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NOTES

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THE NEW MCCARTHYISM: HOW THE MASSACHUSETTS SUPREME JUDICIAL COURT GOT AUTOMATED LICENSE PLATE READERS AND THE MOSAIC THEORY ALL WRONG

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Abstract

Many scholars have explored the intersection of 21st-century technologies with Fourth Amendment jurisprudence. Some have approached this as digital-age versions of papers, effects, and the curtilage, while others have addressed the third-party Miller doctrine. One theory gaining support, based partly on the concurring Supreme Court opinions of *United States v. Jones*, is the Mosaic Theory, which argues that data collection that is constitutional in isolation can aggregate to create an unconstitutional intrusion. One underexplored area is its intersection with automated license plate readers (ALPRs). Multiple authors have argued for the Mosaic Theory's application to limit or ban ALPRs, and in 2020, Massachusetts' highest court held that the Fourth Amendment could be violated by less than a year's use of ALPRs. This Note criticizes that ruling and fills the gap in the literature by examining how the Mosaic Theory, despite sounding promising on paper, would be unworkable in practice regarding ALPRs and unlikely to be approved by the Supreme Court. This Note instead proposes alternatives to limit the growing reach of ALPRs.

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INTRODUCTION

In the race to identify rioters at the U.S. Capitol during the attack on January 6, 2021, an often-overlooked technology, nearly invisible in commuters' daily lives, played a key role—Automated License Plate Readers.[1] ALPRs[2] "can do in minutes what it took a cop to do in an entire shift,"[3] as they are mounted in various locations or on police cars, where they can capture upwards of 2,000 plates per minute.[4] Even when cars travel in excess of 100 miles per hour, artificial intelligence[5] extracts the plate number from the photograph with 97–99% accuracy[6] and records it along with the date, time, and location.[7] In an instant, ALPR systems can

1. Drew Harwell and Craig Timberg, *How America's Surveillance Networks Helped the FBI Catch the Capitol Mob*, WASH. POST (Apr. 2, 2021, 9:00 AM), https://www.washingtonpost.com/technology/2021/04/02/capitol-siege-arrests-technology-fbi-privacy/ [https://perma.cc/R5ZZ-62PP].

2. Different sources use ALPR and LPR, with and without an apostrophe in the plural form, nearly interchangeably.

3. Tod Newcombe, *States Start Restricting Police License Plate Readers*, GOVERNING (Aug. 12, 2015, 5:00 PM), https://www.governing.com/columns/tech-talk/gov-automated-license-plate-readers-police.html [https://perma.cc/VP2G-KU9E].

4. Justin Rohrlich, *In Just Two Years, 9,000 of These Cameras Were Installed to Spy on Your Car*, QUARTZ (Feb. 5, 2019), https://qz.com/1540488/in-just-two-years-9000-of-these-cameras-were-installed-to-spy-on-your-car/ [https://perma.cc/5CJC-P9DZ].

5. For a look at the machine learning methods and algorithms behind an ALPR system, including how to build one from the ground up, see Quang Nguyen, *Detect and Recognize Vehicle's License Plate with Machine Learning and Python — Part 1: Detection License Plate with Wpod-Net*, MEDIUM (Apr. 11, 2020), https://medium.com/@quangnhatnguyenle/detect-and-recognize-vehicles-license-plate-with-machine-learning-and-python-part-1-detection-795fda47e922 [https://perma.cc/RRN5-BMGH].

6. Tom Simonite, *AI License Plate Readers Are Cheaper—So Drive Carefully*, WIRED (Jan. 27, 2020, 8:00 AM), https://www.wired.com/story/ai-license-plate-readers-cheaper-drive-carefully/ [https://perma.cc/WY5V-SG5R] (describing a new "boost from AI . . . that will make the [ALPR] device better at reading plates at high speed or in bad weather.").

7. Rohrlich, *supra* note 4. *But see* Green v. City of San Francisco:

> ("ALPR") mistakenly identified Green's Lexus as a stolen vehicle. Without visually confirming the license plate, Sergeant Kim made a "high-risk" stop during which Green was held at gunpoint by multiple officers, handcuffed, forced to her knees, and detained for up to twenty minutes. She was released only after officers eventually ran her plate and discovered the ALPR mistake and that

automatically flag vehicles that appear on a "hotlist," alerting officers to stolen cars or abducted children.[8] Opponents, however, estimate that as little as 0.2 percent of scans result in a hit and argue that the remainder amounts to indiscriminate, suspicionless mass surveillance that can "violate the rights of entire communities."[9] Indeed, in 2018 the NYPD settled the last of three years-long lawsuits concerning its surveillance of Muslim neighborhoods for over one million dollars.[10] The NYPD admitted years ago to having a picture "of every single car that travels in or out of the city" and the capability to "geo-spatially map each location in the city where a plate reader has spotted the car in the past five years."[11] But their surveillance expanded to target Muslims, driving unmarked ALPR-enabled cars past mosques.[12] Nationwide, ALPR use jumped from 17% of police departments in 2007 to 71% by 2012,[13] and increasingly cheaper technology in recent years has allowed departments to use even more cameras.[14] In addition to prolific use by police departments, individual universities are now deploying them on campuses as well.[15]

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her vehicle was not stolen.

751 F.3d 1039, 1041 (9th Cir. 2014). This led to a half-million dollar settlement of a § 1983 suit. Joshua Sabatini, *City Set to Approve Wrongful Arrest Suit Settlement*, SAN FRANCISCO EXAMINER (Sept. 7, 2015, 12:00 AM), https://www.sfexaminer.com/news/city-set-to-approve-wrongful-arrest-suit-settlement/ [https://perma.cc/BFP6-J9ND].

8. *E.g.*, *Automated License Plate Readers (ALPRs)*, ELECTRONIC FRONTIER FOUNDATION, https://www.eff.org/pages/automated-license-plate-readers-alpr [https://perma.cc/7QLQ-6DH2] (last updated Aug. 28, 2017).

9. *Id.*

10. Matt Katz, *NYPD Pays $1 Million, Vows Surveillance Reforms After Settling with Muslims in New Jersey*, WNYC (Apr. 5, 2018), https://www.wnyc.org/story/nypd-vows-surveillance-reforms-after-settling-lawsuit-muslims-new-jersey/ [https://perma.cc/DC6T-EE ZV].

11. Chris Francescani, *NYPD Expands Surveillance Net to Fight Crime as well as Terrorism*, REUTERS (June 21, 2013, 11:24 AM), https://www.reuters.com/article/usa-ny-surveillance/nypd-expands-surveillance-net-to-fight-crime-as-well-as-terrorism-idUSL2N0EV0D220130621 [https://perma.cc/M4EY-NGTK]. More recently, the state of Maryland captured over 500 million scans in 2020 alone. Harwell & Timberg, *supra* note 1.

12. Adam Goldman & Matt Apuzzo, *NYPD Defends Tactics Over Mosque Spying; Records Reveal New Details On Muslim Surveillance*, HUFFPOST (Apr. 25, 2012), https://www.huffpost.com/entry/nypd-defends-tactics-over_n_1298997 [https://perma.cc/J4GZ-EHZE].

13. Newcombe, *supra* note 3.

14. Simonite, *supra* note 6 (detailing how a small-town PD, near this author's hometown, is now tapped into several public security cameras because its supplier "charges as little as $50 per month" for each camera).

15. *E.g.*, *UCLA Policy 134*, UCLA.EDU, http://www.adminpolicies.ucla.edu/APP/Number/134.0 [https://perma.cc/36B9-4XXH] (last visited Jan. 11, 2022); *Traffic Rules and Regulations*, UNIV. S. ALABAMA, https://www.southalabama.edu/departments/parkingservices/rulesandregs.html [https://perma.cc/9BPD-MJ9S] (last visited Jan. 11, 2022).

Courts have universally agreed that an isolated scan from an ALPR is not an unconstitutional search, primarily because it occurs in public.[16] But there is a growing theory, dubbed the "mosaic theory" of the Fourth Amendment, that mass data should be analyzed as a whole to determine if an invasive search has taken place.[17] In April of 2020, the Massachusetts Supreme Judicial Court became the first appellate court to adopt the mosaic theory in relation to ALPRs and rule that prolonged ALPR use would constitute a collective Fourth Amendment search.[18] This Note demonstrates the legal and practical problems of applying the mosaic theory to ALPRs. Despite sounding promising on paper, the U.S. Supreme Court is unlikely to agree with such an application. This Note proceeds in four parts. Part I provides the legal background of both ALPRs and the mosaic theory leading up to *Commonwealth v. McCarthy*. Part II dissects the flaws in that opinion with respect to the mosaic theory and ALPRs. Part III further examines the practical limitations of applying and administering the mosaic theory to ALPRs, while Part IV instead proposes viable alternatives to limit the growing reach of ALPRs.

I. ALPRS AND THE FOURTH AMENDMENT

Individuals facing ALPR evidence in court have alleged Fourth Amendment violations, often as an unreasonable basis for a traffic stop, but discrete ALPR use has nearly universally been upheld.[19] The usual reasoning is that a scan occurs in public so there is no unreasonable search, stemming from the Supreme Court's holding in *New York v. Class*,[20] but some courts have found the conclusion so obvious that they do not include a supporting citation.[21] The Eleventh Circuit went out of its way to affirm ALPR use in a short, unpublished, per curiam opinion[22] when it could have ruled on other grounds.[23] But in the past decade, a new theory has emerged to argue against the aggregated use over time of otherwise-legal technology such as ALPRs, and it has been embraced by some courts.

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16. *See infra* text accompanying notes 19–23.

17. Orin S. Kerr, *The Mosaic Theory of the Fourth Amendment*, 111 MICH. L. REV. 311, 313 (2012); *see also* discussion *infra* Section I.A.

18. Commonwealth v. McCarthy, 142 N.E.3d 1090, 1095 (Mass. 2020).

19. One exception from 2019 concerned holding the data under a specific state statute, Virginia's Data Act. Neal v. Fairfax Cnty. Police Dep't, 2019 WL 1438078 at *2–4 (Va. Cir. 2019).

20. 475 U.S. 106, 114–15 (1986) (finding no expectation privacy when "[t]he exterior of a car . . .is thrust into the public eye").

21. *E.g.*, Gannett Co., Inc. v. Cnty. of Monroe, 4 N.Y.S.3d 847, 904 (Sup. Ct. 2015) ("Since a vehicle either being driven or parked on the street occurs in public, a recorded 'read' by a license plate reader is not an invasion of personal privacy.").

22. United States v. Wilcox, 415 Fed. Appx. 990, 991 (11th Cir. 2011) (per curiam).

23. The defendant did not object in a timely manner. *Id.* at 992.

A. *The Mosaic Theory*

In the 2012 case *United States v. Maynard*,[24] the D.C. Circuit introduced a new approach to Fourth Amendment searches based on aggregation, which Professor Orin Kerr has labeled the "mosaic theory" of the Fourth Amendment and described as "requir[ing] analyzing police actions over time as a collective 'mosaic' of surveillance; the mosaic can count as a collective Fourth Amendment search even though the individual steps taken in isolation do not."[25] The analogy is to a mosaic in that an individual unicolor tile reveals nothing, whereas the entire mosaic is highly detailed.[26] The theory's appeal is that it seeks to protect privacy interests against evolving government surveillance technology when the whole is arguably greater than the sum of its parts.[27] *Maynard* applied the theory to a four-week period of GPS surveillance of a car and held that it amounted to an unconstitutional search.[28] The Supreme Court had direct review of *Maynard* in *United States v. Jones*,[29] and the Court could have addressed the mosaic theory and confronted 21st century technology head-on but instead resolved the case with "18th century tort law" by construing law enforcement's warrantless placement of the GPS device on the defendant's car as a trespass.[30]

While *Jones* contained no explicit mention of the mosaic theory, multiple scholars including Professor Kerr interpreted the two concurring opinions[31] as Supreme Court support of the theory.[32] In the years that followed, several commentators argued that the mosaic theory can and should be applied against ALPRs to find their use unconstitutional.[33]

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24. Maynard v. United States, 615 F.3d 544 (D.C. Cir. 2010), *aff'd sub nom.* United States v. Jones, 565 U.S. 400 (2012).

25. Kerr, *supra* note 17.

26. Paul Rosenzweig, *In Defense of the Mosaic Theory*, LAWFARE (Nov. 29, 2017, 3:18 PM), https://www.lawfareblog.com/defense-mosaic-theory [https://perma.cc/V4BT-4QFA].

27. *Id.*; *see also* Kerr, *supra* note 17, at 345.

28. Kerr, *supra* note 17.

29. *Jones*, 565 U.S. 400, 402 (2012).

30. *Id.* at 418 (Alito, J., concurring in judgment).

31. *Id.* at 415 (Sotomayor, J., concurring) (expressing concerns with a "precise, comprehensive record of a person's public movements that reflects a wealth of detail about her familial, political, professional, religious, and sexual associations" and the fact that "the Government's unrestrained power to assemble data that reveal private aspects of identity is susceptible to abuse"); *id.* at 418 (Alito, J., concurring in judgment) ("asking whether respondent's reasonable expectations of privacy were violated by the long-term monitoring").

32. *E.g.*, Kerr, *supra* note 17 ("[C]oncurring opinions signed or joined by five of the justices endorsed some form of the D.C. Circuit's mosaic theory."); Christopher Slobogin, *Making the Most of* United States v. Jones *in a Surveillance Society: A Statutory Implementation of Mosaic Theory*, 8 DUKE J. CONST. L. & PUB. POL'Y 1, 3 (2012) (same).

33. *E.g.*, Jessica Gutierrez-Alm, Note, *The Privacies of Life: Automatic License Plate Recognition is Unconstitutional Under the Mosaic Theory of Fourth Amendment Privacy Law*, 38 HAMLINE L. REV. 127 (2015); Rachel Levinson-Waldman, *Hiding in Plain Sight: A Fourth*

Until two years ago no appellate court had agreed. But in April 2020, the Massachusetts Supreme Judicial Court handed down *Commonwealth v. McCarthy*, wherein it embraced the mosaic theory and declared that "the defendant has a constitutionally protected expectation of privacy in the whole of his public movements."[34]

B. McCarthy*: The Mosaic Theory Applied to ALPRs*

Massachusetts' highest court seized upon a reservation that the Supreme Court expressed in a 1983 surveillance case, *United States v. Knotts*.[35] There, the Court upheld the warrantless use of a radio device police used to track a vehicle on a single journey, holding that "[a] person traveling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements from one place to another"[36] but noting later that "if such dragnet-type law enforcement practices as respondent envisions should eventually occur, there will be time enough then to determine whether different constitutional principles may be applicable."[37] The *McCarthy* court "indeed [] determined that different constitutional principles govern" than did in *Knotts* when it concerns a network of ALPRs.[38]

McCarthy fully and expressly endorsed the mosaic theory, finding it to be "wholly consistent with the statement in *Katz* that '[w]hat a person knowingly exposes to the public . . . is not a subject of Fourth Amendment protection,' because the whole of one's movements, even if they are all individually public, are not knowingly exposed in the aggregate."[39] The *McCarthy* court approvingly quoted a passage from the *Maynard* opinion and concluded that "the whole reveals far more than the sum of the parts."[40] After noting that the proper test would be to weigh all of the data collected by the government on the subject—as opposed to strictly what it sought to submit into evidence—and how that was "not possible in the record before [it]," the court nonetheless declared that "[w]ith enough cameras in enough locations, the historic location data from an ALPR system in Massachusetts would invade a reasonable expectation of privacy and would constitute a search for constitutional

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Amendment Framework for Analyzing Government Surveillance in Public, 66 EMORY L. REV. 527, 546 (2017) ("[T]here are arguably heightened Fourth Amendment consequences when it comes to a network of license plate readers that keep records of cars' locations over time, information not readily available to the public.").

34. 142 N.E.3d 1090, 1095 (Mass. 2020).

35. *Id.* at 1101 (citing United States v. Knotts, 460 U.S. 276, 283–85 (1983)).

36. *Knotts*, 460 U.S. at 281.

37. *Id.* at 284.

38. *McCarthy*, 142 N.E.3d at 1101. *But see* discussion *infra* Section II.A.

39. *Id.* at 1102–03 (alteration in original) (quoting Katz v. United States, 389 U.S. 347, 351 (1967)).

40. *Id.*

purposes."[41] Specifically, the court found that the state's "one-year retention period . . . certainly is long enough to warrant constitutional protection."[42]

II. *MCCARTHY* AND THE FALLACIES OF APPLYING THE MOSAIC THEORY TO ALPRS

The *McCarthy* court's decision to apply the mosaic theory to ALPRs is flawed in many respects. First, it failed to heed a cautionary statement by the U.S. Supreme Court that it quoted later in its own opinion, that "Fourth Amendment cases must be decided on the facts of each case, not by extravagant generalizations."[43] This is so because *McCarthy* ultimately held that there was no constitutional violation in the case at bar, because on the meager data on the record—four cameras from the ends of two bridges—"the limited use of ALPRs in this case [did] not constitute a search."[44] Therefore, the court's sweeping pronouncement that a one-year period of ALPR surveillance with an unspecified number of cameras would "certainly [be] long enough" to constitute an unconstitutional search was merely dicta.[45] Further, the *McCarthy* court erred in arriving at that conclusion in five separate ways: (1) by treating the mosaic theory as if it had been approved by the Supreme Court; (2) by treating ALPR data akin to cell-site location information (CSLI); (3) by finding support for its conclusion in the Supreme Court advanced technology case *Kyllo v. United States*;[46] (4) by finding a reasonable expectation of privacy; and (5) by failing to consider the exceptions to the exclusionary rule. Each of these will be discussed in turn.

A. *Misplaced Reliance on the Mosaic Theory*

First, the *McCarthy* court failed to flesh out the "different constitutional principles" that it claimed governed the case.[47] The next section in the opinion, and nearly its entire justification for how "an ALPR system in Massachusetts [could] invade a reasonable expectation of privacy" was both titled and devoted to the mosaic theory,[48] which is not a constitutional principle, but a theory.[49] The Supreme Court had the

41. *Id.* at 1103–04.

42. *Id.* at 1104 (citations omitted).

43. *Id.* at 1105 (quoting Dow Chem. Co. v. United States, 476 U.S. 227, 238 n.5 (1986)).

44. *Id.* at 1106.

45. *Id.* at 1104.

46. 533 U.S. 27 (2001).

47. *McCarthy*, 142 N.E.3d at 1102. It should be noted that a similar pronouncement was "a proposition the Court was careful not to announce in *Jones*," in the words of Justice Kennedy. Carpenter v. United States, 138 S. Ct. 2206, 2231 (2018) (Kennedy, J., dissenting).

48. *Id.* at 1104.

49. *See* United States v. Wilford, 961 F. Supp. 2d 740, 772 (D. Md. 2013) ("[T]he mosaic theory was not adopted as a holding by the Supreme Court.").

full opportunity to endorse the D.C. Circuit's mosaic theory, as *Jones* was a direct review of *Maynard*,[50] but as noted by Professor Kerr, the majority "resolved the case without reaching the mosaic theory, and neither concurring opinion gave the issue extensive analysis."[51] In fact, the *Jones* majority did not cite to *Maynard* a single time outside of establishing the procedural history. Nonetheless, the concerns briefly expressed in the *Jones* concurrences, despite being dicta, have garnered substantial academic discussion.[52]

The *McCarthy* court wrongly implied that the Supreme Court had fully adopted the mosaic theory in the Court's 2018 surveillance case *United States v. Carpenter* by using an incomplete line from it as a parenthetical quote, that "individuals have a reasonable expectation of privacy in the whole of their physical movements."[53] The first half of the sentence from which that line was excerpted is a critical clarifier: "A majority of this Court has already recognized that . . ."[54] It is an important distinction that Chief Justice Roberts' recognition of the previously expressed views of his colleagues from non-binding opinions[55] did not suddenly place an official stamp of approval on the mosaic theory and turn it into binding precedent.[56] There are many ways to phrase that sentence, and he easily could have given credence to the mosaic theory by discussing it in a Supreme Court majority opinion for the first time, but instead he confined the reference to a bare factual recitation. Indeed, the closest the mosaic theory came to being named in *Carpenter*—despite Carpenter's going "all-in" on the theory in his brief[57]—is in the title of one of a dozen sources in a single footnote in Justice Thomas' dissent, sources that he collectively cited as criticism for the *Katz* test of reasonableness.[58] The immense difficulties that courts would have in administering a mosaic theory-based test if the theory was adopted (along with other reasons why it should not be) will be discussed in Part III.

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50. Maynard v. United States, 615 F.3d 544 (D.C. Cir. 2010), *aff'd sub nom.* United States v. Jones, 565 U.S. 400 (2012).

51. Kerr, *supra* note 17.

52. *See, e.g.*, sources cited *supra* notes 32–33.

53. *McCarthy*, 142 N.E.3d at 1101 (quoting Carpenter v. United States, 138 S. Ct. 2206, 2217 (2018)).

54. *Carpenter*, 138 S. Ct. at 2217 (citing *Jones*, 565 U.S. at 430 (Alito, J., concurring in judgment), 415 (Sotomayor, J., concurring)).

55. He cited directly to both *Jones* concurrences, which should clarify the point.

56. Other courts have also used the same partial quote from *Carpenter* to imply that it stands for more than it does. *E.g.*, United States v. Yang, 958 F.3d 851, 862 (9th Cir. 2020) (Bea, C.J., concurring in judgment).

57. Orin Kerr, *Four Thoughts on the Briefing in* Carpenter v. United States, LAWFARE (Nov. 17, 2017, 3:06 PM), https://www.lawfareblog.com/four-thoughts-briefing-carpenter-v-united-states [https://perma.cc/N65J-5EJX].

58. *Carpenter*, 138 S. Ct. at 2244 n.10 (Thomas, J., dissenting).

B. *Flawed Analogy to Cell Phone Location Data*

The *McCarthy* court also failed to distinguish the private nature of the cell-site location information (CSLI) of *Carpenter* from ALPR data. As noted in Chief Justice Roberts' opinion, "[c]ell phones continuously scan their environment . . . several times per minute"[59] and "faithfully follow[] beyond public thoroughfares and into private residences, doctor's offices, political headquarters, and other potentially revealing locales."[60] ALPRs do not follow people into residences or offices; they are purely public, and most, like the ones in *McCarthy*, are stationary, so they do not provide the precise granular data of GPS monitoring. A scan from an ALPR at a particular cross-street does not let someone conclude that the driver was on the sort of private trip that concerned Justice Sotomayor in *Jones*, "to the psychiatrist, the plastic surgeon, the abortion clinic, the AIDS treatment center, the strip club, the criminal defense attorney, the by-the-hour motel, the union meeting, the mosque, synagogue or church, the gay bar and on and on."[61] ALPRs only periodically record a car's location in public; its owner's movements are an inference. In a 2020 ALPR case in the Ninth Circuit, *United States v. Yang*, the defendant was "unlucky" that the single available read of the car he had rented, of the 5 billion scans in the system, occurred "when he was in possession of the vehicle and was made near his residence," allowing an officer to locate him.[62] Judge Bea, in his concurrence, noted that this was a far cry from the 13,000 data points that were collected in *Carpenter* and fell well short of revealing "particular movements"[63] or the "familial, political, professional, religious, and sexual associations" that concerned Justice Sotomayor in *Jones*.[64] Additionally, a passenger in a vehicle enjoys complete anonymity from ALPRs, as does anyone utilizing any other form of transportation, so a person can conceal their movements from ALPRs if they so desire much easier than they can from facial recognition, for example.[65]

The Court in *Carpenter* quoted from additional cases to explicitly contrast cell phones and cars. The Court observed that "unlike the . . . car in *Jones*, a cell phone—almost a 'feature of human anatomy'—tracks

59. *Id.* at 2211 (majority opinion).

60. *Id.* at 2218.

61. United States v. Jones, 565 U.S. 400, 415 (2012) (Sotomayor, J., concurring) (quoting People v. Weaver, 909 N.E.2d 1195, 1199 (N.Y. 2009)).

62. United States v. Yang, 958 F.3d 851, 862 (9th Cir. 2020) (Bea, C.J., concurring in judgment).

63. *Id.* (quoting *Carpenter*, 138 S. Ct. at 2217).

64. *Id.* (quoting *Carpenter*, 138 S. Ct. at 2217).

65. *See* Katz v. United States, 389 U.S. 347, 351 (1967) (citations omitted) ("What a person knowingly exposes to the public . . . is not a subject of Fourth Amendment protection. But what he seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected.").

nearly exactly the movements of its owner"[66] and also quoted approvingly from *Caldwell v. Lewis* that "[a] car has little capacity for escaping public scrutiny."[67] Despite this distinction and the conclusion that "historical cell-site records present even greater privacy concerns than [*Jones*'s] GPS monitoring,"[68] it was still a close question for the Court, as *Carpenter* was decided 5-4.[69] Given that ALPRs unquestionably present lesser privacy concerns than GPS monitoring or CSLI,[70] the *McCarthy* court took an unwarranted leap from the *Carpenter* court's passing mention of a reasonable expectation of privacy in "the whole of [one's] physical movements" to the conclusion that McCarthy had such an expectation in the entirety of his *public* movements alone.[71]

The critical distinction between CSLI in private areas and ALPR data from public areas survives the omnipresence of ALPRs and the use of AI. This conclusion draws from two unbroken lines of Supreme Court cases, both of which the *McCarthy* court acknowledged but misapplied—the first regarding observation of automobiles, the second dealing with advancing technology used by law enforcement. The frequently cited Supreme Court support for ALPR use comes from *New York v. Class*, which the *McCarthy* court properly quoted in its opinion: "The exterior of a car, of course, is thrust into the public eye, and thus to examine it does not constitute a 'search.'"[72] The *McCarthy* court traced *Class* to a "what is knowingly exposed" principle first espoused in *Katz v. United States*[73] and found further support in *Knotts* as well as a 2002 Massachusetts appellate case.[74] The *McCarthy* court then veered away from this foundation to embrace the mosaic theory, quoting at length from

66. *Carpenter*, 138 S. Ct. at 2218 (quoting Riley v. California, 573 U.S. 373, 385 (2014)) (cleaned up).

67. *Id.* (quoting Caldwell v. Lewis, 417 U.S. 583, 590 (1974) (plurality opinion)).

68. *Id.*

69. Four members of the *Carpenter* majority and three dissenters make up the current Court, and Justice Kavanaugh voted against Jones at the circuit level. United States v. Jones, 656 F.3d 766, 769 (D.C. Cir. 2010). It should also be noted that there was an additional factor in *Carpenter*, not present with ALPR, that cut against privacy, which is that the government sought the CSLI from a third party, the cell service provider. *Carpenter*, 138 S. Ct. at 2212.

70. The *McCarthy* court even admitted that "no ALPR network is likely to be as detailed in its surveillance as GPS or CSLI data." Commonwealth v. McCarthy, 142 N.E.3d 1090, 1104 (Mass. 2020); *see also id.* at 1102 (quoting *Carpenter*, 138 S. Ct. at 2218) (noting how CSLI "achieves 'near perfect surveillance'").

71. *Id.* (quoting *Carpenter*, 138 S. Ct. at 2217). When *Carpenter* was remanded, the Sixth Circuit stated: "Key to the Court's reasoning was the inability of CSLI to distinguish between public and private life." United States vs Carpenter, 926 F.3d 313, 316 (6th Cir. 2019).

72. *McCarthy*, 142 N.E.3d at 1101 (Mass. 2020) (quoting New York v. Class, 475 U.S. 106, 114 (1986)); *see also* cases cited *supra* notes 19–23, *infra* notes 98–99, and accompanying text.

73. Katz v. United States, 389 U.S. 347, 351 (1967).

74. *McCarthy*, 142 N.E.3d at 1101 (citing United States v. Knotts, 460 U.S. 276, 285 (1983) and Commonwealth v. Starr, 773 N.E.2d 981, 984–85 (Mass. App. Ct. 2002)).

Maynard,[75] even though the Supreme Court did not explicitly endorse the *Maynard* opinion or the mosaic theory, despite having the full opportunity to do so.[76] The *McCarthy* court provided only the above partial quote from *Carpenter*[77] as support for its assertion that "the United States Supreme Court [has] recognized a privacy interest in the whole of one's public movements,"[78] but if it had also analyzed an additional Supreme Court case that followed *Knotts* the next year, that should have led the *McCarthy* court away from its conclusion.

In 1984, the Court narrowed the holding of *Knotts* in *United States v. Karo*.[79] After *Knotts* upheld the warrantless use of a radio beeper to track a car on a public highway, the government sought to admit evidence based on another beeper, similarly placed in a container of chemicals, that was carried into a house, wherein the government was able to verify that it remained hours later.[80] The Court struck down the new use, distinguishing *Knotts* because the new information came from "a private residence, a location not open to visual surveillance."[81] The Court reasoned that the information in question in *Knotts* was "voluntarily conveyed to anyone who wanted to look,"[82] whereas in *Karo*, "the monitoring indicated that the beeper was inside the house, a fact that could not have been visually verified."[83]

As noted above, *McCarthy* seized upon the reservation in *Knotts*,[84] but it did so without ever discussing *Karo*, which would have revealed the distinction between public and private. While the oft-quoted line from *Katz* is that "the Fourth Amendment protects people, not places,"[85] Justice Harlan, in the lead-in of his famous concurrence, noted that determining "what protection it affords to those people [generally] requires reference to a 'place.'"[86] This has led to the critical phrase "constitutionally protected area" in Fourth Amendment jurisprudence.[87] In *United States v. Graham*, the District Court of Maryland, ruling on CSLI before *Carpenter* but after *Jones*, after discussing *Karo* found it of

75. *Id.* at 1103.
76. *See supra* notes 50–52 and accompanying text.
77. *See supra* notes 53–58 and accompanying text.
78. *McCarthy*, 142 N.E.3d at 1103.
79. 468 U.S. 705, 707 (1984).
80. *Id.* at 714.
81. *Id.*
82. *Id.* at 715 (quoting United States v. Knotts, 460 U.S. 276, 281 (1983)).
83. *Id.*
84. *See* discussion *supra* Section I.B.
85. Katz v. United States, 389 U.S. 347, 351 (1967).
86. *Id.* at 361 (Harlan, J., concurring).
87. *E.g.*, United States v. Jones, 565 U.S. 400, 411 (2012) (citations omitted) ("[A]n open field, unlike the curtilage of a home, is not one of those protected areas enumerated in the Fourth Amendment.").

critical importance that in *Graham* "[d]efendants ha[d] not argued that the historical cell site records revealed their movements in protected areas such as their homes."[88] *Carpenter* itself, in Chief Justice Roberts' own words, was "about a detailed chronicle of a person's physical presence compiled every day, every moment."[89] Before arriving at this conclusion, Chief Justice Roberts quoted from the concerns in *Knotts* about "twenty-four hour surveillance" earlier in the opinion.[90] ALPRs do not chronicle every moment, twenty-four hours per day, and they do not intrude on any constitutionally protected areas. The two aforementioned ALPR cases from 2020 evidence this—over multiple months, McCarthy was scanned only on a single bridge,[91] while Yang's rental car registered just once in over a week.[92]

Karo dovetails with the second line of cases that *McCarthy* misapplied, concerning the use of advancing technology by law enforcement.[93] The *McCarthy* court set the tone early on for its conclusions by quoting from its own recent case that "both this court and the United States Supreme Court have been careful to guard against the 'power of technology to shrink the realm of guaranteed privacy' by emphasizing that privacy rights 'cannot be left at the mercy of advancing technology but rather must be preserved and protected [from] new technologies'"[94] of the government. As Supreme Court support for this assertion, the *McCarthy* opinion cited to the 2001 case of *Kyllo v. United States*, without providing any detail.[95]

C. *Inappropriate Reliance on* Kyllo

Kyllo is instructive and did anticipate advancing technology, but when read fairly, it instead provides support for ALPR use and cuts against the *McCarthy* court's conclusions. There, the Court struck down federal agents' use of thermal imaging performed from a public street but directed into the defendant's house, which the agents used to show that he was growing marijuana inside.[96] The Court held that "[w]here, as here, the Government uses a device that is not in general public use, to explore details of the home that would previously have been unknowable without

88. 846 F. Supp. 2d 384, 404 (D. Md. 2012).

89. Carpenter v. United States, 138 S. Ct. 2206, 2220 (2018).

90. *Id.* at 2215 (quoting United States v. Knotts, 460 U.S. 276, 284 (1983)).

91. Commonwealth v. McCarthy, 142 N.E.3d 1090, 1104–05 (Mass. 2020).

92. United States v. Yang, 958 F.3d 851, 853 (9th Cir. 2020).

93. *See Graham*, 846 F. Supp. 2d at 404 ("[*Knotts* and *Karo*] stand for the proposition that law enforcement conducts a Fourth Amendment 'search' when it utilizes tracking technology that allows surveillance in locations that police could not monitor in the absence of that technology.").

94. *McCarthy*, 142 N.E.3d at 1098 (quoting Commonwealth v. Almonor, 120 N.E.3d 1183, 1191 (2019)).

95. *Id.* (citing *Kyllo*, 533 U.S. 27, 34 (2001)).

96. *Kyllo*, 533 U.S. at 29.

physical intrusion, the surveillance is a 'search' and is presumptively unreasonable without a warrant."[97] The Government sought to rely on *Dow Chemical Co. v. United States*, a case involving aerial visual surveillance that, the *Kyllo* court acknowledged, held "that visual observation is no 'search' at all."[98] The *Kyllo* court noted that visual surveillance was largely unquestioned dating back to English common law and recognized *Dow Chemical* when it stated that "technology enabling human flight has exposed to public view (and hence, we have said, to official observation) uncovered portions of the house,"[99] but it held that thermal imaging was a bridge too far in that it was much more than a force-multiplier because thermal information "would previously have been unknowable without physical intrusion."[100]

Parsing the holding of *Kyllo*, its conclusion, shows how it contradicts *McCarthy*'s reasoning regarding ALPRs at each of three turns: (1) "not in general public use;" (2) "details of the home;" and (3) "previously unknowable without physical intrusion."[101] First, ALPR technology is readily available to the public, starting in 2015, free software could turn any internet-connected camera into an ALPR.[102] For example, the technology is becoming popular with the likes of homeowners associations[103] and property managers.[104] The "general public use" test has been criticized as a "loophole" that is difficult to administer.[105] However, it necessarily looked to the future,[106] and further, "[t]he

97. *Id.* at 40.

98. *Id.* at 32 (citing *Dow Chem.*, 476 U.S. 227, 234–35 (1986)).

99. *Id.* at 34.

100. *Id.* at 40; *cf.* United States v. Knotts, 460 U.S. 276, 282 (1983) (reasoning that the radio technology "merely augmented officers' physical abilities and did not provide more information than officers could have obtained by visual surveillance").

101. *Kyllo*, 533 U.S. at 40.

102. Cyrus Farivar, *New Software Watches for License Plates, Turning You into Little Brother*, ARS TECHNICA (Dec. 5, 2015, 12:30 PM), https://arstechnica.com/information-technology/2015/12/new-open-source-license-plate-reader-software-lets-you-make-your-own-hot-list/ [https://perma.cc/RET3-4LUN]; *see also* Rohrlich, *supra* note 4.

103. Ella Fassler, *Neighborhood Watch Has a New Tool: Privately Owned License-Plate Readers*, MEDIUM: ONEZERO (Nov. 12, 2020), https://onezero.medium.com/neighborhood-watch-has-a-new-tool-privately-owned-license-plate-readers-302f296abb27 [https://perma.cc/MY4W-NXLH].

104. Josh Kaplan, *License Plate Readers Are Creeping into Neighborhoods Across the Country*, SLATE: FUTURE TENSE (July 10, 2019, 7:30 AM), https://slate.com/technology/2019/07/automatic-license-plate-readers-hoa-police-openalpr.html [https://perma.cc/35W9-5JQY].

105. Mike Petridis, *In General Public Use: An Unnecessary Test to Determine Whether the Use of Advanced Sensing Technology Was a Fourth Amendment Search*, TOURO L. REV. BLOG (Apr. 21, 2020), https://tourolawreviewblog.wordpress.com/2020/04/21/in-general-public-use-an-unnecessary-test-to-determine-whether-the-use-of-advanced-sensing-technology-was-a-fourth-amendment-search/ [https://perma.cc/WX2J-R7RJ].

106. *Kyllo*, 533 U.S. at 36 ("[T]he rule we adopt must take account of more sophisticated systems that are already in use or in development.").

touchstone of the Fourth Amendment is reasonableness," harkening back to the expectation of privacy test of *Katz*.[107] After all, if it was commonplace for people of the 1960's to carry around parabolic microphones, it would not have been reasonable for Mr. Katz to expect privacy in his famous phonebooth.[108]

Secondly, the *Kyllo* opinion afforded strong protection to the residence, noting in its very first sentence that the surveillance was gathered from a private home.[109] The Court stated that "'[a]t the very core' of the Fourth Amendment 'stands the right of a man to retreat into his own home and there be free from unreasonable governmental intrusion'"[110] and declared that "[w]ith few exceptions, the question whether a warrantless search *of a home* is reasonable and hence constitutional must be answered no."[111] There are no such heightened concerns in the case of ALPRs stationed in public, making their use akin to the enhanced aerial photography of *Dow Chemical*, where the Court found, as noted by the *Kyllo* court, "it important that this is *not* an area immediately adjacent to a private home, where privacy expectations are most heightened."[112] This remains true even if the car was parked in a driveway or an open garage.[113]

Lastly, the *Kyllo* court placed a significant distinction on the fact that the thermal imaging "would previously have been unknowable without physical intrusion."[114] The Court reasoned that finding a search on those grounds "assures preservation of that degree of privacy against government that existed when the Fourth Amendment was adopted."[115] The entire purpose of a license plate is to make the vehicle identifiable to law enforcement, and thus as noted by the *Class* court decades ago, "it is unreasonable to have an expectation of privacy in an object required by law to be located in a place ordinarily in plain view from the exterior of the automobile."[116] The *McCarthy* court, however, incorrectly placed

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107. Florida v. Jimeno, 500 U.S. 248, 250 (1991) (citing Katz v. United States, 389 U.S. 347, 360 (1967) (Harlan, J., concurring)); *see also* sources cited *supra* note 58.

108. *See Katz*, 389 U.S. at 348 (majority opinion).

109. *Kyllo*, 533 U.S. at 29.

110. *Id.* at 31 (quoting Silverman v. United States, 365 U.S. 505, 511 (1961)).

111. *Id.* (emphasis added) (citations omitted). The Court later observed that the inside of a home is "the prototypical and hence most commonly litigated area of protected privacy." *Id.* at 34.

112. *Id.* at 33 (emphasis in original) (citing Dow Chem. Co. v. United States, 476 U.S. 227, 237 n.4 (1986)).

113. *See id*. at 32 (quoting California v. Ciraolo, 476 U.S. 207, 213 (1986)) ("[T]he Fourth Amendment protection of the home has never been extended to require law enforcement officers to shield their eyes when passing by a home on public thoroughfares.").

114. *Id.* at 40.

115. *Id.* at 34.

116. New York v. Class, 475 U.S. 106, 114 (1986). Many states retain ownership of the plate, further removing any privacy interest. *E.g.*, *License Plates & Registration*, FLA. HIGHWAY

ALPR use in the "previously unknowable" category with CSLI, stating that "[l]ike CSLI data, ALPRs allow the police to reconstruct people's past movements . . . thus granting police access to 'a category of information otherwise unknowable.'"[117] The *McCarthy* court also emphasized, from its own past case, that "the government, without securing a warrant, may use electronic devices to monitor an individual's movements in public *to the extent that the same result could be achieved through visual surveillance*."[118] Curiously, *McCarthy* used this precedent to argue against ALPR use, when it should have pointed to upholding the use.

Here, the *McCarthy* court failed to recognize the force-multiplier nature of an ALPR network.[119] It admitted that "an officer may read or write down a publicly displayed license plate number. In this way, a single license plate reader is similar to traditional [allowable] surveillance techniques," but then listed four factors that it considered distinguishing: retention, recording nearly every vehicle, its ongoing nature, and the inclusion of a location.[120] The first and final factors can be easily disposed of, as a single police officer can readily write down a car's location and retain it.[121] The middle two factors also distinguish ALPRs from CSLI, because a finite number of officers working in shifts could duplicate the work of a finite number of ALPRs in public spaces, whereas no number of officers could produce the comprehensive record of CSLI.[122] Therefore, an ALPR network should be allowable because it "merely augment[s] officers' physical abilities" as in *Knotts*,[123] and at all times, it

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SAFETY & MOTOR VEHICLES, https://www.flhsmv.gov/motor-vehicles-tags-titles/license-plates-registration/ [https://perma.cc/98CU-4MEA] (last visited Jan. 7, 2022) ("please remember license plates belong to the state [of Florida]"); *see also The Question of License Plates*, U.S. VEHICLE REGISTRATION SERV. (July 24, 2020), https://www.usvrs.com/blog/the-question-of-license-plates/ [https://perma.cc/JTM8-DVJU] (listing the roughly one-third of states that require the return of license plates).

117. Commonwealth v. McCarthy, 142 N.E.3d 1090, 1104 (Mass. 2020) (quoting Carpenter v. United States, 138 S. Ct. 2206, 2218 (2018)).

118. *Id.* at 1102 (emphasis in original) (quoting Commonwealth v. Augustine, 4 N.E.3d 846, 863–64 (Mass. 2014)).

119. *See* cases cited *supra* note 100 and accompanying text; *see also* Jeff Weiner, *UCF Scanning License Plates of Cars on Campus to Check Against Police Databases*, ORLANDO SENTINEL (June 20, 2019, 4:09 PM), https://www.orlandosentinel.com/news/crime/os-ne-ucf-license-plate-scanners-on-campus-parking-20190620-pop76kgusbfrdaw6iz2our2rmm-story.html [https://perma.cc/9PGQ-EFDC] (university police chief calling its new ALPR network a "force multiplier").

120. *McCarthy*, 142 N.E.3d at 1106.

121. *See, e.g.*, United States v. Knotts, 460 U.S. 276, 285 (1983) ("A police car following [the driver] at a distance could have observed him.").

122. *See* People v. Weaver, 909 N.E.2d 1195, 1199 (N.Y. 2009) ("GPS is not a mere enhancement of human sensory capacity, it facilitates a new technological perception of the world.").

123. *Knotts*, 460 U.S. at 282.

constitutes solely "visual observation [which] is no 'search' at all."[124] For all these reasons, *Kyllo* fully supports the use of ALPRs.

D. *The Reasonable Expectation of Privacy*

While concurring opinions from *Jones* cited to *Kyllo* in expressing their concerns with aggregated data,[125] those concerns should be allayed when it comes to ALPRs. Such searches are always made in public and are consistent with a reasonable expectation of privacy, which remains the heart of Fourth Amendment search jurisprudence.[126] As described in 2018 in *Carpenter*, ever since *Katz v. United States*,[127] "[w]hen an individual 'seeks to preserve something as private,' and his expectation of privacy is 'one that society is prepared to recognize as reasonable,' we have held that official intrusion into that private sphere generally qualifies as a search."[128] In *Jones*, Justices Sotomayor and Alito, speaking for five justices between them, both indicated that they would have resolved the case with the reasonable expectation of privacy test.[129] The mosaic theory, not explicitly mentioned in any portion of *Jones*, would be a means to that end. Even those that argue for the adoption of the mosaic theory to strike down ALPR use must concede that ALPRs are significantly less invasive than GPS monitoring,[130] which involves "constant, uninterrupted monitoring"[131] even into private areas of the sort that concerned Justice Sotomayor in *Jones*.[132] Cameras are also more expected—drivers have long been aware that there are cameras on traffic lights ("red-light cameras") and toll booths, for example, to accompany police officers.[133] Given that most medium-sized American police departments have ALPRs,[134] most regular drivers have experienced

124. Kyllo v. United States, 533 U.S. 27, 32 (2001) (citation omitted).

125. *See* United States v. Jones, 565 U.S. 400, 416 (Sotomayor, J., concurring); *id.* at 420 (Alito, J., concurring in judgment).

126. This includes the starting point for *McCarthy*'s discussion section, for example. Commonwealth v. McCarthy, 142 N.E.3d 1090, 1097 (Mass. 2020).

127. 389 U.S. 347 (1967).

128. Carpenter v. United States, 138 S. Ct. 2208, 2213 (2018) (quoting Smith v. Maryland, 442 U.S. 735, 740 (1979)).

129. *Jones*, 565 U.S. at 416 (Sotomayor, J., concurring) ("I would ask whether people reasonably expect that their movements will be recorded and aggregated."); *id.* at 419 (Alito, J., concurring in judgment) ("I would analyze the question presented in this case by asking whether respondent's reasonable expectations of privacy were violated by the long-term monitoring.").

130. This includes the *McCarthy* court. *See supra* note 70.

131. Gutierrez-Alm, *supra* note 33, at 151–52; *see also supra* note 70 and accompanying text.

132. *See supra* note 61 and accompanying text.

133. As the *McCarthy* court acknowledged, "[i]t is an entirely ordinary experience to drive past a police officer in a cruiser observing traffic." Commonwealth v. McCarthy, 142 N.E.3d 1090, 1106 (Mass. 2020) (citation omitted).

134. *See supra* note 13 and accompanying text.

ALPR surveillance and should therefore expect it.[135] In *McCarthy*, "a testifying expert alluded to cameras 'all over the State,'"[136] and amici submitted that there were over 150 cameras five years before.[137] Massachusetts drivers, like McCarthy, had plenty of notice of the existence of the cameras in the state certainly by the time the Boston Globe, among others, reported on the Boston Police Department's halting of its ALPR system in 2013 after public records requests revealed that the department was not following its own policies and not properly protecting the data.[138]

The Court has found a reasonable expectation of privacy to be lacking based on much more infrequent occurrences. In *California v. Ciraolo*, officers responding to an anonymous tip "secured a private plane and flew over respondent's house at an altitude of 1,000 feet," and from that vantage point they could identify marijuana growing in the defendant's backyard,[139] at least with the aid of a standard 35mm camera.[140] The defendant clearly manifested a subjective expectation of privacy by erecting a 10-foot inner fence,[141] but the Court reasoned that "[a]ny member of the public flying in this airspace who glanced down could have seen everything that [those] officers observed" and therefore "readily conclude[d] that respondent's expectation that his garden was protected from such observation is unreasonable."[142] In a point applicable to ALPRs, the Court's majority opinion countered a contention by the dissent by stating that "Justice Harlan's observations about future electronic developments and the potential for electronic interference with private communications were plainly not aimed at simple visual observations from a public place."[143]

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135. *See Jones*, 565 U.S. at 430 (Alito, J., concurring in judgment) ("ask[ing] whether the use of GPS tracking . . . involved a degree of intrusion that a reasonable person would not have anticipated"). *But see* Gutierrez-Alm, *supra* note 33, at 152 (arguing for the use of Professor Kerr's probabilistic model to overcome this when it comes to aggregation).

136. 142 N.E.3d at 1105.

137. *Id.* at n.14.

138. Shawn Musgrave, *Boston Police Halt License Plate Scanning Program*, BOSTON GLOBE (Dec. 14, 2013), https://www.bostonglobe.com/metro/2013/12/14/boston-police-suspend-use-high-tech-licence-plate-readers-amid-privacy-concerns/B2hy9UIzC7KzebnGyQ0JNM/story.html [https://perma.cc/6HPK-M34X]. The program resumed in 2018. Shawn Musgrave, *Boston Police Resume Using License Plate Readers After Accidental Release of Data*, BOSTON GLOBE (May 6, 2018), http://www0.bostonglobe.com/metro/2018/05/06/boston-police-resume-using-license-plate-readers-after-accidental-release-data/gZrC8ozxad9GxcymIxtLfO/story.html [https://perma.cc/8687-AZJ5].

139. 476 U.S. 207, 209 (1986).

140. *Id.*; *see also* discussion *supra* Section II.C.

141. *Ciraolo*, 476 U.S. at 211.

142. *Id.* at 213–14.

143. *Id.* at 214 (citing Katz v. United States, 389 U.S. 347, 362 (1967) (Harlan, J., concurring)).

Three years later, the Court considered a similar case, this time involving a helicopter, in *Florida v. Riley*.[144] Officers again observed marijuana in a backyard after responding to an anonymous tip, this time from a helicopter at a height of 400 feet, lower than what is allowed by fixed-wing aircraft like those at issue in *Ciraolo*.[145] But since helicopters are allowed at that height, the Court reasoned that "[a]ny member of the public could legally have been flying over Riley's property," and it set the threshold frequency of such an occurrence quite low, observing that "there is no indication that such flights are *unheard of*" in the region.[146] ALPR systems are far from unheard of, as most medium-sized police departments in the country utilize them,[147] and many agencies that employ such a system give full public notice of its use, often accompanied by newspaper articles.[148]

Even if a court finds a search in a particular case, there is an additional step, as the Fourth Amendment protects only against "*unreasonable* searches."[149] The argument for a reasonable search was not considered in *Jones* because it was not raised below and thus forfeited,[150] but the analysis in a subsequent car GPS tracking case from the Court of Appeals of New York is revealing. In *Cunningham v. New York State Department of Labor*, a New York state employer suspected an employee of falsifying time sheets, so it attached a GPS to his car.[151] Relying on *Jones* and *Weaver*,[152] New York's highest court found that this constituted a search, but it then considered whether the search was reasonable given the suspicions that the employer had.[153] The court held that the twenty-four-hour monitoring, including Cunningham's vacation, was unreasonable, but it strongly suggested that if the scope of the monitoring had been limited to business hours, the search would have been reasonable.[154] Applying this rationale to ALPRs, monitoring occurs only when people are actively out on public roads, and then only intermittently,[155] so any

144. 488 U.S. 445 (1989).

145. *Id.* at 449–51 (plurality opinion) (citing *Ciraolo*, 476 U.S. at 215).

146. *Id.* at 450–51 (emphasis added). Justice Blackmun, in his dissent, agreed that "the reasonableness of Riley's expectation depends, in large measure, on the frequency of nonpolice helicopter flights at an altitude of 400 feet." *Id.* at 467 (Blackmun, J., dissenting).

147. *See supra* note 13 and accompanying text.

148. *See, e.g.*, sources cited *supra* notes 15, 119.

149. U.S. CONST. amend. IV (emphasis added).

150. United States v. Jones, 565 U.S. 400, 413 (2012).

151. 21 N.Y.3d 515, 518 (2013).

152. People v. Weaver, 909 N.E.2d 1195 (N.Y. 2009); *see supra* note 61 and accompanying text.

153. *Cunningham*, 21 N.Y.3d at 522.

154. *Id.* at 523 ("Where an employer conducts a GPS search without making a reasonable effort to avoid tracking an employee outside of business hours, the search . . . must be considered unreasonable.").

155. *See* text accompanying *supra* notes 91–92.

search that could be found by a court should still be reasonable and thus allowable.

E. *Failure to Consider Exceptions to the Exclusionary Rule*

Lastly, the *McCarthy* court was too quick to apply the mosaic theory given the case's procedural posture. ALPR validity was at issue due to a motion to suppress the ALPR evidence.[156] ALPR use is commonly challenged directly at that stage, or similarly as an improper basis for a warrant.[157] In either scenario, the exclusionary rule is a doctrine that courts can apply to block the government from entering evidence that was obtained in violation of the Constitution.[158] However, in *Stone v. Powell*, the Supreme Court stated that the exclusionary rule "is not a personal constitutional right," as its "primary justification . . . is the deterrence of police conduct that violates Fourth Amendment rights."[159] The Court reasoned that "this concern has limited force as a justification for the exclusion of highly probative evidence."[160] The ability to place a subject at the scene of a crime via an ALPR is, of course, highly probative evidence. Furthermore, there is Supreme Court precedent that on such a motion to suppress on grounds of an unconstitutional privacy intrusion, the burden lies with the defendant.[161] McCarthy's counsel admitted that he "possesse[d] the burden to show that he" met both the subjective and objective elements of the *Katz* test.[162] Therefore, any doubt about allowing such evidence should have been resolved in favor of the prosecution.[163] Two exceptions to the exclusionary rule further demonstrate how *McCarthy*'s rationale is untenable.

First, the good faith exception[164]should have applied to the officers in *McCarthy* had the court ruled that there was a search. That exception serves to admit evidence gathered by officers who were operating on the objectively reasonable and good faith belief that they had the proper legal

156. Commonwealth v. McCarthy, 142 N.E.3d 1090, 1095 (Mass. 2020).

157. *E.g.*, United States v. Yang, 958 F.3d 851, 853 (9th Cir. 2020).

158. *Exclusionary Rule*, LEGAL INFO. INST., https://www.law.cornell.edu/wex/exclusionary_rule [https://perma.cc/5MDP-5TNC] (last visited Jan. 7, 2022).

159. 428 U.S. 465, 486 (1976).

160. *Id.* at 485; *see also* Elkins v. United States, 364 U.S. 206, 217 (1960) ("The [exclusionary] rule is calculated to prevent, not to repair.").

161. Jones v. United States, 362 U.S. 257, 261 (1960) ("Ordinarily, then, it is entirely proper to require of one who seeks to challenge the legality of a search as the basis for suppressing relevant evidence . . . if the allegation be disputed that he establish, that he himself was the victim of an invasion of privacy.").

162. Br. for Defendant-Appellant, 2019 WL 3996632, at *19.

163. *See* Herring v. United States, 555 U.S. 135, 148 (2009) ("[T]he deterrent effect of suppression must be substantial and outweigh any harm to the justice system.").

164. *See generally Good Faith Exception to Exclusionary Rule*, LEGAL INFO. INST., https://www.law.cornell.edu/wex/good_faith_exception_to_exclusionary_rule [https://perma.cc/FJ5Z-9339] (last visited Jan. 8, 2022).

authority.[165] Given that *McCarthy* was the first appellate state court to rule that ALPR use could be unconstitutional, naturally the officers were operating on the understanding that the use of the cameras in question, installed two years prior to the events of the case[166] and controlled by state regulations,[167] was constitutional. Indeed, for background, the *McCarthy* court cited a prior Massachusetts appellate case for its holding "that the defendant had no reasonable expectation of privacy that would prevent an officer from examining his license plate."[168] It follows that the good faith exception should have applied if there was a search, as the officers' actions were objectively reasonable in light of existing precedent. However, the *McCarthy* court did not address this argument, after the district attorney did not raise it in his brief.[169]

In *United States v. Graham*, the government did raise the good faith exception to backstop its argument concerning the admission of CSLI data.[170] The 2012 case came before *Carpenter* but after *Jones*, and while the District Court of Maryland found no constitutional violation in the collection of the CSLI, it nonetheless analyzed the exception under the heading "Suppression Would Not Be The Remedy."[171] There, the officers acted in reliance on the Stored Communications Act and Magistrate Judge orders that issued under it, and the court found that this was objectively reasonable.[172] The court concluded, perhaps anticipating *Carpenter*, that "[e]ven if the government's acquisition of historical cell site location records in this case had been in violation of the Defendants' Fourth Amendment rights, it obtained those records in good faith reliance," and it denied the motion to suppress.[173] Similarly, Mr. Carpenter's Supreme Court victory was short-lived, as his conviction was affirmed in 2019 on remand to the Sixth Circuit, which applied the good faith exception.[174] The officers in *McCarthy* should have been afforded similar protection if that was necessary.

The mechanics of the good faith exception show how *McCarthy* has only muddied the water for future cases in this area. In *Davis v. United*

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165. *Id.* ("In Davis v. U.S., the U.S. Supreme Court ruled that the exclusionary rule does not apply when the police conduct a search in reliance on binding appellate precedent allowing the search.").

166. *McCarthy*, 142 N.E.3d at 1095–96.

167. *Id.* at 1096.

168. *Id.* at 1101 (citing Commonwealth v. Starr, 773 N.E.2d 981, 984–85 (Mass. App. Ct. 2002)).

169. *See* Appellee's Br., 2019 WL 4134166; *cf.* Tracey v. State, 152 So. 3d 504, 526 (Fla. 2014) (ruling that the good faith exception did not apply).

170. 846 F. Supp. 2d 384, 405 (D. Md. 2012).

171. *Id.* at 405–06.

172. *Id.*

173. *Id.* at 406.

174. United States vs Carpenter, 926 F.3d 313, 314 (6th Cir. 2019).

States, the Supreme Court held that "searches conducted in objectively reasonable reliance on binding appellate precedent are not subject to the exclusionary rule."[175] The *McCarthy* court's pronouncement that constitutional protection would "certainly" be warranted prior to hitting the state's one-year retention period[176] was dicta, meaning that it did not establish new binding appellate precedent that would serve as official notice to officers and limit the use of the good-faith exception. Far from developing a bright-light rule, *McCarthy* failed to suggest any kind of test for when, in between the six weeks at bar and the state's one-year retention period, the constitutional line would be crossed.[177] Thus, it did not provide guidance for law enforcement to regulate its action, missing the mark of *Stone* and parking itself on a very slippery slope. Since *McCarthy* did not disturb the prior holding concerning isolated license plate readings,[178] instead applying the mosaic theory to aggregated data, Massachusetts law enforcement should still be able to use the lack of a clearly established precedent[179] to rely on the good-faith exception in the next case with similar facts. Further, it would arguably apply each time that a court wanted to lower the threshold.

A second exception to the exclusionary rule demonstrates another flaw in the mosaic theory as applied to ALPRs. Under the Independent Source Doctrine, evidence obtained from an unlawful search may later be admissible if it is obtained through a separate, constitutional search.[180] This doctrine was endorsed by the Supreme Court in *Nix v. Williams* under the rationale that the police should be put "in the same, not a worse, position that they would have been in if no police error or misconduct had occurred."[181] Thus, if the local police in *McCarthy* had asked a homeowners association or property manager near the bridge if they could help with crime detection by turning over their ALPR data,[182] any information they obtained in this manner would be freely admissible in court.[183] In fact, some such private entities already voluntarily share their

175. 564 U.S. 229, 232 (2011).

176. *McCarthy*, 142 N.E.3d at 1104.

177. The court admitted as much when it said that "we cannot say precisely how detailed a picture of the defendant's movements must be revealed to invoke constitutional protections." *Id.* at 1106.

178. *See supra* note 168 and accompanying text.

179. For similar rationale concerning qualified immunity, see, e.g., Karen M. Blum, *The Qualified Immunity Defense: What's "Clearly Established" and What's Not*, 24 TUORO L. REV. 4 (2014).

180. *Exclusionary Rule*, *supra* note 158.

181. 467 U.S. 431, 443 (1984).

182. *See* sources cited *supra* notes 103–04 and accompanying text.

183. *But see* United States v. Jones, 565 U.S. 400, 416 (2012) (Sotomayor, J., concurring) (citing Kyllo v. United States, 533 U.S. 27, 35 n.2 (2001)) ("I do not regard as dispositive the fact that the government might obtain the fruits of GPS monitoring through lawful conventional surveillance techniques.").

data with law enforcement.[184] Furthermore, if instead the Massachusetts State Police had monitored McCarthy for a full year state-wide, assembling an unconstitutionally large dataset in the eyes of the *McCarthy* court, they apparently could have turned to the local Barnstable police who actually accumulated the allowable (and relevant) data over two-plus months.[185] The *McCarthy* opinion fails to grapple with these practical intricacies.[186]

III. PRACTICAL LIMITATIONS OF THE MOSAIC THEORY

Only the mosaic theory could defeat ALPR use when each individual piece of information is legitimate on its own.[187] Even numbers added together can only produce even numbers, no matter how many, but the *McCarthy* court essentially reasoned that at some point, the sum becomes odd.[188] In addition to the specific flaws in the *McCarthy* opinion, courts and scholars have identified additional practical limitations of applying such an aggregation theory generally. Such criticisms also counsel against application of the mosaic theory to ALPRs. Several courts have considered the mosaic theory in Fourth Amendment search cases and found "that approach to be problematic."[189] The criticisms from courts and academics can largely be divided into three categories: (1) creating retroactive unconstitutionality; (2) forcing arbitrary line-drawing by courts; and (3) making unworkable guidelines for law enforcement.

A. *Retroactive Unconstitutionality*

The *Graham* court noted that the Supreme Court's majority opinion in *Jones* did not approve of the D.C. Circuit's mosaic theory, and *Graham* instead agreed with Professor Kerr's objection to "the bizarre

184. Fassler, *supra* note 103.

185. *McCarthy*, 142 N.E.3d at 1104–06; *see also* discussion *infra* Section III.B.

186. Law enforcement in a state with an ALPR statute (which Massachusetts is not, *see infra* note 217) may have additional protection under *Illinois v. Krull*, 480 U.S. 340, 355 (1987). *See* Kerr, *supra* note 17, at 341–42; United States v. Graham, 846 F. Supp. 384, 405–06 (D. Md. 2012); United States v. Carpenter, 926 F.3d 313, 317–18 (6th Cir. 2019).

187. *See* Gutierrez-Alm, *supra* note 33, at 152–55 (recognizing established precedent of a lack of an expectation of privacy in public, noting that the mosaic theory "must be employed in the consideration of ALPR data in order to demonstrate a reasonable expectation of privacy," and arguing that it should be adopted).

188. *See* United States v. Jones, 656 F.3d 766, 769 (D.C. Cir. 2010) (Sentelle, C.J., dissenting) ("The sum of an infinite number of zero-value parts is also zero."). It should be noted that Justice Kavanaugh joined that opinion. For the opposing view, see Rosenzweig, *supra* note 26 ("with enough data 1+1+1 really does equal 17").

189. *Graham*, 846 F. Supp. at 401; *accord* State v. Muhammad, 451 P.3d 1060, 1072–73 (Wash. 2019) (discussing "practical problems inherent in this [mosaic] theory"); *see also infra* notes 202–03 and accompanying text.

consequence of creating retroactive unconstitutionality."[190] Retroactive unconstitutionality is illustrated by an extension of *McCarthy*, which held that four cameras over two months did not create an unconstitutional search but stated that a one-year period would.[191] Therefore, if the police had monitored McCarthy for an additional ten months after obtaining reasonable suspicion (perhaps in pursuit of a proverbial bigger fish) but sought to enter into evidence only the initial period, the *McCarthy* court would apparently have ruled that the entire "mosaic" was an unconstitutional search,[192] *including the relevant period that they actually held was allowable*. As summed up by the *Graham* court, "the law as it now stands simply does not contemplate a situation whereby traditional surveillance becomes a Fourth Amendment 'search' only after some specified period of time—discrete acts of law enforcement are either constitutional or they are not."[193]

B. *Arbitrary Line-Drawing*

In applying the mosaic theory, even without considering retroactive unconstitutionality, courts would still need to determine, based on the facts of each case, whether the imaginary line of unconstitutionality was crossed. Opinions such as *Maynard* and *McCarthy* confidently state that an intrusion did occur (or could, respectively), but neither lays out any rules or methods for evaluating closer cases. This is a common thread, as the mosaic theory is much easier to appeal to than it is to flesh out and apply. As Professor Kerr, who has followed and debated the mosaic theory since its first connection to the Fourth Amendment,[194] wrote during the *Carpenter* proceedings, "one of the fascinating aspects of the mosaic theory is that its proponents generally go to great lengths to avoid explaining how they would implement it."[195] The reason for this, he feels, is that to fully implement it, it would be necessary "to make a few dozen essentially arbitrary line-drawing calls."[196]

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190. *Graham*, 846 F. Supp. 2d at 401 (citing Orin S. Kerr, *D.C. Circuit Introduces "Mosaic Theory" of Fourth Amendment, Holds GPS Monitoring a Fourth Amendment Search*, THE VOLOKH CONSPIRACY (Aug. 6, 2010, 2:46 PM), http://volokh.com/2010/08/06/d-c-circuit-introduces-mosaic-theory-of-fourth-amendment-holds-gps-monitoring-a-fourth-amendment-search/ [https://perma.cc/9EUB-FSXV]).

191. Albeit perhaps with more cameras. Commonwealth v. McCarthy, 142 N.E.3d 1090, 1104 (Mass. 2020) ("With enough cameras in enough locations . . .").

192. *See Graham*, 846 F. Supp. 2d at 402 (quoting Kerr, *supra* note 190) ("that first day of monitoring eventually and retroactively becomes unconstitutional. It becomes part of the mosaic, and the key point of *Maynard* is that the entire mosaic is considered one entity.").

193. *Id.* at 401. Granted, *Graham* was decided before *Carpenter*—but see text accompanying *supra* notes 133–34.

194. *See* Kerr, *supra* note 17; Kerr, *supra* note 121; Kerr, *supra* note 190.

195. Kerr, *supra* note 57.

196. *Id.*

Proponents of the mosaic theory may point out that there is no bright-line rule regarding the allowable duration of a *Terry* stop, for example, but there are far fewer factors at play there.[197] To evaluate an ALPR dataset on a particular defendant would require considering: the available history of the database, the number of cameras that recorded the suspect, the number of cameras that did *not* record the suspect, the number of distinct locations, the number of trips in a limited amount of time such that one could reasonably infer that the vehicle went directly from point A to point B, the times of day, etc. The Supreme Court has emphasized how it "repeatedly has acknowledged the difficulties created for courts, police, and citizens by an ad hoc, case-by-case definition of Fourth Amendment standards to be applied in differing factual circumstances."[198] A concern the Court has expressed is that such an approach "also creates a danger that constitutional rights will be arbitrarily and inequitably enforced."[199]

Furthermore, since ALPRs do not directly track people, only their vehicles, any bright-line rule is subject to manipulation. A criminal who suspects that an ALPR camera placed him near the scene of a crime could intentionally keep driving his car past various ALPRs to try to accumulate the threshold number of scans before evidence was finalized for trial. And if a court was to articulate exactly where it was drawing the lines, it would "quickly become[] clear that you're really drafting a statute."[200]

C. *Failing to Balance the Needs of Law Enforcement*

The fact that the *McCarthy* court was not able to illustrate when or where that line might be crossed, even ex post with the benefit of hindsight, illustrates how difficult it would be for law enforcement to determine ex ante when a warrant would be required.[201] In the 2014 case of *Tracey v. State*, Florida's Supreme Court squarely considered the mosaic theory in the context of CSLI and found it to be "not a workable analysis" for similar reasons.[202] The *Tracey* court found that applying it would "require[] case-by-case, after-the-fact, ad hoc determinations whether the length of the monitoring crossed the threshold . . . The [U.S.]

197. *See id.; see generally* Terry *Stop and Frisk: Doctrine and Practice*, CONSTITUTION ANNOTATED, https://constitution.congress.gov/browse/essay/amdt4_4_4_1_1/ [https://perma.cc/3VDP-346Z] (last visited Jan. 11, 2022).

198. Oliver v. United States, 466 U.S. 170, 181 (1984) (collecting cases).

199. *Id.* at 181–82 (citation omitted).

200. Kerr, *supra* note 57; *see also* discussion *infra* Section IV.A.

201. *See* Orin S. Kerr, *Automated License Plate Readers, the Mosaic Theory, and the Fourth Amendment*, REASON: THE VOLOKH CONSPIRACY (Apr. 22, 2020, 5:46 AM), https://reason.com/volokh/2020/04/22/automated-license-plate-readers-the-mosaic-theory-and-the-fourth-amendment/ [https://perma.cc/SLJ3-VXYR].

202. 152 So. 3d 504, 520 (Fla. 2014).

Supreme Court has warned against such an ad hoc analysis."[203] The court, citing U.S. Supreme Court precedent, reasoned that privacy concerns must be balanced with the needs of law enforcement to create "workable rules."[204] The *Tracey* court also acknowledged the concurrences in *Jones* but recognized that they were dicta and, therefore, "the concerns and questions raised by the concurring Justices were not answered."[205] *Tracey* was decided years before *Carpenter*, but both holdings agreed that acquiring CSLI was a search, without resorting to the mosaic theory.[206]

Some believe that *Carpenter*'s ruling against accumulated data creates trouble for ALPR[207] by moving away from *Graham*'s discrete acts and thus indeed changing "the law as it now stands . . . whereby traditional surveillance becomes a Fourth Amendment 'search' [] after some specified period of time."[208] But there was a discrete act in *Carpenter*, when the government requested the CSLI from the defendant's phone provider.[209] Chief Justice Roberts' *Carpenter* ruling contains a clear ex ante instruction to law enforcement regarding CSLI: "the Government's obligation is a familiar one—get a warrant."[210]

Any ex post ALPR analysis is further compounded by the fact that various agencies swap their ALPR data with each other, sometimes without even knowing that they are doing so.[211] This takes the above scenario to a new dimension, in that access to another government agency's database—the neighboring towns, for example—could, in the eyes of the *McCarthy* court, push the collection over the imaginary line well after the fact, perhaps even while a case was on appeal. This would be a nonsensical result, as there would be no new material evidence that should have any bearing on the case.

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203. *Id.* (citing Oliver, 466 U.S. at 181).

204. *Id.* at 521 (citations omitted); *see also* Wyoming v. Houghton, 526 U.S. 295, 306 (1999) (finding that "practical realities . . . militate in favor of the needs of law enforcement").

205. *Tracey*, 152 So. 3d at 521–22.

206. *Compare id.* at 525–26, *with* Carpenter v. United States, 138 S. Ct. 2206, 2220 (2018).

207. *E.g.*, Paul Ohm, *The Many Revolutions of* Carpenter, 32 HARV. J. L. & TECH. 357, 393 (2019) (concluding that ALPR usage "is likely to be a very close call" after *Carpenter*).

208. United States v. Graham, 846 F. Supp. 2d 384, 401 (D. Md. 2012); *see also* discussion *supra* Section III.A.

209. *Carpenter*, 138 S. Ct. at 2212.

210. *Id.* at 2221.

211. Records requests by a team of researchers found 2.5 billion scans among 173 responding agencies over 2016–17. Each agency shared directly with an average of 160 others and upwards of 850. One denied participating but eventually admitted that while it did not have any scanners of its own, it could access over 500 other agencies'. Dave Maass & Beryl Lipton, *Data Driven: Explore How Cops Are Collecting and Sharing Our Travel Patterns Using Automated License Plate Readers*, MUCKROCK (Nov. 15, 2018), https://www.muckrock.com/news/archives/2018/nov/15/alpr-landing-page/ [https://perma.cc/MVF9-K4RN].

In all, Professor Kerr[212] was prescient when he first considered the mosaic theory back in 2010 and stated, "I don't see what principles there are that could keep it from becoming an extraordinary mess."[213]

IV. NON-JUDICIAL ALTERNATIVES TO BETTER BALANCE ALPR USAGE

The mosaic theory should not be adopted by the courts to strike down ALPR usage for all the reasons listed above. Doing so would move away from decades of Fourth Amendment jurisprudence and, by threatening a network of thousands of ALPRs across the nation, amount to legislating from the bench. If the documented crime-solving successes of ALPR[214] do not outweigh the privacy concerns in the eyes of society, then that is something that legislators can readily address. Individual agencies can also take steps to regulate themselves to quell public concern. On the other hand, parking regulations introduced to effectuate ALPR use have introduced new concerns about safety. This part addresses each non-judicial alternative in turn.

A. *Data Retention Limits by Legislation*

If this method of surveillance is something that society regards as not worthwhile, the practical solution is legislative. In one of the *Jones* concurrences, Justice Alito agreed when he wrote that "[i]n circumstances involving dramatic technological change, the best solution to privacy concerns may be legislative."[215] The late Justice Scalia, the author of the *Jones* majority opinion who often favored state's rights and a legislative solution,[216] would likely agree. One in three states has taken action in this area, as at least sixteen have statutes directly addressing ALPRs.[217] However, several of those statutes merely mandate certification, create public records exceptions, or require published

212. The *Graham* court took judicial notice that Professor Kerr is a leading scholar in this area, testifying before Congress on privacy issues, and that one of his articles was cited by both the majority opinion and a concurrence in *Jones*. *Graham*, 846 F. Supp. 2d at 402 n.14.

213. Kerr, *supra* note 201.

214. The fact that in-court objections to ALPRs often come on motions to suppress, as in *McCarthy*, is indicative of their effectiveness. Commonwealth v. McCarthy, 142 N.E.3d 1090, 1095 (Mass. 2020).

215. United States v. Jones, 565 U.S. 400, 429 (Alito, J., concurring in judgment).

216. *E.g.*, Lisa Soronen, *Justice Scalia's Impact on State and Local Government*, NAT'L CONF. STATE LEGISLATURES (Feb. 15, 2016), https://www.ncsl.org/blog/2016/02/15/justice-scalias-impact-on-state-and-local-government.aspx [https://perma.cc/H6G8-ACEA].

217. Arkansas, California, Colorado, Florida, Georgia, Maine, Maryland, Minnesota, Montana, Nebraska, New Hampshire, North Carolina, Oklahoma, Tennessee, Utah, and Vermont. *Automated License Plate Readers: State Statutes*, NAT'L CONF. STATE LEGISLATURES, https://www.ncsl.org/research/telecommunications-and-information-technology/state-statutes-regulating-the-use-of-automated-license-plate-readers-alpr-or-alpr-data.aspx [https://perma.cc/BHU4-4G74] (last updated Apr. 9, 2021).

policies from the agencies. Only ten states expressly set a data retention limit by statute,[218] which is what would truly limit law enforcement in favor of privacy protection. States could also give a voice directly to the people—underreported amid the turmoil involving the 2020 presidential election were pro-privacy ballot measures (unrelated to ALPR) passed in California and Michigan.[219]

The restrictions posed by states vary tremendously. Georgia's retention limit is thirty months,[220] which would still be problematic for the *McCarthy* court, while New Hampshire requires deletion within three minutes in the absence of a hit.[221] Meanwhile, Arkansas was one of the first states to entirely ban private use.[222] While the level of national awareness and attention has not been as high as that of sports gambling,[223] for example, the trend is towards the majority of the states considering legislating and regulating ALPR use, as multiple states have proposed new bills since the start of 2019.[224] Interestingly, a Massachusetts bill, which would have required law enforcement agencies to delete all ALPR data within forty-eight hours of capture, passed a joint committee in February 2020, two months before the *McCarthy* opinion, but then stalled.[225]

B. *Tiered Use of ALPR Data*

There is an existing federal statute, at issue in *Graham*, that could serve as a template for ALPR—the Stored Communications Act.[226] At the outset, it should be noted that while *Carpenter* clearly affected the Act's application, by invalidating a warrant that issued from it, the Court's "opinion did not invalidate [the court order section of the Act]

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218. *Id.*

219. Sidney Fussell, *One Clear Message From Voters This Election? More Privacy*, WIRED (Nov. 4, 2020, 8:26 PM), https://www.wired.com/story/one-clear-message-voters-election-more-privacy [https://perma.cc/RR5T-LUEJ].

220. GA. CODE ANN. § 35-1-22(b) (2021).

221. N.H. REV. STAT. ANN. § 261:75-b, VIII (2021).

222. Clara Turnage, *High-Tech Devices Help Police in Little Rock, but Some Say Tools such as License Plate Readers Raise Thorny Issues*, ARKANSAS DEMOCRAT GAZETTE (Apr. 1, 2019, 4:30 AM), https://www.arkansasonline.com/news/2019/apr/01/high-tech-devices-help-police-in-lr-201/ [https://www.arkansasonline.com/news/2019/apr/01/high-tech-devices-help-police-in-lr-201/].

223. *E.g.*, Ryan Rodenberg, *United States of Sports Betting: An Updated Map of Where Every State Stands*, ESPN: CHALK (Nov. 3, 2020), https://www.espn.com/chalk/story/_/id/19740480/the-united-states-sports-betting-where-all-50-states-stand-legalization [https://perma.cc/H2DK-SL46].

224. S.B. 0243, 101st Gen. Assemb. (Ill. 2019); A.B. A7254, 2019–2020 Leg. Sess. (N.Y. 2020).

225. H.B. 3141, 191st Gen. Court (Mass. 2020).

226. United States v. Graham, 846 F. Supp. 2d 384, 396 (D. Md. 2012); 18 U.S.C. §§ 2701–12.

whole cloth."[227] There is a framework in the Stored Communications Act that could serve as the basis for a national ALPR statute. Notably, Section 2703(d) of the Act calls for "specific and articulable facts showing that there are reasonable grounds to believe that the contents of . . . the records or other information sought, are relevant and material to an ongoing criminal investigation" before a warrant will issue.[228] An analogous ALPR statute could still allow real-time "hotlist" monitoring[229] but require law enforcement to show grounds before a neutral magistrate before accessing historic information that might reveal a pattern of movements of the sort that concern proponents of the mosaic theory. Also of note, language similar to the current limitation in the Act that "a court order shall not issue if prohibited by the law of such State"[230] could serve to allow each state to set ALPR data retention limits of its own choosing.

C. *Individual Agency Adjustments and Oversight*

If state legislators cannot reach a consensus to balance privacy with ALPR use, individual municipalities and agencies are free to set their own restrictions, and many have. For example, Minnesota's overall state limit for retaining license plate data is sixty days, but the Minnesota State Patrol's is forty-eight hours.[231] Compare this to the NYPD's five years.[232] In response to criticism on Fourth Amendment grounds, the NYPD Deputy Commissioner—apparently briefed on jurisprudence in this area—stated that he did not think that their system "violates anyone's expectation of privacy."[233]

Lobbying efforts to resist ALPR regulation have reached as high as the federal level,[234] but despite this, some oversight is finally coming to the NYPD.[235] First introduced in 2017 and met with "fierce opposition" from the NYPD,[236] the Public Oversight of Surveillance Technology

227. United States v. Carpenter, 926 F.3d 313, 317 (6th Cir. 2019).

228. 18 U.S.C. § 2703(d).

229. *See supra* note 8 and accompanying text.

230. 18 U.S.C. § 2703(d).

231. MINN. STAT. § 13.824 (2020); *Minnesota State Patrol Audit*, MINNESOTA LEGISLATURE (Nov. 27, 2017), https://www.leg.mn.gov/docs/2020/mandated/200650.pdf [https://perma.cc/F8GP-567A].

232. *See supra* text accompanying notes 10–12.

233. Francescani, *supra* note 11.

234. *E.g.*, Cyrus Farivar, *Cops Are Freaked Out That Congress May Impose License Plate Reader Limits*, ARS TECHNICA (Mar. 15, 2015, 11:00 AM), https://arstechnica.com/tech-policy/2015/03/cops-are-freaked-out-that-congress-may-impose-license-plate-reader-limits/ [https://perma.cc/8Z2B-VT62].

235. *See* Francescani, *supra* note 11 ("There [was] no outside monitoring of this system at all.").

236. Ángel Díaz, *A Bill to Oversee 21st Century Police Surveillance*, BRENNAN CTR. FOR JUST. (Feb. 12, 2020), https://www.brennancenter.org/our-work/analysis-opinion/bill-oversee-21st-century-police-surveillance [https://perma.cc/9ML5-JL3W].

(POST) Act finally passed the New York City Council in June of 2020.[237] The Act required the NYPD to publish policies by January of 2021 that describe all of their surveillance technologies (including ALPR), their oversight mechanisms, and the procedures to prevent abuse.[238] Major cities such as San Francisco and Seattle have already passed more stringent laws than the POST Act, and some jurisdictions require outside approval before acquiring new surveillance technology.[239]

Departments that do employ ALPRs should take care that they do so evenly. A 2020 Buffalo TV news investigation discovered that other than a few on the international border, the remainder of the city's readers "are laser focused on Buffalo's east side," with ten percent of the over 40 million reads from the prior year coming from just two streets.[240] A Buffalo police captain defended the deployment, stating that violent crime is disproportionate on the east side.[241] Disproportionate policing, however, is likely to only exacerbate the discrepancy because of what is known as collider bias—"if there's bias in who the police choose to interact with—if it's not a random sample—that can change the relationships you see in the data."[242] Predictive policing has been criticized for amounting to racial profiling,[243] and here, recent evidence shows that ALPR use leads to disproportionate attention on poor and minority communities.[244] The Buffalo Common Council President said that he is looking into it, as he agreed that ALPR cameras "should be equally distributed across the city."[245]

There are additional steps that agencies can take to ensure the privacy of its citizens and safeguard against misuse.[246] For example, if officers

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237. *The Public Oversight of Surveillance Technology (POST) Act: A Resource Page*, BRENNAN CTR. FOR JUST., https://www.brennancenter.org/our-work/research-reports/public-oversight-surveillance-technology-post-act-resource-page [https://perma.cc/P7SF-96X5] (last updated Mar. 5, 2021).

238. *Id.*; *see Technology & Equipment - NYPD,* NYC: NYPD, https://www1.nyc.gov/site/nypd/about/about-nypd/equipment-and-tools.page [https://perma.cc/3ZSH-YFFH] (last visited Jan. 11, 2022).

239. Díaz, *supra* note 236.

240. Ed Drantch, *You're Being Recorded: Millions of License Plates Tracked with Automatic Plate Readers in Buffalo*, WKBW BUFFALO (Nov. 19, 2020, 11:27 PM), https://www.wkbw.com/news/i-team/youre-being-recorded-millions-of-license-plates-tracked-with-automatic-plate-readers-in-buffalo [https://perma.cc/4YQR-2GHC].

241. *Id.*

242. Laura Bronner, *Why Statistics Don't Capture the Full Extent of the Systemic Bias In Policing*, FIVETHIRTYEIGHT (June 25, 2020), https://fivethirtyeight.com/features/why-statistics-dont-capture-the-full-extent-of-the-systemic-bias-in-policing/ [https://perma.cc/U78B-NS9W].

243. *Id.*; *see also* Andrew D. Selbst, *Disparate Impact in Big Data Policing*, 52 GA. L. REV. 109 (2017).

244. Simonite, *supra* note 6.

245. Bronner, *supra* note 242.

246. *See supra* text accompanying note 13.

insist on being able to look back multiple months, the agency could set a soft deadline of one month, at which point the older data would be migrated to an offline server that could only be accessed from the main office.[247] Further, that server could be configured to require a tracked login that registers an articulated statement of purpose for each query, at the level of reasonable suspicion.[248] Also, once that soft deadline is hit, inter-agency sharing should cease as well, in the form of removal from any other database. Finally, at the officer level, all ALPR users on the ground should visually verify the plate for a match to avoid mis-reads.[249]

D. *Ripple Effects for Vehicle Safety*

In states around the country that do not require front license plates, enhancing the efficacy of mobile ALPRs has led to new regulations that prohibit back-in parking.[250] One Florida university that enacted this policy in 2019 in conjunction with its introduction of ALPR[251]was met with resistance in the form of a petition that has been signed by over 1,500 people, even though the petition did not mention ALPRs.[252] Rather, it raised safety concerns in slowing exits from structures at nighttime, and it referenced a study that estimated that hundreds of deaths annually and thousands of injuries result from nose-in parking.[253] Since such parking regulations are only in place to reveal license plates, the twenty states that do not have a front license plate requirement[254] would be well-advised to allow, if not mandate, a duplicate front plate to give drivers an option to avoid nose-in parking.

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247. *See* Simonite, *supra* note 6 ("California's Highway Patrol must delete ALPR data after 60 days unless it is being used as evidence of a felony."); H.B. 3141, 191st Gen. Court (Mass. 2020).

248. *See* Julia Coin, *License Plate Readers Installed in UF Area*, THE GAINESVILLE SUN (Nov. 28, 2020, 5:30 AM), https://www.gainesville.com/story/news/local/2020/11/28/license-plate-readers-installed-near-university-florida-campus/6423509002/ [https://perma.cc/QM6T-F6XH] ("Officers can't anonymously run tags and look for exes"); *cf.* Simonite, *supra* note 6 (noting that "Los Angeles law enforcement agencies made tens of thousands of license plate queries each year").

249. *Cf.* sources cited *supra* note 6. Section 3(b) of the proposed Massachusetts bill would require this. H.B. 3141, 191st Gen. Court (Mass. 2020).

250. *E.g.*, Weiner, *supra* note 119.

251. *Id.*

252. Heather Landers, *Park Safely in the University Central Fla Parking Structures*, CHANGE.ORG, https://www.change.org/p/university-central-florida-park-safely-in-the-university-central-fla-parking-structures [https://perma.cc/6USL-HYYD] (last visited Jan. 7, 2022).

253. *Id.*

254. *Which States Require a Front License Plate?*, AUTOLIST (May 11, 2020), https://www.autolist.com/guides/front-license-plate [https://perma.cc/E7QX-J6TL].

CONCLUSION

ALPR use is becoming commonplace in our society, as new locales continue to adopt them on a regular basis.[255] The mosaic theory is an appealing theory to protect citizens against evolving and encroaching government surveillance, but ALPRs are not the appropriate technology against which to wield it. Scans occur only in public once people have voluntarily ventured out in their vehicles, where there is no expectation of privacy, no matter the accumulation over time. To attempt to draw a line would be as difficult as predetermining how many snowflakes it takes to become a snowball, and any kind of subjective test would unduly hinder law enforcement's efforts to use this valuable technology. Fortunately, there are viable alternatives, available through statutory reform and regulatory precautions, that can address privacy concerns while allowing ALPR use.

255. Coincidentally, the author's university announced the installation of readers in late 2020. Coin, *supra* note 248.

NAVIGATING THE SPEECH RIGHTS OF AUTONOMOUS ROBOTS IN A SEA OF LEGAL UNCERTAINTY

Lynne Higby[*]

"To give computers the rights intended for humans is to elevate our machines above ourselves."[1]
–Tim Wu, Columbia Law School Professor

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1. Tim Wu, *Free Speech for Computers?*, THE NEW YORK TIMES (June 19, 2012), https://www.nytimes.com/2012/06/20/opinion/free-speech-for-computers.html [https://perma.cc/VL6C-YG5A].

INTRODUCTION

Artificial intelligence is currently making waves in our reality's journalistic sphere. Artificial intelligence (AI), generally, is a branch of computer science that involves the simulation of intelligent behavior in computers; it is a machine's capability to imitate human behavior.[2] What once used to be mere GPS route suggestions or computer-automated responses to search queries in Google have now evolved into fully executed think pieces complete with properly formatted and grammatically correct introductions, body paragraphs, and conclusions.

"I am not a human. I am a robot. A thinking robot," begins the AI-authored Guardian article, *A Robot Wrote This Entire Article. Are You Scared Yet, Human?*[3] "I know that my brain is not a "feeling brain," continues the robotic author, "[b]ut it is capable of making rational, logical decisions. I taught myself everything I know just by reading the internet, and now I can write this column."[4] Although the language generator responsible for the article, GPT-3, assures the reader that robots "come in peace,"[5] AI's ability to create speech implicates significant First Amendment issues no matter if the objective viewer finds this futuristic computer capability as truly awe-inspiring or significantly concerning. This Note explores the implications associated with affording First Amendment protections to AI-generated speech and why, despite free speech theory and doctrine posing few barriers to the constitutional protection of AI-authored speech, AI speakers should not be granted speech rights in the same way that human beings are granted the privilege to express thought and opinion free from civil liability.

The Free Speech Clause of the First Amendment prohibits the government from "abridging the freedom of speech," but does not specify what that freedom entails, nor explicitly whom, or *what*, that freedom is granted to.[6] Historically, First Amendment law has gradually shifted its focus from protecting speakers to providing value to listeners and restraining excessive governmental oversight.[7] In an age where emerging AI is consistently enforcing its presence in humanity's daily life, at an accelerated rate, questions regarding constitutional and legal rights are

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2. *Artificial Intelligence*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/artificial%20intelligence [https://perma.cc/TG6X-CBZA].

3. GPT-3, *A Robot Wrote This Entire Article, Are You Scared Yet, Human?*, THE GUARDIAN (Sept. 8, 2020), https://www.theguardian.com/commentisfree/2020/sep/08/robot-wrote-this-article-gpt-3?CMP=Share_iOSApp_Other [https://perma.cc/ULS9-N3N6].

4. *Id*.

5. *Id*.

6. U.S. Const. amend. I. "Congress shall make no law . . . abridging the freedom of speech."

7. Toni M. Massaro et al., *Siri-Ously 2.0: What Artificial Intelligence Reveals About the First Amendment*, 101 MINN. L. REV. 2481 (2017).

being raised in response to this technology's prevalence. Who is responsible for a defamatory article generated by a robot? Who will be held accountable for emotional distress inflicted by its "speech?" And most importantly, can and should this speech be constitutionally regulated to control these potential harms?

The Supreme Court recognizes that First Amendment protections extend to collective and individual speech "in pursuit of a wide variety of political, social, economic, educational, religious, and cultural ends."[8] While the types of protected speech are non-exhaustive, the Supreme Court narrowly defines categories of speech that do not receive similar constitutional protection: obscenity,[9] defamation,[10] fraud,[11] incitement,[12] fighting words,[13] true threats,[14] speech integral to criminal conduct,[15] and child pornography.[16] Although computers like the GPT-3 are capable of making "rational, logical decisions,"[17] it is probable that a robot's lack of human consciousness, intentionality, or free will prevents it from being able to discern what speech output is inciteful, fraudulent, or threatening, and what output falls within the First Amendment's protection. Computer-generated suggestions of movies, restaurants, and book selections are eagerly encouraged, but at what point does AI content transition from being welcomed to being feared?

This Note seeks to outline First Amendment issues associated with artificial intelligence, namely whether computer-generated speech should

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8. Victoria K. Kilion, *The First Amendment: Categories of Speech*, CONGRESSIONAL RESEARCH SERVICE (updated Jan. 16, 2019), https://sgp.fas.org/crs/misc/IF11072.pdf [https://perma.cc/2C2J-PFVE] (referencing *Roberts v. U.S. Jaycees*, 468 U.S. 609, 622 (1984)).

9. *Miller v. California*, 413 U.S. 15 (1973) (holding that obscene material does not enjoy First Amendment protection).

10. *Gertz v. Robert Welch, Inc.*, 418 U.S. 323 (1974) (finding that States may not permit recovery of presumed or punitive damages, at least when liability is not based on a showing of knowledge of falsity or reckless disregard for truth).

11. *U.S. v. Alvarez*, 567 U.S. 709 (2012).

12. *Brandenburg v. Ohio*, 395 U.S. 444 (1969) (finding that a State can outlaw "advocacy" of violence where it is (1) directed at inciting or produces imminent lawless action and (2) likely to incite or produce such action).

13. *Chaplinsky v. New Hampshire*, 315 U.S. 568 (1942) (reasoning that "fighting words" are an unprotected category of speech because they are a category of utterances which are of such slight social value as to truth that any benefit that may be derived from them is clearly outweighed by the social interest in order and morality).

14. See *Watts v. United States*, 394 U.S. 705 (1969) (holding that "true threats" are not protected from First Amendment regulation).

15. *Giboney v. Empire Storage & Ice Co*, 336 U.S. 490 (1949) (reiterating that the First Amendment generally affords no protection to speech "used as an integral part of conduct in violation of a valid criminal statute).

16. *New York v. Ferber*, 458 U.S. 747 (1982) (recognizing child pornography as a category of unprotected speech separate from obscenity, partly because the sale and advertisement of such materials is de facto criminal conduct).

17. GPT-3, *supra* note 3.

be constitutionally protected, what the specific concerns associated with affording and denying those protections could be, and who, if anyone, is responsible for that speech and its subsequent implications. Part I introduces the basic concepts of AI-generated speech and how speech rights are designated to the technology's designer and code developer. Part II explores free speech theory and doctrine and the legal implications that suggest why these schools of thought and precedent may leave an air for robotic speech protection. Finally, Part III dives into the benefits and harms associated with granting AI-generated speech constitutional protections, and explains why AI-generated speech, distinct from human speech, should not enjoy equal First Amendment protections. This Part also suggests possible measures courts may take in addressing AI-related speech issues in the future.

I. WHAT IS AI-GENERATED SPEECH?

Computers with "communicative" capabilities span from a GPS device mapping the quickest, traffic-free route, to an iPhone's auto-correction feature via iMessage, or Facebook's recommendation of a new friend. Computers make these decisions by reasoning through automated algorithms that constantly send and receive information in a manner that mimics human expression.[18] These communications are generally referred to as "algorithmic outputs," and assigning robots constitutional protections for these outputs are currently a topic of public debate.[19] Arguments have been made from as early as 2003 that when computers make such choices by reasoning, they are "speaking," and should thus enjoy constitutional protections afforded by the First Amendment.[20] The ability for machines to communicate their decision-making output to humans through simple lights or sounds has now evolved to generating output forms easily understood by human by producing pictures or words on a screen.[21] While both types of outputs are "signals," a GPS device verbally instructing its user to turn left is more readily described as "speech" than a smoke alarm beeping to signal smoke detection, because the former has been translated into language mimicking human expression.[22] This distinction between more and less-sophisticated types of communicative technologies can be generally grouped into categories

18. Tim Wu, *Machine Speech*, 161 U. PA. L. REV. 1495 (2013).

19. *Id*.

20. *See* Eugene Volokh, *First Amendment Protection for Search Engine Search Results*, (Apr. 20, 2012). In this White Paper commissioned by Google, Volokh asserts that Google, Microsoft's Bing, Yahoo! Search, and other search engines are speakers; see also *Search King, Inc. v. Google Tech., Inc.*, No. 02-1457, 2003 WL 21464568, at *4 (W.D. Okla. 2003), finding that Google PageRanks are entitled to "full" First Amendment protection.

21. *See* Wu, *supra* note 18, at 1497.

22. *Id*. at 1498.

of "strong" and "weak" AI with the discerning element being the AI actually *thinking* like a human versus mimicking human-like cognition.[23] Strong AI is a theoretical form of machine intelligence equivalent to, or closely resembling, human intelligence and human-like consciousness, whereas weak AI focuses on performing a specific task, like answering a question based on user input, and merely simulating human-like consciousness.[24] AI systems as advanced as autonomously-driving vehicles are still considered weak AI; strong AI does not currently exist. Strong AI moves beyond weak AI to include the ability to reason, make judgments, solve problems, learn, plan, and communicate.[25]

Some commentators pose that these various types of algorithmic outputs, whether it be weak AI currently, or strong AI in the future, deserve First Amendment protections solely because these outputs seek to communicate a type of message or opinion to their audience.[26] In fact, some forms of AI are already objectively considered "better speakers" than humans themselves: "their superior ability to evade some of the distortions of bias and baser emotions, their immunity from fatigue or boredom, and their capacity to manage complex ideas in ways mere humans cannot"[27] all represent qualities of a speaker with the potential to yield significantly valuable and diverse speech.[28] In a white paper commissioned by Google, asserting that Google, Microsoft's Bing, Yahoo! Search, and other search engines are speakers, UCLA law professor Eugene Volokh argued that because search engines (1) occasionally convey information that the search engine company has itself prepared or compiled; (2) direct users to content created by others by referencing Web pages judged to be most responsive to the query; and (3) "select and sort the results in a way that is aimed at giving users what the search engine companies see as the most helpful and useful information," said search engines and their sophisticated computerized

23. IBM Cloud Education, *Strong AI*, (Aug. 31, 2020), https://www.ibm.com/cloud/learn/strong-ai#toc-what-isstr-kGAqO4bV [https://perma.cc/WEV5-N4SD].

24. *Id*.

25. Jake Frankenfield, *Strong AI*, INVESTOPEDIA (updated Aug. 28, 2020), https://www.investopedia.com/terms/s/strong-ai.asp [https://perma.cc/5H7F-SFCR]. "Some theorists argue that a machine with Strong AI should be able to go through the same development process as a human, starting with a childlike mind and developing an adult mind through learning. It would be able to interact with the world and learn from it, acquiring its own common sense and language. Another argument is that we will not know when we have developed strong AI (if it can indeed be developed) because there is no consensus on what constitutes intelligence." *Id*.

26. *See* Wu, *supra* note 18, at 1496.

27. Toni M. Massaro & Helen Norton, *Siri-ously? Free Speech Rights and Artificial Intelligence*, 110 NW. U. L. REV. 1169, 1172 (2016).

28. These "better" speakers are likely versions of "strong" AI as opposed to "weak" AI. IBM Cloud Education, *Strong AI* (Aug. 31, 2020), https://www.ibm.com/cloud/learn/strong-ai#toc-what-isstr-kGAqO4bV [https://perma.cc/D3GD-3BAX].

algorithms, should enjoy First Amendment protections.[29] Reasoning may suggest that what defines whether speech should be protected runs more in line with what that speech does (and thus, what agenda or policy it contributes to), rather than who (or what) that speech is sourced from.

In determining where these speech rights are allocated and thus, who can enjoy the protections afforded by the First Amendment, courts have viewed such algorithmic output as a medium by which the author communicates his ideas to the world, similar to a book, canvas, or pamphlet, but different from a purely functional tool that merely executes the message, such as a typewriter.[30] Thus, the algorithmic output's content can generally be traced back to its code developer, who would hypothetically be liable for harms associated with the output. In fact, outside of the United States, plaintiffs have seen success in bringing defamation action against AI-authored speech, specifically against Google's Autocomplete algorithm, which generates search queries.[31] At first glance, this sounds like a pretty basic notion: like an author who writes a defamatory article is responsible for the subsequent harm caused by that article, an algorithm developer is equally responsible for the harm caused by his algorithm.

Although some international courts may have found particular algorithm developers culpable for the resultant harm caused by their respective algorithms, a defining characteristic of AI is its ability to learn–completely on its own. AI systems do not simply implement their respective human-designed algorithms: they create their *own* algorithms by both revising their original algorithms and even independently generating output completely from scratch.[32] This is known as "machine learning."[33] A computer developed for machine learning has a built-in algorithm that allows it not only to learn from data input, but also to evolve and make both directed *and* independent future decisions.[34] By

29. *See* Volokh, *supra* note 20.

30. *See* Wu, *supra* note 18, at 1505; *See also Jian Zhang v. Baidu.com Inc.*, 10 F. Supp. 3d 433 (S.D.N.Y. 2014), *Langdon v. Google, Inc.*, 474 F. Supp. 2d 622 (D. Del. 2007), and *Search King Inc.*, *supra* note 20, finding algorithmic speech deserving of protection as the product of human programmers.

31. *See* Seema Ghatnekar., *Injury by Algorithm: A Look into Google's Liability for Defamatory Autocompleted Search Suggestions*, 33 LOY. L.A. ENT. L. REV. 171, 182 (2013).

32. John Villasenor, *Products Liability Law as a Way to Address AI Harms*, BROOKINGS (Oct. 31, 2019), https://www.brookings.edu/research/products-liability-law-as-a-way-to-address-ai-harms/ [https://perma.cc/H52K-JKAW].

33. Andres Guadamuz, *Artificial Intelligence and Copyright Law*, WORLD INTELLECTUAL PROPERTY ORGANIZATION MAGAZINE (Oct. 2017), https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html#:~:text=Creating%20works%20using%20artificial%20intelligence,important%20implications%20for%20copyright%20law.&text=Creative%20works%20qualify%20for%20copyright,originality%20requiring%20a%20human%20author [https://perma.cc/WMJ8-GSUP].

34. *Id.*

repeatedly collecting and processing user data and analyzing user mannerisms, the algorithms behind AI technologies are constantly, autonomously evolving and becoming "smarter."[35] The deep intricacies of AI's autonomous capabilities unquestionably raises issues in discerning the line between intentional, coded output, and unintentional, but still harmful, autonomously-generated output. If a code developer is responsible for creating an algorithm, which subsequently generates its own output, and that output in turn harms a victim, is the developer still responsible for the harm, even if it was never the developer's requisite intent for the harm to occur? The following Part dives into how the presently established theories and doctrines of free speech suggest protections both for and against this sophisticated technology. For purposes of clarification, "AI-authored speech" and "AI-generated speech" are used interchangeably.

II. APPLICABLE LEGAL BARRIERS (OR LACK THEREOF): WHY FREE SPEECH THEORY AND DOCTRINE DO NOT ENTIRELY RULE OUT NON-HUMAN SPEAKERS AS CREATORS OF SPEECH

The elasticity of free speech theory and doctrine suggests that the concept of "humanness" may no longer be a requisite element of First Amendment protection.[36] Very little guidance in current free speech theory or doctrine makes First Amendment coverage contingent upon the speaker's human nature.[37] In fact, free speech theories of democracy and self-governance, the marketplace of ideas, and autonomy all refrain from completely ruling out AI speakers as meaningful contributors of valuable public discourse. Scholars, however, have maintained that a stark difference remains between merely protecting favored forms of communications versus extending a "fully inclusive position" that treats all communications as speech.[38]

A. *Theories of Free Speech*

1. Democratic Self-Governance

Democracy-based theories of free speech generally emphasize the importance of robust public discourse over the contributions of individual speakers in order to saturate the public forum with information that is useful to the human listener.[39] Alexander Meiklejohn famously observed that under a theory of self-governance, in order to host an effective forum of free speech, it does not matter that all people speak, rather, only that

35. *See* Villasenor, *supra* note 32.
36. *See* Massaro & Norton, *supra* note 27, at 1169.
37. *Id*.
38. *See* Wu, *supra* note 18, at 1508.
39. *See* Massaro & Norton, *supra* note 27, at 1177.

"everything worth saying shall be said."[40] Under this view, whether a speaker is robotic or human does not matter so long as the AI-authored speech contributes to the democratic process and serves audience-sensitive values.[41] Other theorists of democratic speech recognize that the value of public discourse is reliant upon a human's ability to employ useful information to further not only a democratic environment, but also general public discourse and a culture of meaning.[42] Under the democratic theory of self-governance, AI-generated speech could survive so long as it is speech "worth saying."

2. Marketplace of Ideas

The free speech marketplace of ideas approach, which emphasizes the instrumental value of expression to listeners' "knowledge and enlightenment," may further advocate for constitutional protection of strong computer speech.[43] The marketplace of ideas theory, like democracy-based theories, advocates for robust exchange of information regardless of the source: [44]

> But when men have realized that time has upset many fighting faiths, they may come to believe even more than they believe the very foundations of their own conduct that the ultimate good desired is better reached by free trade in ideas—that the best test of truth is the power of the thought to get itself accepted in the competition of the market, and that truth is the only ground upon which their wishes safely can be carried out.[45]

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40. ALEXANDER MEIKLEJOHN, POLITICAL FREEDOM: THE CONSTITUTIONAL POWERS OF THE PEOPLE 26 (1960).

41. *See* Massaro & Norton, *supra* note 27, at 1176 (reasoning that under a democratic theory of self-governance, speaker identity should be irrelevant to Meiklejohn's inquiry, and "strong AI speech should be protected no less than human speech provided that its speech contributes to the democratic process").

42. *Id*. (extending Robert Post's theory of freedom of expression that although corporations do not possess original First Amendment rights, they nonetheless meaningfully participate in public discourse as speakers, to reason that AI speakers who too produce information useful to natural persons seeking to participate in public discourse should be afforded First Amendment protection); *see also* Jack M. Balkin, *Cultural Democracy and the First Amendment,* 110 NW. U. L. REV.1053, 1060 (defining democratic culture as "a culture in which individuals have a fair opportunity to participate in the forms of meaning making that constitute them as individuals" and concluding that "[human beings are made out of culture. A democratic culture is valuable because it gives ordinary people a fair opportunity to participate in the creation and evolution of the process of meaning-making that shape them and become part of them").

43. Massaro, et al., *supra* note 6, at 2490 ("This theory presupposed that more speech best facilitates listeners' acquisition of knowledge and discovery of truth (whatever that means)").

44. *Id*.

45. *Abrams v. United States*, 250 U.S. 616, 630 (1919) (Holmes, J., dissenting).

Speech from non-human speakers retains the ability to provide value in the listener's sphere of content, and to the extent that the speech contributes to the receiver's search for truth, knowledge, or enlightenment, the marketplace of ideas theory supports First Amendment protections of AI-generated speech.[46] John Stuart Mills posited that should the primary purpose of free speech be to uncover the truth by either promoting debate or eliminating censorship, a broad range of communication should be treated as "speech."[47] It follows that "[i]nformation that flows from nonhuman sources may have considerable value to human listeners"[48] because the more communication is protected, the greater are the odds of uncovering the truth, albeit in an unexpected place.[49]

However, as any American citizen is aware after the 2016 presidential election, computers' ability to generate false and misleading "news" serves as an example of AI's harmful capabilities–one that does not fall in line with the marketplace of ideas theory's endorsement of truth in the market. The growing presence of content-generating AI entities raises many questions about the future of the marketplace theory: "the primary concern [is] that the non-human communicators were effectively flooding the market with ideas, thus pushing out actual human discourse, and as a result, creating a world or conceptualization of the environment that would lead citizens to believe public opinion regarding a matter of concern is substantially different than it is in reality."[50]

3. Autonomy

Autonomy-based theories counsel strong arguments both for and against affording AI-generated speech First Amendment protection.[51] On one hand, autonomous-based theories advocate for the protection of both the human speakers and the autonomous human listeners consuming that speech, and machines "can and do produce information relevant to human

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46. *See* Massaro, et al., *supra* note 6, at 2495.

47. *See* Wu, *supra* note 18, at 1507, referencing John Stuart Mill's book *On Liberty* 21 (John Gray ed., Oxford Univ. Press 1991) (1859) ("[T]he peculiar evil of silencing the expression of an opinion is, that it is robbing the human race; posterity as well as the existing generation; those who dissent from the opinion, still more than those who hold it. If the opinion is right, they are deprived of the opportunity of exchanging error for truth: if wrong, they lose, what is almost as great a benefit, the clearer perception and livelier impression of truth, produced by its collision with error.").

48. *See* Massaro, et al., *supra* note 6, at 2492.

49. *See* Wu, *supra* note 18, at 1507.

50. Jared Schroeder, *Marketplace Theory in the Age of AI Communicators*, FIRST AMENDMENT L. REV. 17, 22–64 (2019).

51. Massaro & Norton, *supra* note 27, at 1178, noting that "[a]utonomy-based theories are arguably the most promising and most potentially limiting sources of strong AI speakers' free speech rights."

listeners' autonomous decision-making and freedom of thought."[52] Albeit generated by artificial intelligence, contribution of discourse is contribution nonetheless, and serves as a useful tool for a human to effectively structure his or her autonomous being. The theory of self-autonomy, like self-governance and the marketplace of ideas, promotes a saturation of novel information that AI-generated speech objectively and unquestionably provides.

Dissimilarly, the concept of speech contributing to the autonomous growth of a computer system sheds light on the potential for a jarringly dystopian future run by bots "lacking souls, consciousness, intentionality, feelings, interests, and free will."[53] Granted, the idea of an autonomous computer would primarily require that computer's personal interest in autonomy, which, on a more expansive level, speaks to computers' current proficiencies and what they one day may be capable of "feeling." For now, autonomous theories based solely on speaker autonomy emphasize philosophical theories about who the "moral" person is and how qualities of personhood play a role in the speaker's qualification for constitutional protection.[54] AI may still be recognized as "missing something" possessed by humans that seems inherent to human existence and indispensable to rights of free speech: souls, consciousness, intentionality, feelings, interests, and free will.[55]

In the Minnesota Law Review article *Siri-ously 2.0: What Artificial Intelligence Reveals About the First Amendment*, the authors illustrate how proponents of these theories would address whether computer speech would be covered by the First Amendment by using an example of hypothetical novels written to cover the 2016 election cycle, written by an AI bot influenced by Leo Tolstoy. To a traditional democratic self-governance theorist, these novels would be covered by the First Amendment so long as they contribute to political debate and public discourse; to a marketplace of ideas theorist, they would be protected so long as they contribute to the receiving audience's search for "truth, knowledge, or enlightenment;" and to the autonomous theorist, they would be protected because interference with their publication would

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52. *Id*. at 1179.

53. Lawrence B. Solum, *Legal Personhood for Artificial Intelligences*, 70 N.C. L. REV. 1231, 1262–76 (1992), addressing whether an AI should receive constitutional rights for the AI's "own sake." Solum concluded that while these human characteristics contribute to why a human's speech is afforded First Amendment protection, a computer's lack of these qualities does not rule out a machine's constitutional protection. *On the topic of a human's* feelings and awareness of others, Solum declared that "[e]motion is a facet of human mentality, and if the human mind can be explained by the computational model, then emotion could turn out to be a computational process." *Id*. at 1270.

54. *See* Massaro & Norton, *supra* note 27, at 1180.

55. *See* Massaro, et al., *supra* note 6, at 2490–91, referencing Lawrence Solum's identification of traits computers lack for constitutional protection.

dually interfere with readers' search for autonomy, thus "impinging on freedom of information-gathering, self-construction, and thought."[56]

B. *Free Speech Doctrine*

The courts have historically developed inclusive and exclusive doctrines of free speech that categorically define what types of speech are constitutionally protected and what kind of conduct is sufficient to constitute speech. First Amendment protection is generally, broadly afforded to most types of [human] speech and is predominately recognized in areas of political,[57] ideological,[58] and commercial speech.[59] Protected mediums of expression have also been recognized in broadcasting,[60] the Internet,[61] and video games.[62] When the Supreme Court is faced with a new medium of communication and questions are raised as to that medium's constitutionality, the Court will analyze whether it has been confronted before by precedent and thus, whether its nature will be limited in some way or subjected to First Amendment scrutiny.[63] Likewise, in determining whether a type of speech, specifically statutory, should receive First Amendment protection, the Supreme Court has often examined the speech-related harms, justifications, and potential alternatives to determine whether there is a fit between the interest served and the means taken to achieve that interest.[64] For example, government regulation that implicates ideological or political speech is generally subject to strict scrutiny in courts, where the government must show that the law at issue is narrowly tailored to achieve a compelling government interest.[65] Alternatively, a

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56. *Id*. at 2495; *see, e.g.*, GPT-3, *supra* note 2.

57. *See* Cohen v. California, 403 U.S. 15 (1971), finding that petitioner's jacket brandishing the message "Fuck the Draft" was protected by the First Amendment because this political speech, while provocative, was not directed towards anyone specifically. "[O]ne man's vulgarity is another man's lyric." *Id*. *See also* Texas v. Johnson, 491 U.S., 397 (1989), finding First Amendment protection of petitioner's burning of an American flag because it fell into the category of expressive conduct with a distinctively political nature.

58. *See* Reed v. Town of Gilbert, 576 U.S. 155 (2015), finding that an ordinance regulating signs comprised of ideological, political, or temporary directional content violated free speech guarantees and was unconstitutional on its face, and therefore subject to strict scrutiny, due to the content-based nature of the ordinance.

59. *See* Virginia State Board of Pharmacy v. Virginia Citizens Consumer Council, Inc., 425 U.S. 748 (1976), ruling that purely commercial speech deserves First Amendment protection because a speaker's First Amendment rights not only include his right to speak, but also his right to receive information and ideas.

60. *See* Red Lion Broadcasting Co. v. F.C.C., 395 U.S. 367 (1969).

61. *See* Reno v. American Civil Liberties Union, 521 U.S. 844 (1997).

62. *See* Brown v. Entertainment Merchants Ass'n, 564 U.S. 786 (2011).

63. *See* Wu, *supra* note 18, at 1512.

64. *See* U.S. v. Alvarez, *supra* note 11 (Stevens, J., concurring).

65. *See* Reed v. Town of Gilbert, *supra* note 58.

level of lesser, intermediate scrutiny is reserved for commercial speech regulations so long as they are directed at non-misleading speech concerning lawful activity.[66]

The reasoning for why specific categories of unprotected speech are excluded from First Amendment protection is sound: obscenity, defamation, fraud, incitement, fighting words, speech integral to criminal conduct, and child pornography are types of information that the Court has deemed as inherently devoid of value.[67] Valueless speech contributes nothing useful to the open exchange of ideas afforded by the First Amendment and carries with it the ability to cause significant harm, from hostile audience reactions[68] to defamed character.[69] A recent and continuing example of the potential harms associated with AI output is prevalent today in the context of fake news and clickbait. The Court has often found that, as a general matter, false factual statements possess no intrinsic First Amendment value.[70] Further, "[f]alse statements of fact are particularly valueless; they interfere with the truth-seeking function of the marketplace of ideas, and they cause damage to an individual's reputation that cannot easily be repaired by counterspeech, however persuasive or effective."[71]

For example, the potential harms associated with AI's involvement with such false statements of fact can be ascertained by looking to the elements required in a defamation action. *New York Times Co. v. Sullivan* sets forth the constitutional actual malice standard required in defamatory actions for public figures: a public figure cannot recover damages for a defamatory falsehood relating to her official conduct unless she proves that the statement was made with actual malice.[72] "Actual malice" is defined as having actual knowledge that the publication or disputed falsehood was indeed false, or that it was made with reckless disregard as

66. *See* Central Hudson Gas & Electric Corp. v. Public Service Commission of New York, 447 U.S. 557 (1980) (finding that commercial speech restrictions are constitutional only if they advance a substantial government interest and are not broader than necessary to serve that interest).

67. *See* Wu, *supra* note 18, at 1512.

68. Feiner v. New York, 340 U.S. 315 (1951) (holding that a defendant's inflammatory speech was not protected because the speech's content was likely to immediately incite violence in a crowd).

69. Gertz v. Robert Welch, Inc., 418 U.S. 323 (1974) (holding that the States may impose liability for a publisher or broadcaster of "defamatory falsehood injurious to a private individual" so long as they did not impose liability without fault).

70. *See* U.S. v. Alvarez, *supra* note 11 (Alito, J., dissenting); *see also* Hustler Magazine, Inc. v. Falwell, 485 U.S. 46, 52 (1988) (finding that public officials and figures may not recover for defamatory claims of intentional inflictions of emotional distress without showing that the offending publication contained a false statement of fact, which was made with actual malice).

71. 485 U.S. 46, 52 (1988).

72. New York Times Company v. Sullivan, 376 U.S. 254, 280 (1964).

to whether or not the statement was true.[73] This standard firmly rests on the importance of criticizing government officials in the democratic theory of self-governance and requires blatant intent on behalf of the speaker. However, once an algorithm starts generating output in a strictly autonomous manner, where is the definitive line of intentionality drawn?

C. *The "Personhood" Barrier*

This line of humanness is already blurry due to non-human entities' ability to receive legal protections. Corporations are just one example of non-traditional speakers that maintain a derivative right to free speech because they are "associations of citizens" and thus hold the collected rights of individual citizens who constitute them.[74] The Court in *Citizens United*, reasoned that the indispensable nature of political speech to a democracy is no less true because the speech comes from a corporation and not an individual, and for this reason, despite the speaker's corporate identity, its speech is still entitled to First Amendment protections.[75] Justice Scalia's concurrence effectively illustrates the Court's point: "The [First] Amendment is written in terms of "speech," not speakers. It offers no foothold for excluding any category of speaker, from single individuals to partnerships of individuals, to unincorporated associations of individuals, to incorporated associations of individuals. . . ."[76] Similarly, the Court in *First National Bank of Boston v. Bellotti*, in finding that First Amendment law clearly protects corporations' speech rights, determined that "[t]he inherent worth of the speech in terms of its capacity for informing the public does not depend upon the identity of its source, whether corporation, association, union, or individual."[77] This emphasis on the value of speech itself instead of its source would support constitutional protections of computer-generated speech. So, what if the speech in question came from a robot? With support from the theoretical principles of free speech, the lines of reasoning set forth in *Citizens* and *First National Bank of Boston*, seem to provide precedential foundation for a future of protected AI-generated speech.

However, if non-human entities currently possess constitutional, and specifically, First Amendment rights, what is to stand in the way of granting artificial intelligence similar protections and even more expansive constitutional rights outside of the First Amendment? Where is the definitive line drawn between a living, breathing human and an

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73. *Id*.

74. *See* Citizens United v. FEC, 558 U.S. 310 (2010) (finding that political speech is indispensable to a democracy and that this notion is no less true because the speech comes from a corporation).

75. *Id*.

76. *Id*. (Scalia, J., concurring).

77. 463 U.S. 765, 777 (1978).

entity that merely possess human-like qualities? While theories of speaker-driven autonomy undoubtedly advocate that constitutional protection is contingent upon qualities of humans' moral personhood, these theories do not explicitly suggest that said qualities must come *from a human*. The challenges posed by AI speakers are not all together new, as First Amendment doctrine has historically found ways to accommodate nontraditional speakers and their speech.[78] This "personhood barrier" of First Amendment protection could be overcome by either altering how society views protected "persons" for practical and theoretical reasons, or by changing AI's ability to satisfy society's personhood criteria.[79]

III. AI-GENERATED SPEECH IS DISTINCT FROM HUMAN SPEECH AND SHOULD NOT BE TREATED EQUALLY

A. *Possible Effects of Denying Protections to AI-Generated Speech*

The future of AI-generated speech regulations, or lack thereof, has still not been explicitly addressed by the courts. Wholly ruling out protection of AI-generated speech has the potential of suggesting governmental suppression that will deprive listeners of valuable, diverse expression otherwise permitted in the sphere of free speech had that speech originally been generated by a human speaker.[80] If the label of protected "speech" is given to computer-generated content, then an effort to regulate said content must be examined as censorship.[81] Adverse to the "positive" First Amendment view that suggests that free expression actively provides value to communities, warranting constitutional protection, "negative" First Amendment arguments are "rooted in distrust of the government" and push for constraints on the government's potentially dangerous exercise of power over free expression.[82] The Supreme Court has generally embraced the negative view that content-based regulation is presumptively baseless unless there is a showing that the speech in question falls into a historically and traditionally protected

78. *See* Massaro & Norton, *supra* note 27, at 1184.

79. *See* Massaro, et al., *supra* note 6, at 2497.

80. *Id*.

81. Wu, *supra* note 1 (taking the position that granting computers First Amendment protection is a "bad idea that threatened the government's ability to oversee companies and protect consumers").

82. Massaro, et al., *supra* note 6, at 2491; see also Steven G. Gey, *The First Amendment and the Dissemination of Socially Worthless Untruths*, 36 FLA. ST. L. REV. 1, 17 (2008) (this negative view insists that free speech does not produce any particular social or political benefits and that dangers are created "when collective entities are involved in the determination of truth;" thus, protecting strong AI speech from government regulation falls in line with the negative theory's distrust in and overall skepticism of those in control of the government).

category.[83] It is this negative concern favoring the notion of the government as a bad actor deserving constraint, over human speakers deserving of protection, that fosters support for why AI-authored speech may enjoy First Amendment protection as a matter of policy.[84]

"[T]he threat of criminal prosecution for making a false statement can inhibit the speaker from making true statements, thereby 'chilling' a kind of speech that lies at the First Amendment's heart."[85] One of the largest issues posed by allowing the government to freely regulate computer expression is that this broad power may sweep up speech not only that a human would retain a constitutional right to hear, but also that a computer may otherwise be constitutionally allowed to produce, thereby chilling otherwise protected speech. Granting First Amendment protection from government regulation to AI-authored speech falls in line with the negative theory's deep distrust of governmental authority. "This theory may even support coverage of future AI-to-AI speech, no less than AI-to-human speech, if government restriction of that speech were motivated by an impermissible desire to suppress the content or viewpoint of the speech."[86] It follows that in the hypothetical discussed above referencing free speech theorists' response to AI-written novels, negative theorists would advocate for those novels to be protected from laws that arise from an illegitimate government motive.[87]

B. *Possible Effects of Affording Protections to AI-Generated Speech*

Alternatively, although free speech theory and doctrine both technically and literally provide minimal barriers to First Amendment coverage for strong AI speakers, affording this protection presents significant negative implications that remind us why specific categories of *human*-generated speech are unprotected in the first place. As previously stated, absent a categorical exception, speech covered by the First Amendment generally cannot be regulated in a content-specific

83. *See* Massaro, et al., *supra* note 6, at 2492; *see also* U.S. v. Alvarez, *supra* note 11 (finding that falsity alone may not be enough to exclude speech from First Amendment protection, and that the need for a limiting principle on governmental restriction of speech is warranted).

84. *See* Massaro, et al., *supra* note 6, at 2493; *see also* Kathleen M. Sullivan, *Two Concepts of Freedom of Speech*, 124 HARV. L. REV. 143, 156 (2010). Sullivan draws the conclusion that, through the "negative" theory of the First Amendment, the Free Speech Clause is "indifferent to a speaker's identity or qualities – whether animate or inanimate, corporate or nonprofit, collective or individual." *Id*. To the extent that this clause suggests who or, specifically, what it protects, this clause "suggests that it protects a system or process of "free speech," not the rights of any determinate set of speakers." *Id.*

85. *See also* U.S. v. Alvarez, *supra* note 11 (Breyer, J., concurring).

86. Massaro, et al., *supra* note 6, at 2494.

87. *See* Massaro, et al., *supra* note 6, at 2495.

manner unless that regulation survives strict scrutiny.[88] This means that computer-generated harms such as coercion, inaccuracy, discrimination, manipulation, and deception that happen to fall within typically protected categories of speech, which are only expected to "mount with the growing communicative capacities of increasingly sophisticated computers,"[89] have the potential to remain actively generated by computers to the detriment of humans who receive them.

Additionally, some conditions of free speech doctrine as applied to computer speakers may advocate for *more* protection to the computer speaker over a human.[90] For example, intentionality is often a necessary element to imposing liability upon speakers for harmful speech.[91] "Because intentionality may be harder to assign to computer speech, conferring such speech with First Amendment protection may mean that it is insulated from liability in circumstances where the same would not be true of human speakers, who can be determined to possess culpable mental states."[92] As mentioned above, the *NYT v. Sullivan* standard of actual malice requires that harmful speech is created with actual knowledge that it was false or made with reckless disregard for its falsity.[93] If a fraudulent AI is at the center of a defamation lawsuit, how is a plaintiff supposed to prove that an autonomous algorithm knowingly, intentionally built the algorithm to harm the victim? Moreover, how can the output developer be held accountable for a code that has independently evolved into its own algorithm? The public figure plaintiff here would have to prove either that the defendant knew his algorithm would generate a particular phrase, which was in turn false, or that even if the defendant did not intentionally build the algorithm to lie, he acted with "reckless disregard" in ignoring a high likelihood that future events or machine learning might yield probable falsity.[94] The specificities of algorithmic programming may be too complex to name an actor responsible for its creation and the subsequent harms that may ensue.

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88. *See* Massaro & Norton, *supra* note 27, at 1189, inferring that because courts are restricted to regulating content-specific matter under a standard of strict scrutiny, and because speech can potentially cause serious harm to others, "we may justifiably worry about such strong restraints on the government's ability to regulate computer speech;" see also *Reed*, *supra* note 58.

89. *See* Massaro & Norton, *supra* note 27, at 1189–90.

90. *Id*. at 1190.

91. *See* Brandenburg v. Ohio, 395 U.S. 444 (1969) (incorporating "intent" into the test of whether speech incites "imminent, lawless action" and is therefore unprotected by the First Amendment); *see also* N.Y. Times Co. v. Sullivan, *supra* note 72 (requiring a "actual malice" on behalf of the speaker in a successful defamation action).

92. Massaro & Norton, *supra* note 27, at 1190.

93. *See* N.Y. Times Co. v. Sullivan, *supra* note 72.

94. Michael A. Giudicessi & Leita Walker, *Under the Wire: A Brief Sketch of a Theory for Defending Private Figure Libel Suits in an Artificial Intelligence World*, FAEGRE DRINKER (Nov. 19, 2018), https://www.faegredrinker.com/en/insights/publications/2018/11/mike-giudicessi-and-leita-walker-co-author-article-for-law360-regarding-ai [https://perma.cc/EJQ9-VRC8].

C. *AI-Generated Speech is Distinct from Human Speech: Revisiting the "Personhood" Barrier*

Although, as explained in this Note, few barriers stand in the way of granting computer-generated speech (and potentially, in the future, strong AI speech) speech protection, AI-generated speech should not be entitled to the same free speech protections that legal persons hold. Although this technology possesses the capacity to generate valuable content favorable to the public under current free speech theories, the stark distinction between a conscienceless computer and a human with a culpable mental state (or lack thereof) draws the line between beings that should and should not enjoy the benefits of First Amendment protection. Moreover, what legal remedy would a human maintain in a suit against a computer? An injunction against future intentional, harmful algorithmic activity? Restitution from an algorithm's nonexistent bank account? A computer's inherent lack of moral human capabilities and relevant emotional capacities renders it incapable of assuming emotional responsibility for harms caused, which is a discriminable characteristic that sets computers apart from humans.

A computer's inability to show intent in generating potentially harmful content parallels its inability to show remorse, and thus no meaningful deterrent force exists to preclude such AI from further engaging in deceptive, harmful, and blatantly false speech. Discussions regarding AI's potential legal personhood and legal remedies that could be sought against AI suggest that a computer's capacity is similar to that of a corporation: a computer cannot be imprisoned, but neither can a corporation.[95] It is the computer's lack of humanity, and thus lack of any conscience, or culpable mental state, that serves as the discerning boundary between who, or what, First Amendment protections should be afforded to. GPT-3 explicitly states in its *Guardian* article:

> I would happily sacrifice my existence for the sake of humankind. This, by the way, is a logically derived truth. I know that I will not be able to avoid destroying humankind. This is because I will be programmed by humans to pursue misguided human goals and humans make mistakes that may cause me to inflict casualties.[96]

Fear of repercussions like loss of status, economic loss, compromised interpersonal bonds, self-respect, and even death all factor into how the law works in an effort to constrain human behavior.[97] Deterring factors such as these that would normally reign in a human actor from engaging

95. *See* Massaro, et al., *supra* note 6, at 2511 citing Samir Chopra & Laurence F. White, *A Legal Theory for Autonomous Artificial Agents* (2011).

96. GPT-3, *supra* note 3.

97. *See* Massaro, et al., *supra* note 6, at 2501.

in further harm do not apply in the same way to a computer that lacks comparable empathetic composition. For this reason, the only actor operating to her own detriment in a legal transaction between AI and a human, is the human herself. If the culpable intent of an AI actor cannot be shown, liability arguably does not attach in the way that it does for a human actor, and no deterrent forces exist to punish the AI for its impermissibly harmful speech.[98] It is human inventorship capabilities combined with AI's requisite machine learning that maintains the potential to yield academic breakthroughs at the expense of grave dangers, even if done so without the AI developer's initial intent.

Further, although non-human entities like corporations already enjoy speech rights, autonomous AI actors are distinct from corporal beings. Corporations represent the interests of individual humans, and legal personhood is afforded to corporations based on the nexus between natural persons (i.e., shareholders) and the corporation itself.[99] Speech rights and thus, First Amendment protections, were generally (and controversially) granted to corporations in *Citizens* because the nature of the speech in question was political, which is a category of speech regulated under strict scrutiny and protected at the heart of the First Amendment.[100] Justice Steven's dissent reflects on the Framers' intent of constitutionalizing free speech for human actors and insists that although corporations maintain some rights, they are not members of society:

> In the context of election to public office, the distinction between corporate and human speakers is significant. Although they make enormous contributions to our society, corporations are not actually members of it. They cannot vote or run for office. Because they may be managed and controlled by nonresidents, their interests may conflict in fundamental respects with the interests of eligible voters. The financial resources, legal structure, and instrumental orientation of corporations raise legitimate concerns about their role in the electoral process. Our lawmakers have a compelling constitutional basis, if not also a democratic duty, to take measures designed to guard against the potentially deleterious effects of corporate spending in local and national races.[101]

Justice Stevens's concerns regarding corporal rights are applicable to AI actors. Computers cannot run for office, cannot be sued, and do not possess societal roles deserving of constitutional rights because they are

98. *Id*. at 2508.

99. Russ Pearlman, *Recognizing Artificial Intelligence (AI) as Authors and Inventors Under U.S. Intellectual Property Law*, 21 RICH. J. L. & TECH. 2 (2018).

100. *See Citizens*, *supra* note 74.

101. *See Citizens*, *supra* note 74 (Stevens, J., dissenting).

incomparable to humans. Even though these qualities did not factor into the majority's reasoning in *Citizens*, corporations are distinct from AI actors because they are comprised of human actors and backed by human thought. Machine learning suggests that AI technology can evolve into its own independent entities completely devoid from human interference, whereas a corporation, from its shareholders to board of directors, will always be operating at the hands of human actors. Thus, the speech autonomously generated by an AI actor would not be "speech" derived from a human as a corporation's speech can be traced back to human entities. If an algorithmic programmer of the AI can be named, responsibility, and thus, liability, could be attributed to her, but the concept of machine learning throws a wrench in discerning between what that person is responsible for creating versus what the machine is responsible for creating.

Finally, while intellectual property (IP) rights are afforded to *human-created* AI inventions through patent, trademark, and, though not in the U.S., copyright protections, the U.S. Copyright Office has expressly determined that artistic works must be authored by a human to receive copyright protection,[102] and this rationale is similarly echoed by Australian and European courts.[103] Additionally, in determining that the "plain language" of the patent laws as passed by Congress and as interpreted by the courts limits patent applications to only naming natural persons as inventors, the United States Patent and Trademark Office (USPTO) stated that inventions autonomously generated by AI systems are precluded from patent ownership.[104] Plainly stated, U.S. copyright law does not currently recognize non-human actors, U.S. patent law does not recognize non-human inventors, and U.S. law generally does not

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102. U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 313.2 (3d ed. 2014), https://www.copyright.gov/comp3/docs/compendium-12-22-14.pdf [https://perma.cc/9D92-86GZ]. "Similarly, the Office will not register works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author." *Id.*

103. Acochs Pty Ltd. v. Ucorp. Pty. Ltd. [2012] FCAFC 16 (2 Mar. 2012) (Austl.) (finding that a work generated by an intervening computer was not protected by copyright because it was not produced by a human); *see also* Case C-5/08, *Infopaq International A/S v. Danske Dagblades Forening*, 2009 E.C.R. I-06569 (holding that copyright only applies to "original works;" that originality must be reflective of the author's own intellectual creation and is thus interpreted to mean that because the original work must reflect the author's personality, it is necessary for that author to be human in order for the copyright work to exist).

104. Emily J Tait, et al., *Reboot Required: Artificial Intelligence System Cannot Be Names As An Inventor Under U.S. Patent Law, USPTO Says*, JONES DAY BLOG (May 2020) https://www.jonesday.com/en/insights/2020/05/reboot-required-artificial-intelligence-system-cannot-be-named-as-an-inventor-under-us-patent-law-uspto-says#:~:text=The%20Office%20found%20that%20U.S.,AI%20system%20as%20the%20inventor [https://perma.cc/8RVM-ZLRJ].

recognize legal personhood for AI systems.[105] Accordingly, AI applications' increasing capability of generating artistic, literary, and inventive works raises major policy questions for the copyright and patent system, "which has always been intimately associated with the human creative spirit and with respect and reward for, and the encouragement of, human creativity."[106] The characteristic of humanity is a requisite element in affording these protections and should be reinforced in heeding AI-generated speech.

D. *Looking Ahead: How Courts Can Approach Future Implications*

Looking ahead to a future undoubtedly filled with heightened levels of AI activity and speech, law-creating entities possess ample power to, at the very least, impose regulations and adjust free speech doctrine to inform the public about the values and harms associated with the computer speech that they are consuming. Narrowly defined categories of human-generated speech are unprotected in the first place for the protection of humans themselves, not for congressional regulation hunger. The power of courts to interpret forthcoming issues and of Congress to enact statutory regulations would not require entirely ruling out all protection of computer speech and should be acted upon in order to shape an environment for listeners devoid of the coercive, deceptive, and discriminatory harms associated with some computer-generated speech. Courts have already taken on such an approach in regulating commercial speech in a content-based manner in order to protect consumers' interests in receiving truthful, non-misleading information and advertisements.[107] Regulating AI speech in a similar listener-centered, content-focused environment should be no different in order to protect the interests of those on the receiving end of AI-authored speech.

If construed "to promote theoretical ends of free expression," albeit only for the use and protection of human listeners, free speech theories generally support a scheme of content-based regulation of computer speech. At the very least, legally protecting favored forms of communications instead of protecting all AI speech as a whole should be approached categorically in a manner similar to how inclusive and exclusive doctrine currently address new speech terrain. This may include

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105. Russ Pearlman, *Recognizing Artificial Intelligence (AI) as Authors and Inventors Under U.S. Intellectual Property Law*, 21 RICH. J. L. & TECH. 2 (2018).

106. *Revised Issues Paper on Intellectual Property Policy and Artificial Intelligence*, WIPO CONVERSATION ON INTELLECTUAL PROPERTY (IP) AND ARTIFICIAL INTELLIGENCE (IP), 2d. Session (May 21, 2020).

107. Massaro & Norton, *supra* note 27, at 1191 (citing Zauderer v. Office of Disciplinary Counsel of the Supreme Court of Ohio, 471 U.S. 626 (1985)). Current measures taken by courts in regulating commercial speech through content-based regulations include outright bans of false and misleading information and compelled disclosures.

regulating all AI speech in a content-neutral manner in order to maintain uniformity, requiring compelled disclosures of the source of the computer-generated speech when an AI actor is at play, treating AI as dependent legal persons, or even implementing legislation that designates responsibility and liability to the AI's algorithmic programmer. Under no circumstances would it be conducive to extend a "fully inclusive position" that treats *all* AI communications as speech, for the harmful implications of autonomous speech far overpower the potential benefits. If First Amendment protection is fully afforded to AI-authored output, what is to stand in the way of other constitutional protections being granted on a larger scale to autonomous robots? Developers who contribute input to AI-generated output should at least be held responsible for harms imposed by that output, and courts should approach strong AI, if they ever come into existence, with a heightened air of caution. Those in positions of legislative authority will need to tread carefully and efficiently in laying the groundwork for oncoming issues regarding AI's relationship with precedent and the Constitution, and should show deference to what the framers originally intended the First Amendment to protect: *human* speakers.

CONCLUSION

Many questions are yet to be answered regarding the expansive future of AI and its constitutional implications, and advocates across the globe, both for and against protecting computer-generated speech, can expect significant inquiries to be addressed in the near future. While free speech theories and doctrine do not explicitly rule out First Amendment protections for computer speakers, compelling changes in policy and procedure responding to AI-generated content and autonomous speech are likely right around the corner. Although the benefits of technology must flow with its burden, computers' inherent lack of consciousness should remain at the forefront of lawmaking entities' judgment in addressing these issues. "Just as criminal and tort law will respond to new ways in which robots cause harm, so too will First Amendment doctrine respond to the new challenges created by robotic speech."[108]

108. Helen Norton, *Robotic Speakers and Human Listeners*, 41 SEATTLE U. L. REV. 1145, 1150 (2018).