

**WHEN AUTONOMOUS VEHICLES TAKE OVER THE ROAD:
RETHINKING THE EXPANSION OF THE FOURTH AMENDMENT
IN A TECHNOLOGY-DRIVEN WORLD**

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INTRODUCTION

[1] On a cool summer morning in upstate New York, a man sitting on his couch types in the coordinates to a warehouse in Virginia on his phone and presses “engage.” At that moment, the engine of a vehicle several miles away starts up, and the vehicle slowly backs out of the driveway. Without a driver or any occupants, the vehicle travels several hundred miles from the driveway in New York to the warehouse in Virginia. Meanwhile, the man who engaged the vehicle remains seated on his couch in upstate New York. The man has engaged an autonomous vehicle (AV), capable of operating entirely independent from any human intervention and capable of complying with traffic laws.¹

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¹ See Sebastian Thrun, *What We’re Driving At*, GOOGLE OFFICIAL BLOG (Oct. 9, 2010), <http://googleblog.blogspot.com.au/2010/10/what-were-driving-at.html> [hereinafter “*What We’re Driving At*”].

[2] While this may seem like a perfectly harmless and legal activity, the potential legal ramifications and the potential effect on individual liberty are immense. Prior to engaging the vehicle, an associate of the man on the couch retrofit the vehicle with additional cargo holds to store hundreds of pounds of cocaine and marijuana. Currently, police use traffic stops and drug-interdiction stops as a method to fight the “war on drugs.”² The Fourth Amendment permits these stops as long as the officer has reasonable suspicion or probable cause to believe that a law has been broken.³ Alternatively, officers can search vehicles for contraband if they have probable cause to believe evidence of a crime will be found therein.⁴ Since the AV is designed to abide traffic laws,⁵ it is unlikely that there would be a lawful reason for an officer to stop the vehicle based on probable cause that a traffic violation occurred. Since there is no occupant, officers cannot observe the behavior of the driver as officers often do in hopes of gaining reasonable suspicion to make a stop.⁶ Without probable cause that a law has been broken, or reasonable suspicion to stop the vehicle, the Fourth Amendment does not permit an officer to stop the vehicle. The introduction of AVs into our society may shift the way we look at the Fourth Amendment search and seizure jurisprudence and the ability of the police to make drug-interdiction stops, but ultimately, AVs will remain stoppable under the Fourth Amendment.

² See, e.g., Robert H. Whorf, *Consent Searches Following Routine Traffic Stops: The Troubled Jurisprudence of a Doomed Drug Interdiction Technique*, 28 OHIO N.U. L. REV. 1, 3-6 (2001).

³ See *id.* at 4 (explaining the procedure of drug-interdiction stops); see also *infra* Part II.C.

⁴ See *infra* Part II.C.2.

⁵ See Susan Kuchinskas, *Crash Course: Training the Brain of a Driverless Car*, SCI. AM. (Apr. 11, 2013), <http://www.scientificamerican.com/article.cfm?id=autonomous-driverless-car-brain>.

⁶ See, e.g., *United States v. Arvizu*, 534 U.S. 266, 277 (2002) (finding border patrol agents had reasonable suspicion based largely on the agent’s observations of the occupants of the vehicle). Without occupants such observation would be impossible.

Though the police may be slightly more restricted in stopping AVs, any increase in the government's power to stop automobiles could be devastating to our privacy, and courts should refrain from increasing the government's power in this arena.

[3] This Note examines the current state of Fourth Amendment search and seizure jurisprudence with relation to automobiles to illustrate how AVs may change this area of law. Part I examines the history and development of AVs and current regulation of the vehicles. Part II discusses Fourth Amendment jurisprudence, including the history of automobile searches, stops, and consent to search. Part III illustrates how AVs will slightly change the police's ability to make drug-interdiction stops, and how this may affect our privacy interests in the future, ultimately concluding that any further extension of the Fourth Amendment will unconstitutionally violate our right to be free from unreasonable government intrusion.

I. THE BEGINNING OF AVS

[4] In 1962, Hanna-Barbera Studios released a cartoon set in a futuristic city in 2062.⁷ *The Jetsons* featured futuristic inventions ranging from a robotic maid to flying cars.⁸ The utility of George Jetson's flying car is illustrated in the introduction to the show, where George can be seen taking his hands off the control panel and attending to his family.⁹ *The Jetsons* gave us a glimpse into the world of the future—a world that is becoming reality.

⁷ See Grey Hall, *Space Family 2062: The Jetsons*, EXAMINER.COM (Oct. 11, 2013), <http://www.examiner.com/article/space-family-2062-the-jetsons>.

⁸ See Jennifer Dudley-Nicholson, *The Jetsons' Visions of the Future 51 Years Ago Spot-On*, NEWS.COM.AU (Sept. 23, 2013, 2:25 PM), <http://www.news.com.au/technology/the-jetsons8217-vision-of-the-future-51-years-ago-spoton/story-e6frfro0-1226725268775>.

⁹ See guillermo3650, *The Jetsons TV Intro*, YOUTUBE (Jan. 19, 2008), <https://www.youtube.com/watch?v=Yjy-fnsmWR4>.

A. An Autonomous What?

[5] For years, various agencies and departments have been trying to perfect a vehicle of the future like the one featured in *The Jetsons*. Over the last several decades, and more rapidly in the past several years, innovators across the automotive and technology sectors have been inching closer to this futuristic technology.¹⁰

1. The History of AVs

[6] Discussion of AVs started in 1939 at the World's Fair where General Motors showcased its *Futurama* exhibit predicting AVs would be standard by the 1960s.¹¹ While AVs were not standard by then, development actually began as early as the 1980s with the initiation of the EUREKA¹² PROMETHEUS program in Europe.¹³ The program focused on developing computer-aided driving systems that would use “electronic traffic-flow monitors to increase communication among drivers and automatically detect any risk of collision.”¹⁴

¹⁰ See, e.g., Chloe Albanesius, *Google Car: Not the First Self-Driving Vehicle*, PCMag (Oct. 11, 2010, 3:55 PM), <http://www.pcmag.com/article2/0,2817,2370598,00.asp>.

¹¹ Daniel Bartz, *Autonomous Cars Will Make Us Safer*, WIRED (Nov. 16, 2009, 8:00 AM), <http://www.wired.com/autopia/2009/11/autonomous-cars>.

¹² The EUREKA program was a research and development cooperative between nineteen European countries aimed at bringing innovative technologies to the market. See David Dickson, *EUREKA!*, TECH. REV., Aug. 1988, at 27.

¹³ See *id.* at 28. PROMETHEUS stands for the Program for European Traffic and Highest Efficiency and Unprecedented Safety. *Id.*

¹⁴ *Id.* A similar technology, now known as vehicle communication systems, is still in the works, though proponents of AVs argue that the costly infrastructure required by those systems make AVs more practical. See Transcript of *The Future of Driving*, THE DIANE REHM SHOW, at 10:24:33-10:25:49 (Sept. 27, 2012, 10:06 AM), <http://thedianerehmshow.org/shows/2012-09-27/future-driving/transcript>. Testing of vehicle-to-vehicle communication (V2V) and vehicle-to-infrastructure (V2I) communication is ongoing, but Dr. Alberto Broggi, IEEE senior member and professor of

[7] Later, the Defense Department's DARPA¹⁵ Grand Challenges were initiated, not to increase the safety of the general public on the roads, but to reduce the number of soldiers who are exposed to dangerous conditions in war zones.¹⁶ DARPA hosted a total of three Challenges with participants from Germany, Australia, universities, various industries, private individuals, and even a high school.¹⁷ The first two events, held in 2004 and 2005, required the AVs to navigate through the desert on different road conditions, through obstacles, and through areas with little or no global positioning system (GPS) service.¹⁸ The 2004 Challenge required participants to traverse a 150-mile course, but unfortunately, none of the fifteen qualifiers succeeded.¹⁹ Just a year later, five teams

computer engineering at the University of Parma, notes that the current AVs being developed require less rather than more infrastructure. See Doug Newcomb, *You Won't Need a Driver's License by 2040*, WIRED (Sept. 17, 2012, 1:42 PM), <http://www.wired.com/autopia/2012/09/ieee-autonomous-2040/> [hereinafter "Newcomb"].

¹⁵ DARPA stands for the Defense Advanced Research Projects Agency. *Our Work*, DARPA, http://www.darpa.mil/our_work/ (last visited Oct. 16, 2013).

¹⁶ Christian Berger et al., *introduction* to EXPERIENCE FROM THE DARPA URBAN CHALLENGE 3, 4 (Christopher Rouff & Mike Hinchey eds., 2012); see *Overview*, DARPA, <http://archive.darpa.mil/grandchallenge/overview.asp> (last visited Oct. 16, 2013). DARPA's rationale for the Urban Challenge:

The National Defense Authorization Act for Fiscal Year 2001, Public Law 106-398, Congress mandated in Section 220 that "It shall be a goal of the Armed Forces to achieve the fielding of unmanned, remotely controlled technology such that . . . by 2015, one-third of the operational ground combat vehicles are unmanned."

Id.

¹⁷ Berger et al., *supra* note 16, at 4.

¹⁸ *Id.* at 4-5.

¹⁹ *Id.* at 5. The Carnegie Mellon University Red Team's vehicle the "Sandstorm" went the farthest, but it only made it 7.4 miles. *Id.*

completed the second DARPA Grand Challenge, and the vehicle “Stanley” from Stanford University took home the \$2 million prize.²⁰

[8] Following the success of the 2005 Grand Challenge, DARPA held its first Urban Challenge, which required the AVs to navigate through an urban environment rather than the rural environment used in the previous Challenges.²¹ The AVs were required to complete the sixty-mile course within six hours, while following all relevant traffic laws and navigating through obstacles like busy intersections and lane changes.²² While the teams received data about the routes prior to the race,²³ “freely navigatable [sic] zones” required the AVs to navigate through areas without any lane markings and to find a previously assigned parking space.²⁴ Moreover, the vehicles were able to use GPS; however, they had to be able to navigate without it while remaining in their lane in areas of GPS outage or with insufficient GPS signal quality.²⁵ The team from Carnegie Mellon placed first with its vehicle, “Boss.”²⁶ While the Urban Challenge brought us one step closer to a product that could be operated on public roads, it

²⁰ *Id.* This illustrates how quickly the technology is evolving.

²¹ *Id.* at 3, 5-6.

²² Berger et al., *supra* note 16, at 6. The course also featured fifty human driven vehicles around which the AVs had to safely maneuver. *Id.*

²³ *Id.* at 9. A route network definition file (RNDF) was given to the teams twenty-four hours before the race, which gave participants details about the road networks the vehicles would face during the challenge. *Id.* The mission data files (MDF), which provided information about the start and end points of the race, were given to teams five minutes before the race and five minutes before the start of each mission. *Id.*

²⁴ *Id.* at 10.

²⁵ *Id.*

²⁶ *Id.* at 7. Stanford’s “Junior” took second, and Virginia Tech’s “Odin” took third place. *Id.*; see also *Video and Animations from the NQE*, STANFORD RACING TEAM, <http://cs.stanford.edu/group/roadrunner/video.html> (last visited Oct. 9, 2013) (featuring several videos of Junior in action during the qualifying rounds).

did not require the AVs to detect or react to traffic signals or pedestrians—a feat necessary before AVs can be sold to the general public.²⁷

2. AVs Today

[9] The most widely recognized AV today is the “Google Car.”²⁸ Dr. Sebastian Thrun, the lead engineer of Stanford’s Racing Team and the Director of the Stanford Artificial Intelligence Lab,²⁹ is one of the engineers of the project.³⁰ The Google Team is comprised of leading engineers in the field, including Chris Urmson,³¹ Mike Montemerlo,³² and Anthony Levandowski.³³ Thrun and the Google Team’s efforts were

²⁷ See Berger et al., *supra* note 16, at 10.

²⁸ See Google, *Self-Driving Car Test: Steve Mahan*, YOUTUBE (Mar. 28, 2012), <https://www.youtube.com/watch?v=cdgQpa1pUUE>. This YouTube video produced by Google not only shows the Google Car in action, but also shows one of the many benefits these vehicles can bring to the general public. See *id.*

²⁹ *The Team*, STANFORD RACING TEAM, <http://cs.stanford.edu/group/roadrunner/team.html> (last visited Oct. 1, 2013). Dr. Thrun was the lead engineer of “Stanley,” winner of the second DARPA Grand Challenge and “Junior,” runner up in the Urban Challenge. See *Thrun Reappears with Google Backing: Cars that Drive Themselves*, Q. NEWSL. OF THE INST. OF NAVIGATION (The Inst. of Navigation, Manassas, Va.), Fall 2010, at 12.

³⁰ See *Sebastian Thrun: Google’s Driverless Car*, TED (Mar. 2011), http://www.ted.com/talks/sebastian_thrun_google_s_driverless_car.html [hereinafter *Google’s Driverless Car*].

³¹ *What We’re Driving At*, *supra* note 1. Chris Urmson was the leader of the technical team for Carnegie Mellon, the team that won the 2007 Urban Challenge. *Id.*

³² *Id.* Mike Montemerlo led the software development for the 2005 Stanford Racing Team. *Id.*

³³ *Id.* Anthony Levandowski helped build the first autonomous motorcycle and a Prius that delivered a pizza without a driver inside. *Id.*

guided by a desire to reduce automobile injuries and fatalities.³⁴ According to the Google Car project manager Anthony Levandowski, there are 40,000 casualties in America from automobile accidents and approximately ninety percent are a result of human error.³⁵ As of October 2010, the Google Car had already driven 140,000 miles through California and the surrounding areas without an accident; that number is now well above 300,000.³⁶

[10] The Google Car is equipped with several sensors to enable it to “see”³⁷ the world around it.³⁸ Cameras on the vehicle look at traffic lights, while lasers “measure the world all around it in three dimensions and radars [] track other vehicles and their speeds.”³⁹ A central computer in the vehicle then processes the information and allows the vehicle to make decisions based on the data received.⁴⁰ In addition, the Google Car utilizes GoogleMaps and GPS technology, though the vehicles do not rely

³⁴ See *id.*; *Google’s Driverless Car*, *supra* note 30. This video also illustrates the technology in use. *Id.*

³⁵ *The Future of Driving*, *supra* note 14, at 10:09:24.

³⁶ *What We’re Driving At*, *supra* note 1; see also Doug Newcomb, *Feds Try to Stay Ahead of the Rise of the Robo-Car*, WIRED (Oct. 24, 2012, 1:28 PM), <http://www.wired.com/autopia/2012/10/nhtsa-autonomous-cars/>. Thrun also notes that throughout the testing Google has always had a driver in the vehicle to ensure the testing is conducted as safely as possible. *What We’re Driving At*, *supra* note 1.

³⁷ Erico Guizzo, *How Google’s Self-Driving Car Works*, IEEE SPECTRUM (Oct. 18, 2011, 9:00 AM), <http://spectrum.ieee.org/automaton/robotics/artificial-intelligence/how-google-self-driving-car-works#>.

³⁸ *The Future of Driving*, *supra* note 14, at 10:10:25.

³⁹ *Id.*

⁴⁰ *Id.*

on GPS to stay within a designated lane.⁴¹ While the Google Car and its technology is probably the most widely known, especially outside of the technology sector, Google is not alone in AV development.⁴² BMW has implemented a system called ConnectedDrive Connect, which is designed to provide lower-level automated technology, though it has completed over 5,000 kilometers in “highly-automated” mode.⁴³ Similarly, Volvo is developing a system intended to navigate traffic jams or traffic moving up to 31 miles per hour.⁴⁴ Volvo’s technology is not yet fully autonomous, but Volvo hopes to achieve that goal in the future.⁴⁵ General Motors has also been developing a similar technology called “Super Cruise,” which is

⁴¹ See *What We’re Driving At*, *supra* note 1. Anthony Levandowski explains that GPS is helpful to know what town the vehicle is in, but the intricacies of driving are handled by the sensors. *The Future of Driving*, *supra* note 14, at 10:11:34.

⁴² Google is exclusively developing fully autonomous technology, while many of the other manufacturers are developing incremental technology like driver assistance programs that can be implemented more quickly than fully autonomous technology. See *supra* notes 37-41 and accompanying text; *infra* notes 43-47 and accompanying text.

⁴³ Peter Murray, *A Look at BMW’s Semi-Autonomous Driving Car*, SINGULARITY HUB (Feb. 2, 2012, 7:29 AM), <http://singularityhub.com/2012/02/02/a-look-at-bmws-semi-autonomous-driving-car/>; see also *BMW ConnectedDrive*, BMW, http://www.bmw.com/com/en/insights/technology/technology_guide/articles/connecteddrive.html (last visited Oct. 10, 2013).

⁴⁴ Jeffrey N. Ross, *Watch Volvo’s Autonomous Car System in Action, Before It Shows Up in 2014*, AUTOBLOG (Oct. 24, 2012, 7:31 PM), <http://www.autoblog.com/2012/10/24/watch-volvos-autonomous-car-system-in-action-before-it-shows-u/>.

⁴⁵ See *id.* Volvo was also involved in the SARTRE (Safe Road Trains for the Environment) project, a collaboration by several European corporations, which just last year successfully completed a road train on public roads in Europe. See SupercarHall, *2012 Volvo—SARTRE Road Train on Public Road (A-roll)*, YOUTUBE (May 28, 2012), <http://www.youtube.com/watch?v=-jQ1U9KZfWg>. A road train is a convoy led by a human driver. *Id.* The remaining cars in the convoy are in autonomous mode and communicate wirelessly with the lead vehicle. *Id.* This video illustrates the technology as well as the process of initiated autonomous mode. See *id.*

capable of steering, braking, and keeping a vehicle in its lane.⁴⁶ Lastly, in early January 2013, Toyota announced its Lexus Advanced Active Safety Research Vehicle.⁴⁷ At this point the vehicle is intended to be semi-autonomous, or to act as a “co-pilot,” but Toyota suspects its technology will evolve into a fully autonomous vehicle.⁴⁸

[11] AVs are coming.⁴⁹ General Motors expects semi-autonomous vehicles to be on the market by the middle of the decade and fully autonomous vehicles to be available by the end of the decade.⁵⁰ Some estimate that driver’s licenses will be a thing of the past by 2040, and the Institute of Electrical and Electronics Engineers (IEEE) predicts seventy-five percent of all vehicles on the road will be fully autonomous by that same time.⁵¹ In fact, society—rather than technology—may pose the

⁴⁶ *Self-Driving Car in Cadillac’s Future*, CADILLAC NEWS (Apr. 20, 2012), http://media.gm.com/media/us/en/cadillac/news.detail.html/content/Pages/news/us/en/2012/Apr/0420_cadillac.html.

⁴⁷ Erico Guizzo, *Toyota’s Semi-Autonomous Car Will Keep You Safe*, IEEE SPECTRUM (Jan. 8, 2013, 5:51 PM), <http://spectrum.ieee.org/automaton/robotics/artificial-intelligence/toyota-semi-autonomous-lexus-car-will-keep-you-safe>.

⁴⁸ *Id.* The hardware on Toyota’s vehicle is almost the same as that used on the Google Car, so it seems entirely plausible that this vehicle will develop into a fully autonomous vehicle in the future. *Id.*

⁴⁹ See Jim Motavalli, *Self-Driving Cars Will Take Over by 2040*, FORBES (Sept. 25, 2012, 11:39 AM), <http://www.forbes.com/sites/eco-nomics/2012/09/25/self-driving-cars-will-take-over-by-2040/> (noting that approximately ten billion dollars was spent in 2011 on “advanced driver assistance systems” and that is expected to grow to as much as \$130 billion by 2016).

⁵⁰ Newcomb, *supra* note 14; *Emerging Technology: Driving Safety, Efficiency and Independence*, GEN. MOTORS, http://www.gm.com/vision/design_technology/emerging_technology.html (last visited Oct. 10, 2013).

⁵¹ Newcomb, *supra* note 14.

biggest hurdles in the transition from traditional automobiles to AVs.⁵² Some drivers simply enjoy driving and will not want to give that up; others may be afraid to relinquish control of their vehicle to a computer.⁵³ Regardless of the hurdles, AVs are coming. With the AV technology rapidly developing, the legal field needs to respond.

B. AVs and the Law

[12] Currently, the law lags behind the development of AVs.⁵⁴ As of October 2012, only three states—Nevada, Florida, and California—had enacted legislation regarding AVs.⁵⁵ California, the state where Google is based, was the last of the three to pass legislation.⁵⁶ Of those three, only Nevada has passed detailed regulations regarding the use, licensing, and testing of AVs.⁵⁷ Technically, AVs were not explicitly prohibited in these states even before the legislation,⁵⁸ but Google is encouraging lawmakers

⁵² See Motavalli, *supra* note 49.

⁵³ See *id.*; Newcomb, *supra* note 14.

⁵⁴ See *The Future of Driving*, *supra* note 14, at 10:08:16-10:09:24.

⁵⁵ See CAL. VEH. CODE § 38750 (West Supp. 2013); FLA. STAT. §§ 316.85-316.86, 319.145 (2013); NEV. REV. STAT. § 482A.100 (2013). Michigan is currently considering similar legislation, which is expected to pass soon. David Shepardson, *Snyder Wants State to Be Leader for Emerging Automated Technology*, DENVER POST (Feb. 15, 2013, 11:58 PM), http://www.denverpost.com/auto/news/ci_22599372. Colorado, on the other hand, rejected a proposal to legalize AVs. *Colorado Rejects Driverless Car Proposal*, CBS DENVER (Feb. 5, 2013, 6:12 PM), <http://denver.cbslocal.com/2013/02/05/colorado-rejects-driverless-car-proposal/>.

⁵⁶ Claire Cain Miller, *With a Push from Google, California Legalizes Driverless Cars*, N.Y. TIMES (Sept. 25, 2012, 5:23 PM), <http://bits.blogs.nytimes.com/2012/09/25/with-a-push-from-google-california-legalizes-driverless-cars/>. See generally VEH. § 38750.

⁵⁷ See *infra* notes 61-62 and accompanying text.

⁵⁸ See *The Future of Driving*, *supra* note 14, at 10:13:18; see also Miller, *supra* note 56. Additionally, the California Vehicle Code simply defines a motor vehicle as “a vehicle

to create legislation and regulations to legitimize the technology and to ensure the development and use of the technology is done safely by other manufacturers.⁵⁹

1. Nevada Pioneers AV Regulation

[13] In early 2012, Nevada became the first state to pass legislation and regulation regarding autonomous vehicles.⁶⁰ Effective March 1, 2012, Nevada passed enabling legislation authorizing the Nevada Department of Motor Vehicles (DMV) to regulate AVs.⁶¹ Among other things, the legislation gave the DMV authority to regulate the operation, minimum safety standards, and testing requirements for AVs.⁶² The Nevada DMV regulation, also adopted March 1, 2012, establishes several important policies.⁶³ First, the regulation defines more specifically what constitutes an AV by explaining what kind of technology is not covered under this

that it self-propelled,” which would include an AV. VEH. § 415. Similarly, the provision for unlawful operation does not suggest an AV would be prohibited. *See id.* § 24002. Likewise, Nevada defines a motor vehicle as one that is self-propelled and can be used on a public highway. NEV. REV. STAT. §§ 482.075, 482.135. Florida uses a similar definition. *See* FLA. STAT. § 316.003(21). The Florida law does, however, suggest some problem for AVs absent the enabling legislation since it requires an operator be physically in control of the vehicle. *See id.* § 316.003(25). A physically present operator of an AV could be considered “in actual physical control” of the vehicle since the operator could take over at any time. *Id.* The current enabling legislation requires a physically present operator and someone to engage and disengage the technology, so arguably this provision would not have acted to prohibit AVs absent the enabling legislation. *See id.* §§ 316.85, 316.86, 319.145.

⁵⁹ *The Future of Driving*, *supra* note 14, at 10:09:24-10:10:22.

⁶⁰ Compare VEH. § 38750, and FLA. STAT. §§ 316.85, 316.86, 319.145, with NEV. REV. STAT. § 482A.100.

⁶¹ NEV. REV. STAT. § 482A.100.

⁶² *Id.*

⁶³ *See generally* NEV. ADMIN. CODE § 482A (2012).

regulation.⁶⁴ Specifically, the regulation states that “vehicle[s] enabled with a safety system or driver assistance system” are not classified as AVs unless the system can operate without a driver monitoring it.⁶⁵ Additionally, the regulation states that whoever engages the vehicle will be considered the “operator,” whether or not the operator is in the vehicle while it is engaged.⁶⁶ Likewise, the operator is considered the “driver” for enforcement of traffic laws and similar motor vehicle laws.⁶⁷ During testing, however, the regulation requires two people to be in the vehicle, including one who is able to “take complete control of the vehicle” if necessary.⁶⁸ Further, this regulation essentially establishes liability for accidents.⁶⁹ Lastly, Nevada has added a legislation making it legal to text while operating an AV.⁷⁰

⁶⁴ *See id.*

⁶⁵ *Id.* § 482A.010. The regulation specifically states that “electronic blind spot assistance, crash avoidance, emergency braking, parking assistance, adaptive cruise control, lane keep assistance, lane departure warnings and traffic jams and queuing assistance” are not included under this regulation. *Id.*

⁶⁶ *Id.* § 482A.020. This provision suggests AVs will be able to be operated without a physically present operator.

⁶⁷ *Id.* § 482A.030.

⁶⁸ NEV. ADMIN. CODE § 482A.130(1).

⁶⁹ Presumably this would enable the current insurance law to apply to autonomous vehicles regardless of the presence of the operator at the time of the accident. *But see* John Markoff, *Collision in the Making Between Self-Driving Cars and How the World Works*, N.Y. TIMES (Jan. 23, 2012), http://www.nytimes.com/2012/01/24/technology/googles-autonomous-vehicles-draw-skepticism-at-legal-symposium.html?_r=0 (stating that insurance regulation for autonomous vehicles has yet to be addressed).

⁷⁰ NEV. REV. STAT. §§ 484B.165(1)(a), (7) (2013). This further suggests how little, if at all, the driver will need to be involved in the operation of the vehicle.

2. Florida Follows the Leader

[14] In July 2012, Florida enacted legislation similar to the legislation in Nevada.⁷¹ This statute provides a definition of “autonomous vehicle” that is almost identical to the Nevada statute.⁷² This statute differs, though, in that it does not require operators to have special endorsements; a valid driver’s license is all that is necessary to operate a vehicle in autonomous mode.⁷³ The Florida law also provides immunity for the original manufacturer if a third party equips a vehicle with autonomous technology.⁷⁴

3. California Catches Up

[15] On September 25, 2012, at Google’s headquarters, California’s Governor Jerry Brown signed legislation initiated by Senator Alex Padilla to authorize the use of AVs in California.⁷⁵ California defines an AV as any vehicle that “has the capability to drive . . . without the active physical control or monitoring by a human operator,”⁷⁶ but does not include vehicles that only have collision avoidance systems.⁷⁷ Similar to the Nevada regulation,⁷⁸ the “operator” is anyone who engages the vehicle or

⁷¹ FLA. STAT. §§ 316.85-16.86, 319.145 (2013); *accord* NEV. REV. STAT. § 482A.

⁷² *Compare* FLA. STAT. § 319.145, *with* NEV. REV. STAT. § 482A.080.

⁷³ *See* FLA. STAT. § 316.85.

⁷⁴ *Id.* § 316.86(2).

⁷⁵ Damon Lavrinc, *Autonomous Vehicles Now Legal in California*, WIRED (Sept. 25, 2012, 4:30 PM), <http://www.wired.com/autopia/2012/09/sb1298-signed-governor/>.

⁷⁶ CAL. VEH. CODE § 38750(a)(1)-(a)(2)(A) (West Supp. 2013).

⁷⁷ VEH. § 38750(a)(2)(B). These include systems like blind spot assistance, automated emergency braking systems and lane departure warning systems. *Id.*

⁷⁸ NEV. ADMIN. CODE § 482A.020 (2012).

is in the driver's seat.⁷⁹ Another provision explicitly states that "[t]he driver shall be seated in the driver's seat."⁸⁰ The rest of the bill is fairly similar to the Nevada legislation.⁸¹

II. THE FOURTH AMENDMENT IN A WORLD WITH AVS

[16] With the growing discussion about AVs, many have speculated about the potential legal and social effects likely to result.⁸² Much of the current discussion revolves around liability, either for the manufacturers or for the operators of AVs.⁸³ Additionally, there is potential for Google and similar companies to use the information gained from the "black-box"⁸⁴

⁷⁹ VEH. § 38750(a)(4).

⁸⁰ *Id.* § 38750(b)(2). While this provision states that the law is not intended to allow for AVs to be operated without the physical presence of a driver, section 38750(a)(4) suggests it is only a matter of time before operation without a physically present driver will be permissible. *See id.* § 38750(a)(4). Further, the statute states that the Department of Motor Vehicles may impose additional requirements on a party seeking approval to operate an AV without a physically present driver, suggesting this will be a possibility in the future. *See id.* § 38750(e)(2).

⁸¹ *Compare id.* § 38750, with discussion *supra* Part I.B.1.

⁸² *See generally* Robert Peterson, *New Technology–Old Law: Autonomous Vehicles and California's Insurance Framework*, 52 SANTA CLARA L. REV. 1341 (2012) (discussing the effect AVs will have on the California insurance industry); Andrew P. Garza, Note, "Look Ma, No Hands!": *Wrinkles and Wrecks in the Age of Autonomous Vehicles*, 46 NEW ENG. L. REV. 581 (2011) (discussing the impact AVs may have on products liability law); Susan Vogel, *Driving the Future*, SANTA CLARA L. MAG., <http://law.scu.edu/sclaw/spring-2012-driving-the-future.cfm> (last visited Oct. 2, 2013) (exploring liability, insurance, criminal tampering, and social challenges of autonomous vehicles).

⁸³ *See generally* Frank Douma & Sarah Aue Palodichuk, *Criminal Liability Issues Created by Autonomous Vehicles*, 52 SANTA CLARA L. REV. 1157 (2012); Peterson, *supra* note 82; Garza, *supra* note 82.

⁸⁴ The Senate has recently passed a bill requiring Event Data Recorders or "black boxes" in every car. *See* S. 1813, 112th Cong. § 31406 (2012). The black box tracks the

for advertising purposes.⁸⁵ What has scarcely been mentioned, however, is the impact AVs might have on law enforcement activity under the Fourth Amendment with regards to drug-interdiction stops.⁸⁶ To see more clearly how AVs may change Fourth Amendment jurisprudence, it is helpful first to look at Fourth Amendment jurisprudence as it currently stands.

A. The Fourth Amendment and Automobiles

[17] The Fourth Amendment provides safeguards for the public against unreasonable government intrusion.⁸⁷ Typically, courts have required

movements of the operators which could then be used to obtain information about what advertising would be relevant for the AV operator.

⁸⁵ Cf. Sarah Mitroff, *Senate Passes Bill Requiring “Black Boxes” for Cars, But You May Already Have One*, VENTUREBEAT (Apr. 19, 2012, 3:14 PM), <http://venturebeat.com/2012/04/19/black-boxes-for-cars/> (discussing black boxes and privacy concerns).

⁸⁶ See, e.g., Whorf, *supra* note 2 (explaining the process of drug-interdiction stops). See generally Dorothy J. Glancy, *Privacy in Autonomous Vehicles*, 52 SANTA CLARA L. REV. 1171 (2012) (discussing the various privacy concerns with regard to AVs beyond just the Fourth Amendment).

⁸⁷ See U.S. CONST. amend. IV. The amendment reads:

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

Id. Daniel R. Dinger and John S. Dinger explain that “[a]t the time of its ratification, the Fourth Amendment’s primary purpose was to protect ‘against the utilization of the ‘writs of assistance’” by the British. Over the years, however, it has evolved into an important part of every citizen’s procedural rights against government intrusion into personal affairs.” Daniel R. Dinger & John S. Dinger, *Deceptive Drug Checkpoints and Individual Suspicion: Can Law Enforcement Really Deceive Its Way into a Drug Trafficking Conviction?*, 39 IDAHO L. REV. 1, 6 (2002) (quoting THE CONSTITUTION OF

officers to secure a warrant from a neutral magistrate prior to entering a home or conducting a search,⁸⁸ though the Supreme Court has stated that a warrant is not required for all searches.⁸⁹ The Court has often reiterated that one's reasonable expectation of privacy in a home is much greater than one's reasonable expectation of privacy in an automobile.⁹⁰ Unlike homes, automobiles are subject to immense government regulation because they operate on public roads and their interiors are more visible to the public.⁹¹ Nearly a century ago, the Court specifically addressed the differences between the home and an automobile under the Fourth Amendment in *Carroll v. United States*.⁹² In *Carroll*, officers suspected the petitioners of transporting alcohol,⁹³ and consequently stopped them and searched their vehicle.⁹⁴ The Court held that even in the absence of a valid search warrant, the police may make a search and seizure so long as they have probable cause to believe that the vehicle was being used to commit a crime.⁹⁵ The decision in *Carroll* introduced the Court's

THE UNITED STATES OF AMERICA: ANALYSIS AND INTERPRETATION 1199-1200 (Johnny H. Killian & George A. Constello eds., 1996)).

⁸⁸ See *United States v. Martinez*, 686 F. Supp. 2d 1161, 1179 (D.N.M. 2009).

⁸⁹ *Carroll v. United States*, 267 U.S. 132, 146 (1925).

⁹⁰ See, e.g., *United States v. Knotts*, 460 U.S. 276, 281 (1983); *Rakas v. Illinois*, 439 U.S. 128, 153-54, 154 n.2 (1978) (Powell, J., concurring); *South Dakota v. Opperman*, 428 U.S. 364, 367-68 (1976).

⁹¹ See *Rakas*, 439 U.S. at 154 n.2 (Powell, J., concurring).

⁹² 267 U.S. at 153.

⁹³ During this time, the transportation of alcohol was prohibited by the Eighteenth Amendment. U.S. CONST. amend. XVIII.

⁹⁴ 267 U.S. at 163 (McReynolds, J., concurring).

⁹⁵ *Id.* at 156. The Court explained that “the seizing officer shall have reasonable or probable cause for believing that the automobile which he stops and seizes has contraband liquor therein which is being illegally transported. . . . In cases where the

reluctance to equate the privacy afforded in the home and the privacy afforded in an automobile.⁹⁶ Moreover, it gave the police greater authority to conduct searches of automobiles by eliminating the need for a neutral third party to verify that the officer had probable cause prior to the search.⁹⁷

B. Challenging a Stop or Seizure

[18] Before looking at the different ways in which the police may currently stop and search an automobile, it is essential to have a basic understanding of who may make a Fourth Amendment challenge. The Court generally finds that an individual has standing to raise a Fourth Amendment challenge either when she has been seized⁹⁸ or when she has a legitimate expectation of privacy in the area or item searched.⁹⁹ To

securing of a warrant is reasonably practicable, [however,] it must be used.” *Id.*; *see also* California v. Carney, 471 U.S. 386, 393-95 (1985) (holding that a warrantless search of a motor home based on probable cause was not a violation of the Fourth Amendment).

⁹⁶ *See supra* note 90 and accompanying text.

⁹⁷ *See Carroll*, 267 U.S. at 154 (abandoning the warrant requirement for a search of an automobile based on probable cause).

⁹⁸ *See Brendlin v. California*, 551 U.S. 249, 263 (2007) (holding that police seizure of a passenger of a stopped automobile implicated the Fourth Amendment); *Delaware v. Prouse*, 440 U.S. 648, 653 (1979) (stating that “stopping an automobile and detaining its occupants constitute[s] a ‘seizure’”).

⁹⁹ *See Minnesota v. Carter*, 525 U.S. 83, 87-88, 91 (1998) (using an apartment simply to package cocaine does not create a legitimate expectation of privacy); *Rakas v. Illinois*, 439 U.S. 128, 148 (1978) (explaining that the defendant did not have a property interest in the item seized and failed to show a legitimate expectation of privacy in the car in which he was a passenger). In *Katz v. United States*, Justice Harlan outlined a two part test that is still being used by the courts. 389 U.S. 347, 361 (1967) (Harlan, J., concurring) (explaining that a person must have both an expectation of privacy, and that expectation must be “one that society is prepared to recognize as ‘reasonable’”). The First Circuit Court of Appeals has even refused to permit a passenger seized during a traffic stop to challenge the constitutionality of a search because the passenger did not

determine whether a seizure has occurred, the Court generally looks at the totality of the circumstances to see if a reasonable person would feel free to leave.¹⁰⁰ In some cases, a person may not feel free to leave for reasons other than police presence, so the “free to leave” test is not appropriate in all circumstances.¹⁰¹ In those situations, the Court looks instead at whether “a reasonable person would feel free to decline the officers’ requests or otherwise terminate the encounter.”¹⁰² Importantly, not every encounter between the police and an individual amounts to a seizure or stop under the Fourth Amendment.¹⁰³ For example, a casual encounter

have a reasonable expectation of privacy in the place searched. *United States v. Symonevich*, 688 F.3d 12, 21 (1st Cir. 2012). So, a person seized may challenge the constitutionality of the seizure, but not the search unless the person has a reasonable expectation of privacy in the place to be searched. *See id.* at 19.

¹⁰⁰ *See United States v. Mendenhall*, 446 U.S. 544, 553 (1980) (“We adhere to the view that a person is ‘seized’ only when, by means of physical force or a show of authority, his freedom of movement is restrained.”); *see also California v. Hodari D.*, 499 U.S. 621, 626 (1991) (holding that the suspect was not seized when he ignored the officer’s show of authority and continued running); *United States v. Johnson*, 620 F.3d 685, 690-92 (6th Cir. 2010) (holding that the defendant was seized when officers in a marked car demanded he “stop” and “stay right there”).

¹⁰¹ *See Florida v. Bostick*, 501 U.S. 429, 435-36 (1991) (explaining that in a situation where the person does not intend to leave, determining whether a reasonable person would feel free to leave would not be an adequate test).

¹⁰² *Id.* at 436. In *Bostick*, officers boarded a bus on which the defendant was traveling and requested to search the defendant’s luggage. *Id.* at 431-32. The Court determined that he undoubtedly did not feel free to leave because he would ultimately be sacrificing his luggage and bus ticket. *Id.* at 435-36. Thus, the Court found it inappropriate to apply the free-to-leave test. *Id.* at 436. Still, the key for courts is to inquire into the totality of the circumstances surrounding the event. *Id.* at 437; *see also INS v. Delgado*, 466 U.S. 210, 216, 219 (1984) (explaining that the Court should inquire into a reasonable person’s freedom to decline an officers’ request when immigration officials question employees at their workplace).

¹⁰³ *Terry v. Ohio*, 392 U.S. 1, 19 n.16 (1968).

with the police does not implicate Fourth Amendment protections.¹⁰⁴ Still, the Court has been clear that when the police stop a vehicle, the driver is seized and entitled to the protections of the Fourth Amendment.¹⁰⁵

C. Stops and Subsequent Searches

[19] In *Carroll*, the Court dealt with the validity of the search of the vehicle, not with the stop that preceded the search.¹⁰⁶ In general, probable cause is necessary to search a vehicle once it has been stopped, but reasonable suspicion is all that is needed to initially stop a vehicle.¹⁰⁷

¹⁰⁴ See *Kentucky v. King*, 131 S. Ct. 1849, 1858 (2011) (“[O]fficers may seek consent-based encounters if they are lawfully present in the place where the consensual encounter occurs.”); *Bostick*, 501 U.S. at 434 (suggesting that drug-interdiction efforts do not always implicate the Fourth Amendment); *Florida v. Royer*, 460 U.S. 491, 497 (1983) (explaining that the Fourth Amendment is not violated simply by an officer approaching a person and asking her questions); see also *infra* note 109 and accompanying text (discussing the three different kinds of police encounters).

¹⁰⁵ *Brendlin v. California*, 551 U.S. 249, 251 (2007). The Court in *Brendlin* explains that “[a] person is seized by the police and thus entitled to challenge the government’s action under the Fourth Amendment when the officer, ‘by means of physical force or authority,’ terminates or restrains his freedom of movement.” *Id.* at 254 (quoting *Bostick*, 501 U.S. at 434). For the purpose of this note, it is sufficient to understand that one is seized and the Fourth Amendment is implicated simply by an officer stopping the vehicle. See, e.g., *City of Indianapolis v. Edmond*, 531 U.S. 32, 40 (2000) (explaining that a checkpoint constitutes a seizure); *Delaware v. Prouse*, 440 U.S. 648, 653 (1979) (explaining that the Fourth Amendment is implicated “because stopping an automobile and detaining its occupants constitute a ‘seizure’ . . . even though the purpose of the stop is limited and the resulting detention quite brief.”) (citing *United States v. Brignoni-Ponce*, 422 U.S. 873, 878 (1975)); see also *Brendlin*, 551 U.S. at 257 (holding that a passenger is seized when the vehicle in which he is riding is stopped).

¹⁰⁶ *Carroll v. United States*, 267 U.S. 132, 153 (1925).

¹⁰⁷ See generally *United States v. Arvizu*, 534 U.S. 266 (2002) (holding that a stop of a vehicle based on reasonable suspicion is permissible).

1. Reasonable Suspicion Stops

[20] Even though a stop of an automobile implicates the Fourth Amendment, in some instances reasonable suspicion, a lesser standard than probable cause, is all the police need in the absence of a warrant.¹⁰⁸ The Court has classified police encounters in three different ways: casual encounters, *Terry* stops, and arrests.¹⁰⁹ As the Court held in *Terry v. Ohio*,¹¹⁰ when an officer reasonably believes that “criminal activity may be afoot,” the officer may make a reasonable inquiry to protect himself and those around him.¹¹¹ Any action taken by the officer must be

¹⁰⁸ See, e.g., *Brignoni-Ponce*, 422 U.S. at 880; *Terry v. Ohio*, 392 U.S. 1, 8 (1968).

¹⁰⁹ *United States v. Jones*, 701 F.3d 1300, 1312 (10th Cir. 2012) (explaining that there are three kinds of police-citizen encounters, (1) consensual encounters not based on any level of suspicion, (2) stops under *Terry*, and (3) arrests). Unless otherwise noted, the term “stop” throughout the rest of this note refers to a stop based on reasonable suspicion or what have also been classified as *Terry* stops.

¹¹⁰ 392 U.S. 1 (1968).

¹¹¹ *Id.* at 30. More specifically the court held that

[W]here a police officer observes unusual conduct which leads him reasonably to conclude in light of his experience that criminal activity may be afoot and that the persons with whom he is dealing may be armed and presently dangerous, where in the course of investigating this behavior he identifies himself as a policeman and makes reasonable inquiries, and where nothing in the initial steps of the encounter serves to dispel his reasonable fear for his own or others' safety, he is entitled for the protection of himself and others in the area to conduct a carefully limited search of the outer clothing of such persons in an attempt to discover weapons which might be used to assault him.

Id. In this case, Officer McFadden observed two men acting in what he considered to be an odd way. *Id.* at 5. He explained that one man would leave the other, stop by a store to look in the window, then walk a few more steps, turn and walk past again, pausing at the same store. *Id.* at 6. McFadden noted that these two men took turns walking past the store several times each. *Id.* at 6. Suspecting the men to be casing the store, he stopped

reasonable based on the circumstances and limited in scope.¹¹² Reasonable suspicion and the subsequent seizure “must be based on specific, objective facts”¹¹³ that give the officer “a particularized and objective basis for suspecting” the person stopped was engaging in criminal activity.¹¹⁴ Courts apply a totality-of-the-circumstances test to determine if the reasonable suspicion requirement is satisfied.¹¹⁵ Additionally, facts that might individually suggest innocent behavior may amount to reasonable suspicion when aggregated.¹¹⁶ Thus, since the

the men, asked their names, and then patted them down. *See id.* at 6-7. Officer McFadden found a gun on two of the men, and they were both charged with carrying a concealed weapon. *Id.* at 7. Agreeing that Officer McFadden did not have probable cause to stop and frisk the two men, the Court nonetheless held that the officer’s actions were not a violation of the Fourth Amendment since the seizure and the pat down were reasonable and limited in scope. *See id.* at 19-20, 30. The initial rule was more focused on police protection when police encounter individuals on the street, but has been expanded to include traffic stops. *See infra* notes 118-23 and accompanying text.

¹¹² *Terry*, 392 U.S. at 19-20.

¹¹³ *Brown v. Texas*, 443 U.S. 47, 51 (1979).

¹¹⁴ *United States v. Cortez*, 449 U.S. 411, 417-18 (1981). The Supreme Court has also found that “some investigative stops based on reasonable suspicion of past criminal activity could withstand Fourth Amendment scrutiny.” *United States v. Hensley*, 469 U.S. 221, 227 (1985). Whether this requirement is actually used in practice is another issue. David A. Harris suggests that while the Court reiterates this requirement, it does not *actually* require it. David A. Harris, *Terry and the Fourth Amendment: Particularized Suspicion, Categorical Judgments: Supreme Court Rhetoric Versus Lower Court Reality Under Terry v. Ohio*, 72 ST. JOHN’S L. REV. 975, 976 (1998) (“Even though the Court’s rhetoric concerning the requirement of particularized suspicion stands, almost unchanged, since 1968, lower courts have gradually but unmistakably eroded the force of these words.”).

¹¹⁵ *See, e.g.*, *United States v. Johnson*, 620 F.3d 685, 692 (6th Cir. 2010) (citing *United States v. Arvizu*, 534 U.S. 266, 273 (2002); *United States v. McCauley*, 548 F.3d 440, 443 (6th Cir. 2008)).

¹¹⁶ *See, e.g.*, *United States v. Neff*, 681 F.3d 1134, 1138 (10th Cir. 2012) (quoting *United States v. Sokolow*, 490 U.S. 1, 9 (1989)) (“While certain facts, taken in isolation, may be ‘quite consistent with innocent travel,’ these facts may, in the aggregate, add up to

inquiry is so heavily dependent on the specific facts of the case, there is no clear set of rules that a court can apply to determine whether reasonable suspicion is present in any given case.¹¹⁷

[21] A decade after *Terry*, the Court held that stops of automobiles in particular are unreasonable absent articulable reasonable suspicion that there has been some violation of the law.¹¹⁸ In *Delaware v. Prouse*, an officer stopped the respondent's vehicle simply to check his driver's license and registration; the officer lacked both probable cause and reasonable suspicion to make the stop.¹¹⁹ The Court recognized that government interests may justify an intrusion on privacy, so the Court must carefully balance the government's interest in making stops with the individual's privacy interest.¹²⁰ Even though individuals are entitled to a

reasonable suspicion.”); *United States v. Baskin*, 401 F.3d 788, 793 (7th Cir. 2005) (explaining that behavior “susceptible to an innocent explanation when isolated from its context may still give rise to reasonable suspicion when considered in light of all the factors”).

¹¹⁷ *See, e.g.*, *Arvizu*, 534 U.S. at 274; *Terry v. Ohio*, 392 U.S. 1, 21 (1968) (quoting *Camara v. Municipal Court*, 387 U.S. 523, 536-37 (1967)); *see also infra* notes 125-30 and accompanying text.

¹¹⁸ *Delaware v. Prouse*, 440 U.S. 648, 663 (1979); *cf. State v. Butler*, 539 S.E.2d 414, 416 (S.C. Ct. App. 2000) (holding that the police lacked the necessary reasonable suspicion to stop based solely on the presence of a paper temporary license plate on the vehicle).

¹¹⁹ *See Prouse*, 440 U.S. at 663 (affirming defendant's motion to suppress evidence of marijuana possession because the officer did not have reasonable suspicion to stop defendant's vehicle).

¹²⁰ *Id.* at 656-57 (quoting *United States v. Brignoni-Ponce*, 422 U.S. 873, 883 (1975)); *see also United States v. Place*, 462 U.S. 696, 703 (1983) (“We must balance the nature and quality of the intrusion on the individual's Fourth Amendment interests against the importance of governmental interests alleged to justify the intrusion.”); *State v. Rissley*, 824 N.W.2d 853, 857 (Wis. Ct. App. 2012) (explaining that the court “balances the interests of the State in detecting, preventing, and investigating crime and the rights of individuals to be free from unreasonable intrusions”) (quoting *State v. Post*, 733 N.W.2d 634, 638 (Wis. 2007) (internal quotation marks omitted)).

lesser protection in automobiles than in homes,¹²¹ the Court stressed that individuals “operating or traveling in an automobile [do] not lose all reasonable expectation of privacy”¹²² Because the government can achieve the same interest served by allowing stops to check for driver’s licenses by making stops for observed violations, the Court held that the government interest here did not justify the intrusion.¹²³

[22] What actually constitutes reasonable suspicion, upon which officers can stop an automobile, is more difficult to understand. In *United States v. Brignoni-Ponce*, the Court held that border patrol agents’ stops based solely on the apparent ancestry of the occupants of the vehicle were insufficient to establish reasonable suspicion.¹²⁴ The *Brignoni-Ponce* Court outlined several factors that officers can take into account when establishing reasonable suspicion, including: the characteristics of the area, the proximity to the border, normal traffic patterns on a given road, the driver’s and occupant’s behavior, features of the vehicle,¹²⁵ and the

¹²¹ See *supra* note 90 and accompanying text.

¹²² *Prouse*, 440 U.S. at 662.

¹²³ *Id.* at 659-61; *cf. Brignoni-Ponce*, 422 U.S. at 882-83 (finding that the government’s interest in limiting illegal immigration did not justify the use of roving patrols to make stops based upon the apparent ethnicity of the occupants); *infra* notes 124-27 and accompanying text.

¹²⁴ *Brignoni-Ponce*, 422 U.S. at 885-86 (finding that the respondents were stopped because officers believed them to be illegal aliens based solely on “apparent Mexican ancestry”); *cf. United States v. Montero-Camargo*, 208 F.3d 1122, 1132 (9th Cir. 2000) (“The likelihood that in an area in which the majority—or even a substantial part—of the population is Hispanic, any given person of Hispanic ancestry is in fact an alien, let alone an illegal alien, is not high enough to make Hispanic appearance a relevant factor in the reasonable suspicion calculus.”).

¹²⁵ *Brignoni-Ponce*, 422 U.S. at 884-85. The Court gave the example of a station wagon with compartments that can be used to transport aliens or an unusually heavy load. *Id.* at 885; see also *United States v. Arvizu*, 534 U.S. 266, 277-78 (2002) (applying all of these factors to conclude the agent had reasonable suspicion to make the stop).

appearance of the occupants,¹²⁶ but not simply one's race or ethnicity.¹²⁷ The totality-of-the-circumstances test enables courts and officers to use their past experiences to infer that criminal activity may be afoot by analyzing these and other factors present at the time of the stop or present during prior investigations.¹²⁸

¹²⁶ The Court noted that "officers can recognize characteristic appearance of persons who live in Mexico, relying on such factors as mode of dress and haircut." *Brignoni-Ponce*, 422 U.S. at 885. This seems to be a distinction without a difference. The Court essentially just re-characterized the factor to make it sound more politically correct.

¹²⁷ *Id.* at 884-86. The Ninth Circuit Court of Appeals also held that in general one's Hispanic appearance cannot be considered for reasonable suspicion. *Montero-Camargo*, 208 F.3d at 1132.

¹²⁸ *Arvizu*, 534 U.S. at 273 (explaining that "[t]his process allows officers to draw on their own experience and specialized training to make inferences from and deductions about the cumulative information available to them that 'might well elude an untrained person'" (quoting *United States v. Cortez*, 449 U.S. 411, 418 (1981))). Additionally, in *United States v. Johnson*, the Sixth Circuit Court of Appeals methodically listed the factors it took into account in determining that the officers lacked reasonable suspicion. *United States v. Johnson*, 620 F.3d 685, 692 (6th Cir. 2010). The court explained that the following factors were present at the time of the stop:

- (1) Johnson was in a high drug-trafficking area;
- (2) it was 4:00 a.m.;
- (3) the officers were responding to a 911 call;
- (4) two or three minutes after the 911 call, the officers observed Johnson twenty to thirty yards from the blue Cadillac referenced in the call and near the residence from which the call was made;
- (5) the officers did not notice anyone else in the area, besides the driver of the white car to which Johnson was headed;
- (6) Johnson did not stop when called to by the officers and instead continued walking toward the white car; and
- (7) he was carrying a bag, which he threw into the white car.

Id. at 692. The court went into a lengthy discussion about why it did not believe these factors established reasonable suspicion, ultimately determining that "[t]he facts involved here fall short of the constitutional standard." *Id.* at 696. On the other hand, the Supreme Court in *Arvizu* determined that the officer's inference based on observable facts was sufficient for reasonable suspicion. *Arvizu*, 534 U.S. at 277.

2. Probable Cause to Search

[23] Once a vehicle has been stopped based either on probable cause¹²⁹ or reasonable suspicion, officers must have probable cause in order to conduct a search.¹³⁰ Probable cause is more than a “bare suspicion” that a crime has been committed.¹³¹ The traditional view is that probable cause is established “[i]f the facts and circumstances before the officer are such to warrant a man of prudence and caution in believing that the offence has

¹²⁹ Stops based on probable cause are not *Terry* stops. Still, officers can stop based on probable cause because the lower standard of reasonable suspicion will, by definition, be satisfied.

¹³⁰ *Chambers v. Maroney*, 399 U.S. 42, 52 (1975) (“[W]e see no difference between on the one hand seizing and holding a car before presenting the probable cause issue to a magistrate and on the other hand carrying out an immediate search without a warrant. Given probable cause to search, either course is reasonable under the Fourth Amendment.”). In addition to stops based on reasonable suspicion, the police can pull over automobiles based on probable cause. *Carroll v. United States*, 267 U.S. 132, 155-56 (1925). Probable cause can be established simply by a driver breaking a traffic law. *See, e.g., Whren v. United States*, 517 U.S. 806, 810 (1996) (holding that stops are reasonable if an officer has probable cause to believe the driver violated a traffic law); *State v. Voichahoske*, 709 N.W.2d 659, 668 (Neb. 2006) (“[A] traffic violation, no matter how minor, creates probable cause to stop the driver of the vehicle.”); *People v. Robinson*, 767 N.E.2d 638, 642 (N.Y. 2001) (noting that an officer who has probable cause to believe that a traffic violation has been committed may make a stop). Establishing probable cause can sometimes be more certain than reasonable suspicion. In most cases, officers stop vehicles following a traffic violation. Any traffic violation establishes probable cause since a law has actually been broken. Thus, in most instances, police can be more certain the stop will hold up if there is a traffic violation. Similarly, because the standard for probable cause is higher than that for reasonable suspicion, if an officer believes probable cause has been established, it is almost certain that she has reasonable suspicion, so the stop should hold up. *See Terry v. Ohio*, 392 U.S. 1, 22 (1968) (explaining that reasonable suspicion can be established despite a lack of probable cause). There are, however, several exceptions that allow officers to get into vehicles absent probable cause to believe evidence of a crime will be found therein. *See infra* notes 140-43 and accompanying text.

¹³¹ *Brinegar v. United States*, 338 U.S. 160, 175 (1949).

been committed.”¹³² As with reasonable suspicion,¹³³ determining probable cause is highly dependent on the facts, and the Court has avoided issuing set rules on how it must be established.¹³⁴ Probable cause to search is often based upon an officer sensing something when she approaches the vehicle,¹³⁵ which then gives the officer some level of the individualized suspicion required for a search to be reasonable.¹³⁶

[24] An initial stop based on reasonable suspicion can lead to a search of the automobile based on probable cause.¹³⁷ Nevertheless, even if the initial stop is based on probable cause after the driver was observed

¹³² *Carroll*, 267 U.S. at 161.

¹³³ *See supra* note 117 and accompanying text.

¹³⁴ *See, e.g.*, *Illinois v. Gates*, 462 U.S. 213, 232 (1983) (“[P]robable cause is a fluid concept—turning on the assessment of probabilities in particular factual contexts—not readily, or even usefully, reduced to a neat set of legal rules.”).

¹³⁵ *See, e.g.*, *Johnson v. United States*, 333 U.S. 10, 13 (1948) (explaining that probable cause was established when the officer smelled burning opium); *United States v. West*, 219 F.3d 1171, 1179 (10th Cir. 2000) (holding that probable cause to search a bag in the trunk of a vehicle was established after the officer smelled methamphetamine); *Minnick v. United States*, 607 A.2d 519, 525 (D.C. 1992) (holding that an officer established probable cause to search when he smelled a scent he associated with PCP).

¹³⁶ *See, e.g.*, *City of Indianapolis v. Edmond*, 531 U.S. 32, 37 (2000) (“A search or seizure is ordinarily unreasonable in the absence of individualized suspicion of wrongdoing.” (citing *Chandler v. Miller*, 520 U.S. 305, 308 (1997))); *Delaware v. Prouse*, 440 U.S. 648, 663 (1979) (holding that stopping a vehicle without reasonable suspicion is a violation of the Fourth Amendment). The Court has recognized only limited situations where this general rule does not apply. *See, e.g.*, *Veronia Sch. Dist. 47J v. Acton*, 515 U.S. 646, 653 (1995) (allowing random drug testing of student-athletes); *Nat’l Treasury Emps. v. Von Raab*, 489 U.S. 656, 679 (1989) (allowing drug tests for some customs officials).

¹³⁷ *See United States v. Hensley*, 469 U.S. 221, 235-36 (1985) (explaining that the stopping officer had reasonable suspicion based on a wanted flyer from another police department, and that the subsequent search was based on probable cause after the officers saw a gun in plain view).

breaking a traffic law, the officer must further establish probable cause that there is evidence of a crime in the vehicle before he can search.¹³⁸ This general rule is subject to several exceptions that allow officers to get into vehicles for limited purposes without probable cause.¹³⁹ Courts have permitted a limited search to determine ownership of a vehicle¹⁴⁰ or to ensure the officer's safety.¹⁴¹ Similarly, the Court has validated searches

¹³⁸ See *Arizona v. Gant*, 556 U.S. 332, 345 (2009) (“A rule that gives police the power to conduct such a search whenever an individual is caught committing a traffic offense, when there is no basis for believing evidence of the offense might be found in the vehicle, creates a serious and recurring threat to the privacy of countless individuals.”); see also *State v. Voichahoske*, 709 N.W.2d 659, 668-69 (Neb. 2006). In *Voichahoske*, an officer stopped the vehicle for speeding. *Id.* Following the stop, the court found that the officer had reasonable suspicion to prolong the stop to continue investigating based on the occupants behavior and lack of registration. *Id.* at 668-69. The officer summoned a drug dog, and the dog alerted to the vehicle providing probable cause to search the vehicle. See *id.* at 670-71. Thus, probable cause to search had to be established independent of the probable cause to stop.

¹³⁹ See *Voichahoske*, 709 N.W.2d at 670 (“The warrantless search exceptions recognized by this court include: (1) searches undertaken with consent or probable cause, (2) searches under exigent circumstances, (3) inventory searches, (4) searches of evidence in plain view, and (5) searches incident to a valid arrest.”).

¹⁴⁰ See, e.g., *Harris v. United States*, 390 U.S. 234, 235 (1968); *United States v. Ferri*, 357 F. Supp. 487, 490 (W.D. Wis. 1973). The court in *United States v. Lopez* determined that “at a minimum, an inquiry should be made by the officers as to the whereabouts of the registration prior to the entry.” 474 F. Supp. 943, 948 (C.D. Cal. 1979). By comparison, in *Paschall v. State*, the Indiana Supreme Court validated the search of a gym bag to find the vehicle registration despite no further inquiry by the officer about the possible location of the registration. 523 N.E.2d 1359, 1361-62 (Ind. 1988). However, the court found the subsequent search of a suitcase to be in violation of the Fourth Amendment absent a warrant since the identification exception was no longer applicable. *Id.* at 1362.

¹⁴¹ See *Michigan v. Long*, 463 U.S. 1032, 1051 (1983) (“The balancing required by *Terry* clearly weighs in favor of allowing the police to conduct an area search of the passenger compartment to uncover weapons, as long as they possess an articulable and objectively reasonable belief that the suspect is potentially dangerous.”). The Court has also permitted a limited search of the driver. See, e.g., *Pennsylvania v. Mimms*, 434 U.S. 106, 111-12 (1977) (permitting a search of a driver after the officer noticed a bulge on the person); *Adams v. Williams*, 407 U.S. 143, 145 (1972) (permitting an officer to reach

incident to arrest¹⁴² and seizures of items found in plain view.¹⁴³ Still, a further search of the vehicle's compartments, like the trunk, must be based on probable cause to believe contraband will be found therein.¹⁴⁴ Establishing probable cause to conduct a further search and determining the scope of that search are dependent on whether the officer has probable cause to believe evidence of a crime will be found in the place searched.¹⁴⁵

into a vehicle and grab the suspect's weapon after an informant told the officer where it was located).

¹⁴² See *Gant*, 556 U.S. at 335. Searches incident to arrest must be limited in scope. *Id.* (holding that officer can search incident to arrest so long as they reasonably believe "evidence of the offense of [the] arrest might be found in the vehicle"); see also *United States v. Jackson*, 415 F.3d 88, 91-92 (D.C. Cir. 2005).

¹⁴³ See *Coolidge v. New Hampshire*, 403 U.S. 443, 467-69 (1971) (permitting the police to seize an item found in plain view so long as the discovery was inadvertent).

¹⁴⁴ See *Jackson*, 415 F.3d at 91. Once an officer may search the trunk, though, that officer may search any containers inside the trunk. *Id.* at 91-92; see also *United States v. Ross*, 456 U.S. 798, 825 (1982).

¹⁴⁵ See *Ross*, 456 U.S. at 824 (explaining that the scope of a warrantless automobile search is limited by "the places in which there is probable cause to believe that it may be found," rather than by "the nature of the container in which the contraband is secreted"); see also *California v. Acevedo*, 500 U.S. 565, 580 (1982) (holding that police may conduct warrantless searches of containers in automobiles so long as they have probable cause to believe contraband will be contained therein). Establishing probable cause to search both a container or the trunk and the passenger compartment is dependent on the likelihood that evidence of the crime would be found in the container or the trunk. See *Jackson*, 415 F.3d at 91-93 (rejecting the government's argument that the officers had probable cause to search for contraband in the trunk because they found stolen tags on the outside of the vehicle). The *Jackson* court differentiated that case from other cases where there were more "empirical connection[s]" between discovery in the passenger compartment and the presence of additional contraband in the trunk. *Id.* at 93 (citing *United States v. Brown*, 334 F.3d 1161, 1171 (D.C. Cir. 2003)); see also *United States v. Turner*, 119 F.3d 18, 20-21 (D.C. Cir. 1997) (permitting the search of the trunk after the officer established probable cause that marijuana was contained in the vehicle and could be contained in the trunk).

D. Consent to Search

[25] Officers can avoid establishing probable cause to search if they can obtain valid consent to search.¹⁴⁶ A warrantless entry and search of an automobile, or even a home, does not violate the Fourth Amendment prohibition against unreasonable searches and seizures¹⁴⁷ as long as the officer obtains the consent of the owner whose property is to be searched prior to conducting the search.¹⁴⁸ If the owner is not present, a third party who has access to the area¹⁴⁹ and “common authority over or other sufficient relationship to the premises” may give valid consent to a search.¹⁵⁰ Any consent given, though, must be free and voluntary.¹⁵¹

¹⁴⁶ See *Schneekloth v. Bustamonte*, 412 U.S. 218, 219 (1973). See generally Tracey Maclin, *The Good and Bad News About Consent Searches in the Supreme Court*, 39 MCGEORGE L. REV. 27 (2008) (discussing consent searches); Whorf, *supra* note 2.

¹⁴⁷ See U.S. CONST. amend. IV.

¹⁴⁸ See *Illinois v. Rodriguez*, 497 U.S. 177, 181 (1990); *Schneekloth*, 412 U.S. at 248; *Davis v. United States*, 328 U.S. 582, 593-94 (1946).

¹⁴⁹ See *United States v. Davis*, 967 F.2d 84, 87 (2d Cir. 1992) (permitting the owner of the locker in which the defendant had stored items to consent to a search).

¹⁵⁰ *United States v. Matlock*, 415 U.S. 164, 171 (1974). The Court explained that common authority depends on the

mutual use of the property by persons generally having joint access or control for most purposes, so that it is reasonable to recognize that any of the co-inhabitants has the right to permit the inspection . . . and that the others have assumed the risk that one of their number might permit the common area to be searched.

Id. at 172 n.7.

¹⁵¹ See, e.g., *United States v. Drayton*, 536 U.S. 194, 206-07 (2002); *Ohio v. Robinette*, 519 U.S. 33, 35 (1996) (holding that officers do not need to tell the detainee that he or she is “free to go” before his consent to search is recognized); *Schneekloth*, 412 U.S. at 222 (quoting *Bumper v. North Carolina*, 391 U.S. 543, 548 (1968)) (explaining that the prosecution has the burden of establishing consent was “freely and voluntarily given”).

Additionally, the consent of a third party who in fact does not possess authority to consent is valid as long as the officers reasonably believe the person has authority to consent.¹⁵² Lastly, the validity of a minor's consent is still being debated in the courts, but courts have held that the Fourth Amendment protections apply to minors.¹⁵³ The Supreme Court has yet to decide the issue of minor consent to search automobiles, but some lower courts have found that minors have authority to consent to searches, at least in some circumstances.¹⁵⁴ In any case, the request for consent cannot delay the stop itself.¹⁵⁵ Some courts have further limited the scope of consent inquiries, holding that it must be related to the traffic

The Court determines voluntariness based on the totality of the circumstances to ensure the consent was not the "product of duress or coercion." *Id.* at 227. The Court noted that it is not necessary for police to inform a party of his or her right to refuse consent, though such knowledge can be taken into account. *Id.* Lastly, the Court noted a need to balance the "legitimate need for such searches and the equally important requirement of assuring the absence of coercion." *Id.* Additionally, consent must be more than just acquiescence to a lawful authority. *Id.* at 233; *see also* *United States v. Ruiz-Estrella*, 481 F.2d 723, 727 (2d Cir. 1973).

¹⁵² *Rodriguez*, 497 U.S. at 188-89; *Maclin*, *supra* note 146, at 43-44.

¹⁵³ *See, e.g.*, *Abdella v. O'Toole*, 343 F. Supp. 2d 129, 135, 137 (D. Conn. 2004) (noting that a minor's authority to consent has not been decided, but courts should consider the possibility that minor may be more easily coerced); Kristin Henning, *The Fourth Amendment Rights of Children at Home: When Parental Authority Goes Too Far*, 53 WM. & MARY L. REV. 55, 61 (2011).

¹⁵⁴ *E.g.*, *Lenz v. Winburm*, 51 F.3d 1540, 1545, 1548-49 (11th Cir. 1995) (permitting a minor to consent to a GAL search of a bedroom); *United States v. Clutter*, 914 F.2d 775, 778 (6th Cir. 1990) (permitting the defendant's fourteen and twelve-year-old children to consent to a search of their home). *Contra* *United States v. Barkovitz*, 29 F. Supp. 2d 411, 415-16 (E.D. Mich. 1998) (finding the twelve-year-old son of the defendant lacked authority to consent to a search of the father's bedroom); *People v. Jacobs*, 729 P.2d 757, 759 (Cal. 1987) (holding that an eleven-year-old's consent to search the child's home was invalid); *State v. Schwarz*, 136 P.3d 989, 992 (Mont. 2006) (invalidating a search pursuant to a thirteen-year-old's consent to search the child's home).

¹⁵⁵ *See* *State v. Johnson*, 51 P.3d 1112, 1116-17 (Idaho Ct. App. 2002).

stop and supported by some kind of reasonable suspicion.¹⁵⁶ Consent nevertheless gets officers into many vehicles, but the process may be affected by AVs in the future.

III. SO WHAT DOES THIS MEAN FOR AVS?

[26] According to the Department of Justice, people most often encounter the police during traffic stops.¹⁵⁷ Professor Wayne R. LaFave explains that since drivers cannot travel a significant distance without breaking some traffic law, “virtually anyone (even a Supreme Court Justice) can readily be stopped” based on probable cause.¹⁵⁸ AVs, however, can do just that; AVs are designed to abide by all traffic laws. Thus, the ability of the police to stop just anyone will presumably be significantly lessened with the introduction of AVs into our society. For the most part, current AV regulation does not allow for vehicles to be operated without a physically present operator,¹⁵⁹ but the text of the legislation and reports from the industry suggest that the goal is to have AVs be fully operational without a physically present operator.¹⁶⁰ Thus, the applicability of the Fourth Amendment to AVs, both with and without

¹⁵⁶ See *State v. Fort*, 660 N.W.2d 415, 418-19 (Minn. 2003).

¹⁵⁷ Bureau of Justice Statistics, *Traffic Stops*, OFF. JUST. PROGRAMS (Jan. 16, 2013), <http://bjs.ojp.usdoj.gov/index.cfm?ty=tp&tid=702>.

¹⁵⁸ Wayne R. LaFave, *The “Routine Traffic Stop” from Start to Finish: Too Much “Routine,” Not Enough Fourth Amendment*, 102 MICH. L. REV. 1843, 1853 (2004) (citing B. James George, Jr., CONSTITUTIONAL LIMITATIONS ON EVIDENCE IN CRIMINAL CASES 65 (1969)).

¹⁵⁹ See *supra* notes 68, 81, and accompanying text. *But see* NEV. ADMIN. CODE § 482A.030 (2012) (permitting the operation of AVs without an operator being physically present only if a certificate of compliance has been issued).

¹⁶⁰ See Nissan Motor Company, *Nissan Announces Unprecedented Autonomous Drive Benchmarks*, NISSANNEWS (Aug. 27, 2013), <http://nissannews.com/en-US/nissan/usa/releases/nissan-announces-unprecedented-autonomous-drive-benchmarks>; *supra* notes 66, 76, 80, and accompanying text.

a physically present operator, will likely be at the forefront of debate within the next several years.

A. Reasonable Suspicion and Probable Cause when AVs Rule the Road

[27] Establishing reasonable suspicion to stop an AV may be more difficult than establishing reasonable suspicion to stop a traditional vehicle. Reasonable suspicion is generally found in one of three ways. The first is by prior extrinsic observation, meaning officers conduct an outside investigation that increases their suspicion of a certain individual and vehicle without necessarily relying on the behavior of the individual at the time of the stop.¹⁶¹ The second way reasonable suspicion can be found is by receiving information from a tipster,¹⁶² and the third way is by police officers' observations of the driver at the time of the search.¹⁶³ The latter

¹⁶¹ See, e.g., *United States v. Cortez*, 449 U.S. 411, 413-14 (1981). This kind of observation generally takes place sometime before the stop. This type of reasonable suspicion is typically established based on an outside investigation and is largely independent from the observations at the time of the stop. For example, in *Cortez*, Border Patrol officers found recurring footprints of eight to twenty people in an area near the border, with one distinctive set of prints that were always present. *Id.* at 413. Based on the path of the prints and the times when they were found, officers deduced that the group was traveling at night and on the weekends. *Id.* Based on this information and the officers' experience with illegal immigration in the area, they predicted that a group would be coming through on a particular weekend. *Id.* at 414. The officers waited for a vehicle that would be capable of transporting a group of aliens and that was driving in the pattern they had predicted it would. *Id.* at 414-15. Based on this information, the officers stopped the defendant's vehicle and found the illegal aliens. *Id.* at 415. The Court held that the stop was constitutional, stressing the officers' knowledge of the area and the practices of illegal aliens. *Id.* at 421-22.

¹⁶² See, e.g., *Alabama v. White*, 496 U.S. 325, 331 (1990); *Flemister v. State*, 732 S.E.2d 810, 820 (Ga. Ct. App. 2012) (determining the reasonable suspicion requirement was satisfied based on the officers' observations following a tip from a confidential informant).

¹⁶³ See, e.g., *United States v. Arvizu*, 534 U.S. 266, 269-71 (2002). In *Arvizu*, an officer observed a driver on a rural road near the Mexican border where smugglers often try to

will not be possible when an AV is operated in autonomous mode without a physically present operator for obvious reasons. However, the first issue the Court will likely face is a stop of an AV, operating in autonomous mode, with an operator in the vehicle. Since AVs are designed to abide by all relevant traffic laws, the stop will not likely have been based on probable cause or reasonable suspicion that the driver broke a traffic law.¹⁶⁴ So, as has been done, the officer will have to rely on things like the behavior of the operator, the characteristics of the vehicle, the route taken by the vehicle, and the area in which the vehicle is located to establish reasonable suspicion to make a spontaneous stop, as the Court did in *United States v. Arvizu*.¹⁶⁵ The factors relevant to establish reasonable suspicion to stop AVs should not be very different from the current factors addressed by the courts where reasonable suspicion has been found.¹⁶⁶ One exception, however, is the officer's ability to consider erratic or unusual driving patterns. For example, in *United States v. Baskin*, the officer established the requisite reasonable suspicion to make

avoid permanent checkpoints. *Id.* at 269-70. In addition to the location of the vehicle, the officer took into account the driver and passenger's odd behavior, including the kids' raised knees as if they had something under their feet and their strange waves, in determining he had reasonable suspicion to make the stop. *Id.* at 270-71, 277-78.

¹⁶⁴ *See supra* Part I.A. Of course, if a law was broken, the officers would immediately have probable cause to make the stop as with a traditional automobile. *See United States v. Bloomfield*, 40 F.3d 910, 915 (8th Cir. 1994); *State v. Lee*, 658 N.W.2d 669, 676 (Neb. 2003) ("It is well established that a traffic violation, no matter how minor, creates probable cause to stop the driver of a vehicle."). Similarly, officers will still be able to stop for a burned out headlight or other similar maintenance issue.

¹⁶⁵ *Arvizu*, 534 U.S. at 277; *see also United States v. Brignoni-Ponce*, 422 U.S. 873, 884-85 (1975); *State v. Cure*, 93 So. 3d 1268, 1270 (La. 2012) (per curiam) (holding that reasonable suspicion was established based on the defendant's behavior and the vehicle's location in a high-crime area). This analysis should not be different from the court's current analysis of reasonable suspicion with automobiles since the officers will be able to consider the driver's behavior. The issue changes even more when officers are unable to take into account a person's behavior and facial expressions.

¹⁶⁶ *See supra* notes 124-28 and accompanying text (discussing the factors appropriate for courts to consider).

the stop based on the driver's sudden acceleration upon seeing the officer near a meth lab.¹⁶⁷ The driver reacted to an outside stimulus, causing him to change his method of driving without breaking the law.¹⁶⁸ An AV operating in autonomous mode will not react to outside stimuli in the way the driver in *Baskin* did, so to that extent officers may have one less factor upon which to rely in establishing reasonable suspicion. It is still possible, though, for the driver to disengage autonomous mode.¹⁶⁹ In that situation, this factor may retain its relevance with regard to AVs with a physically present operator.

[28] While that analysis should remain largely unchanged, establishing reasonable suspicion to stop an AV operating without a physically present driver will be different. Under these conditions, the officer will have even less upon which to establish reasonable suspicion to make the stop, though it should still be possible for an officer to develop the requisite particularized suspicion using either prior extrinsic observations or tipsters. Obtaining reasonable suspicion through these mechanisms is more difficult than traditional drug-interdiction stops. Currently, many drug-interdiction stops are based on observable circumstances immediately before the stop.¹⁷⁰ Without a physically present operator, the police cannot observe the behavior of the operator. Similarly, when AVs are operated in autonomous mode, some other immediate observations like

¹⁶⁷ 401 F.3d 788, 793 (7th Cir. 2005).

¹⁶⁸ *Id.*

¹⁶⁹ CAL. VEH. CODE § 38750(c)(1)(A), (D) (West 2012); NEV. ADMIN. CODE §§ 482A.110(2)(c), 482A.190(2)(b), (g) (2012).

¹⁷⁰ *See, e.g.*, *United States v. Arvizu*, 534 U.S. 266, 277 (2002) (holding that reasonable suspicion was established based on the location of the vehicle and observations of the driver and passengers immediately before the stop); *United States v. Farnell*, 701 F.3d 256, 262 (8th Cir. 2012) (establishing reasonable suspicion from an officer's observation of a driver who matched the description of a "be on the look-out" report and who shielded his face when the officer drove by); *Cure*, 93 So. 3d at 1270-72 (holding that reasonable suspicion was established after the officer observed the behavior of the defendant).

the route taken or even the neighborhood where the vehicle is being operated may be less indicative of criminal activity.¹⁷¹ When the AV takes control of the navigation of the vehicle and the route taken, these factors may simply be indicative of the programming of the vehicle, rather than an indication that criminal activity may be afoot. That is not to say that the location of the vehicle and route taken will become completely irrelevant, but the weight given to those factors should be reduced in many instances.¹⁷² That being the case, police departments may need to increase the amount of drug investigations they are conducting in order to maintain the number of drug-interdiction stops they make, as they will be more reliant on prior extrinsic observation and tipsters.

[29] As a result, the government will quickly request the Court to increase its authority to stop AVs because of the government's heightened interest in preventing drug trafficking and its inability to conduct additional investigations. Currently, drug-interdiction stops account for a significant amount of drug seizures and drug arrests.¹⁷³ Routine traffic stops allow police to get one step closer to making a formal search of the

¹⁷¹ Typically, courts find a vehicle's presence in a "high-crime" or "high drug-trafficking" area to be particularly relevant in determining whether an officer has reasonable suspicion. Harris, *supra* note 114, at 998. These factors, however, allow the court to use racial and ethnic stereotypes to establish reasonable suspicion, resulting in many more stops of minority populations. Prohibiting officers from using these two factors would help reduce the amount of racial and ethnic stereotyping, thereby equating the privacy awarded to all populations. *See id.* at 997-98; Margaret Raymond, *Down on the Corner, Out in the Street: Considering the Character of the Neighborhood in Evaluating Reasonable Suspicion*, 60 OHIO ST. L.J. 99, 112 (1999). *See generally* Katherine Y. Barnes, *Assessing the Counterfactual: The Efficacy of Drug Interdiction Absent Racial Profiling*, 54 DUKE L.J. 1089 (2004) (discussing how race is used in determining whether to stop a vehicle and how problematic that can be).

¹⁷² Anecdotal evidence suggests that GPS navigation systems frequently take drivers on routes the driver may not have chosen on his or her own. The value of an officer's observation that an AV is in a "high-crime" area is substantially lessened if the operator has not chosen the route.

¹⁷³ *See generally* Whorf, *supra* note 2.

vehicle. By restricting routine stops, the government arguably loses an important mechanism to prevent illegal drug use and trafficking. In *Prouse*, the Court explained that because alternative mechanisms for ensuring safety on the roads existed, the stop just to check a driver's license and registration was overly intrusive.¹⁷⁴ That might not be the case with drug-interdiction stops if the police are restricted from stopping AVs because of the nature of the vehicles. If stops are more restricted, the police will arguably be losing a significant mechanism for ensuring drugs remain off the street. As a result, the government will likely suggest that stops of AVs without a traffic violation are reasonable and necessary. The government's argument loses some traction, though, because of the possibility of conducting stops based on reasonable suspicion obtained from prior extrinsic observation and from tipsters.¹⁷⁵ In reality, the police still have a significant mechanism to ensure this government interest is met without interfering with individuals' privacy.

[30] Not only will the police retain a mechanism for stopping AVs, the police will still be able to establish probable cause to search AVs without a physically present operator in almost the same way they currently establish probable cause to search. Once the vehicle is stopped, the police must establish probable cause to search the vehicle or obtain consent to search from the driver.¹⁷⁶ The police often establish probable cause to search based on the actions of the driver, smells emanating from the

¹⁷⁴ *Delaware v. Prouse*, 440 U.S. 648, 659 (1979). The government tried to argue that it should be allowed to make stops solely for the purpose of checking the driver's license and registration to ensure safety on the roads, but the Court rejected that argument. *Id.* at 658-59. The Court said it was "unconvinced that the incremental contribution to highway safety of the random spot check justifies the practice under the Fourth Amendment." *Id.* at 659.

¹⁷⁵ *See supra* Part III.A.

¹⁷⁶ *See infra* Part III.B (discussing consent to search).

vehicle, or observations of the inside of the vehicle.¹⁷⁷ Officers will still be able to speak directly with a physically present operator of an AV if the vehicle is stopped, and the officer will still be able to ask the operator basic investigatory questions.¹⁷⁸ Again, the current “probable cause to search” analysis will remain unchanged in that scenario. When AVs are operated without a physically present operator, however, the police will be restrained from speaking with the operator.¹⁷⁹ As a result, the police may be slightly hindered in establishing probable cause to search. Still, officers can establish probable cause based on scents emanating from the vehicle or based on a signal from a drug-detection dog.¹⁸⁰ If the contraband being transported has a pungent odor, the officer could still establish probable cause just as easily as he would with a traditional vehicle. Likewise, the numerous exceptions to the probable cause requirement would enable the officer to search in many situations.¹⁸¹ For example, if the trafficker failed

¹⁷⁷ See, e.g., *Michigan v. Thomas*, 458 U.S. 259, 259-61 (1982) (per curiam) (holding that probable cause to search was satisfied when the officer saw an open bottle of alcohol in the vehicle); *State v. Betz*, 815 So. 2d 627, 633 (Fla. 2002) (explaining that “the smell of burnt marijuana, in combination with other circumstances, leads to law enforcement officers’ possession of probable cause to search the entirety of the motor vehicle”); *State v. Longo*, 608 N.W.2d 471, 474 (Iowa 2000) (holding that the smell of burnt marijuana helped establish probable cause to search the entire vehicle).

¹⁷⁸ See *State v. Voichahoske*, 709 N.W.2d 659, 668 (Neb. 2006) (explaining that following a traffic stop for speeding, an officer may ask the driver for his or her license and registration, may ask about the purpose of the driver’s travel, may run a search for outstanding warrants, and may ask the passengers other similar routine questions); see also *State v. Sweeney*, 227 P.3d 868, 873 (Ariz. Ct. App. 2010) (permitting the officer’s questions regarding the driver’s final destination, but not the further suspicionless extension of the stop after the driver refused to consent to a search).

¹⁷⁹ If, however, the AV manufacturers install a program to contact the operator at the time of the stop, the officer would still be able to speak with and question the operator. See *infra* note 189 and accompanying text.

¹⁸⁰ See *infra* notes 199-205 and accompanying text (discussing drug-detection dog sniffs).

¹⁸¹ See *supra* notes 139-43 and accompanying text (discussing the various exceptions to probable cause).

to conceal of the product, the officer would have authority to search based on the contraband being in plain view.¹⁸² In the situation where a trafficker creates a special enclosed compartment to house the drugs within the AV, plain view and likely scent will not be helpful. In that situation, the officer may be unable to establish probable cause absent a drug-detection dog or prior extrinsic observation.¹⁸³ Still, all it would take to establish probable cause to conduct a search would be a signal from a drug dog.¹⁸⁴ Thus, AVs being operated without a physically present driver should not result in much, if any, additional restriction on the ability of the police to establish probable cause to search a vehicle. Any additional restriction on the police is already remedied by the numerous automobile exceptions to the Fourth Amendment.

B. Consensual Searches and AVs

[31] If an officer cannot immediately establish probable cause to search, police can often get authority to search vehicles by consent of the

¹⁸² *Horton v. California*, 496 U.S. 128, 130 (1990) (holding that the seizure of evidence found in plain view does not violate the Fourth Amendment, even absent inadvertence).

¹⁸³ If the stop itself were based on information obtained during prior extrinsic observation, the officer may have enough to make a search as well. Whether that is the case will be dependent upon the extent of suspicion obtained; in other words, whether or not the stop was based on reasonable suspicion or probable cause. Still, it might be the case that the prior extrinsic observation was accompanied with a tip that established reasonable suspicion to stop. Probable cause might then be established if the officers further corroborate part of the tip upon examining the exterior of the vehicle. *See, e.g., Alabama v. White*, 496 U.S. 325, 332 (1990) (holding that an anonymous tip later corroborated was enough to establish reasonable suspicion to make a stop); *United States v. Jones*, 700 F.3d 615, 622 (1st Cir. 2012) (explaining that “a tip predicting future behavior, not known to the general public, may be worthy of significant weight to the extent that it demonstrates that the informant has some inside information or familiarity with the defendant’s affairs” thereby giving the officer probable cause to search).

¹⁸⁴ *See, e.g., United States v. Place*, 462 U.S. 696, 706 (1983); *United States v. Bloomfield*, 40 F.3d 910, 919 (8th Cir. 1994); *United States v. Stone*, 866 F.2d 359, 363 (10th Cir. 1989).

driver.¹⁸⁵ Police frequently request to search during routine traffic stops.¹⁸⁶ Of those who are asked to consent, most do.¹⁸⁷ Consent searches are becoming part of routine traffic stops and are unreasonably interrupting the travels of drivers, regardless of their culpability in any kind of criminal activity.¹⁸⁸ The Court has not specifically authorized an operator who is not physically present to consent and has not addressed whether an officer's reliance on that consent would be reasonable. One possible solution to this issue is for the AV manufacturers to create a method for immediately contacting the operator in the event of a stop.¹⁸⁹ For example, the AV could send the operator a message as soon as the

¹⁸⁵ See *supra* Part II.D.

¹⁸⁶ See LaFave, *supra* note 158, at 1852, 1891-92.

¹⁸⁷ *Id.* at 1891. LaFave further cites a study that found approximately ninety percent of people consent to a search when one is requested by an officer. *Id.* at 1891 n.274 (citing Daniel J. Steinbock, *The Wrong Line Between Freedom and Restraint: The Unreality, Obscurity, and Incivility of the Fourth Amendment Consensual Encounter Doctrine*, 38 SAN DIEGO L. REV. 507, 533-35 (2001)). When faced with the authority of the police, many are willing to sacrifice their rights without thinking twice. See, e.g., Tatum Ryan, *White Lake Man Stopped at Gunpoint During Search for I-96 Shooter*, HARTLANDPATCH (Oct. 29, 2012, 5:01 PM), <http://brighton.patch.com/articles/local-man-searched-for-weapons-on-way-to-work> (discussing an incident where an innocent man was stopped and forced out of his vehicle at gun point based on nothing more than reasonable suspicion). Following the event the man explained he “was completely fine with what they did.” *Id.*

¹⁸⁸ LaFave, *supra* note 158, at 1891, 1893.

¹⁸⁹ For example, the operator could be required to input a contact number before engaging the vehicle; that number could be obtained by the officer scanning a code on the vehicle. This might unconstitutionally delay the stop, though, if the police cannot get a hold of the operator for whatever reason. See *supra* note 155 and accompanying text. On the other hand, it could be required that the operator be available whenever the vehicle is engaged. Of course, this assumes that the court will accept consent obtained over the Internet or by phone.

vehicle has been stopped by the police,¹⁹⁰ and the operator could either approve or refuse the search.¹⁹¹ This procedure would ensure the police maintain their ability to request a consensual search.

[32] The government could also argue that AV owners, by virtue of their ownership and licensing of the vehicles, provide implied consent to police searches following a lawful stop when operating their vehicles in autonomous mode on state roads. Currently, many states have implied consent statutes that provide that a person driving on state highways has impliedly consented to blood, breath, urine, or saliva tests when a driver has been arrested for operating under the influence and the officer had reasonable grounds to believe such offense was committed prior to the arrest.¹⁹² These implied consent statutes for intoxication require enough evidence to make an arrest.¹⁹³ The correlative standard for AVs without a physically present driver would be enough information to establish probable cause to arrest the operator for trafficking drugs.¹⁹⁴ If the officer

¹⁹⁰ This mechanism could also be used to help the officer establish probable cause to search, which is another reason why the government's power under the Fourth Amendment should not be extended. *See* Part II.A (discussing probable cause to search an AV without a physically present driver).

¹⁹¹ The Court would still need to approve this method of consent.

¹⁹² *See, e.g.*, CAL. VEH. CODE § 13384 (West 2013); FLA. STAT. § 316.1932(1) (2013); GA. CODE ANN. §§ 40-5-55, 40-5-67.1 (2013); MO. REV. STAT. § 577.020 (2013); NEV. REV. STAT. §§ 484C.150-484C.160 (2012). Federal law contains a similar provision applicable to persons who operate a vehicle "in the special maritime and territorial jurisdiction of the United States." 18 U.S.C. § 3118 (2006). Some states provide even less protection of drivers with commercial driver's licenses. *See, e.g.*, *Robinson v. Kan. Dep't. of Revenue*, 154 P.3d 508, 510-11 (Kan. Ct. App. 2007) (holding that a driver's commercial driver's license could be suspended for refusal to consent without specific notice of such even when the driver was driving a non-commercial vehicle at the time of the stop).

¹⁹³ *See supra* note 192 and accompanying text.

¹⁹⁴ This correlative standard does not fit this situation seamlessly. Any stop of the AV based on probable cause to arrest the operator would be speculative, at best, because the

could establish probable cause to arrest without a physically present driver, it is likely the officer would also have probable cause to believe evidence of the crime was contained within the vehicle.¹⁹⁵ Thus, the officer would have authority to search since an officer with probable cause to search can search without a warrant,¹⁹⁶ so the directly analogous principle would only be marginally applicable. The alternative would require a legislature to pass a statute requiring AV operators who intend to operate the vehicle without a physically present operator to give implied consent to all searches. While such a statute might solve the problem of obtaining consent, it would most likely, as it should, be found to be an unreasonable and unconstitutional intrusion.¹⁹⁷ Such a provision would essentially permit the government to have unrestricted access to AVs. It is improbable that the Court would accept such a provision since the Court has refused to find that an individual loses all Fourth Amendment protection when operating a vehicle. Similarly, given the extensive search exceptions for automobiles already in place, any further extension would be unreasonable and unnecessary.¹⁹⁸

officer could have no way of knowing for certain that the one for whom he has probable cause to arrest is actually operating the AV. It seems more likely that the officer would have probable cause to believe that the AV in question was involved in the trafficking operation. Thus, the most likely situation would be that the officer has probable cause to believe contraband would be found within the AV, giving the officer authority to search.

¹⁹⁵ Likely, the officer would have probable cause to arrest based on an investigation of the operator of the vehicle and his drug trafficking scheme. If that is so, the officer would also have probable cause to believe that contraband would be found within the AV, and the officer could search based on that.

¹⁹⁶ *Carroll v. United States*, 267 U.S. 132, 155-57 (1925).

¹⁹⁷ *See, e.g., Ohio v. Mesley*, 732 N.E.2d 477, 480 (Ohio Ct. App. 1999) (“The Fourth Amendment protects against unreasonable government intrusions, whether a search or a seizure, into areas of recognized privacy expectations.”) (citations omitted).

¹⁹⁸ Current automobile exceptions have eliminated the warrant requirement, permitted searches incident to arrest, tolerated limited searches for weapons, and allowed limited searches to determine the identity of the operator. *See supra* notes 140-43 and accompanying text.

[33] Additionally, the Supreme Court has already validated dog sniffs of vehicles lawfully stopped, as long as the sniff does not unreasonably prolong the stop itself.¹⁹⁹ The use of drug dogs may eliminate the consent issue in most situations. A signal from a drug-detection dog is all the officer needs to establish probable cause to search the entire vehicle.²⁰⁰ Thus, if the police instituted a policy of sniffing all AVs lawfully stopped, they could potentially get into any vehicle carrying contraband, without regard to consent.²⁰¹ The biggest problem for the state would be ensuring the stop is not prolonged any more than is necessary to investigate the purpose of the stop. A stop and the subsequent questioning or detention must be reasonably related in scope to the reason for the stop.²⁰² Because drug dogs are often not readily available and obtaining one may prolong

¹⁹⁹ *Florida v. Royer*, 460 U.S. 491, 500 (1983) (explaining that “an investigative detention must be temporary and last no longer than necessary to effectuate the purpose of the stop” and that “the investigative methods employed should be the least intrusive means reasonably available”); *see also* *United States v. Bloomfield*, 40 F.3d 910, 916-17 (8th Cir. 1994) (finding the stop was not unreasonably prolonged when the officer and the suspect had to wait an hour for a drug dog). When stops become “unreasonably prolonged” is somewhat unclear. In *United States v. Sharpe*, the Court permitted a twenty-minute detention while the parties waited for a drug dog. 470 U.S. 675, 687-88 (1985). The Court noted that the only behavior that extended the length of the detention was the driver’s evasive actions when the officers tried to stop him. *Id.* Similarly, in *United States v. Bloomfield*, the Eighth Circuit Court of Appeals validated a detention of one hour because the officer took immediate action to obtain a drug dog. *Bloomfield*, 40 F.3d at 916-17. In *United States v. Place*, by contrast, the Court found an airplane traveler’s detention for ninety minutes while waiting for a drug dog to be unreasonable because almost the entire length of the detention was the result of police incompetence. 462 U.S. 696, 708-10 (1983). Accordingly, the inquiry seems to hinge on how quickly and reasonably the officers act and less upon how quickly the dog is actually procured.

²⁰⁰ *See, e.g.*, *Bloomfield*, 40 F.3d at 919; *United States v. Stone*, 866 F.2d 359, 363 (10th Cir. 1989).

²⁰¹ Likewise, the other automobile exceptions are still available to police if a drug dog cannot be obtained. *See supra* notes 139-43 and accompanying text.

²⁰² *See supra* note 178 and accompanying text.

the stop,²⁰³ and because the other exceptions do not apply in all circumstances, the consent issues will still need to be addressed if the government is to have authority to obtain consent to search an AV. The best option is for the AV manufacturers to include a mechanism for obtaining consent²⁰⁴ and for legislatures to require AVs operators who are not physically present to be available to consent via the mechanism created by the AV manufacturers. This would ensure the officer has the opportunity to obtain consent, thereby ensuring the government retains its ability to conduct consent searches when a drug dog is not readily available. Similarly, this would guarantee the individuals' privacy and ability to refuse a search is protected. The interests of both parties would be protected and balanced similar to the way they are currently balanced.²⁰⁵

[34] If the operator can somehow consent without being present, or an implied consent statute is permitted, the problem becomes ensuring the search is limited to the consent obtained. Conversely, if the operator does not consent, there is an issue of ensuring the police do not move forward with the search anyway. These problems could easily be remedied by the AV manufacturer installing interior cameras accessible from the device used to operate the vehicle. Further, AV owners may want to send their AV to daycare to pick up a child, or send the AV to take the child to football practice. Currently, it is not settled whether consent of a minor is

²⁰³ See, e.g., *Bloomfield*, 40 F.3d at 917 (“When police need the assistance of a drug dog in roadside *Terry* stops, it will in general take time to obtain one; local government police forces and the state highway patrol cannot be expected to have drug dogs immediately available to all officers in the field at all times.”).

²⁰⁴ See *supra* note 189 and accompanying text.

²⁰⁵ Arguably, much of the feared coercion possible during a stop of a traditional vehicle may be gone because the operator may be less likely to submit to the officer's show of authority while she is sitting on her couch waiting for her AV to arrive. Cf. Rebecca Strauss, *We Can Do This the Easy Way Or the Hard Way: The Use of Deceit to Induce Consent Searches*, 100 MICH. L. REV. 868, 882, 886-87 (2002) (discussing coercion in the context of consent searches).

sufficient.²⁰⁶ The current trend in the lower courts is to permit a minor to consent in some instances, but these cases have dealt specifically with a minor's authority to consent to the search of the home in which the child resides.²⁰⁷ The applicability of these cases to consent to search an AV is unclear.²⁰⁸ The Court could find that if the child is frequently left with exclusive control of the AV, meaning the child is often left to travel in the AV alone, or if the adult operator permits the child to consent, then the child may be able to consent to a search.²⁰⁹ On the other hand, if the "degree of access" the child has to the car is limited, the child's ability to consent may likewise be limited.²¹⁰ Thus, if the minor is given frequent exclusive control of the AV, the consent of a minor should be permissible if the minor has the capacity to weigh the issues at hand. For example, a fifteen-year-old may be able to contemplate and understand the consequences of permitting the search and the consequences of denying the search. On the other hand, a five-year-old probably would not. Further, to ensure consent of a minor is freely and voluntarily given and to dispel much of the concern for coercion, the police should be advised to inform the minor of her right to decline the officer's request to search.

²⁰⁶ See *supra* notes 153-54 and accompanying text.

²⁰⁷ See *supra* note 154 and accompanying text; Henning, *supra* note 153, at 72-73 (explaining that the courts that have heard the issue have held that minors have the right to challenge searches of their living spaces). The ability of minors to challenge searches suggests they also have the authority to initially consent to such a search.

²⁰⁸ A child's reasonable expectation of privacy in the home in which she resides is more easily established than the child's reasonable expectation of privacy in her mother's AV since the child likely stores personal belongings and other intimate things in the home while the same cannot likely be said for the AV.

²⁰⁹ See, e.g., *United States v. Clutter*, 914 F.2d 775, 778 (6th Cir. 1990) (permitting the defendant's fourteen and twelve-year-old children to consent to a search of their home because the children were frequently left in exclusive control of the home).

²¹⁰ See *United States v. Barkovitz*, 29 F. Supp. 2d 411, 413 (E.D. Mich. 1998) (differentiating this case from *Clutter* because there was no showing that the children were ever given exclusive control of the home).

The Court, though, should establish a workable standard to determine when consent of a minor is sufficient.

IV. HOW FAR SHOULD THE COURT EXTEND THE FOURTH AMENDMENT?

[35] It appears the government may be able to stop and search AVs based on probable cause and reasonable suspicion, with slight, if any, shift in Fourth Amendment jurisprudence. Yet, the question remains whether the Court should enable the government to conduct these searches on AVs and whether the Court should extend the Fourth Amendment to accommodate the government. The current test and precedent for the Fourth Amendment is “arbitrary and unpredictable.”²¹¹ It is not clear to officers, individuals, or even the courts when reasonable suspicion or probable cause has been established.²¹² Additionally, the more the Court extends the government’s power under the Fourth Amendment and the

²¹¹ David E. Steinberg, *Restoring the Fourth Amendment: The Original Understanding Revisited*, 33 HASTINGS CONST. L.Q. 47, 56 (2005); see also Phyllis T. Bookspan, *Reworking the Warrant Requirement: Resuscitating the Fourth Amendment*, 44 VAND. L. REV. 473, 474-75 (1991) (“Current search and seizure doctrine is inconsistent and incoherent. No one, including the police who are to abide by it, judges who apply it, or the people who are protected by it, has any meaningful sense of what the law is.”).

²¹² Courts have even acknowledged that there cannot be a set of rules to determine these cases, which suggests that the determinations made by the courts are based more on who the judge is than what the standard ought to be. See *supra* notes 117, 134 and accompanying text. Similarly, courts do not always understand the distinction between reasonable suspicion and probable cause. For example, in *State v. Lloyd* the court conflated the two terms by saying the officer had reasonable suspicion to initially approach the vehicle when the officer actually had probable cause since the officer’s subsequent search had to have been based on probable cause and the same facts that supported the “reasonable suspicion” supported the probable cause for the search. 263 P.3d 557, 563-69 (Utah Ct. App. 2011). The court said, “[n]evertheless, this seizure was constitutional because the officer had *reasonable suspicion* to detain Defendant for a brief investigation. Because there was *probable cause* to believe that the vehicle contained contraband, i.e., crack cocaine [the officer] had authority to ‘search [the] automobile *and the containers within it.*’” *Id.* at 568 (first and second emphasis added) (footnote omitted) (citing *California v. Acevedo*, 500 U.S. 565, 580 (1991)).

more ambiguous the test, the less privacy individuals can retain. On the other hand, increasing the government's power under the Fourth Amendment may help legitimize our laws by enabling the police to enforce drug laws, human trafficking laws, and immigration laws. Ultimately, though, individuals' privacy interests in their vehicles must take priority over the government's interest in detecting contraband.

[36] Proponents of increased government power might suggest that as AVs become more prevalent, the risk that people will use their AVs to transport illegal drugs or to engage in other illegal activities will grow simply because of ease. Some members of the Court have recognized the need to evolve the Fourth Amendment jurisprudence as technology evolves.²¹³ Our federal government currently spends approximately \$2.6 billion on enforcing drug laws.²¹⁴ Not only is the cost of policing and restricting illegal drug use high, but the societal costs of drug use are also great.²¹⁵ An estimated \$200 to \$250 billion is necessary to handle needed drug treatment costs throughout the world.²¹⁶ Additionally, an estimated

²¹³ See *United States v. Jones*, 132 S. Ct. 945, 955-57 (2012) (Sotomayor, J., concurring) (suggesting the Court should account for evolving technology like GPS in making its Fourth Amendment determinations regarding one's expectation of privacy).

²¹⁴ Rob Reuteman, *The Cost-and-Benefit Arguments Around Enforcement*, CNBC, (April 20, 2010 12:03 AM), http://www.cnbc.com/id/36600923/The_CostandBenefit_Arguments_Around_Enforcement. In 2009, the Drug Enforcement Agency's budget was \$2.6 billion. *Id.* In addition, at least eight states spend more than one billion dollars on drug enforcement annually. *Id.* Those states are New York, Texas, California, Florida, Michigan, New Jersey, Ohio, and Pennsylvania. *Id.* Granted, some argue that by reducing the restrictions on drugs we can reduce the amount spent enforcing such laws; however, that discussion is beyond the scope of this note.

²¹⁵ See UNITED NATIONS OFFICE ON DRUGS AND CRIME, *WORLD DRUG REPORT 2012*, at 4 (2012), available at http://www.unodc.org/documents/data-and-analysis/WDR2012/WDR_2012_web_small.pdf (discussing societal costs such as negative health consequences, decreased productivity, and heavy financial burden).

²¹⁶ *Id.* at 4. These costs can include rudimentary drug treatment programs, but it can also be the result of medical costs related to HIV, which affects three million drug users

0.9% of gross domestic product is sacrificed to productivity losses within the market place associated with drug abuse in the United States.²¹⁷ This illustrates that drug abuse and trafficking continues to be a problem in countless facets of our society. As such, the government arguably has an increasing interest, both financial and social, in limiting drug use and drug trafficking. Permitting the use of AVs without much ability to stop and search them will likely result in an increase in the amount of money spent on policing drugs. Some may argue that these growing numbers tip the scale in favor of the government.²¹⁸ As a result, some may say that despite the ability of officers to stop AVs under the current law, the Court ought to extend the Fourth Amendment to permit stops of AVs more frequently and more easily.²¹⁹

[37] While drug abuse and use has significant financial and societal costs,²²⁰ the cost of individual freedom is much greater. The Supreme

worldwide, or hepatitis B and C, which together affect approximately 9.7 million drug users. *Id.* at 7.

²¹⁷ *Id.* at 4.

²¹⁸ The Court has typically held that the government interest in policing general crime control does not outweigh the individual's privacy interest. *See City of Indianapolis v. Edmond*, 531 U.S. 32, 47 (2000) (invalidating a checkpoint for illegal drugs because it furthered no interest beyond general crime control).

²¹⁹ The effectiveness of increased drug enforcement to cut other crime has been highly debated. *See* Bruce L. Benson et al., *The Impact of Drug Enforcement on Crime: An Investigation of the Opportunity Cost of Police Resources*, 31 J. DRUG ISSUES 989, 989-90 (2001), available at <http://jod.sagepub.com/content/31/4/989.refs> [hereinafter *Is Property Crime Caused by Crime*]. Some authors suggest that increased drug enforcement reduces the police resources to enforce other laws, which ultimately results in an increase in property and violent crimes. *See generally* Bruce L. Benson et al., *Is Property Crime Caused by Drug Use or by Drug Enforcement Policy?*, 24 APPLIED ECON. 679 (1992). *But see generally* *The Impact of Drug Enforcement on Crime*, *supra* (rebutting this argument). If that is the case, an increase in drug enforcement might not be in accordance with public policy.

²²⁰ *See supra* notes 215-18 and accompanying text.

Court should not extend the Fourth Amendment any further, but instead protect individual liberty and privacy by restricting the government's suspicionless access to automobiles, both traditional and autonomous. The Court has said that "if the government intrudes . . . the privacy interest [of the individual] suffers whether the government's motivation is to investigate violations of criminal laws or breaches of other statutory or regulatory standards."²²¹ Thus, a legitimate government purpose to reduce drug trafficking is not enough to justify a violation of the United States Constitution. Instead, the government ought to find ways to fight the "war on drugs" without further invading individuals' constitutionally protected rights. Officers are already improperly using routine traffic stops to search for contraband with regular vehicles.²²² For example, "[t]he federal government has strongly encouraged state and local enforcement officers to view the highway as a battleground in the war on drugs. It has trained police officers to use traffic stops to investigate suspected drug offenses."²²³ Likewise, many courts have essentially accepted that one's presence in a high-crime area without much more is sufficient to establish reasonable suspicion.²²⁴ As a result, minority populations are targeted for stops more frequently than others.²²⁵ Such practices encourage

²²¹ *Marshall v. Barlow's, Inc.*, 436 U.S. 307, 312-13 (1978).

²²² *See* Wayne R. LaFave, *supra* note 158, at 1852-54; *see also* *United States v. Jones*, 234 F.3d 234, 241-42 (5th Cir. 2000).

²²³ Albert W. Alschuler, *Racial Profiling and the Constitution*, 2002 U. CHI. LEGAL F. 163, 170 n.25 (2002) (citations omitted)

²²⁴ *See, e.g.*, *Raymond*, *supra* note 171, at 115-24.

²²⁵ *See generally id.* at 116-24 (explaining why using one's presence in a high-crime area is problematic). Similarly, the Ninth Circuit Court of Appeals explained that:

[s]tops based on race or ethnic appearance send the underlying message to all our citizens that those who are not white are judged by the color of their skin alone. Such stops also send a clear message that those who are not white enjoy a lesser degree of constitutional protection—that

unconstitutional interference with individuals' privacy rights and ignore the requirement for particularized suspicion. Whether the operator is physically present or not, the individual retains a privacy interest in the vehicle. The Court has refused to find that the individual loses all privacy interests when using an automobile. Still, the trend in Fourth Amendment jurisprudence with regard to automobiles is the continued erosion of individuals' rights in their vehicles.²²⁶ Any further extension of the Fourth Amendment with regard to automobile stops and searches would essentially eliminate all individual privacy interests in the automobile.²²⁷

[38] The protections guaranteed to individuals under the Fourth Amendment have slowly been deteriorating. The Court continues to empower the government to invade a space that is inherently private to most people.²²⁸ Professor David Cole argues that "[t]he war on drugs has put political pressure on judges, which has led them to consistently

they are in effect assumed to be potential criminals first and individuals second.

United States v. Montero-Camargo, 208 F.3d 1122, 1135 (9th Cir. 2000).

²²⁶ See Sara L. Shaeffer, Note, *Another Dent in Our Fourth Amendment Rights: The Supreme Court's Precarious Extension of the Automobile Exception in Wyoming v. Houghton*, 45 S.D. L. REV. 422, 424-26 (2000). See generally James A. Adams, *The Supreme Court's Improbable Justifications for Restriction of Citizens' Fourth Amendment Privacy Expectations in Automobiles*, 47 DRAKE L. REV. 833 (1999) (discussing the diminished Fourth Amendment protection in automobiles).

²²⁷ Similarly, this extension is not necessary. Officers have numerous exceptions to the Fourth Amendment that enable them to get into vehicles, one being consent. Consent searches essentially provide limitless discretion on the part of officers; any further power is not necessary. See Rebecca Strauss, *supra* note 205, at 877-81. If anything, the police's power should be lessened.

²²⁸ See generally Chris K. Visser, Comment, *Without a Warrant, Probable Cause, or Reasonable Suspicion: Is There Any Meaning to the Fourth Amendment While Driving a Car?*, 35 HOUS. L. REV. 1683 (1999) (discussing how the Supreme Court's decisions in *Whren*, *Robinette*, and *Maryland v. Wilson*, 519 U.S. 408 (1997), have allowed officers to invade individuals' privacy more easily).

overlook constitutional violations by the police where drugs are involved and to bend and stretch the law to afford the police greater ability to search without probable cause.”²²⁹ Similarly, the political support for extending drug checkpoints is simply a campaigning mechanism.²³⁰ The current trend of slowly allowing more government intrusion will result in significant violations of individual liberty and Americans who are pacified to these government intrusions.²³¹ Americans currently spend a significant portion of their lives in automobiles. The average American spends more than twenty-five minutes commuting to work, each way.²³² For the average person, this amounts to approximately 500,000 minutes or just over 347 days over the course of one’s career, and these figures do not account for the numerous hours spent commuting elsewhere.²³³ It stands to reason that individuals have a significant privacy interest in the space where they will spend nearly an entire year of their lives, and some far

²²⁹ *Comment: A Sane Drug Policy*, PROGRESSIVE, October 1999, at 8, 8.

²³⁰ See Suzanne Graves, Note, *Checkpoints and the Fourth Amendment: Saving Grace or Constitutional Martyr?*, 32 CONN. L. REV. 1487, 1517 (2000). Graves explains that “[t]he numbers associated with narcotics and weapons checkpoints do not reflect a serious endeavor to apprehend criminals and deter future crime. Rather, they pacify the taxpayers while at the same time threaten their basic liberties.” *Id.* at 1517-18.

²³¹ See Wendy Kaminer, *Taking Liberties: The New Assault on Freedom*, AM. PROSPECT, Jan./Feb. 1999, at 33, 39, available at <http://prospect.org/article/taking-liberties-0> (“The trouble is that many people are becoming accustomed to submitting to authority in the hope of remaining safe. Most of us trudge sheeplike through airports, readily complying with all the demands of low-level security personnel, who are themselves applying, without question, the dictates of their superiors.”).

²³² BRIAN MCKENZIE, UNITED STATES CENSUS BUREAU, OUT-OF-STATE AND LONG COMMUTES: 2011, at 2 (2013), available at http://www.census.gov/newsroom/releases/pdf/acs_20_out_of_state_and_long_commutes_report.pdf.

²³³ These figures are based on a person commuting five days a week for fifty weeks a year who enters the workforce at age twenty-five and retires at sixty-five. Volvo estimates people spend more than a hundred hours commuting per year. See Ross, *supra* note 44.

more. The Court ought to recognize that our society is becoming increasingly mobile, resulting in individuals spending more time in their vehicles.²³⁴ Thus, the Court should acknowledge the significant privacy interest Americans have in their vehicles and adjust the Fourth Amendment jurisprudence accordingly.

V. CONCLUSION

[39] The introduction of AVs into our society is likely to change our society in countless ways. Inevitably these changes will bring both legal and social challenges. While many of the resulting issues may have more clear solutions, like insurance²³⁵ or products liability,²³⁶ the effect AVs will have on the application of the Fourth Amendment is vague at best. Current jurisprudence suggests that the police may not have been able to stop the vehicle in *Arvizu* had it been operated autonomously without a physically present operator or any passengers.²³⁷ When police are unable to observe behavior of the occupants of the vehicle, it is more difficult to establish reasonable suspicion to make a stop without a traffic violation. It is especially difficult to establish reasonable suspicion for a spontaneous stop.²³⁸ Since traffic violations should be rare, if ever, with an AV,²³⁹

²³⁴ Additionally, once AVs take over the roads, people will likely use their vehicles as offices rather than simply for travel. Once that happens, the Court may be forced to afford more privacy to the individual.

²³⁵ See generally Peterson, *supra* note 82.

²³⁶ See generally Garza, *supra* note 82.

²³⁷ See *United States v. Arvizu*, 534 U.S. 266, 277 (2002) (holding that reasonable suspicion was established based on the location of the vehicle and observations of the driver and passengers given the officer's experience). It is questionable whether the circumstances in *Arvizu*, absent the observations of the driver and the passengers, would have amounted to reasonable suspicion.

²³⁸ See *supra* notes 161-63 and accompanying text

officers may not be able to stop as many AVs as they might traditional vehicles. Similarly, the AV engaged by the operator resting on his couch in New York²⁴⁰ may not have been stoppable absent prior extrinsic observation or a tip from a tipster.²⁴¹ Thus, the government might request an extension of the Fourth Amendment to permit more stops.²⁴²

[40] The current trend of Fourth Amendment jurisprudence suggests that the Court may accept the government's argument and extend its authority to conduct stops and searches of automobiles—particularly stops and searches of AVs in order to prevent the drug trafficker from New York from transporting contraband in his AV. While the government does have a legitimate interest in preventing drug and other illegal trafficking, the price we pay for this is our individual liberty and freedom from undue government influence. Extension of the government's rights under the Fourth Amendment will open the door to unprecedented government intrusion. The framers of the Fourth Amendment intended to protect individuals from the intrusions the founding fathers experienced at the hands of the British government.²⁴³ Without suggesting we ought to adhere strictly to the framers intent, we ought to consider the broad purpose for the amendment; that is, protecting our individual liberty and privacy.²⁴⁴ Thus, the Supreme Court ought to reject an extension of the Fourth Amendment in order to curtail the current trend of sacrificing

²³⁹ See Devin Desai, *Autonomous Vehicles: Unintended Upsides and Changes*, MADISONIAN.NET (Mar. 17, 2013), <http://madisonian.net/2013/03/17/autonomous-vehicles-unintended-upsides-and-changes/>; *supra* note 5 and accompanying text.

²⁴⁰ See *supra* INTRODUCTION.

²⁴¹ See discussion *supra* ¶ 28.

²⁴² It might even be the case that the Court refuses to view AVs under the automobile exception. Instead, the Court might handle AVs as it does mail and other containers, but that analysis is beyond the scope of this note.

²⁴³ See Dinger & Dinger, *supra* note 87 at 6.

²⁴⁴ See U.S. CONST. amend. IV.

individual liberty and extending the government's power to invade our private space.