

Fall 2011

Following You Here, There, and Everywhere; An Investigation of GPS Technology, Privacy, and the Fourth Amendment, 45 J. Marshall L. Rev. 1 (2011)

Stephanie G. Forbes

Follow this and additional works at: <https://repository.law.uic.edu/lawreview>



Part of the [Fourth Amendment Commons](#), [Law Enforcement and Corrections Commons](#), [Privacy Law Commons](#), and the [Science and Technology Law Commons](#)

Recommended Citation

Stephanie G. Forbes, Following You Here, There, and Everywhere; An Investigation of GPS Technology, Privacy, and the Fourth Amendment, 45 J. Marshall L. Rev. 1 (2011)

<https://repository.law.uic.edu/lawreview/vol45/iss1/2>

This Article is brought to you for free and open access by UIC Law Open Access Repository. It has been accepted for inclusion in UIC Law Review by an authorized administrator of UIC Law Open Access Repository. For more information, please contact repository@jmls.edu.

FOLLOWING YOU HERE, THERE, AND EVERYWHERE: AN INVESTIGATION OF GPS TECHNOLOGY, PRIVACY, AND THE FOURTH AMENDMENT

STEPHANIE G. FORBES*

I. INTRODUCTION

In an increasingly mobile society, there is immense value in knowing one's location. Social network applications such as Foursquare¹ and Facebook Places² continue to grow in popularity,³ and global positioning systems ("GPS") also enable drivers to get directions and assist emergency responders in locating cars.⁴ The emergence of this technology has had a profound effect on law enforcement.⁵

* J.D. 2011, William & Mary School of Law; A.B. 2008, Mount Holyoke College. Ms. Forbes began this Article as part of her studies and presently serves as a law clerk for the New Jersey Superior Court Appellate Division. Many thanks to the staff of the John Marshall Law Review for their hard work and to Professor William W. Van Alstyne for encouraging my research.

1. Foursquare is "a location-based mobile platform that . . . [lets] users share their location with friends." *About Foursquare*, FOURSQUARE, <http://foursquare.com/about> (last visited Sept. 29, 2011).

2. Facebook users may use the Places application to "find out more details about the places . . . friends are checking into (map location, description, directions, comments, and other check-ins), or . . . check . . . into a nearby location." Patrick Miller, *How To Use Facebook Places*, PCWORLD (Aug. 20, 2010, 5:52 PM), http://www.pcworld.com/article/203819/how_to_use_facebook_places.html.

3. Foursquare had over ten million users as of September 2011. *About Foursquare*, *supra* note 1.

4. See Donald W. Garland & Carol M. Bast, *Is the Government Riding Shotgun? Recent Changes in Automobile Technology and the Right to Privacy*, 46 CRIM. L. BULL. 4 (2010) (noting the utility of GPS devices in "providing detailed step-by-step driving instructions or proximity to a type of business the motorist wishes to locate without consulting a map, calling for emergency services in the event of an accident, and locating a stolen vehicle."). For an explanation of how GPS devices work, see generally Renee McDonald Hutchins, *Tied Up in Knots? Gps Technology and the Fourth Amendment*, 55 UCLA L. REV. 409, 414-21 (2007).

5. Christopher Slobogin, *Is the Fourth Amendment Relevant in a Technological Age?* 2 (Vand. Pub. Law, Research Paper No. 10-64, 2011) [hereinafter Slobogin, *Technological Age*], available at <http://ssrn.com/abstract=1734755> ("[T]his technological revolution is well on its way to drastically altering the way police go about looking for evidence of

Law enforcement officers have wholeheartedly embraced GPS technology: "Arlington [Virginia] police said they have used GPS devices 70 times in the last three years, mostly to catch car thieves, but also in homicide, robbery and narcotics investigations. Fairfax [Virginia] police used GPS devices 61 times in 2005, 52 times in 2006 and 46 times in 2007."⁶ These changes in tracking technology and its widespread use by law enforcement has led to concerns over potential privacy violations⁷ and infringement of the Fourth Amendment's protection against unreasonable searches.⁸

The United States Supreme Court has yet to rule on whether the Fourth Amendment applies to GPS tracking of automobiles, however, several lower courts have considered the issue to mixed results. This Article confronts the problems posed by the technological outpacing of the law by proposing a solution conforming to the Supreme Court's Fourth Amendment decisions, beginning with *Katz v. United States*, that acknowledges the potential invasion of privacy due to GPS tracking.⁹ I propose that although attaching a GPS device to a vehicle in and of itself does not offend the Fourth Amendment, only tracking on public roads may be done without a warrant.¹⁰ For the results of any tracking on private property to be admissible in court, a warrant must be issued on probable cause.¹¹ Part II analyzes recent developments in case law in line with *Katz* and its progeny. Part III discusses

crime.").

6. Ben Hubbard, *Police Turn to Secret Weapon*, WASH. POST, Aug. 13, 2008, at A1.

7. Hutchins, *supra* note 4, at 411 ("[O]ne cannot escape the conclusion that technological advancements now enable substantial encroachments into zones formerly deemed wholly personal.").

8. U.S. CONST. amend. IV.

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

Id.

9. *Katz v. United States*, 389 U.S. 347, 353 (1967) (holding warrantless searches and seizures are unreasonable under the Fourth Amendment when the reasonable expectation of privacy is violated). In *Katz*, the Supreme Court held a listening device placed on a public phone booth violated the Fourth Amendment, as there was a reasonable expectation of privacy in the closed phone booth. *Id.* at 361 (Harlan, J., concurring).

10. "What a person knowingly exposes to the public . . . is not a subject of Fourth Amendment protection." *Katz*, 389 U.S. at 351. *See also* *United States v. Knotts*, 460 U.S. 276, 281 (1983) ("A person traveling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements from one place to another."). This Article does not address the constitutional issues implicated by police retrieval of GPS data stored by units built into the cars themselves.

11. U.S. CONST. amend. IV.

the tension between privacy and the increasing use of GPS technology by law enforcement. Part IV proposes a solution that enables law enforcement to continue surveillance in public areas to the extent already permitted under Fourth Amendment doctrine, and provides a bright-line rule regarding surveillance on private property.

II. KEEPING UP WITH *KATZ*, *KNOTTS*, *KARO*, AND *KYLLO*: FOURTH AMENDMENT CHALLENGES OF GPS TRACKING

The inability of the law to keep pace with advances in surveillance techniques has created enormous frustration in the application of Fourth Amendment precedent.¹² The seminal surveillance case of *Katz v. United States*¹³ still provides the foundation of any inquiry into unreasonable searches or seizures, however, it “has not been a good shield for privacy against intrusive new technologies.”¹⁴ Subsequent decisions in *United States v. Knotts*,¹⁵ *United States v. Karo*,¹⁶ and *Kyllo v. United*

12. See, e.g., Brief of Am. Civil Liberties Union of Va., Inc. as Amicus Curiae Supporting Appellant at 1, *Foltz v. Commonwealth*, 698 S.E.2d 281 (2010) (No. 0521-09-5) [hereinafter *ACLU VA Brief*], available at <http://acluva.org/wp-content/uploads/2010/11/Foltz-Amicus-VA-Ct-of-Appeals.pdf> (noting twenty-seven years have passed since the so-called “beeper cases” were decided); Orin Kerr, *Does the Fourth Amendment Prohibit Warrantless GPS Surveillance?*, THE VOLOKH CONSPIRACY (Dec. 13, 2009, 9:46 PM), <http://volokh.com/2009/12/13/does-the-fourth-amendment-prohibit-warrantless-gps-surveillance/> (“Surveillance Tool 1.0 is quickly replaced by Tool 1.1 and then 1.2. The Supreme Court can’t possibly decide a new case every time the tool changes.”); Vivek Kothari, *Autobots, Decepticons, and Panopticons: The Transformative Nature of GPS Technology and the Fourth Amendment* 3 (June 29, 2009) (unpublished article), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1427476 (“The Fourth Amendment has always played the proverbial tortoise to technology’s hare.”).

13. Peter P. Swire, *Katz Is Dead. Long Live Katz*, 102 MICH L. REV. 904, 904 (2004) (“*Katz v. United States* is the king of Supreme Court surveillance cases.”).

14. *Id.* at 906.

15. *Knotts*, 460 U.S. 276 (monitoring signals of beeper placed in container driver transported to owner’s property did not violate reasonable expectation of privacy). The police placed a tracking device within a container, which was then placed into *Knotts*’s car. The Court held “[n]othing in the Fourth Amendment prohibited the police from augmenting the sensory faculties bestowed upon them at birth with such enhancement as science and technology afforded them in this case.” *Id.* at 282.

16. *United States v. Karo*, 468 U.S. 705 (1984) (monitoring of a beeper in a private residence violates the Fourth Amendment). A beeper was placed into a container in a car, however, unlike *Knotts*, this beeper entered a private residence. *Id.* at 714-15. As “private residences are places in which the individual normally expects privacy free of governmental intrusion not authorized by a warrant, and that expectation is plainly one that society is prepared to recognize as justifiable,” following the tracking device into the private residence violated the Fourth Amendment. *Id.* at 714.

States,¹⁷ have only further blurred the lines as to when the government may engage in warrantless electronic surveillance. Several federal circuits have already confronted the difficulties posed by the *Katz* line of cases and changing societal values in the face of invasive technologies.

A. United States v. Garcia

In *Garcia*, the police received information that Bernardo Garcia—who previously served time for methamphetamine offenses—provided meth to an informant, purchased materials for the manufacturing of methamphetamine, and “bragged that he could manufacture meth in front of a police station without being caught.”¹⁸ They located the vehicle he drove and placed a “pocket-sized, battery-operated, commercially available” GPS device under the car.¹⁹ After the retrieval of the device, the police discovered Garcia had been traveling to a large parcel of land.²⁰ The police received the landowner’s consent to search the land and discovered meth-making materials. Garcia arrived during the search, and police discovered more incriminating evidence in his car after arresting him.²¹ The Seventh Circuit held a GPS tracking device attached to a vehicle without a warrant did not violate the Fourth Amendment.²²

In holding the placement of the tracking device did not violate the Fourth Amendment, the court relied on *Knotts*’s determination that “the mere tracking of a vehicle on public streets by means of a similar though less sophisticated device (a beeper) is not a search.”²³ Writing for the court, Judge Posner noted police could “follow a car around, or observe its route by means of cameras mounted on lampposts or of satellite imaging as in Google Earth,” without running afoul of the Fourth Amendment; the fact that a

17. *Kyllo v. United States*, 533 U.S. 27 (2001) (holding the use of sense-enhancing technology to gather any information regarding interior of home that could not otherwise have been obtained without physical intrusion into constitutionally protected area constitutes a search and requires a warrant). Police used thermal imagers to determine whether grow-lights were being used to grow marijuana. *Id.* The Court held “that obtaining by sense-enhancing technology any information regarding the interior of the home that could not otherwise have been obtained without physical intrusion into a constitutionally protected area . . . at least where (as here) the technology in question is not in general public use.” *Id.* at 46.

18. *United States v. Garcia*, 474 F.3d 994, 995 (7th Cir. 2007), *cert. denied*, 552 U.S. 883 (2007).

19. *Id.*

20. *Id.*

21. *Id.* at 995-96.

22. *Id.* 994.

23. *Id.* at 995 (citing *Knotts*, 460 U.S. at 281 (“A person travelling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements from one place to another.”)).

tracking device placed on the vehicle allowed them to do the same without going into the field “is a distinction without any practical difference.”²⁴ The only real difference is the technology:

[I]t is the difference between the old technology—the technology of the internal combustion engine—and newer technologies (cameras are not new, of course, but coordinating the images recorded by thousands of such cameras is). But GPS tracking is on the same side of the divide with the surveillance cameras and the satellite imaging, and if what they do is not searching in Fourth Amendment terms, neither is GPS tracking.²⁵

Judge Posner reserved the question of whether mass surveillance, as opposed to the targeted surveillance of Garcia, could eventually be deemed a search within the meaning of the Fourth Amendment.²⁶

B. United States v. Pineda-Moreno

In *Pineda-Moreno*, Drug Enforcement Administration (DEA) agents monitored Juan Pineda-Moreno’s Jeep for a four-month period using GPS devices; “[e]ach device was about the size of a bar of soap and had a magnet affixed to its side, allowing it to be attached to the underside of a car.”²⁷ The agents placed a device on the Jeep seven times: four times when the vehicle was parked on public streets, once while parked in a public parking lot, and twice when the vehicle was parked in Pineda-Moreno’s driveway.²⁸ Agents arrested Pineda-Moreno after tracking him from a marijuana grow site.²⁹ The Ninth Circuit followed the Seventh Circuit’s lead when it held the warrantless tracking of a car’s movements did not violate the Fourth Amendment because it was not a search, as Pineda-Moreno did not have a reasonable expectation of privacy in his car’s movements.³⁰

Pineda-Moreno argued the installation of the tracking devices, especially those installed while the Jeep remained in his driveway, violated his reasonable expectation of privacy. The Government conceded the DEA agents violated the curtilage³¹ of

24. *Id.* at 996.

25. *Id.* at 997.

26. *Id.* at 998 (“Should government someday decide to institute programs of mass surveillance of vehicular movements, it will be time enough to decide whether the Fourth Amendment should be interpreted to treat such surveillance as a search.”).

27. *United States v. Pineda-Moreno*, 591 F.3d 1212, 1213 (9th Cir. 2010), *reh’g en banc denied*, 617 F.3d 1120 (9th Cir. 2010).

28. *Id.*

29. *Id.*

30. *Id.* at 1212.

31. Curtilage is “[t]he land or yard adjoining a house, usually within an enclosure. Under the Fourth Amendment, the curtilage is an area usually protected from warrantless searches.” BLACK’S LAW DICTIONARY 171 (3d

Pineda-Moreno's home by entering onto the driveway; the panel ignored the curtilage issue,³² however, and determined that even if it was in the curtilage, driveways are "only semi-private area[s] . . . [and] Pineda-Moreno did not take steps to exclude passersby[s] from his driveway, [therefore] he cannot claim a reasonable expectation of privacy in it, regardless of whether a portion of it was located within the curtilage of his home."³³

The panel also dismissed Pineda-Moreno's claims that the other five installations of the GPS device violated his Fourth Amendment rights. The court noted that law enforcement's use of advanced technology did not transform legitimate surveillance techniques under *Knotts* and *Kyllo* into violations of the Fourth Amendment: "Insofar as [Pineda-Moreno's] complaint appears to be simply that scientific devices such as the [tracking devices] enabled the police to be more effective in detecting crime, it simply has no constitutional foundation. We have never equated police efficiency with unconstitutionality and decline to do so now."³⁴

Chief Judge Kozinski heavily criticized the panel in his dissent from the petition for rehearing en banc for restricting established Fourth Amendment curtilage doctrine.³⁵ He heatedly argued that by imposing a requirement that people must take affirmative steps in order for the curtilage to be considered private, the court engaged in an act of "unselfconscious cultural elitism,"³⁶ favoring wealthier citizens who could afford to guard their "privacy with the aid of electric gates, tall fences, security booths, remote cameras, motion sensors and roving patrols."³⁷ He further noted "the vast majority of the 60 million people living in the Ninth Circuit will see their privacy materially diminished by

pocket ed. 2006).

32. "We need not decide, however, whether Pineda-Moreno's vehicle was parked within the curtilage of his home." *Pineda-Moreno*, 591 F.3d at 1215.

33. *Id.* The court noted, "[i]f a neighborhood child had walked up Pineda-Moreno's driveway and crawled under his Jeep to retrieve a lost ball or runaway cat, Pineda-Moreno would have no grounds to complain." *Id.* But see *Pineda-Moreno*, 617 F.3d at 1123 (Kozinski, C.J., dissenting):

[T]here's no limit to what neighborhood kids will do, given half a chance: They'll jump the fence, crawl under the porch, pick fruit from the trees, set fire to the cat and micturate on the azaleas. To say that the police may do on your property what urchins might do spells the end of Fourth Amendment protections for most people's curtilage.

34. *Pineda-Moreno*, 591 F.3d at 1216 (quoting *Knotts*, 460 U.S. at 284).

35. *Pineda-Moreno*, 617 F.3d at 1123 (Kozinski, C.J., dissenting). See also Adam Cohen, *The Government Can Use GPS To Track Your Moves*, TIME (Aug. 25, 2010), <http://www.time.com/time/nation/article/0,8599,2013150,00.html> (noting that "courts have long held that people have a reasonable expectation of privacy in their homes and in the 'curtilage,' a . . . legal term for the area around the home.").

36. *Pineda-Moreno*, 617 F.3d at 1123.

37. *Id.*

the panel's ruling."³⁸ Chief Judge Kozinski also dismissed the panel's reliance on *Knotts*, focusing instead on *Kyllo's* reluctance to leave people "at the mercy of advancing technology."³⁹ He asserted the majority's rule failed to "take account of more sophisticated systems that are already in use or in development."⁴⁰

The Court of Appeals of Virginia agreed with the Ninth Circuit in holding the warrantless tracking of a registered sex offender, suspected of unsolved sex offenses, did not violate the Fourth Amendment.⁴¹ There, the police placed a GPS device on a van owned by David Foltz's employer but driven exclusively by Foltz.⁴² Police inserted the device "sort of underneath the bumper to a place that is not observable [from] the public street.' . . . The GPS device was attached to the left side of the rear bumper using a magnet and 'a sticky substance,'"⁴³ and the police were able to track the van in real time and store the van's movements.⁴⁴ Following the signal, police observed Foltz assault a woman and arrested him.⁴⁵ In dismissing Foltz's Fourth Amendment arguments, the court noted, "police used the GPS device to crack this case by tracking [Foltz] on the public roadways—which they could, of course, do in person any day of the week at any hour without obtaining a warrant,"⁴⁶ and there was "no societal interest in protecting the privacy of those activities that might occur in a

38. *Id.*

39. *Id.* at 1125 (quoting *Kyllo*, 533 U.S. at 35 (internal quotation marks omitted)).

40. *Id.* (quoting *Kyllo*, 533 U.S. at 36 (internal quotation marks omitted)). See also *Kyllo*, 533 U.S. at 40 ("[W]e must take the long view . . . [t]he Fourth Amendment is to be construed in the light of what was deemed an unreasonable search and seizure when it was adopted, and in a manner which will conserve public interests as well as the interests and rights of individual citizens." (quoting *Carroll v. United States*, 267 U.S. 132 (1925) (internal quotation marks omitted))).

41. *Foltz*, 698 S.E.2d at 292, *reh'g en banc granted*, 699 S.E.2d 522 (Va. Ct. App. 2010). The court analyzed Foltz's claims under both the Fourth Amendment and the Virginia Constitution, however as the "privacy rights in the Virginia Constitution are coextensive with those in the United States Constitution," the court spoke in terms of the Fourth Amendment. *Id.* at 285 n.6.

42. *Id.* at 283.

43. *Id.* at 284.

44. *Id.*

45. Chief Judge Walter S. Felton, Jr., concurred in the result, however, he would have affirmed on the basis of the eyewitness testimony rather than deciding the Fourth Amendment issue. *Id.* at 293 (Felton, C.J., concurring). He did note, however, that he "[had] no concerns with the analysis of the majority in its determination that the placement of the GPS on the van and the use of the GPS tracking information did not violate [Foltz's] Fourth Amendment rights." *Id.* In its en banc decision, the court bypassed the Fourth Amendment issue and upheld Foltz's conviction on the eyewitness testimony. *Foltz v. Commonwealth*, 706 S.E.2d 914, 920 (Va. Ct. App. 2011) (en banc).

46. *Foltz*, 698 S.E.2d at 289.

bumper.”⁴⁷

Not all of Foltz’s recorded movements took place on public roads; the tracking device continued to record his movements while he was on the private property of his employer.⁴⁸ The court summarily dismissed the assertion that this violated Foltz’s rights, as the property belonged to his employer and “[t]he ‘potential’ use of GPS tracking in other circumstances to follow individuals into truly private areas has no place in the analysis of this case.”⁴⁹ Persuaded by *Garcia* and *Pineda-Moreno*, the court declined to consider the possibility of widespread surveillance in its determination.⁵⁰

C. United States v. Maynard

Breaking with the Ninth and Seventh Circuit,⁵¹ the D.C. Circuit held the warrantless use of a GPS device to track Antoine Jones’s movements continuously for a month violated the Fourth Amendment, as tracking defeated Jones’s reasonable expectation of privacy.⁵² Unlike the other circuits, the court held *Knotts* did not control the present case.⁵³ In reaching its determination, the court distinguished between movements between places and movement over time: “*Knotts* held only that ‘[a] person traveling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements from one place to another,’ not that such a person has no reasonable expectation of privacy in his movements whatsoever, world without end”⁵⁴ The court further argued this case presented the question reserved by the court in *Knotts*: “Whether a warrant would be required in a case involving ‘twenty-four hour surveillance,’ stating ‘if such

47. *Id.* at 287.

48. *Id.* at 292.

49. *Id.*

50. *Id.* at 289. See also *Pineda-Moreno*, 591 F.3d at 1217 n.2 (9th Cir. 2010); *Garcia*, 474 F.3d at 998 (noting that should the government decide to implement systems of mass surveillance of vehicular movements, the definition of surveillance under the Fourth Amendment may have to be reevaluated).

51. Professor Kerr disagrees there is any real circuit split and states, “[t]he two cases are like apples and oranges, at least if you imagine a world where no one has ever seen or heard of an orange.” Orin Kerr, *Petition for Certiorari Filed in Pineda-Moreno, The Ninth Circuit GPS Case, THE VOLOKH CONSPIRACY* (Nov. 22, 2010, 3:00 PM), <http://volokh.com/2010/11/22/petition-for-certiorari-filed-in-pineda-moreno-ninth-circuit-gps-case/>. It is this Article’s position, however, that *Maynard* constitutes a significant divergence from previous GPS cases.

52. *United States v. Maynard*, 615 F.3d 544, 555-56 (D.C. Cir. 2010), *cert. granted sub nom.*, *United States v. Jones*, 2011 U.S. LEXIS 4956 (June 27, 2011) (citing *Katz*, 389 U.S. at 360-61 (Harlan, J., concurring)).

53. *Id.* at 556.

54. *Id.* at 557 (quoting *Knotts*, 460 U.S. at 281).

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.”⁵⁵

In holding that *Knotts* did not control, the court fell back on *Katz*’s reasonable expectation of privacy.⁵⁶ Again, the court distinguished between movements between two places (public) and those over a period of time (private):

First, unlike one’s movements during a single journey, the whole of one’s movements over the course of a month is not *actually* exposed to the public because the likelihood anyone will observe all those movements is effectively nil. Second, the whole of one’s movements is not exposed *constructively* even though each individual movement is exposed, because that whole reveals more-sometimes a great deal more-than does the sum of its parts.⁵⁷

Professor Orin Kerr describes this “potentially revolutionary Fourth Amendment decision” as the “mosaic theory” of the Fourth Amendment: “Whether government conduct is a search is measured not by whether a particular individual *act* is a search, but rather *whether an entire course of conduct, viewed collectively*, amounts to a search.”⁵⁸ This approach has been critiqued on both its practicality⁵⁹ and its conformance to doctrine.⁶⁰ The Supreme

55. *Id.* at 556 (quoting *Knotts*, 460 U.S. at 283-84).

56. *Id.* at 558 (“Whether an expectation of privacy is reasonable depends in large part upon whether that expectation relates to information that has been ‘expose[d] to the public.’” (quoting *Katz*, 389 U.S. at 351)).

57. *Id.*

58. Orin Kerr, *DC Circuit Introduces Mosaic Theory of Fourth Amendment, Holds GPS Monitoring a Fourth Amendment Search*, THE VOLOKH CONSPIRACY (Aug. 6, 2010, 2:46 PM) [hereinafter Kerr, *Mosaic Theory*], <http://volokh.com/2010/08/06/d-c-circuit-introduces-mosaic-theory-of-fourth-amendment-holds-gps-monitoring-a-fourth-amendment-search/>.

59. See, e.g., *In re U.S. for an Order Authorizing Release of Historical Cell-Site Information*, 2011 WL 679925, at *2 (E.D.N.Y. 2011) (“[*Maynard*] did not attempt to define the length of time over which location tracking technology must be sustained to trigger the warrant requirement. I recognize that any such line-drawing is, at least to some extent, arbitrary, and that the need for such arbitrariness arguably undermines the persuasiveness of the rationale of *Maynard*.”); Kerr, *Mosaic Theory*, *supra* note 58 (“One-month of surveillance is too long, the court says. But how about 2 weeks? 1 week? 1 day? 1 hour? . . . At the end of that one day, the first day of monitoring would be constitutional. . . . But by continuing to monitor the GPS device for more time, that first day of monitoring eventually and retroactively becomes unconstitutional. It becomes part of the mosaic.”).

60. See, e.g., *United States v. Cuevas-Perez*, 640 F.3d 272, 280 (7th Cir. 2011) (Flaum, J., concurring) (holding the installation of GPS, which stored defendant’s movements for sixty hours, did not violate the Fourth Amendment). “*Maynard*’s reasoning does not fit comfortably with the Supreme Court’s Fourth Amendment search cases.” *Id.*; *United States v. Jones*, 625 F.3d 766, 767 (D.C. Cir. 2010) (Sentelle, C.J., dissenting) (“[T]his question

Court granted certiorari on two questions: “Whether the warrantless use of a tracking device on [Jones’s] vehicle to monitor its movements on public streets violated the Fourth Amendment,”⁶¹ and “[w]hether the government violated [Jones’s] Fourth Amendment rights by installing the GPS tracking device on his vehicle without a valid warrant and without his consent.”⁶²

These cases illustrate the difficulty confronting the courts due to the rising use of GPS tracking. Changing technology, years beyond the simple beeper of *Knotts* and *Karo*, provides the Government an unparalleled ability to track suspects unchecked by judicial supervision. Instead of having a clear consensus on the Fourth Amendment standard required for police, courts cannot even agree whether Supreme Court precedent applies. This next part will compare courts’ analyses of precedent, the severe privacy implications of the courts’ failure to regulate GPS use, and will argue for a middle ground requiring a warrant in order to track suspects onto private property.

III. TOWARDS A NEW MIDDLE GROUND: HONORING PRECEDENT AND PRIZING PRIVACY

A. *Of Knotts, Karo, and Kyllo: Does Supreme Court Precedent Actually Cover GPS Tracking?*

The proper application of precedent forms the central conflict between the cases that uphold GPS tracking and those that strike it down.⁶³ The Ninth and Seventh Circuits proclaimed themselves

should be reviewed by the court en banc because the panel’s decision is inconsistent not only with every other federal circuit which has considered the case, but more importantly, with controlling Supreme Court precedent.”); Motion to Extend the Stay of the Mandate in This Case at 6, *Jones v. United States*, No. 08-3034 (D.C. Cir. Mar. 18, 2011), available at http://legaltimes.typepad.com/files/doj_motion_gps.pdf (“[W]e submit that this Court’s theory that (otherwise permissible) incidents of GPS monitoring can violate the Fourth Amendment when aggregated, conflicts with the Supreme Court’s analysis in *Karo*.”); Orin Kerr, *Applying the Mosaic Theory of the Fourth Amendment to Disclosure of Stored Records*, THE VOLOKH CONSPIRACY (Apr. 5, 2011, 4:54 PM), <http://volokh.com/2011/04/05/applying-the-mosaic-theory-of-the-fourth-amendment-to-disclosure-of-stored-records/> (“[A]s I see it, the oddity of the inquiries called for by the *Maynard* mosaic theory shows why it is not part of the Constitution at all. In Fourth Amendment law, the lawfulness of government [sic] conduct has always been viewed discretely: Each government act is either a search or it is not a search.”).

61. Petition for a Writ of Certiorari at I *United States v. Jones*, 625 F.3d 766 (D.C. Cir. 2010), petition for cert. filed, Apr. 15, 2011, available at http://legaltimes.typepad.com/files/doj_gps_cert. Oral argument occurred on November 8, 2011.

62. *Jones*, 625 F.3d 766, cert. granted, 2011 U.S. LEXIS 4956 (June 27, 2011).

63. Compare *Pineda-Moreno*, 591 F.3d at 1216-17, and *Garcia*, 474 F.3d at 996-98, with *Maynard*, 615 F.3d at 556-58.

bound by *Knotts* to uphold the use of GPS. They dismissed the *Karo* and *Kyllo* concerns of encroaching technology by limiting those cases to technology that intruded on the privacy of the home, familiar Fourth Amendment ground for judges.⁶⁴ This lock-step reliance on decades-old cases falsely insists there can be no privacy outside the home and ignores significant changes in what society recognizes as intrusive.

The sophistication of the technology utilized had little impact on the decisions upholding GPS tracking. Judge Posner rejected the assertion that vast improvement in technology impacted the case at hand, stating the “difference between the old technology—the technology of the internal combustion engine—and newer technologies [the surveillance camera] . . . GPS tracking is on the same side of the divide with the surveillance cameras and the satellite imaging, and if what they do is not searching in Fourth Amendment terms, neither is GPS tracking.”⁶⁵ The Ninth Circuit panel agreed, stating Pineda-Moreno’s “complaint appears to be simply that scientific devices such as the [tracking devices] enabled the police to be more effective in detecting crime, it simply has no constitutional foundation. We have never equated police efficiency with unconstitutionality and decline to do so now.”⁶⁶ These assertions vastly understate the difference in technology, as “the electronic tracking devices used by the police . . . have little in common with the primitive devices in *Knotts*.”⁶⁷

Many critics of the courts’ supposed powerlessness in the face of *Knotts*’s assertion that “[a] person travelling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements from one place to another,”⁶⁸ focus on the

64. See *Pineda-Moreno*, 591 F.3d at 1216 (“Pineda-Moreno makes no claim that the agents used the tracking devices to intrude into a constitutionally protected area.”); *Garcia*, 474 F.3d at 997 (“*Kyllo* does not help our defendant, because his case . . . is not one in which technology provides a substitute for a form of search unequivocally governed by the Fourth Amendment.”). See also *Kyllo*, 533 U.S. at 34 (“[I]n the case of the search of the interior of homes—the prototypical and hence most commonly litigated area of protected privacy—there is a ready criterion, with roots deep in the common law, of the minimal expectation of privacy that *exists*, and that is acknowledged to be *reasonable*.”); *Karo*, 468 U.S. at 718 (“We discern no reason for deviating from the general rule that a search of a house should be conducted pursuant to a warrant.”).

65. *Garcia*, 474 F.3d at 997.

66. *Pineda-Moreno*, 591 F.3d at 1216 (quoting *Knotts*, 460 U.S. at 284). See also *Jones*, 625 F.3d at 768 (Sentelle, C.J., dissenting) (“There is no material difference between tracking the movements of the *Knotts* defendant with a beeper and tracking the *Jones* appellant with a GPS.”).

67. *Pineda-Moreno*, 617 F.3d at 1124 (Kozinski, C.J., dissenting). See also Kothari, *supra* note 12, at 26 (“If beeper technology is like Marco Polo, GPS is more like the precision guided missiles popularized by the media in the First Gulf War.”).

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

dramatic difference between the technology used by law enforcement in *Knotts* and the GPS cases. “GPS technology enables what beepers could not—the flawless, uninterrupted, and twenty-four hour tracking of a suspect.”⁶⁹ GPS devices’ accuracy makes them effective tools for law enforcement,⁷⁰ but they truly differ from the *Knotts* and *Karo* beepers in their ability to completely replace physical surveillance. Unlike the beepers in *Knotts* and *Karo*, GPS devices have the potential to take the place of traditional police surveillance techniques. Their very natures are different: “[B]eeper technology forces the police to physically follow the individuals they suspect of wrongdoing. . . . GPS technology, on the other hand, enables law enforcement to forego actual surveillance and track the movements of a suspect.”⁷¹ Whereas the police in the beeper cases had to accompany the tracking device in order to observe movements, the police in the GPS cases could use “advanced satellite and computer technology to remotely monitor . . . movements across public and private areas. This was not human observation assisted by technology, but non-human technological tracking unassisted by humans in any manner after the initial installation of the GPS device.”⁷² Police could attach hundreds of devices at low-cost, without needing to articulate any reason for doing so,⁷³ and let a computer track the movements while the police work on other cases.⁷⁴ Although this

69. Kothari, *supra* note 12, at 25; see also *ACLU VA Brief*, *supra* note 12, at 2 (“GPS tracking (1) does not merely augment the senses of police officers, but provides a complete technological replacement for human surveillance; (2) enables twenty-four hour a day ‘dragnet’ surveillance at nominal cost.”).

70. Hutchins, *supra* note 4, at 417 (“GPS receivers use trilateration in three dimensions . . . to calculate their latitude, longitude, and altitude. . . . [T]he information transmitted from the GPS satellites allow a basic receiver to accurately determine its position to within one or two meters.”).

71. Kothari, *supra* note 12, at 25-26.

72. Brief of Elec. Frontier Found. & Am. Civil Liberties Union of the Nat’l Capital Area as Amici Curiae Supporting Appellants at 11, *United States v. Maynard*, 615 F.3d 544 (D.C. Cir. 2010) (Nos. 08-3030, 08-3034). See also *Pineda-Moreno*, 617 F.3d at 1124 (Kozinski, C.J., dissenting) (“But the beeper could perform no tracking on its own, nor could it record its location. If no one was close enough to pick up the signal, it was lost forever.”).

73. See, e.g., *Cuevas-Perez*, 640 F.3d at 287 (Wood, J., dissenting):

If the Fourth Amendment is out of the picture, then it makes no difference whether a police officer subjectively had a good reason to activate a device that he attached, if he acted on a whim, or if he was systematically using devices put on every car in a bad part of town to see where the drivers might be going. . . . Police officers could cruise the parking lots of shopping malls or the streets in one of Chicago’s rougher neighborhoods, install GPSs randomly, and begin tracking any person they chose.

74. Slobogin, *Technological Age*, *supra* note 5, at 4. (“Today it is both technologically and economically feasible to outfit every car with a Radio Frequency Identification Device that communicates current and past routes to an Intelligent Transportation System (ITS) computer.”).

may seem tempting in the never-ending war on crime, permitting the government to use this low-cost, highly-effective tool wholly outside of judicial supervision creates the potential for disastrous constitutional consequences.

B. Privacy in a GPS World

The increasing presence of technology in society raises legitimate privacy concerns that may not be adequately addressed under traditional Fourth Amendment doctrine.⁷⁵ Perhaps the most worrisome aspect of the rise of GPS tracking is the “creep” factor: “There is something creepy and un-American about such clandestine and underhanded behavior. To those of us who have lived under a totalitarian regime, there is an eerie feeling of déjà vu.”⁷⁶ The idea that the government may surreptitiously monitor people’s movements over an extended period of time, which in other cases might be considered stalking,⁷⁷ contradicts the notion that even in public there is a degree of privacy.⁷⁸ The judges writing against warrantless GPS tracking have raised concerns over the vast amount of information to which police would be privy: “What the technology yields and records with breathtaking quality and quantity is a highly detailed profile, not simply of where we go, but by easy inference, of our associations—political, religious, amicable and amorous, to name only a few—and of the pattern of our professional and avocational pursuits.”⁷⁹ Not only can rampant police surveillance expose past activity, but it may

75. Thomas P. Crocker, *The Political Fourth Amendment*, 88 WASH. U. L. REV. 303, 306 (2010) (“In a robust socially networked world, Fourth Amendment privacy by itself may offer little constitutional guidance or protection.”).

76. *Pineda-Moreno*, 617 F.3d at 1126 (Kozinski, C.J., dissenting).

77. “The act or an instance of following another by stealth.” BLACK’S LAW DICTIONARY 671 (3d pocket ed. 2006).

78. See, e.g., *Hill v. Colorado*, 530 U.S. 703, 716-17 (2000) (referencing the “right to be let alone” [which] one of our wisest Justices characterized as ‘the most comprehensive of rights and the right most valued by civilized men.’” (quoting *Olmstead v. United States*, 277 U.S. 438, 478 (1928) (Brandeis, J., dissenting))); *Maynard*, 615 F.3d at 563 (“A person does not leave his privacy behind when he walks out his front door, however.”); *Pineda-Moreno*, 617 F.3d at 1126 (Kozinski, C.J., dissenting):

You can preserve your anonymity from prying eyes, even in public, by traveling at night, through heavy traffic, in crowds, by using a circuitous route, disguising your appearance, passing in and out of buildings and being careful not to be followed. But there’s no hiding from the all-seeing network of GPS satellites that hover overhead, which never sleep, never blink, never get confused and never lose attention.

79. *People v. Weaver*, 909 N.E.2d 1195, 1199-1200 (N.Y. 2009) (striking down warrantless GPS tracking on state constitution grounds). See also *Maynard*, 615 F.3d at 558 (“[The] whole reveals more-sometimes a great deal more-than does the sum of its parts.”).

even chill future activity.

Pervasive fear over being watched may lead to changes in social behavior.⁸⁰ Even if mandatory GPS installation in cars never occurs,⁸¹ society as a whole will suffer if the judiciary turns its back on GPS tracking:

The ill effects of virtual searches do not stop with official misuse of information resulting from general searches. Less tangible, but arguably just as important, is the discomfort people feel when they are being watched or monitored even if, or perhaps especially when, they aren't sure they are being targeted. In other words, for many individuals privacy vis-à-vis the government has value in and of itself, regardless of whether there is evidence of government abuse, over-stepping or mistake.⁸²

Constant paranoia as to when the government may or may not be following its citizens prevents people from fully participating in society. Fear that someone may record, and keep that record, of trips to the clinic, place of worship, and political activities keeps people from living their lives.⁸³ As the "primary arbiter of how government investigates its citizens,"⁸⁴ the Fourth Amendment should act to prevent this inference in private lives of the citizens. The problem thus presented is reconciling what the majority of courts have interpreted to be clear Supreme Court doctrine with the very real specter of omnipresent privacy invasion.

C. Balancing the Scales: GPS and Equilibrium-Adjustment Theory

The Fourth Amendment serves as more than just a procedural guideline for police investigations, it serves as "a constraint on the power of the sovereign, not merely on some of its agents."⁸⁵ The low-cost of GPS surveillance incentivizes its use

80. Crocker, *supra* note 75, at 344 ("Searches can impose 'chilling effects' on individuals' ability and willingness to engage in public social and political activities when they fear unpleasant interactions with police. . . . From a political liberty perspective, we have more to fear from government search and surveillance than from the exercise of eminent domain.").

81. Judge Posner suggested it was not outside the realm of possibility for a future law to require "all new cars to come equipped with the device so that the government can keep track of all vehicular movement in the United States." *Garcia*, 474 F.3d at 998.

82. Slobogin, *Technological Age*, *supra* note 5, at 11-12.

83. *Weaver*, 909 N.E.2d at 1199-1200.

84. Slobogin, *Technological Age*, *supra* note 5, at 22.

85. *Herring v. United States*, 555 U.S. 135, 151-52 (2009) (Ginsburg, J., dissenting) (quoting *Arizona v. Evans*, 514 U.S. 1, 18 (1995) (Stevens, J., dissenting)). See also Crocker, *supra* note 75, at 308 ("[T]he Fourth Amendment . . . protects a political right of the people to organize community life free from pervasive government surveillance and interference." (quoting

over other forms of surveillance.⁸⁶ The cost of surveillance functions as a check on the government as it forces police to evaluate where to spend their resources and determine if the likelihood of finding evidence outweighs the cost of surveillance. If the cost of surveillance is practically nil, the chance that police are going to consider whether following a target is worth it will be as well.⁸⁷ Professor Orin Kerr's Equilibrium-Adjustment Theory provides a "correction mechanism" for this conundrum.⁸⁸

Equilibrium-Adjustment postulates that the Supreme Court adopts lower Fourth Amendment protections "[w]hen changing technology or social practice makes evidence substantially harder for the government to obtain."⁸⁹ Conversely, when technology makes evidence collection "substantially easier for the government to obtain, the Supreme Court often embraces higher protections to help restore the prior level of privacy protection."⁹⁰ Professor Kerr hypothesizes the Equilibrium-Adjustment Theory was a motivating factor for the development of the car search doctrine, which in turn served as a justification for GPS searches.

The development of the automobile presented a significant challenge to law enforcement. Chief Justice William Howard Taft referred to the automobile as "the greatest instrument to promote immunity from punishment for crime that we have introduced in many, many years."⁹¹ "Cars were akin to homes and sealed packages on wheels. And yet the judges of the 1920s realized that

Herring, 555 U.S. at 151-52)).

86. Continuous human surveillance for a week would require all the time and expense of several police officers, while comparable photographic surveillance would require a net of video cameras so dense and so widespread as to catch a person's every movement, plus the manpower to piece the photographs together. . . . On the contrary, the marginal cost of an additional day—or week, or month—of GPS monitoring is effectively zero.

Maynard, 615 F.3d at 565.

87. Hutchins, *supra* note 4, at 463 ("The use of GPS-enhanced tracking is most productive for law enforcement, and most troublesome in constitutional terms, when it is used over extended spans of time. But, it is in precisely these cases that officers, armed with the luxury of time, have little reason not to secure the preauthorization of a warrant. Indeed, in many cases, this is precisely what law enforcement is already doing.").

88. Orin S. Kerr, *An Equilibrium-Adjustment Theory of the Fourth Amendment*, 125 HARV. L. REV. 476 (2011) [hereinafter Kerr, *Equilibrium-Adjustment*] ("Equilibrium-adjustment is a judicial response to changing technology and social practice. When new tools and new practices threaten to expand or contract police power in a significant way, courts adjust the level of Fourth Amendment protection to try to restore the prior equilibrium.").

89. *Id.*

90. *Id.*

91. Robert Post, *Federalism, Positive Law, and the Emergence of the American Administrative State: Prohibition in the Taft Court*, 48 WM. & MARY L. REV. 1, 125 n.408 (2006).

extending the home protections to cars threatened to cut short police power so dramatically as to make many laws virtually unenforceable.”⁹² The Court under Chief Justice Taft, according to Professor Kerr, crafted the car search doctrine in *Carroll v. United States*,⁹³ in order to restore police power to the “level that enabled the ‘proper administration of our criminal laws.’”⁹⁴ Because the current interpretation of the Fourth Amendment insufficiently addressed this “‘instrument of evil’ . . . greatly expand[ing] opportunities for criminal activity,”⁹⁵ the Court reinterpreted the amendment to tip the scales in favor of security and law enforcement over privacy.⁹⁶ Under Professor Kerr’s theory, the Supreme Court should strengthen the Fourth Amendment’s protection against warrantless GPS tracking.

As previously discussed, GPS tracking greatly enhances police power by providing law enforcement the ability to monitor people’s movements over long stretches of time without using as many physical and economic resources.⁹⁷ This tips the police-power/privacy-right balance sharply in favor of the government, and the scale is in need of a correction mechanism. “The use of the tracking device gives the police an important advantage: It lets the police track location more easily [than] before and more often in circumstances that would be difficult otherwise.”⁹⁸ Indeed, judges striking down GPS tracking have engaged in equilibrium-adjustment.⁹⁹ In the case of GPS tracking, however, the

92. Kerr, *Equilibrium-Adjustment*, *supra* note 88, at 27.

93. *Carroll*, 267 U.S. at 147 (“The intent of Congress to make a distinction between the necessity for a search warrant in the searching of private dwellings and in that of automobiles and other road vehicles . . . is thus clearly established. . . . Is such a distinction consistent with the Fourth Amendment? We think that it is.”).

94. Kerr, *Equilibrium-Adjustment*, *supra* note 88, at 27 (quoting *People v. Case*, 190 N.W. 289, 292 (Mich. 1922)). See also Substituted Brief for the United States on Reargument at 20-21 *Carroll v. United States*, 267 U.S. 132 (1925) (No. 15), available at 1924 WL 25788 at *20-21.

Prior to the invention of the automobile, the well-settled rules of the common law and the decisions of this and the several State courts had established, with comparative certainty, a proper balance between the necessities of public authority, on the one hand, and the demands of personal liberty, on the other. The invention of this remarkable instrument of transport, however, has operated to disturb that balance.

95. Kerr, *Equilibrium-Adjustment*, *supra* note 88, at 28 (quoting *Post*, *supra* note 91, at 125 n.408).

96. *Garcia*, 474 F.3d at 998 (“There is a tradeoff between security and privacy, and often it favors security.”).

97. See *supra* notes 67-71 and accompanying text.

98. Kerr, *Equilibrium-Adjustment*, *supra* note 88, at 9.

99. *Maynard*, 615 F.3d at 563 (“[P]rolonged GPS monitoring reveals an intimate picture of the subject’s life that he expects no one to have—short perhaps of his spouse. The intrusion such monitoring makes into the subject’s private affairs stands in stark contrast to the relatively brief intrusion at issue

Equilibrium-Adjustment conflicts with traditional Fourth Amendment doctrine to such an extent that the Court may strike down warrantless GPS tracking wholesale. In that case, a legislative solution may permit society to express its disapproval with the practice of warrantless GPS surveillance without court involvement.

IV. STRIKING THE BALANCE BETWEEN SECURITY AND PRIVACY

A. *Filling the Gaps: Congressional Solution in lieu of Court Involvement*

As an alternative to courts engaging in equilibrium-adjustment, Congress has previously intervened in filling perceived gaps in Fourth Amendment doctrine. The Electronic Privacy Communications Act (ECPA)¹⁰⁰ passed in order to fill the Fourth Amendment gap left by *Katz* and third-party doctrine in the interception of wireless conversations.¹⁰¹ Courts have taken note of the gaps in Fourth Amendment doctrine as the impetus for congressional action in the face of emerging technology: “The growth of electronic communications has stimulated Congress to enact statutes that provide both access to information heretofore unavailable for law enforcement purposes and, at the same time, protect users of such communication services from intrusion that Congress deems unwarranted.”¹⁰² Some argue a legislative solution would be better than a judicial one:

Judges struggle to understand even the basic facts of such technologies, and often must rely on the crutch of questionable metaphors to aid their comprehension. Judges generally will not know whether those metaphors are accurate, or whether the facts before them are typical or atypical given the technology of the past

in *Knotts*.”); *Pineda-Moreno*, 617 F.3d at 1123 (Kozinski, C.J., dissenting) (“By holding that this kind of surveillance doesn’t impair an individual’s reasonable expectation of privacy, the panel hands the government the power to track the movements of every one of us, every day of our lives.”).

100. Electronic Communications Privacy Act of 1986, Pub. L. No. 99-508, 100 Stat. 1848 (1986).

101. CHRISTOPHER SLOBOGIN, *PRIVACY AT RISK: THE NEW GOVERNMENT SURVEILLANCE AND THE FOURTH AMENDMENT* 5 (2007) [hereinafter SLOBOGIN, *PRIVACY AT RISK*]. See also DEPT. OF JUSTICE, COMPUTER CRIME AND INTELLECTUAL PROPERTY SECTION, *SEARCHING AND SEIZING COMPUTERS AND OBTAINING ELECTRONIC EVIDENCE IN CRIMINAL INVESTIGATIONS* 7 (2009), available at <http://www.cybercrime.gov/ssmanual/ssmanual2009.pdf> (“Title III [of the ECPA] . . . provides a comprehensive statutory framework that regulates real-time monitoring of wire and electronic communications. Its scope encompasses, and in many significant ways exceeds, the protection offered by the Fourth Amendment.”).

102. *In re Application of U.S. for an Order Directing a Provider of Electronic Communication Service to Disclose Records to Government*, 620 F.3d 304, 306 (3d Cir. 2010).

or the present. These dynamics make it easy for judges to misunderstand the context of their decisions and their likely effect when technology is in flux. Judges who attempt to use the Fourth Amendment to craft broad regulatory rules covering new technologies run an unusually high risk of crafting rules based on incorrect assumptions of context and technological practice.¹⁰³

Congressional action has the potential to address the situation more thoroughly. Whereas a court will have to confine itself to the case presented, Congress can craft legislation to anticipate future events. However, even Congress has acknowledged its difficulty in keeping pace with technological advances in other areas of the law,¹⁰⁴ and previous legislative solutions have not provided the clear guidance promised.¹⁰⁵ Moreover, “while legislative remedies should offer supplemental coverage, they are not a necessary stand-in for constitutional safeguards.”¹⁰⁶ The courts, not the legislature, must take the initiative in protecting against abuses of GPS surveillance in order to provide the maximum constitutional protection.¹⁰⁷

B. “This Far You May Come and No Farther”:¹⁰⁸ Protecting Privacy Without Burdening Security

For privacy advocates, “the threshold for assessing ‘how much technological enhancement of ordinary perception turns mere observation into a Fourth Amendment search’ has been crossed.”¹⁰⁹ Many have called for GPS to require warrants in all

103. Orin S. Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801, 875-76 (2004); see also Joseph Goldstein, *The Oldest Bench Ever*, SLATE (Jan. 18, 2011), <http://www.slate.com/id/2281318> (describing the difficulties older judges have with new technology).

104. See Stephanie Gaylord Forbes, Note, *Sex, Cells, and SORNA: Applying Sex Offender Registration Laws to Sexting Cases*, 52 WM. & MARY L. REV. 1717, 1743 n.164 (2011) (discussing Congress’s difficulty in keeping up with the technology used in child pornography cases).

105. DANIEL J. SOLOVE, NOTHING TO HIDE: THE FALSE TRADEOFF BETWEEN PRIVACY AND SECURITY 166 (2011) [hereinafter SOLOVE, NOTHING TO HIDE] (“[F]ederal electronic surveillance statutes are famously complex, if not entirely impenetrable.”) (internal quotation omitted).

106. Hutchins, *supra* note 4, at 412-13.

107. Senator Roy Wyden (D-OR) introduced the Geolocational Privacy and Surveillance Act [“GPS Act”] on June 15, 2011. Geolocational Privacy and Surveillance Act, S. 1212, 112th Cong. (2011). The GPS Act would prohibit the warrantless interception and disclosure of location information and its use in criminal trials. *Id.* §§ 2602(a)-(h), 2603. The text of the bill does not, however, limit the ability of police to install tracking devices. Therefore, the Court should take the opportunity to decide the constitutional issue.

108. *Job* 38:11.

109. Hutchins, *supra* note 4, at 457; see generally *ACLU VA Brief*, *supra* note 12, at 15 (“Taken together, U.S. Supreme Court precedent establishes that intrusive police techniques revealing the details of a person’s private activities

circumstances,¹¹⁰ however, this deprives law enforcement of a valuable tool in the fight on crime. In order to protect privacy interests and without unduly restricting law enforcement's ability to investigate and prevent crime, police must be able to articulate, at minimum, a reasonable suspicion for the placement of GPS devices on vehicles, and also obtain a warrant for tracking on private property. Requiring a warrant only to prove a vehicle entered private property would reduce concerns of unchecked police power while permitting police to track vehicles on public roads.

Reconciling the *Knotts* line of cases with reasonable restrictions on police power requires concessions from each side of the debate.¹¹¹ A reasonable suspicion standard for the placement of a GPS device, regardless of whether on public or private property, requires police "to point to specific and articulable facts which, taken together with rational inferences from those facts, reasonably warrant that intrusion."¹¹² Furthermore, they will have to determine if evidence of a vehicle's presence on private property constitutes a vital aspect of the case, such that it necessitates the procurement of a warrant. If so, police must present evidence of probable cause, justifying the surveillance of a tracking device to a neutral magistrate, just as they would to secure any other warrant. Arguably, this would require police to obtain warrants in all GPS cases "because they have no way of knowing in advance whether the beeper will be transmitting its signals from inside private premises."¹¹³ This argument failed to persuade the Court in *Karo*,¹¹⁴ and the state of advanced technology hardly makes the

constitutes a Fourth Amendment search even if those activities may be exposed to the public, especially when the techniques involve use of sophisticated technology that does not merely enhance an officer's own senses.").

110. See generally *ACLU VA Brief*, *supra* note 12, at 1 (making the argument that "[w]ithout a warrant requirement, an individual's every movement could be subject to remote monitoring, and permanent recording, at the sole discretion of any police officer."); Hutchins, *supra* note 4, at 462 ("[T]he Court has consistently declared its preference for warrants to be the presumptive baseline."); Haley Plourde-Cole, Note, *Back to Katz: Reasonable Expectation of Privacy in the Facebook Age*, 38 *FORDHAM URB. L.J.* 571 (2010).

111. As with most compromises, "it is unlikely that all involved will be completely happy with any result. . . . [T]his is the nature of compromise." *United States v. City of Miami*, 614 F.2d 1322, 1342 (5th Cir. 1980).

112. *Terry v. Ohio*, 392 U.S. 1, 21 (1968).

113. *Karo*, 468 U.S. at 718.

114. If agents are required to obtain warrants prior to monitoring a beeper when it has been withdrawn from public view, the Government argues, for all practical purposes they will be forced to obtain warrants in every case in which they seek to use a beeper, because they have no way of knowing in advance whether the beeper will be transmitting its signals from inside private premises. The argument that a warrant requirement would oblige the Government to obtain warrants in a large

argument more convincing now. In fact, it is possible for police in certain jurisdictions to obtain warrants without having to appear in court,¹¹⁵ so the warrant requirement places little burden on law enforcement.

The solution admittedly does not completely dispel fears over the accumulation of data on people's movement as expressed by the courts in *Weaver* and *Maynard*.¹¹⁶ It would, however, prevent from admission into evidence a vehicle's presence on private property, including privately owned parking lots open to the public,¹¹⁷ and would require justification of the placement in the first place. Faced with the bright-line rule that only truly public roads will be admissible in court without a warrant, police will be forced to evaluate their cases more carefully to determine where the resources are best spent.¹¹⁸ Police could no longer merely assert the "naked eye" defense to justify the electronic tracking,¹¹⁹ providing relief against "the erosion of personal privacy wrought by technological advances."¹²⁰

V. CONCLUSION

GPS technology benefits society in numerous ways. In addition to the conventional and popular uses,¹²¹ the technology has been used to deliver blood to military outposts,¹²² supervise

number of cases is hardly a compelling argument against the requirement.

Id.

115. See Martha Neil, *Police in Fla. Town Use Email and Skype to Obtain Warrants While Still on the Scene*, A.B.A. J. (Mar. 29, 2011), http://www.abajournal.com/news/article/police_in_fl._town_use_email_and_skype_to_obtain_warrants/ (noting the use of the internet to obtain a warrant, rather than conventional methods).

116. See *supra* note 80 and accompanying text.

117. Under this rule, an officer could offer into evidence that GPS tracked the vehicle to a public road in front of private property, but, absent a warrant authorizing tracking, would not be able to testify the vehicle entered the private property.

118. See *supra* notes 86-88 and accompanying text.

119. "[A]nyone who wanted to look the fact that he was traveling over particular roads in a particular direction, the fact of whatever stops he made, and the fact of his final destination." *Knotts*, 460 U.S. at 281-82, 285. Moreover, it raises the question, "[i]f the naked eye viewing without physical intrusion could have occurred, why didn't it?" SLOBOGIN, *PRIVACY AT RISK*, *supra* note 101, at 64.

120. *Pineda-Moreno*, 617 F.3d at 1124 (Kozinski, C.J., dissenting).

121. *Supra* notes 1-5 and accompanying text.

122. *GPS Equipped Parachutes Deliver Blood From the Sky To Save Lives*, MILITARY HEALTH SYS. – U.S. DEP'T OF DEFENSE (June 25, 2010), http://www.health.mil/News_And_Multimedia/News/detail/10-06-25/GPS_Equipped_Parachutes_Deliver_Blood_From_the_Sky_to_Save_Lives.aspx.

prisoners on release,¹²³ and decrease truancy in schools.¹²⁴ In a nod to the rapid development of technology, the Supreme Court acknowledged that the Fourth Amendment cannot ignore technological advancements.¹²⁵ In order to keep the Fourth Amendment relevant,¹²⁶ the Court must acknowledge the intrusiveness of technology as well as its benefits.

The creep factor articulated by Chief Judge Kozinski illustrates the need for a swift resolution by the courts in favor of providing clear standards for law enforcement.¹²⁷ The idea that police may use sophisticated technology to craft an elaborate portrait of people's movements and associations over an extended, and seemingly limitless, period of time, without any judicial oversight violates the promise of the Fourth Amendment to guard against unreasonable intrusions into private life.¹²⁸ The temptation to utilize technological surveillance, which is more cost-efficient than traditional surveillance and yields more accurate results,¹²⁹ increases in the current economic climate when police departments around the country face budget crises.¹³⁰

123. Patti Davis, *Freedom is Too Good for Hinckley*, TIME (Mar. 24, 2011), <http://www.time.com/time/magazine/article/0,9171,2061239,00.html> (stating John Hinckley must carry a GPS phone during his time away from the hospital).

124. Eric Carpenter, *Kids who Skip School are Tracked by GPS*, THE ORANGE COUNTY REGISTER (Feb. 17, 2011), <http://www.ocregister.com/news/school-288730-students-program.html>.

125. "[T]he rule we adopt must take account of more sophisticated systems that are already in use or in development." *Kyllo*, 533 U.S. at 35-36. *Cf. City of Ontario v. Quon*, 130 S. Ct. 2619, 2629 (2010) ("The judiciary risks error by elaborating too fully on the Fourth Amendment implications of emerging technology before its role in society has become clear.").

126. "The Fourth Amendment's increasing irrelevance stems from the fact that the Supreme Court is mired in precedent decided in another era." Slobogin, *Technological Age*, *supra* note 5, at 2.

127. *See Pineda-Moreno*, 617 F.3d at 1126 (Kozinski, C.J., dissenting) (explaining that "there is something creepy and un-American about unchecked police use of GPS tracking devices"); *supra* note 77 and accompanying text.

128. *See Katz*, 389 U.S. at 357 ("Searches conducted without warrants have been held unlawful notwithstanding facts unquestionably showing probable cause, for the Constitution requires that the deliberate, impartial judgment of a judicial officer . . . be interposed between the citizen and the police.") (internal citation and quotation omitted); SOLOVE, NOTHING TO HIDE, *supra* note 105, at 35 ("[T]he Fourth Amendment doesn't protect privacy by stopping the government from searching; it works by requiring judicial oversight and mandating that the government justify its measures.").

129. *See supra* notes 70-75 and accompanying text.

130. *See, e.g.,* Eric Lichtblau & Ron Nixon, *In Budget's Fine Print, Real and Illusory Cuts*, N.Y. TIMES, Apr. 14, 2011, at A16 ("State and local police will be losing more than \$900 million this year—a 25 percent reduction—in Justice Department money used to hire hundreds of local police officers, pay for new technology and provide other services. The cuts come at a time when many departments are already facing state budget crunches."); Joseph Goldstein, *Police Force Nearly Halved, Camden Feels Impact*, N.Y. TIMES, Mar. 7, 2011,

Without a firm boundary line between acceptable and unconstitutional surveillance techniques, police departments will engage in this court-sanctioned stalking. By requiring a warrant to prove a vehicle's presence on private property, but permitting warrantless GPS tracking on public roads,¹³¹ the Court would recognize the inherent intrusiveness of GPS tracking without completely sacrificing effective police surveillance tools. The implementation of such a standard, however, should not wait until GPS technology becomes the forewarned totalitarian surveillance program.

Judge Posner urges patience in extending Fourth Amendment protections against warrantless GPS tracking, saying "it will be time enough to decide whether the Fourth Amendment should be interpreted to treat such surveillance as a search."¹³² The constitutional violation, however, remains the same whether one person or one million people face standardless GPS tracking. As a society, we should endeavor to prevent constitutional violations instead of waiting for the worst-case-scenario to arrive, especially in cases in which the violation is readily foreseen. We cannot forever postpone a decision, claiming "there will be time enough . . . to determine whether different constitutional principles may be applicable,"¹³³ when, as in the case of GPS surveillance, the time has already arrived.

at A14 ("If it doesn't need a gun and a badge at that location,' officers are not sent, [said] the city's police chief, J. Scott Thomson . . ."); Jesse McKinley & Malia Wollan, *Facing Deficit, Oakland Put Police Force on Chopping Block*, N.Y. TIMES, June 26, 2010, at A9.

131. Provided reasonable suspicion exists to place the GPS device on the vehicle in the first place. See *supra* notes 111-12 and accompanying text.

132. *Garcia*, 474 F.3d at 998. *Accord Jones*, 625 F.3d at 769 (Sentelle, C.J., dissenting) (explaining that he "cannot discern any distinction between the supposed invasion by aggregation of data between the GPS-augmented surveillance and a purely visual surveillance of substantial length."); *Pineda-Moreno*, 591 F.3d at 1216 (declining to find that GPS tracking constituted a Fourth Amendment violation, the court found that "[t]he only information the agents obtained from the tracking devices was a log of the locations where . . . [the] car traveled, information the agents could have obtained by following the car."); *Foltz*, 698 S.E.2d at 289 ("[W]e . . . find that Judge Posner's comments about judicial restraint are also appropriate and applicable here, Consequently, we do not address the concerns raised by appellant regarding what may one day be potential future practices of the police.").

133. *Knotts*, 460 U.S. at 284.