives would be saved and two million fewer traffic accidents would occur each year. At a 90% market penetration, 21,700 lives would be saved and there would be over four million fewer crashes each year in the United States. One scholar theorizes that “we might plausibly imagine a reduction to hundreds of deaths per year in the United States as we achieve full deployment” of autonomous vehicles. In fact, driverless cars are predicted to reduce accidents by so much that the automobile insurance industry is preparing for its revenues to shrink considerably and premiums to “drop as much as 60 percent in 15 years as self-driving cars hit the roads.” Id.} The use of autonomous vehicles would prevent a significant number of accidents caused by driving while under the influence.\footnote{76. Griffin, supra note 4, at 88 (claiming that “drunk driving is still one of the highest risks on the road; on average one person every fifty-three minutes dies due to a drunk driver. Supporters of autonomous vehicles argue that autonomous cars will make our roads safer by eliminating those risks”).}

C. Driving Under the Influence Statutes Include Actual Physical Control Over a Vehicle as a Prophylactic Measure to Increase Highway Safety

Most current driving under the influence (“DUI”) statutes require actual physical control (“APC”) of a vehicle while under the influence.
ence. All states prohibit driving vehicles under the influence of drugs and alcohol, and many states have extended this prohibition to include possessing control of a vehicle, because an intoxicated person could potentially start or resume driving. Over thirty states have adopted the Uniform Vehicle Code or a variation of its DUI statute which defines driving as operating or being in physical control of a vehicle. In jurisdictions without a statutory definition of APC, courts have defined APC by focusing on the control or dominion of a vehicle or the potential to operate the vehicle. Some states, for instance, have concluded that the following conduct constitutes APC: where an intoxicated person placed the keys in the ignition; where an intoxicated person in a vehicle admitted to being unable to find his keys; and where an intoxicated passenger pulled the steering wheel from the driver.

States employ different tests to determine if a person was in APC of a vehicle for the purposes of a DUI. There are two distinct approaches for determining APC: (1) the totality of the circumstances approach and (2) bright-line tests.

77. State v. Sommers, 339 P.3d 65, 68-69 (Mont. 2014) (stating that “[t]he National Committee on Uniform Traffic Laws and Ordinances first included the language ‘in actual physical control’ in the 1934 version of the UVC [Uniform Vehicle Code] . . . . More than 30 states have adopted the [UVC], or a variation of its DUI statute that includes the phrase ‘actual physical control’”). See generally Patricia C. Kussmann, Annotation, What Constitutes Driving, Operating, or Being in Control of Motor Vehicle for Purposes of Driving While Intoxicated Statute, Regulation, or Ordinance – Being in Physical Control or Actual Physical Control – General Principles, 92 A.L.R.6th 295 (2019) (collecting cases); James Pearson, Jr., Annotation, What Constitutes Driving, Operating, or Being in Control of Motor Vehicles for Purposes of Driving While Intoxicated Statute or Ordinance, 93 A.L.R.3d 7 (2019) (collecting cases).

78. Kussman, supra note 77, at 2 (stating that public policy behind adopting APC in DUI statutes is to “[e]nable law enforcement to apprehend a drunken driver before he strikes, as well as serving as evidence of prior intoxicated driving”).


80. Kussmann, supra note 77, at 2 (defining actual physical control as “having control of or dominion over a motor vehicle [or] having the potential to drive or operate a motor vehicle”).

81. Case v. Commonwealth, 753 S.E.2d 860, 867 (Va. Ct. App. 2014) (determining defendant was in APC of the vehicle when the motor was running); State v. Maletich, 384 N.W.2d 586, 588 (Minn. Ct. App. 1986) (noting the defendant “had the present ability to drive away, even if had trouble finding the keys, as the keys were in his constructive possession”); State v. Rivera, 83 P.3d 69, 74 (Ariz. Ct. App. 2004) (concluding that “a passenger who grabs the steering wheel of a moving car and alters the car’s movement has assumed [APC] for the purposes of the DUI statutes”).

82. See generally Kussmann, supra note 77 (collecting cases on states interpreting APC in regard to DUI statutes).

83. See generally Kussmann, supra note 77 (examining cases discussing the totality of the circumstances approach and jurisdictions that have rejected that approach for bright-line tests).
1. The Majority of Jurisdictions Have Adopted the Totality of the Circumstances Approach to Determine if an Intoxicated Person Is in Actual Physical Control (“APC”) of a Vehicle by Weighing All Relevant Factors

The majority of courts have adopted the totality of the circumstances approach for determining whether a person is in APC of a vehicle.\textsuperscript{84} By applying the totality approach, courts determine whether the driver was exercising control or imminently likely to exercise control over a motor vehicle while intoxicated.\textsuperscript{85} Although this test considers all relevant facts, courts have developed inexhaustive lists of factors for juries to consider in cases of APC.\textsuperscript{86} Factors may include operability of the vehicle, the intent of the driver, the position of the vehicle on the roadway, and the location of the keys.\textsuperscript{87} APC is ultimately determined by a case-by-case, factually intensive approach.\textsuperscript{88}

a. The Supreme Court of Arizona Adopted the Totality of the Circumstances Approach in \textit{State v. Love}\textsuperscript{89} to Determine Actual Physical Control (“APC”)

In \textit{State v. Love}, the Supreme Court of Arizona adopted the totality of the circumstances approach for determining actual physical control (“APC”) of a vehicle while under the influence of alcohol.\textsuperscript{90} In \textit{Love}, an officer found Victor Love asleep in his car parked in the emergency lane of an interstate.\textsuperscript{91} The engine of the vehicle was running and Love’s legs were beneath the steering wheel while his head rested near the passenger seat.\textsuperscript{92} The officer woke Love and, after detecting

\begin{itemize}
  \item \textsuperscript{84} State v. Sommers, 339 P.3d 65, 72 (Mont. 2014) (noting that a majority of states use the totality of the circumstances approach to determine APC); State v. Love, 897 P.2d 626 (Ariz. 1995); Atkinson v. State, 627 A.2d 1019 (Md. 1993).
  \item \textsuperscript{85} \textit{Atkinson}, 627 A.2d at 1027.
  \item \textsuperscript{86} \textit{Id.} at 1027-28; \textit{Love}, 897 P.2d at 628; \textit{Sommers}, 339 P.3d at 72.
  \item \textsuperscript{87} \textit{Sommers}, 339 P.3d at 72 (reasoning that operability is a factor to consider and, notably, although an intoxicated person cannot have control over a vehicle that is inoperable, in certain circumstances, the vehicle’s disability can be easily cured); Wells v. Commonwealth, 709 S.W.2d 847, 850 (Ky. Ct. App. 1986) (noting that, in examining intent as a factor under the totality approach, there was no evidence that the defendant had planned or intended to operate the vehicle, because the inference of intent was negated by the undisputed facts that the transmission was in neutral and the parking brake was engaged in addition to the fact that the defendant was sleeping in the vehicle); \textit{Love}, 897 P.2d at 628 (examining factors to consider in determining APC).
  \item \textsuperscript{88} \textit{Atkinson}, 627 A.2d at 1028 (stating that “[n]o one factor alone will necessarily be dispositive of whether the defendant was in “actual physical control” of the vehicle . . . . Courts must in each case examine what the evidence showed the defendant was doing or had done, and whether these actions posed an imminent threat to the public”); see \textit{Kussmann}, \textit{supra} note 77 (collecting and comparing cases determining APC).
  \item \textsuperscript{89} 897 P.2d 626 (Ariz. 1995).
  \item \textsuperscript{90} \textit{State v. Love}, 897 P.2d 626, 629 (Ariz. 1995).
  \item \textsuperscript{91} \textit{Love}, 897 P.2d at 627.
  \item \textsuperscript{92} \textit{Id.}
\end{itemize}
an odor of alcohol, asked Love to perform a sobriety test. Love failed the test and was subsequently arrested for driving or being in APC of a vehicle while under the influence. The trial court found Love guilty of driving under the influence (“DUI”) and the Court of Appeals of Arizona affirmed the lower court’s holding. Love appealed and the Supreme Court of Arizona granted certiorari.

The court vacated the decision of the Court of Appeals, and reversed and remanded Love’s conviction, because exercising APC depends on the fact finder considering all of the circumstances. The court reasoned that the bright-line tests established in State v. Webb and State v. Zavala resulted in inappropriate rigidity not consistent with criminal jurisprudence. The court reasoned that a bright-line test may lead to difficulties and unfair results. Instead, the court determined that the totality of the circumstances approach recognizes the uniqueness of each case by requiring the fact finder to weigh the circumstances. This allows the fact finder to assess whether a driver was in APC or whether a driver relinquished such control. In adopting the totality approach, the court provided non-exhaustive factors to consider in determining APC including whether the key was in the ignition, the capacity of the driver, and the position of the vehicle on the roadway. The court also noted that even in situations where a defendant is determined to have relinquished APC,

93. Id.
94. Id.
95. Id. at 628.
96. Id.
97. Id. at 630 (determining that “whether a driver had actual physical control is a question for the fact finder and should be based upon consideration of all the circumstances,” therefore, the court “vacate[d] the memorandum decision of the court of appeals, reverse[d] appellant’s conviction, and remand[ed] the case for a new trial”).
100. Love, 897 P.2d at 628 (commenting on the appellate court’s finding “that unless a motorist pulls completely off the travelled portion of the roadway and turns off the ignition he or she cannot escape a presumption of actual physical control” and “such a rigid, mechanistic analysis that is neither appropriate nor in keeping with the rest of our criminal jurisprudence”).
101. Id. at 629.
102. Id. at 628.
103. Id. at 629.
104. Id. at 628. The non-exhaustive list of factors includes:
[W]hether the vehicle was running or the ignition was on; where the key was located; where and in what position the driver was found in the vehicle; whether the person was awake or asleep; if the vehicle’s headlights were on; where the vehicle was stopped (in the road or legally parked); whether the driver had voluntarily pulled off the road; time of day and weather conditions; if the heater or air conditioner was on; whether the windows were up or down; and any explanation of the circumstances advanced by the defense.

Id.
evidence that the defendant drove while intoxicated to reach the place where the defendant was apprehended will support a judgment of DUI.105

2. Some Jurisdictions Use Bright-Line Tests to Determine Actual Physical Control (“APC”) in Regards to Driving Under the Influence (“DUI”) Statutes

Bright-line tests consist of objective rules that resolve issues in a clear and predictable manner determined by whether a certain condition has occurred.106 Most jurisdictions reject bright-line tests because specific, rigid tests cannot appropriately be applied to all variations of factual circumstances.107 However, bright-line tests still serve the purpose of preventing DUIs by prohibiting APC of a vehicle while intoxicated.108

a. The Arkansas Court of Appeals Applied a Bright-Line Test in State v. Rogers109 to Determine Actual Physical Control Based on Whether the Key Was in the Ignition

In State v. Rogers, the Arkansas Court of Appeals determined that an intoxicated person cannot be in actual physical control (“APC”) of a vehicle if the keys are not in the ignition.110 In Rogers, two officers found Charles Rogers passed out in his vehicle parked outside of a lodge.111 Rogers was in the driver’s seat.112 The engine was running and Rogers’ foot appeared to be on the brake pedal; but officers testified that the keys to the vehicle were recovered from the front passenger area.113 Rogers alleged that the keys were never in the ignition

105. Id. at 629-30.
107. State v. Sommers, 339 P.3d 65, 73 (Mont. 2014) (rejecting a bright-line test for the totality approach as it allows the jury to consider hard-to-predict situations); Atkinson v. State, 627 A.2d 1019, 1028 (Md. 1993) (determining that “[n]o one factor alone will necessarily be dispositive of whether the defendant was in ‘actual physical control’ of the vehicle”); State v Love, 897 P.2d 626, 628 (Ariz. 1995) (noting that bright-line tests result in “a rigid, mechanistic analysis is neither appropriate nor in keeping with the rest of our criminal jurisprudence” and there is no reason “why DUI cases should be accorded unique treatment”).
108. See Rogers v. State, 224 S.W.3d 564, 566 (Ark. Ct. App. 2006). Arkansas, using the bright-line test, recognized that “[t]he purpose of Arkansas laws against driving while intoxicated is to prevent accidents and protect persons from injury.” Id.
110. Rogers v. State, 224 S.W.3d 564, 566 (Ark. Ct. App. 2006) (determining that “[t]he case law developed in this area makes clear that if a person does not place keys in the ignition, then this scenario falls short of the proof necessary to establish [APC] of the vehicle for purposes of DWI [driving while intoxicated]).
111. Rogers, 224 S.W.3d at 564.
112. Id.
113. Id.
and that he used the remote start to stay warm until he was able to drive. At trial, the Washington County Circuit Court heard expert testimony from an electronics technician explaining that when the engine is started by remote-start a driver may only use accessories such as the radio, heat, and air conditioning. The technician testified that placing the keys in the ignition and turning the ignition on is the only way to move the vehicle. Rogers moved for a directed verdict arguing the state lacked proof that he was in APC of the vehicle. The motions were denied and Rogers was found guilty of driving while intoxicated. Rogers appealed to the Arkansas Court of Appeals.

The Arkansas Court of Appeals clarified that a person cannot be in APC of a vehicle without placing his or her keys in the ignition. The court relied on several cases in which Arkansas courts have used the bright-line rule requiring keys to be in the ignition for APC to begin. The court determined that because the keys were not in the ignition, the state failed to prove Rogers was in APC of the vehicle. Consequently, the conviction was reversed.

b. The Circuit Court in Commonwealth v. Reid Interpreted Actual Physical Control (“APC”) Under a Bright-Line Test Which Required the Key to Be in the Ignition and the Intoxicated Person to Be Seated in the Driver’s Seat

In Commonwealth v. Reid, the Circuit Court of the City of Norfolk, Virginia, determined that when an intoxicated person is seated behind the steering wheel of a vehicle and the key is in the ignition, that person is in APC of the vehicle. In Reid, Sheena Reid was arrested for driving under the influence (“DUI”) after an officer observed her staggering to her car, sitting in the front seat, and placing the key in the ignition. Reid admitted to being intoxicated, but

114. Id. at 565.
115. Id.
116. Id.
117. Id.
118. Id. at 565-66.
119. Id.
120. Id. at 566 (noting that “the case law developed in this area makes clear that if a person does not place keys in the ignition, then this scenario falls short of the proof necessary to establish actual physical control of the vehicle for purposes of DWI”).
121. Id. at 566-67 (citing Stephenson v. City of Fort Smith, 36 S.W.3d 754 (Ark. Ct. App. 2000); Wiyott v. State, 683 S.W.2d 220 (Ark. 1985); Dowell v. State, 671 S.W.2d 740 (Ark. 1984)).
122. Id. at 567.
123. Id.
claimed that it was raining and she needed to roll up her car windows. The Norfolk General District Court convicted Reid of DUI and Reid appealed to the Circuit Court of the City of Norfolk.

The circuit court affirmed the trial court’s decision reasoning that Virginia’s DUI statute has evolved into a bright-line rule specifying that an intoxicated person is in APC of a vehicle if the person is seated in the driver’s seat and the key is in the ignition. The court noted that the Virginia Supreme Court has consistently adhered to this bright-line rule. The court determined that, based on Reid’s own admissions of sitting in the driver’s seat and placing the key in the ignition, the lower court did not err in concluding that Reid was in APC of the vehicle.

III. ARGUMENT

This Note will argue that under the totality of the circumstances approach and bright-line tests, it remains unclear whether persons under the influence of drugs or alcohol while operating autonomous vehicles are in actual physical control (“APC”) of the vehicle. The separate tests for determining APC and the significant technological differences between Level 4 and Level 5 autonomous vehicles result in inconsistent application of APC. This Note asserts that the possibility of being in violation of driving under the influence (“DUI”) while operating an autonomous vehicle conflicts with the overall purpose of developing such vehicles and further hinders the opportunity to increase public safety. As a result, states should adopt separate DUI statutes governing the use of autonomous vehicles or create exemptions for autonomous vehicles from current traffic laws that presume a human is driving. States should, however, take into consideration the ability of intoxicated persons to operate the driving functions of Level 4 vehicles and adopt either laws distinguishing the level of autonomy or require additional technology limiting operator control. This allows states to obtain benefits from autonomous vehicles while

127. Id. at 363.
128. Id.
129. Id. at 371.
130. Id. at 370 (citing Enriquez, 722 S.E.2d 252; Sarafin v. Commonwealth, 764 S.E.2d 71 (Va. 2014)) (noting that the court determined APC under the bright-line test in Enriquez and further expanded the test in Sarafin to include not only public highways and parking lots, but also private driveways).
132. See infra notes 139-97 and accompanying text.
133. See infra notes 139-97 and accompanying text.
134. See infra notes 198-201 and accompanying text.
135. See infra notes 202-19 and accompanying text.
136. See infra notes 220-24 and accompanying text.
ensuring safety.137 Autonomous vehicles have the potential to revolutionize driving safety, but to effectively utilize such technology requires a proactive legislative approach.138

A. WHETHER THE OPERATION OF AN AUTONOMOUS VEHICLE BY AN INTOXICATED PERSON CONSTITUTES ACTUAL PHYSICAL CONTROL (“APC”) REMAINS AMBIGUOUS

Policy makers, scientists, and corporations support the use of autonomous vehicles to combat driving under the influence, although fully autonomous vehicles are not yet available to consumers.139 While drivers of semi-autonomous vehicles have been arrested for driving under the influence (“DUI”), it has not been considered whether a person operating a fully autonomous vehicle can be convicted of a DUI in the United States.140 A person operating an autonomous vehicle under the influence without operating any driving functions cannot be convicted of a DUI for driving under the influence.141 APC of a vehicle, opposed to driving, is not as concrete.142

States have defined APC as having control or dominion over a vehicle as well as having the potential to operate the vehicle.143 Moreo-

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137. See infra notes 220-24 and accompanying text.
138. See infra notes 225-31 and accompanying text.
139. See e.g. Surden & Williams, supra note 3, at 128 (stating that “[m]ost experts predict that autonomous cars will be much safer than human drivers”); Self-Driving Vehicles Enacted Legislation, supra note 58 (reporting that twenty-nine states enacted legislation and governors from eleven states have issued executive orders to regulate safe development and production of autonomous vehicles); Dewey, supra note 2 (reporting that “Wine and Spirits Wholesalers of America, a group representing nearly 400 U.S. alcohol brokers, officially joined the Coalition for Future Mobility, which has lobbied in favor of self-driving cars”).
140. See Surden & Williams, supra note 3, at 125 (noting that fully autonomous vehicles will be available to consumers within the next ten to fifteen years); see also Griffin, supra note 4, at 85 (stating that fully autonomous vehicles are not yet available to consumers and “[t]he race to bring a fully autonomous vehicle to the consumer’s market appears to exist primarily between Google and Tesla”).
141. Atkinson v. State, 627 A.2d 1019, 1022 (Md. 1993) (defining “drive” as “steering and controlling a vehicle while in motion”); Pearson, supra note 77, at 3 (stating that “[t]he courts which have defined ‘driving,’ as used in statutes prohibiting driving while intoxicated, have ordinarily held that the term requires motion. Thus, many courts have stated that driving requires that the vehicle be in motion in order for the offense of drunk driving to be committed”); see Surden & Williams, supra note 3, at 121 (noting that fully autonomous vehicles operate absent human intervention).
142. See Kussmann, supra note 77, at 2 (explaining that states’ definitions for actual physical control are diverse).
143. Kussmann, supra note 77, at 2 (defining actual physical control as “having control of or dominion over a motor vehicle [or] having the potential to drive or operate a motor vehicle”); State v. Love, 897 P.2d 626, 628 (Ariz. 1995) (noting that APC “may, under some circumstances, apply to persons who are not at the time driving or otherwise putting a vehicle in motion”); State v. Sommers, 339 P.3d 65, 69 (Mont. 2014) (determining that APC “is meant to ‘enable the drunken driver to be apprehended before he strikes’”); Atkinson, 627 A.2d at 1028 (stating that “once an individual has started
ver, a person in a vehicle not operating the driving functions is guilty of DUI for merely having the ability to operate driving functions.\footnote{See generally Kussmann, supra note 77 (collecting cases on what constitutes APC in regards to DUI).} The hypothetical application of separate tests for determining APC over autonomous vehicles by a person under the influence of drugs or alcohol will exemplify whether the conduct would constitute a DUI conviction.\footnote{See infra notes 147-97 and accompanying text (applying modern APC interpretations to Level 4 and Level 5 autonomous vehicles).} To effectively apply the totality of the circumstances approach and bright-line tests, Level 4 and Level 5 vehicles must be considered separately due to the significant difference in operator capabilities.\footnote{See Griffin, supra note 4, at 86 (explaining that “Levels 4 and 5 are both fully automated and do not require driver interaction; however, Level 5 vehicles do not have a steering wheel or driver controls”); see also AUTOMATED VEHICLES 3.0, supra note 28, at vi (noting that in Level 4 vehicles are considered high automation opposed to Level 5 vehicles which are full automation performing “all aspects of the dynamic driving task under all roadway and environmental conditions that can be managed by a human driver”).}

1. **The Operation of a Level 4 Autonomous Vehicle Would Most Likely Constitute Actual Physical Control (“APC”) Under the Totality Approach Based on the Ability for an Intoxicated Person to Exercise Control of Driving Functions**

A person operating a Level 4 autonomous vehicle while under the influence could be guilty of driving under the influence (“DUI”), because the operator retains the ability to exercise APC of the vehicle under the totality of the circumstances approach.\footnote{See infra notes 148-64 and accompanying text.} Although Level 4 autonomous vehicles are capable of operating without human intervention, these vehicles may contain certain driving functions, including a steering wheel and brakes, that allow a human to exercise control of the vehicle as a fallback measure.\footnote{Id.} Therefore, an operator of an autonomous vehicle would have the ability to exercise control of driving functions.\footnote{State v. Love, 897 P.2d 626, 628 (Ariz. 1995) (determining that APC “depends on weighing of the particular facts presented rather that the application of a boilerplate formula”); State v. Sommers, 339 P.3d 65, 72 (Mont. 2014) (stating that “whether an individual had actual physical control of a vehicle is a fact-intensive inquiry which may require consideration of a wide variety of circumstances”).} The ability to exercise control is not indicative of APC; instead, the weighing of the totality factors determine APC.\footnote{Id.}
Most general factors applied by courts that have adopted the totality approach are prerequisites for an autonomous vehicle to actually operate.¹⁵¹ For instance, if an intoxicated person was using a Level 4 vehicle on a public roadway as a mode of transportation prior to being stopped by law enforcement, the keys would need to be in the ignition and the engine would need to be on for the vehicle to be moving.¹⁵² Other factors, such as the vehicle being on a public roadway and the intoxicated person located in the driver’s seat, may occur without the operator of the autonomous vehicle exercising control over driving functions.¹⁵³

Some jurisdictions have adopted certain factors that warrant additional consideration.¹⁵⁴ In weighing the operability of a vehicle, in application to the above scenario, the vehicle itself is plainly operable.¹⁵⁵ Operability refers to the vehicle’s ability to physically move and the intoxicated person’s ability to control the moving vehicle.¹⁵⁶ In a Level 4 autonomous vehicle, due to the vehicle’s operability and the ability for an intoxicated person to immediately exercise available driving functions, this factor weighs in favor of the person being in APC of the vehicle.¹⁵⁷

However, there are potential difficulties in evaluating the intent of the intoxicated person, because an intoxicated person operating a Level 4 vehicle could solely intend for the vehicle to be in operation to

¹⁵¹ See Atkinson v. State, 627 A.2d 1019, 1027 (Md. 1993). The general factors to consider are:

- Whether or not the vehicle’s engine is running, or the ignition is on; where and in what position the person is found in the vehicle; whether the person is awake or asleep; where the vehicle’s ignition key is located; whether the vehicle’s headlights are on; whether the vehicle is located in the road way or is legally parked.

¹⁵² Atkinson, 627 A.2d at 1027.

¹⁵³ Id.

¹⁵⁴ See generally Kussmann, supra note 77 (collecting cases on states interpreting APC in regards to DUI statutes and the various factors considered by courts under the totality approach).

¹⁵⁵ See Sommers, 339 P.3d at 70-72 (Mont. 2014) (noting that “it is axiomatic that in order to relinquish control over something, you must first have control,” but “the disability of the vehicle will not defeat a person’s actual physical control because the conditions making the vehicle immovable or inoperable can be quickly and easily remedied”).

¹⁵⁶ Id.

¹⁵⁷ See id. at 72 (determining that inoperability as a factor “is consistent with the widely accepted premise that ‘physical control is meant to include situations where an intoxicated individual is found in a parked car under circumstances where the car, without too much difficulty, might again be started and become a source of danger’”; see also Automated Vehicles 2.0, supra note 38, at 4 (explaining capabilities of Level 4 vehicles).
reach a specific destination.\textsuperscript{158} Intent could be interpreted as the intent of the person to generally operate the vehicle or the intent of the person to actually operate driving functions.\textsuperscript{159} This factor potentially weighs in favor of the intoxicated person being in APC.\textsuperscript{160}

Under the totality approach, an operator of a Level 4 vehicle may also be found guilty of a DUI based on circumstantial evidence even if it is deemed the person relinquished control of the vehicle.\textsuperscript{161} If a person is found intoxicated in a Level 4 vehicle but is not presently driving or in APC, the person may be found guilty of DUI if there is sufficient evidence showing that the person drove while intoxicated before being apprehended.\textsuperscript{162} Level 4 technology contains a fully automated driving system, but allows an operator to retain control over driving functions.\textsuperscript{163} Thus, it will be difficult to prove that an operator of a Level 4 vehicle was not driving the vehicle prior to relinquishing control.\textsuperscript{164}

\textsuperscript{158} Compare Wells v. Commonwealth, 709 S.W.2d 847, 850 (Ky. Ct. App. 1986) (noting that Wells had not planned or intended to operate his vehicle based on evidence revealing that Wells was asleep), with Griffin, supra note 4, at 96 (explaining Level 4 vehicles can operate without interference as long as the vehicle is geographically programmed to reach a requested destination).

\textsuperscript{159} See Wells, 709 S.W.2d at 849 (stating that the intent of the person behind the wheel is a factor to consider).

\textsuperscript{160} Compare Griffin, supra note 4, at 96 (explaining Level 4 vehicles may operate without human interference), and Pearl, supra note 7, at 28-29 (noting that Level 4 vehicles include fallback measures allowing an operator to gain control over driving functions), with Wells, 709 S.W.2d at 850 (determining that there was no evidence the Defendant had planned or intended to operate the vehicle, because the inference of intent was negated by the undisputed facts that the transmission was in neutral and the parking brake was engaged in addition to the fact that the defendant was sleeping in the vehicle).

\textsuperscript{161} See Love, 897 P.2d at 629 (noting that "even where a defendant is determined to have relinquished [APC], if it can be shown that such person drove while intoxicated to reach the place where he or she was found, the evidence will support a judgment of guilt").

\textsuperscript{162} Id.

\textsuperscript{163} Griffin, supra note 4, at 86; Pearl, supra note 7, at 28-29.

\textsuperscript{164} Compare Love, 897 P.2d at 629 (stating "the suggestion that an impaired motorist, stopped off the roadway, should be able to gain immunity by the simple act of turning off the engine (perhaps even as the police car approaches) best illustrates the absurdity of an inflexible rule"), with Griffin, supra note 4, at 86 (explaining that Level 4 vehicles are considered fully autonomous, but do contain fallback technology and driving controls such as a steering wheel and brakes in order to allow the operator the ability to manually drive the vehicle).
2. An Intoxicated Person Operating a Level 5 Autonomous Vehicle Under the Totality of the Circumstances Approach Would Most Likely Not Be Considered in Actual Physical Control (“APC”) of the Vehicle Due to the Lack of Driver Controls

Under the totality of the circumstances approach, an intoxicated person operating a Level 5 vehicle would most likely not be guilty of driving under the influence (“DUI”), because operators of Level 5 vehicles do not have access to driving functions beyond the input of a desired destination. APC involves the ability to control or the potential to operate a vehicle. Level 5 vehicle technology does not contain driver functions, and subsequently, an intoxicated operator of such a vehicle is not able to control the operation of the vehicle. In consideration of the totality factors, the operation of a Level 5 autonomous vehicle is similar to a Level 4 vehicle, because it meets general factors such as the engine being turned on and the vehicle being on a public roadway. Unlike a Level 4 vehicle, the operability of the vehicle, the intent of the driver, and the ability to relinquish control weigh in favor of demonstrating that an intoxicated person cannot have APC over a Level 5 vehicle.

In regards to operability, a Level 5 vehicle itself would not be inoperable in this scenario, and in the event a Level 5 vehicle becomes inoperable, an intoxicated person would still not be able to exercise control over the vehicle. When using a Level 5 autonomous vehicle,

165. Compare Griffin, supra note 4, at 86, 96-97 (noting that Level 5 vehicles do not require any human intervention and, therefore, do not include driving functions required in manual vehicles), with Kusmann, supra note 77, at 2 (defining actual physical control as “having control of or dominion over a motor vehicle [or] having the potential to drive or operate a motor vehicle”).

166. Kusmann, supra note 77, at 2 (defining actual physical control as “having control of or dominion over a motor vehicle [or] having the potential to drive or operate a motor vehicle”).

167. Griffin, supra note 4, at 96 (explaining that no driver intervention “means no steering wheel, no pedals, and full capacity to navigate the roads to any requested destination”).

168. See Automated Vehicles 3.0, supra note 28, at iv (noting that Level 5 vehicles perform “all aspects of the dynamic driving task under all roadway and environmental conditions that can be managed by a human driver”).

169. Compare Griffin, supra note 4, at 96 (noting that Level 5 vehicles will require no driver intervention “that means no steering wheel, no pedals, and full capacity to navigate the roads to any requested destination”), with Automated Vehicles 2.0, supra note 38, at 4 (stating that “[t]he vehicle is capable of performing all driving functions under certain conditions”) (emphasis added).

170. Compare State v. Sommers, 339 P.3d 65, 69-72 (Mont. 2014) (determining that “if a person cannot put a vehicle into motion, that person is not in [APC] of that vehicle . . . . To hold otherwise would mean that a person in a vehicle up on blocks, with no wheels could be found guilty of DUI”), with Griffin, supra note 4, at 86, 96 (noting that Level 5 vehicles do not include driver functions and only require the input of a destination).
the only human intervention required is to input the destination.\textsuperscript{171} Operability, as applied to a Level 5 vehicle, would weigh in favor of an intoxicated person not exercising APC.\textsuperscript{172}

Similarly, the intent of the person operating a Level 5 vehicle is unlikely to result in APC, because the human input required does not allow for the use of driving functions.\textsuperscript{173} While a person operating a Level 5 vehicle intends the operation of the vehicle, the driver does not intend to personally operate the vehicle.\textsuperscript{174} This intent to travel to a destination is similar to that of a person using a taxicab, Uber, or public transportation service – none of which allow the intoxicated individual any control regarding the driving functions.\textsuperscript{175} In this situation, the intoxicated person is merely a passenger.\textsuperscript{176}

In addition, an intoxicated person operating a Level 5 vehicle could not be convicted of a DUI based on circumstantial evidence that, prior to relinquishing control, the person was actually driving.\textsuperscript{177} The concept of relinquishing control would not apply, because a person cannot relinquish control over something he or she never had control over.\textsuperscript{178}

\begin{itemize}
\item \textsuperscript{171} Griffin, supra note 4, at 86, 96.
\item \textsuperscript{172} Compare Sommers, 339 P.3d at 70 (explaining that if a vehicle cannot be put into motion or a disability easily cured to put the vehicle into motion then an intoxicated person is not in APC over a vehicle), with Griffin, supra note 4, at 86 (stating that Level 5 vehicles virtually require no human intervention).
\item \textsuperscript{173} Compare Wells v. Commonwealth, 709 S.W.2d 847, 850 (Ky. Ct. App. 1986) (considering the intent of the driver as a factor to consider under the totality approach), with Griffin, supra note 4, at 98 (reiterating that there is no further operation required for Level 5 autonomous vehicles beyond inputting a destination).
\item \textsuperscript{174} See Griffin, supra note 4, at 98 (describing that all a person would need to do is input a desired destination into the vehicle’s system to initiate operation).
\item \textsuperscript{175} Compare Automated Vehicles 2.0, supra note 38, at 4 (stating in Level 4 vehicles that “[t]he driver may have the option to control the vehicle”), with Sommers, 339 P.3d at 72-73 (determining that an intoxicated person is not in APC when the intoxicated person is not in a position to control driving functions).
\item \textsuperscript{176} See Sommers, 339 P.3d at 72-73 (Mont. 2014) (stating “[a]n individual is in [APC] of a vehicle when the individual is not a passenger, and is in a position to cause the vehicle to move, or control the vehicle’s movement in some manner or direction”) (internal quotation marks omitted).
\item \textsuperscript{177} See State v. Love, 897 P.2d 626, 629-30 (Ariz. 1995) (noting that if there is evidence that the defendant drove while intoxicated to reach the place where the defendant was apprehended, then the circumstantial evidence will support a judgment of driving under the influence).
\item \textsuperscript{178} Compare Griffin, supra note 4, at 96-97 (providing that the operator does not retain the ability to control driving functions other than the input of a geographic destination), with Sommers, 339 P.3d at 70 (explaining that “[i]t is axiomatic that in order to relinquish control over something, you must first have control”).
\end{itemize}
3. The Operation of a Level 4 Autonomous Vehicle by an Intoxicated Person May Be Considered Actual Physical Control ("APC") Under Bright-Line Tests Regardless of Whether the Person Was Exercising Control of Driving Functions

Bright-line tests, unlike the totality approach, are easier to apply as such tests are essentially a matter of whether a certain condition has occurred.179 Under the bright-line tests established in Commonwealth v. Reid180 and Rogers v. State,181 an intoxicated person operating a Level 4 autonomous vehicle could be considered in APC and, therefore, guilty of driving under the influence ("DUI").182

The bright-line test for Arkansas, as established by the Rogers court, concludes that a person is in APC of a vehicle when the keys are located in the ignition.183 If an intoxicated person was operating a Level 4 vehicle with the key in the ignition or the engine turned on, then the person would automatically be guilty of a DUI regardless of if the person controlled any driver functions, because APC begins when the keys are in the ignition.184

In applying the bright-line test explicated in Reid, an intoxicated person operating a Level 4 vehicle may be considered in APC depending on the person’s placement in the vehicle as well as the key being located in the ignition.185 This bright-line test stipulates that the intoxicated person needs to be in the driver’s seat of the vehicle.186 Although a Level 4 vehicle is fully autonomous, fallback remedies might require a person to be seated in the driver seat in order to exercise control of the vehicle in the event the vehicle’s technology malfunc-

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179. Compare State v. Love, 897 P.2d 626, 628 (Ariz. 1995) (believing “that such a rigid, mechanistic analysis is neither appropriate nor in keeping with the rest of our criminal jurisprudence”), with Commonwealth v. Reid, 99 Va. Cir. 362, 371 (Va. Cir. Ct. 2018) (noting that APC in Virginia has developed into a bright-line rule only requiring the key to be in the ignition and the driver seated in the driver seat); see generally Kussmann, supra note 77 (compiling cases that interpret APC).


182. See infra notes 183-88 and accompanying text.

183. Rogers v. State, 224 S.W.3d 564, 567 (Ark. Ct. App. 2006) (stating that the Supreme Court of Arkansas “set out a bright-line rule that actual physical control begins when the keys are located in the ignition”).

184. Compare Rogers, 224 S.W.3d at 567 (determining that APC occurs when the keys are in the ignition), with AUTONOMOUS VEHICLES 3.0, supra note 28, at vi (stating that “[t]he driving mode-specific performance by an automated driving system of all aspects of the dynamic driving task” under certain circumstances).

185. Compare Reid, 99 Va. Cir. at 370 (requiring a key to be in the ignition and the intoxicated person to be seated behind the steering wheel), with AUTONOMOUS VEHICLES 3.0, supra note 28, at vi (providing that a Level 4 vehicle can operate without human intervention under certain circumstances).

186. Reid, 99 Va. Cir. at 370.
Therefore, whether an intoxicated person is in APC under Virginia’s bright-line test will depend on the operator’s location in the vehicle and whether that particular autonomous vehicle requires the operator to be seated in the driver’s seat.188


The operation of a Level 5 autonomous vehicle by an intoxicated person could potentially be considered APC under bright-line tests, because the conditions of the tests could be satisfied despite the operator retaining no control over driving functions.189 Similar to Level 4 vehicles, a person operating a Level 5 vehicle would be in APC under the rule outlined in Rogers v. State190 the moment the keys are located in the ignition or the engine is turned on.191 The lack of driving functions in Level 5 vehicles is not dispositive of the ability to be in APC under the Rogers bright-line test.192

However, analyzing the additional requirement in the bright-line test adopted by Virginia in Reid v. Commonwealth193 produces a different result.194 Virginia’s test requires that the key be located in the ignition as well as the intoxicated person being seated in the driver seat.195 Level 5 vehicles do not contain driving functions associated

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187. See Pearl, supra note 7, at 28-29 (comparing the technological differences between Level 4 and Level 5 vehicles).
188. Compare Reid, 99 Va. Cir. at 370 (determining the bright-line test requires an intoxicated person to be located in the driver’s seat with a key in the ignition to be in APC of the vehicle under the DUI statute), with Pearl, supra note 7, at 28-29 (noting that Level 4 vehicles only operate at full automation under certain circumstances and that Level 5 vehicles do not include fallback capabilities which allows a person to gain control of driver functions if the vehicle malfunctions).
189. See infra notes 191-97 and accompanying text.
191. Compare Rogers v. State, 224 S.W.3d 564, 566 (Ark. Ct. App. 2006) (stating that “[t]he case law developed in this area makes clear that if a person does not place keys in the ignition, then this scenario falls short of the proof necessary to establish actual physical control for the purpose of DWI”), with AUTONOMOUS VEHICLES 3.0, supra note 28, at vi (providing that Level 5 vehicles operate “under all roadway and environmental conditions that can be managed by a human driver”).
192. Compare Griffin, supra note 4, at 86 (explaining that Level 5 autonomous vehicles do not contain driving functions necessary to manually operate or maintain control over a vehicle), with Rogers, 224 S.W.3d at 566 (requiring the keys to be located in the ignition for an intoxicated person to be in APC of a vehicle).
194. Compare Commonwealth v. Reid, 99 Va. Cir. 362, 370 (Va. Cir. Ct. 2018) (requiring both the key to be in the ignition and the driver to seated behind the steering wheel), with Rogers, 224 S.W.3d at 566 (considering the sole requirement that the key must be in the ignition for APC).
with the driver’s seat. Without a driver’s seat present, an intoxicated operator of a Level 5 vehicle cannot be in APC under the bright-line test established in Reid.

B. STATES SHOULD ADOPT SEPARATE DRIVING UNDER THE INFLUENCE (“DUI”) STATUTES OR EXEMPTIONS FOR AUTONOMOUS VEHICLES TO PROMOTE THE DEVELOPMENT AND USE OF AUTONOMOUS VEHICLES AND ENHANCE HIGHWAY SAFETY

Whether an intoxicated person is in violation of DUI statutes while operating an autonomous vehicle remains ambiguous. Differences in technology and methods for interpreting actual physical control (“APC”) result in inconsistent application of the law. Current application of DUI statutes inhibits the use of autonomous vehicles to prevent injury caused by driving under the influence, because a person could be charged with a DUI while using an autonomous vehicle. In response to the inevitable use of autonomous vehicles, states should adopt either separate laws or create exemptions for persons operating autonomous vehicles under the influence of drugs or alcohol to resolve current ambiguities.

Australia proactively seeks to address this dilemma by adopting separate legislation for autonomous vehicles. The Australian Na-

196. Griffin, supra note 4, at 96.
197. Compare Reid, 99 Va. Cir. at 370 (determining the defendant was guilty of DUI because she admitted she was seated behind the steering wheel with the key in the ignition while she was intoxicated), with Griffin, supra note 4, at 96 (noting that Level 5 vehicles will not have driving functions available to the operator such as a steering wheel or brakes), and Pearl, supra note 7, at 28-29 (stating that “[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” in a Level 5 vehicle).
198. See supra notes 139-97 and accompanying text.
199. See supra notes 139-97 and accompanying text.
200. See Pearl, supra note 7, at 43 (stating that “there is already a robust body of laws pertaining to automotive and highway safety, there also seems to be a consensus that those laws must be amended because they are based on the underlying assumption that human beings are operating the vehicle”).
201. See AUTONOMOUS VEHICLES 3.0, supra note 28, at 18 (encouraging states to “[r]eview laws and regulations that may create barriers to testing and deploying automated vehicles”; see also AUSTL. NAT’L TRANSF. COMM’N., supra note 57, at 4 (urging Australian states and territories to adopt separate laws for autonomous vehicles that do not presume a human is driving)).
202. See AUSTL. NAT’L TRANSF. COMM’N., supra note 57, at 17. The National Transport Commission stated:

The key reason given in support of reform was a need for clarity and legal certainty. This legal certainty and clarity is twofold. First, to clearly allow an ADS to perform the dynamic driving task. Second, submissions identified a need for legal reform to ensure that a legal entity is responsible for the actions of the ADS when it is engaged and to clearly identify this entity. Both insurers and police emphasised this need for enforcement and insurance purposes.

Id.
tional Transport Commission published a report outlining policy recommendations to address the legal assumption that there is a human driver in autonomous vehicles. This report recommends Australian states and territories clarify that an intoxicated person operating an autonomous vehicle would not be subject to DUI-related offenses. Lawmakers have approved recommendations of the report and seek to create a uniform national approach to determine who is legally responsible for the operation of such vehicles.

Although the U.S. National Highway and Transportation Safety Administration suggested regulations for the use and development of autonomous vehicles, criminal fault has yet to be addressed by the majority of states. Some states have recently passed legislation specifically distinguishing the driver or operator of an autonomous vehicle. Some laws, however, remain counterproductive toward achieving increased highway safety. California’s autonomous vehicle statute explicitly defines operator as the person who is seated in the driver’s seat or the person who causes the vehicle to engage. This statute does not carve out an exception for autonomous vehicles, meaning the statute attaches both criminal and civil liability to the designated operator despite such person lacking control over any driv-

203. See generally id. at 17-18 (releasing information addressing the need for policy change in response to the use autonomous vehicles).
204. Id. at 4 (stating that “[s]tate and territory legislation should clarify that a person who starts, or is a passenger in, a dedicated automated vehicle is not subject to drink- and drug-driving offences concerning starting a vehicle or being in charge of a vehicle”).
205. Barbaschow, supra note 57. “NTC chief executive Paul Retter said the legislation, to be in place by 2020, is expected to help automated vehicle manufacturers, as well as the public, understand the legal framework they are operating in, and accelerate the introduction of autonomous vehicles in Australia.” Id.
206. See Pearl, supra note 7, at 50 (noting that autonomous vehicle provisions “raise two questions: (1) can human beings be held legally responsible - either civilly or criminally - for actions of autonomous vehicles . . . and (2) if so, is this form of liability fair? With regard to the first question, under current laws, the answer seems to be ‘yes’”).
207. See Fla. Stat. § 316.85(3)(a) (2019) (stating that “the automated driving system, when engaged, shall be deemed to be the operator of an autonomous vehicle, regardless of whether a person is physically present in the vehicle while the vehicle is operating with the automated driving system engaged”); see also Cal. Veh. Code § 38750 (West 2019) (defining operator as “the person who is seated in the driver’s seat, or, if there is no person in the driver’s seat, causes the autonomous technology to engage”); Pearl, supra note 7, at 48-49 (listing states that have recently passed legislation defining “operator” of an autonomous vehicle including Florida, Nevada, D.C., California, New York, Oregon, and Texas).
208. See Pearl, supra note 7, at 67 (stating that “one of the most significant problems with existing driverless car laws is that they treat all autonomous vehicles exactly the same despite the fact that variations in semi-autonomous and fully autonomous cars pose unique sets of challenges and strengths”).
ing functions. California’s statute deters the use of autonomous vehicles by holding operators liable for the actions of the vehicle.

Florida’s recently enacted legislation not only exempts the presumption of a human driver, but also expressly characterizes an autonomous driving system (“ADS”) as the operator of an autonomous vehicle while the system is engaged. Unlike California, Florida absolves a human engaging the ADS from criminal or civil liability. By removing liability, a person will not be penalized for properly using autonomous vehicles and, subsequently, will not be deterred from using autonomous vehicles. Ultimately, such exemptions create the opportunity for states to benefit from autonomous vehicle technology.

States should follow Florida’s and Australia’s lead in creating exemptions under current DUI statutes to allow for the operation of fully autonomous vehicles while under the influence. Legislation creating DUI exemptions for autonomous vehicles would address the ambiguities explicated above and also promote public policy surrounding

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210. Compare id. § 38750(a) (determining the operator to be the person in the driver’s seat or the person who causes the vehicles automated system to engage), with Pearl, supra note 7, at 48, 53 (claiming that “traditional motor vehicle laws defined the term ‘operator’ to mean the individual actively controlling the vehicle - typically from the driver’s seat” which is not compatible with vehicles that “may entirely lack the means by which a human could control, influence, or override the vehicle’s operations”).

211. Compare CAL. VEH. CODE § 38750(a) (deeming the person who engages the technology – despite lacking control of driving functions – the operator), with Pearl, supra note 7, at 54-55 (noting that “[t]he operator does not cause, nor has any opportunity to prevent [violations of the law]” and, moreover, “holding human operators strictly liable for the actions of their autonomous vehicles may strongly deter people from using autonomous cars at all” as they may be concerned with criminal and civil liability).

212. FLA. STAT. § 316.85(3)(a) (2019).

213. Compare FLA. STAT. § 316.85(3)-(4) (stating that when the ADS is engaged it is the operator), with CAL. VEH. CODE § 38750(4) (stating that the person in the driver’s seat or the person causing the technology to engage is the operator).

214. See Pearl, supra note 7, at 54-55 (stating that failing to enact legislation that does not presume a human driver “would be a net loss for society because we would lose the extraordinary benefits that can come from greater use of autonomous vehicles”).

215. See Pearl, supra note 7, at 39 (noting that “[a]t a 50% market penetration, 9,600 lives would be saved and 2 million fewer traffic accidents would occur each year. At a 90% market penetration, 21,700 lives would be saved and there would be over 4 million fewer crashes each year in the United States”).

216. See AUTONOMOUS DRIVING SYSTEMS 2.0., supra note 38, at viii (stating that “[t]he right approach to achieving safety improvements begins with a focus on removing unnecessary barriers and issuing voluntary guidance, rather than regulations that could stifle innovation”); see also AUTONOMOUS VEHICLES 3.0, supra note 28, at 18 (encouraging states to “[r]eview laws and regulations that may create barriers to testing and deploying automated vehicles”); Pearl, supra note 7, at 55 (stating that not amending laws to address the presumption of a human driver and subsequent criminal and civil liability placed on the operator of an autonomous vehicle despite not having control of driving functions would “be a net loss for society because we would lose the extraordinary benefits that can come from greater use of autonomous vehicles”).
DUI statutes.\textsuperscript{217} By encouraging and allowing an intoxicated person to travel without driving, the danger caused by human error would diminish.\textsuperscript{218} States should adopt such laws to keep up with the fast pace of developing technologies and to effectively reap the safety benefits of autonomous vehicles.\textsuperscript{219}

C. THE POTENTIAL THREAT CAUSED BY INTOXICATED PERSONS OPERATING LEVEL 4 AUTONOMOUS VEHICLES CAN BE REMEDIED BY SEPARATE LEGISLATION OR ADDITIONAL TECHNOLOGY REQUIREMENTS

Providing an exemption for the operation of autonomous vehicles while intoxicated presents an issue of safety in regard to Level 4 vehicles.\textsuperscript{220} States began including actual physical control (“APC”) in driving under the influence (“DUI”) statutes to increase roadway safety by allowing officers to apprehend an intoxicated person imminently likely to exercise control of driving functions.\textsuperscript{221} Although the use of autonomous vehicles will revolutionize roadway safety, the op-

\begin{footnotesize}
\textsuperscript{217} See supra notes 139-97 and accompanying text (examining the ambiguities of the operation of Level 4 and 5 autonomous vehicles under current tests determining actual physical control); see also Pearl, supra note 7, at 54-55 (explaining that current laws are obstacles toward achieving safety benefits from autonomous vehicles, because current laws presume a human is driving); Kussman, supra note 77, at 2 (stating that public policy behind adopting APC in DUI statutes is to “[enable] law enforcement to apprehend a drunken driver before he strikes”).

\textsuperscript{218} See Griffin, supra note 4, at 88 (stating that “[t]he Eno Center for Transportation found that if ninety percent of vehicles on the road were autonomous, the number of accidents would fall from 6 million a year to 1.3 million, eliminating up to two-thirds of driving-related deaths”); see also Surden & Williams, supra note 3, at 128 (concluding that “[m]ost experts predict that autonomous cars will be much safer than human drivers”).

\textsuperscript{219} See Barbaschow, supra note 57, at 1 (explaining that “[t]he Australian community cannot gain the benefits of automated vehicles, including safety, productivity, environmental and mobility benefits, unless barriers in transport legislation applying to automated vehicles are removed”); see also Pearl, supra note 7, at 43 (claiming “given that autonomous technology innovations are ‘severely outpacing legislation designed to allow for [their] use,’ lawmakers appear to be feeling some urgency to make those amendments or at least pass some semblance of a framework of laws pertaining to driverless cars”).

\textsuperscript{220} Compare Atkinson v. State, 627 A.2d 1019, 1027 (Md. 1993) (determining that actual physical control (“APC”) was intended by the legislature to “differentiate between those inebriated people who represent no threat to the public because they are only using their vehicles as shelters until they are sober enough to drive and those people who represent an imminent threat to the public by reason of their control of a vehicle”), with Griffin, supra note 4, at 86 (stating that Level 4 vehicles are distinguishable from Level 5 based on the presence of driver controls).

\textsuperscript{221} See State v. Sommers, 339 P.3d 65, 69 (Mont. 2014) (describing “[APC] as a prophylactic measure that is intended to discourage intoxicated persons from entering into motor vehicles except as passengers”) (quoting State v. Adams, 127 P.3d 208, 210-11 (Idaho Ct. App. 2005)); see generally Kusmann, supra note 77 (collecting cases outlining policy rationale for APC).
\end{footnotesize}
eration of Level 4 vehicles by an intoxicated person may still result in DUI-related injuries and deaths, because operators have the ability to exercise control over driver functions. The Australian National Transport Commission suggests that operators of autonomous vehicles with manual controls, such as a steering wheel and brakes, should be subject to current DUI statutes. Limiting the DUI exemption strictly to Level 5 vehicles would prevent the potential harm caused by an intoxicated person exercising the available driving functions of a Level 4 vehicle.

Exemptions should also be included for Level 4 vehicles that contain Driver Alcohol Detection System for Safety (“DADSS”) technology. The DADSS Program entered into an agreement with the Automotive Coalition for Traffic Safety (“ACTS”) and the U.S. National Highway Traffic Safety Administration (“NHTSA”) to explore new technology for alcohol detection in vehicle operators. DADSS prevents vehicles from moving when the system detects a driver is intoxicated at or above the legal limit through touch-based and breath-based systems. The system would operate in conjunction with Automated Driving Systems (“ADS”) technology in Level 4 vehicles. DADSS technology could be innovated to lock manual driver functions and prevent the use of fallback measures, and in the event of

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222. Compare Atkinson v. State, 627 A.2d 1019, 1027 (Md. 1993) (defining APC as when an intoxicated person is imminently likely to exercise control over a motor vehicle), with Griffin, supra note 4, at 86, 95-96 (discussing the difference between Level 4 and 5 autonomous vehicles and the ability for a person to retain control of driving functions in Level 4 vehicles).

223. Austl. Nat’l Transp. Comm’n, supra note 57, at 57 (suggesting that “[a]ll drink and drug driving offences including those concerning starting or being in charge of a vehicle should apply to a person who starts or turns off an automated vehicle with manual controls”).

224. See id. (“Requiring occupants who are not driving to comply with drink and drug driving laws is a potential barrier to receiving the full benefits of automated vehicles. Legislative amendments to provide exemptions from these laws could be made for people who set a vehicle operating at high or full automation into motion.”); compare Pearl, supra note 7, at 54 (finding humans criminally and civilly liable for the actions of autonomous vehicles when the human did not have control of driving functions is inconsistent with the conception of criminal law and deters persons from using autonomous vehicles), with Automated Vehicles 3.0, supra note 28, at iv (noting that Level 4 vehicles are considered high automation opposed to Level 5 vehicles which are full automation performing “all aspects of the dynamic driving task under all roadway and environmental conditions that can be managed by a human driver”).

225. See infra notes 226-30 and accompanying text.

226. DADSS, supra note 42.

227. Id.

228. DADSS, supra note 42 (noting that “[DADDS] will be voluntarily offered as an option in new vehicles – like automatic braking, lane departure warning and other advanced driver assist vehicle technologies”); see Surden & Williams, supra note 3, at 134 (noting that ADS features include lane-keeping technology, automatic parking abilities, and adaptive cruise control).
a technological malfunction, the vehicle would safely stop. DADSS would allow an intoxicated person to operate a Level 4 vehicle as a Level 5 vehicle, and because the intoxicated person could not operate driving controls, an exemption should be included in proposed legislation for such technology. Enacting exemptions and implementing additional technology addresses the potential risks associated with the ability of an intoxicated person to exercise control over driving functions in a fully autonomous vehicle.

IV. CONCLUSION

Advancements in technology indicate that autonomous vehicles will soon be available to consumers across the United States. Autonomous vehicles, however, present legal implications, especially in regards to driving under the influence (“DUI”) statutes. Under the totality of the circumstances approach and bright-line tests, it remains unclear whether an intoxicated person operating an autonomous vehicle is in actual physical control (“APC”) over the vehicle in violation of DUI statutes. Under some states’ recently enacted laws governing autonomous vehicles, civil and criminal liability is placed on a human regardless of whether the autonomous driving system (“ADS”) is in complete control of the vehicle’s driving functions. The ambiguity of whether a person is subject to DUI statutes while operating an autonomous vehicle consequently deters a person from using an autonomous vehicle, and thus, prevents states from exper-

229. Compare Automated Vehicles 2.0, supra note 38, at 8 (stating that vehicles with fallback abilities “should be able to notify the human driver of such events in a way that enables the driver to regain proper control of the vehicle or allows the ADS to return to a minimal risk condition independently”), with DADSS, supra note 42 (explaining that DADSS systems prevent a person from operating a motor vehicle unless the person passes an alcohol measuring system).

230. Compare Griffin, supra note 4, at 86, 96-97 (explaining that Level 5 vehicles do not have driving functions available for human input or intervention beyond inputting the desired destination unlike Level 4 vehicles which are fully autonomous under certain conditions), and DADSS, supra note 42 (explaining technology that will prevent the operation of driving functions by an intoxicated person), with Kussman, supra note 77, at 2 (noting that APC is included in DUI statutes to prevent the harm caused by drunk driving by apprehending the intoxicated person before he or she exercises control of the vehicle).

231. See supra notes 220-30 and accompanying text.

232. Boudette, supra note 5 (noting that Tesla aims to release fully autonomous vehicles in 2020); Griffin, supra note 4, at 85 (stating that Google’s approximate release date for autonomous vehicles is 2021).

233. Pearl, supra note 7, at 43. “While there is already a robust body of laws pertaining to automotive and highway safety, there also seems to be a consensus that those laws must be amended because they are based on the underlying assumption that human beings are operating the vehicle.” Id.

234. See supra notes 139-97 and accompanying text.

235. See supra notes 208-11 and accompanying text.
iencing substantial safety benefits. To avoid this problem, states should enact separate DUI statutes or exemptions for the operation of autonomous vehicles. However, states should consider the technological differences of Level 4 vehicles and create laws that distinguish between vehicles with driving functions or fallback technology available to an intoxicated person. States should also recognize technology such as Driver Alcohol Detection for Safety Systems (“DADSS”) to prevent an intoxicated person from being able to exercise control of driving functions in a Level 4 vehicle.

Although only Level 3 autonomous vehicles are currently available to consumers, corporations are urgently working to produce consumer-ready fully autonomous vehicles. If technology severely outpaces the law, issues will arise regarding civil and criminal liability, and producers and consumers may be deterred from selling and buying advanced technology. Laws must proactively address potential issues before they arise to ensure that autonomous vehicles are promoted in order to achieve safety benefits. Autonomous vehicles have the ability to prevent accidents caused by human error – including driving under the influence. It is human error, nevertheless, that may be the roadblock preventing the revolutionization of highway safety.

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236. See supra notes 139-97 and accompanying text.
237. See supra notes 198-219 and accompanying text.
238. See supra notes 220-24 and accompanying text.
239. See supra notes 225-31 and accompanying text.
240. See Griffin, supra note 4, at 85 (noting the race between Google and Tesla to produce the first fully autonomous vehicle to consumers).