

Mind Uploading: Confronting the Privacy Challenges and Legal Ramifications of Inevitable Technological Advancements in the Context of the Fourth Amendment

Cameron Holmes*

I.	INTRODUCTION	191
II.	TECHNOLOGY TODAY AND WHAT LIES AHEAD	194
	A. <i>Defining Mind Uploading</i>	194
	B. <i>From Smartphones to Mind Uploading</i>	195
	C. <i>Exploring the Legal Ramifications</i>	196
III.	FOURTH AMENDMENT OVERVIEW AND HISTORY	197
	A. <i>Interpreting “Search”: Protecting Individual Privacy Interests</i>	197
	B. <i>The Reasonableness Doctrine and the Recurring Trespass Theory</i>	199
IV.	PROTECTING OUR PRIVACY: THREE REASONS WHY THE SUPREME COURT SHOULD NEVER ALLOW SEARCH WARRANTS FOR MIND UPLOADING DEVICES	201
	A. <i>Reasonable Expectation of Privacy</i>	202
	B. <i>The Trespass Theory</i>	203
	C. <i>Government Interests Versus Privacy Interests</i>	204
V.	CONCLUSION	206

I. INTRODUCTION

“Privacy comes at a cost,” but at what cost?¹ As advances in technology have made life easier for many Americans, both good and bad,² it has also raised an onslaught of privacy concerns.³ Throughout the

* © 2016 Cameron D. Holmes. Senior Managing Editor, Volume 19, *Tulane Journal of Technology and Intellectual Property*. J.D. candidate 2017, Tulane University Law School; B.B.A. 2010, University of Miami. The author thanks his boyfriend, family, and friends for their love and support. The author also thanks all of the members of Volume 19 for their hard work and dedication.

1. *Riley v. California*, 134 S. Ct. 2473, 2493 (2014).

2. See Georges Nahon, *Why Digital in 2015 Will Make Our Lives Easier and Better*, WIRED: INNOVATION INSIGHTS (Feb. 16, 2015, 11:06 AM), <http://www.insights.wired.com/profiles/blogs/why-digital-in-2015-will-make-out-lives-easier-and-better#axzz4K3Q4ILw>;

United States, and most notably in New York City, countless police departments have pursued criminal investigations based upon controversial policies, including stop-and-frisk.⁴ Many times, challenges to these policies have proven unsuccessful, as the government has effectively argued that it has a “strong interest in solving crimes and bringing offenders to justice.”⁵ Most recently, the U.S. government attempted to compel Apple to bypass the security functions for its iPhone in an attempt to uncover encrypted information stored on a San Bernardino terrorist’s iPhone.⁶ Although the FBI’s seemingly noble investigation into terrorist Syed Farook does not implicate the Fourth Amendment because the phone belonged to Mr. Farook’s employer,⁷ the government’s attempt to create a backdoor into his cell phone is a cause for concern and a stark reminder “of the ‘chilling’ breach of privacy posed by the government’s demands.”⁸

As technology advances, the threat of government overreach and Fourth Amendment violations have become more and more inescapable.⁹ It was not long ago that Americans were unfamiliar with the Internet, yet today, “the vast majority of Americans are online” as it has become “an important way to connect with friends and family, shop, get news and search for information.”¹⁰ Similarly, just as the idea of a phone that could

Catherine Rampell, *A Generation of Slackers? Not So Much*, N.Y. TIMES (May 28, 2011), <http://www.nytimes.com/2011/05/29/weekinreview/29graduates.html>.

3. See, e.g., Jason Trahan, *New Surveillance Technology Raises Privacy Issues*, DALL. MORNING NEWS (Oct. 5, 2011, 11:24 PM), <http://www.dallasnews.com/news/local-news/20111005-new-surveillance-technology-raises-privacy-issues.ece>; Gary T. Marx, *Communications Advances Raise Privacy Concerns*, CHRISTIAN SCI. MONITOR, http://web.mit.edu/gtmarx/www/comm_advance_privacy.html (last visited Oct. 28, 2016).

4. See David Keenan & Tina M. Thomas, *An Offense-Severity Model for Stop-and-Frisks*, 123 YALE L.J. 1448, 1450 (2014).

5. See *id.* at 1451, 1484 (quoting *United States v. Hensley*, 469 U.S. 221, 228 (1985)).

6. See Eric Lichtblau & Katie Benner, *As Apple Resists, Encryption Fray Erupts in Battle*, N.Y. TIMES, Feb. 18, 2016, at A1.

7. Fred Kaplan, *Nobody Won the Apple-FBI Standoff*, SLATE (Mar. 29, 2016, 10:34 AM), http://www.slate.com/articles/news_and_politics/war_stories/2016/03/the_fbi_ended_its_showdown_with_apple_and_neither_won.html (“There were no Fourth Amendment issues; the phone belonged to Farook’s employer, which had consented to government inspection.”).

8. Lichtblau & Benner, *supra* note 6, at B4.

9. See, e.g., Walter Simpson, *The End of Privacy? Government and Private Surveillance Pose a Growing Threat to Americans*, BUFFALO NEWS (May 10, 2014, 11:46 PM), <http://www.buffalonews.com/opinion/viewpoints/the-end-of-privacy-government-and-private-surveillance-pose-a-growing-threat-to-americans-20140510>; Daniel J. Weitzner, *Facing Privacy Tradeoffs To Restore Trust and the Rule of Law*, LAWFARE (May 6, 2016, 7:30 AM), <https://www.lawfareblog.com/facing-privacy-tradeoffs-restore-trust-and-rule-law>.

10. Cf. Monica Anderson & Andrew Perrin, *13% of Americans Don’t Use the Internet. Who Are They?*, PEW RES. CTR. (Sept. 7, 2016), <http://www.pewresearch.org/fact-tank/2016/09/07/some-americans-dont-use-the-internet-who-are-they/> (discussing research on the characteristics of the 13% of Americans who do not use the Internet).

carry all of an individual's information in it was inconceivable in the pre-digital age,¹¹ many Americans are skeptical of the mere possibility of mind uploading¹²—that is, the process by which a human being is able to upload all of the activity from his or her brain, including thoughts, memories, ideas, etc. to some other tangible medium.¹³

However, Americans would be naïve to assume that such futuristic innovations are far from reality. In fact, both the United States government, as well as private companies, have already invested in developing technology that can decipher the brain—technology which puts mind uploading “tantalizingly within reach.”¹⁴ Although there remains substantial progress to be made in developing a mind uploading device,¹⁵ the legal ramifications of such innovations have so far not been discussed. The Supreme Court, however, has acknowledged the power of technology and the unique circumstances technological advancements present in relation to individual privacy interests.¹⁶ Of course, the Supreme Court's acknowledgement of the privacy consequences of technological advancements, such as the invention of the cell phone,¹⁷ are not the same as the potential privacy consequences of mind uploading devices; they are analogous. Given that mind uploading implicates far greater privacy concerns than cell phones,¹⁸ these technological advancements should receive exceptional protection.

This Comment will discuss the legal consequences of technological innovations designed to preserve and, in some cases, extend mental states through the process of mind uploading. Such technological

11. See *Riley v. California*, 134 S. Ct. 2473, 2484 (2014) (“A smart phone of the sort taken from Riley was unheard of ten years ago; a significant majority of American adults now own such phones.”).

12. See Zoltan Istvan, *Despite Skepticism, Many People May Embrace Radical Transhumanist Technology in the Future*, HUFFINGTON POST: BLOG (Feb. 18, 2014, 5:06 PM), http://www.huffingtonpost.com/zoltan-istvan/despite-skepticism-many-p_b_4800932.html.

13. See *Frequently Asked Questions*, CARBONCOPIES, <http://www.carboncopies.org/our-company/frequently-asked-questions> (last visited Mar. 15, 2016).

14. See Adam Piore, *The Neuroscientist Who Wants To Upload Humanity to a Computer*, POPULAR SCI. (May 16, 2014), <http://www.popsci.com/article/science/neuroscientist-who-wants-upload-humanity-computer>.

15. See *id.* (noting that even the leading scientist in the pursuit of mind uploading has asserted that such technology may not be available until at least 2045); see generally John Smart, *Dendritic Spines, Memory, and Brain Preservation*, BRAIN PRESERVATION FOUND. (Feb. 6, 2016), <http://www.brainpreservation.org/dendritic-spines-memory-and-brain-preservation/> (discussing “recent advances in the neurosciences, and what they may mean for human brain preservation in coming years”).

16. See *United States v. Jones*, 132 S. Ct. 945, 964 (2012); *Riley v. California*, 134 S. Ct. 2473, 2493 (2014).

17. See *Riley*, 134 S. Ct. at 2493.

18. Cf. *Frequently Asked Questions*, *supra* note 13.

advancements will require unprecedented protection from the Fourth Amendment's search and seizure clause.

First, this Comment will discuss the technological advancements being made in the field of mind uploading and the imminent legal consequences that such advancements pose to privacy. Second, this Comment will provide a brief historical overview of the Fourth Amendment's search and seizure clause and the Supreme Court's proclivity to adjust its interpretation of the Fourth Amendment with respect to government interests *vis-à-vis* individual privacy interests as technology has evolved.¹⁹ Finally, through an analysis of relevant Supreme Court case decisions concerning the Fourth Amendment, this Comment will offer three distinct reasons why devices capable of storing enormous amounts of sensitive, personal information, such as mind uploading devices, must receive unprecedented protection from government intrusion, including from the issuance of search warrants that would otherwise be legal today.

II. TECHNOLOGY TODAY AND WHAT LIES AHEAD

A. *Defining Mind Uploading*

For the purposes of this Comment, mind uploading “refers to a transfer procedure, whereby the relevant data that describes a mind’s operation and information content is moved from a biological brain to some other medium.”²⁰ Dr. Randal Koene, a neuroscientist who has devoted his life to the concept of mind uploading, has noted that the nomenclature is far from clear— “[t]he term is not at all self-explanatory to the uninitiated.”²¹ The reason for this is that the word “is based off terminology originating from the context of conventional, contemporary computers,” whereby the word has come to encapsulate the idea of uploading a given mind into a computer.²² However, defining mind uploading in “paradigms of computation and communications technology” only lends itself to misunderstanding by vastly

19. See *Olmstead v. United States*, 277 U.S. 438, 465 (1928) (holding that listening to conversations by using wiretaps did not constitute a search); see also *Jones*, 132 S. Ct. at 950 (holding that the use of long term GPS monitoring impinged upon society’s expectation of privacy and therefore constituted a search); *Riley*, 134 S. Ct. at 2493 (holding that the search incident to arrest exception does not apply to cell phones since many times they contain personal information).

20. *Frequently Asked Questions*, *supra* note 13.

21. *Id.*

22. Franco Cortese, *Clearing Up Misconceptions About Mind Uploading*, H+ MEDIA (June 17, 2013), <http://hplusmagazine.com/2013/06/17/clearing-up-misconceptions-about-mind-uploading/>.

oversimplifying the process.²³ In this broad sense, the uploading of the mind to another tangible medium may serve the purpose of storing information, such as ideas and memories, or in the more extreme and hopeful scenario, extend the life of the individual.²⁴

B. *From Smartphones to Mind Uploading*

It may seem dubious to assert that from the creation of smartphones, smart TVs, and self-driving cars that mind uploading is the next logical step in human innovation; however, such an assertion is not as far-fetched as it may appear.²⁵ Although mind uploading is unlikely to be a part of Americans' lives within the immediate future, governments and private companies alike have invested in initiatives to further understand the brain while scientists work on developing the technology to eventually carry out the mind uploading process.²⁶ At the Massachusetts Institute of Technology (MIT), a group of scientists were charged with mapping “the activity of every single neuron in a mouse brain”—a process which would be key to understanding the human brain, and ultimately, creating a platform for mind uploading.²⁷ Motivated in part by MIT's research, the United States government began the BRAIN (Brain research through innovative neuro-technologies) initiative in an attempt to build tools necessary to “map the activity of the 100-billion-odd neurons in the human brain.”²⁸ In Europe, the European Union has initiated a similar program “with over 100 partner research institutions and 1 billion Euros in seed funding . . . to create super computer simulations incorporating everything we know about how the human brain operates.”²⁹ Finally, IBM has invested in further understanding the human brain by creating the Blue Brain Project, whose purpose is “to build biologically detailed digital reconstructions and simulations of the rodent, and ultimately the human brain.”³⁰ These projects are a simple reminder that advances in technology, even those as fantastical as mind uploading, are not that far-fetched.

23. *Id.*

24. *See Frequently Asked Questions, supra* note 13.

25. *See id.*; Smart, *supra* note 15.

26. *See Frequently Asked Questions, supra* note 13; Piore, *supra* note 14.

27. Maddie Stone, *What Happens When We Upload Our Minds?*, MOTHERBOARD (June 12, 2015, 5:00 AM), <http://motherboard.vice.com/read/what-happens-when-we-upload-our-minds>.

28. *Id.*

29. *Id.*

30. *In Brief*, BLUE BRAIN, <http://bluebrain.epfl.ch/cms/lang/en/pid/56882> (last visited Mar. 15, 2016); *Grey Matter, Blue Matter*, ECONOMIST (June 9, 2005), <http://www.economist.com/node/4054975>.

Although the possibility of a device capable of uploading an individual's mind may seem dubious presently, such devices may become an important part of Americans' lives, just as the smartphone has become ubiquitous in American society.³¹ Yet, while understanding the psychology behind why Americans would ever choose to upload their minds to another medium is a question for another day, Americans should be wary of the privacy concerns unique to a device powerful enough to store vast amounts of sensitive information that would otherwise be available to the government notwithstanding new, unprecedented protection.

C. *Exploring the Legal Ramifications*

Mind uploading brings about a plethora of legal ramifications to the American way of life, and the challenges it presents within the context of the Fourth Amendment's search and seizure clause are particularly concerning.³² Although, as aforementioned, the Supreme Court has considered how complex technologies interact with the law, the Court has never been charged with understanding technology as complex as mind uploading.³³ Because mind uploading would allow an individual to preserve their mind by uploading his or her memories, thoughts, ideas, etc., a search of such a device would yield enormous amounts of information about the individual on a far more substantial and dangerous level than that of a simple computer.³⁴ When such technology inevitably becomes available, the government will eventually attempt to obtain a search warrant for one of these devices.

If the government were to establish the need for the search of a mind uploading device, would a valid search warrant justify the need considering such an enormous intrusion into an individual's private life? This Comment asserts that the answer would likely be no, and that if the Supreme Court were ever to undertake such a case, the Court would be justified in disallowing a search warrant for a mind uploading device by relying on prior Fourth Amendment decisions concerning technological advancements.

31. See Lorenzo Ligato, *An Embarrassing Number of People Say They Couldn't Live Without Their Smartphone*, HUFFINGTON POST (July 13, 2015, 3:26 PM), http://www.huffingtonpost.com/2015/07/13/smartphone-dependence-addiction_n_7785782.html.

32. Cf. Lichtblau & Benner, *supra* note 6. Although mind uploading is not a reality today, because of the vast amounts of information that they potentially can store, the government's request of Apple to disencrypt terrorist Sayed Farook's iPhone is analogous to the privacy challenges which individuals may one day face concerning mind uploading.

33. See *infra* Part III.

34. See generally Stone, *supra* note 27 (discussing the amount of information that could potentially be stored on a mind uploading device).

III. FOURTH AMENDMENT OVERVIEW AND HISTORY

Initially, the Fourth Amendment of the United States Constitution provided Americans with an understanding that they would be protected from unwarranted searches and seizures during a period of time when privacy interests were at the forefront of many Americans' minds.³⁵ Although the Framers of the Constitution were uniquely aware of Americans' privacy interests,³⁶ in the centuries since the Fourth Amendment's ratification, its interpretation has steadily undulated with the Supreme Court's composition. The Court's fluid interpretation of the Fourth Amendment has created undue complexity concerning individual privacy interests as technological advancements have caused the Supreme Court to refine and redefine the scope of the Fourth Amendment's protection.³⁷

A. *Interpreting "Search": Protecting Individual Privacy Interests*

To understand the Supreme Court's fluid interpretation of the Fourth Amendment as it relates to technology, it is important to understand how the Court has defined a search through the decades. After its adoption, it was well understood that the Fourth Amendment protected "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures."³⁸ The term, "searches," was originally defined under a trespass theory, which had been established and developed through case law, and was based on actual, physical intrusions by the government into certain designated areas, such as the home or office.³⁹ Notwithstanding any exceptions, such physical intrusions required a search warrant, which functioned as a safeguard between the government and its citizens.⁴⁰ The Supreme Court emphasized the importance of the warrant requirement as a means of protecting individual privacy interests countless times⁴¹ and specifically addressed this point in *Skinner v. Railway Labor Executives' Ass'n*. The court noted "[a]n essential purpose of a warrant requirement is to protect privacy interests by assuring citizens subject to a search . . . that such

35. See generally RUSSEL L. WEAVER ET AL., CRIMINAL PROCEDURE: INVESTIGATIVE Chapter 4 (2015) (noting that the adoption of the Fourth Amendment was directly related to the British's practice of unreasonable searches and seizures).

36. See *id.* at 195.

37. See generally *id.* (highlighting various cases that have shaped the Supreme Court's interpretation of the Fourth Amendment).

38. U.S. CONST. amend. IV.

39. See WEAVER ET AL., *supra* note 35, at 195-96.

40. See *id.*; see also *Olmstead v. United States*, 277 U.S. 438, 460 (1928).

41. See, e.g., *United States v. Leon*, 468 U.S. 897, 913-14 (1984).

intrusions are not the random or arbitrary acts of government agents.”⁴² However, despite the purported protections of the warrant requirement, the Supreme Court’s narrow definition of a search proved to be problematic as advances in technology undermined the Fourth Amendment’s purpose by allowing the government to circumvent the requirement.⁴³

After decades of narrowly interpreting the Fourth Amendment, the Supreme Court refined its interpretation of a search in order to protect the privacy interests of American citizens.⁴⁴ However, the Court’s development of its interpretation of the Fourth Amendment’s search and seizure clause was gradual,⁴⁵ and the United States government exploited the Court’s reliance upon the trespass theory as “science . . . brought forth far more effective devices for the invasion of a person’s privacy than the direct and obvious methods of oppression.”⁴⁶ The Supreme Court, in *Katz v. United States*, enhanced the protections of the Fourth Amendment by broadly interpreting the definition of a search to correspond to advances in technology.⁴⁷ The Court undertook a new position on the trespass theory as the defendant, Katz, asserted that his Fourth Amendment rights were violated when the police placed a recording device on top of a phone booth that he was using to illegally gamble.⁴⁸ Under the Court’s trespass theory, as the lower court had held, the police could not have possibly violated Mr. Katz’s Fourth Amendment rights as there was never any physical intrusion.⁴⁹ In order to address Mr. Katz’s privacy concerns, the Court emphasized that the Fourth Amendment protects people, not places, from governmental intrusions and moved away from the trespass theory as means of identifying Fourth Amendment violations.⁵⁰

In his concurrence, Justice Harlan articulated the development of the reasonableness doctrine, noting: “[m]y understanding of the rule that has emerged from prior decisions is that there is a twofold requirement, first, that a person have exhibited an actual (subjective) expectation of privacy and, second, that the expectation be one that society is prepared

42. *Skinner v. Ry. Labor Execs.’ Ass’n*, 109 S. Ct. 1402, 1415 (1989).

43. *See Goldman v. United States*, 316 U.S. 129, 135 (1942).

44. *See generally Katz v. United States*, 389 U.S. 347 (1967) (resulting in the development of the reasonable expectation of privacy test).

45. *See WEAVER ET AL.*, *supra* note 35, at 197-216 (noting the development of the reasonable expectation of privacy test through various cases).

46. *See Goldman*, 316 U.S. at 139-41 (Murphy, J., dissenting).

47. *See Katz*, 389 U.S. at 353.

48. *Id.* at 348, 353.

49. *Id.* at 348-49.

50. *See id.* at 353.

to recognize as ‘reasonable.’”⁵¹ Although the court did not directly apply the newly developed reasonable expectation of privacy test,⁵² the Court nevertheless concluded that the police recordings of Mr. Katz were searches under the Fourth Amendment’s search and seizure clause, and by not obtaining a warrant, the police violated Mr. Katz’s right to be free from unwarranted governmental intrusion.⁵³

B. The Reasonableness Doctrine and the Recurring Trespass Theory

The reasonableness doctrine was an indirect response to privacy concerns amongst American citizens as technology had outpaced the law.⁵⁴ Although *Katz v. United States* was the first case which directly addressed an individual’s reasonable expectation of privacy as it related to government intrusions, the Supreme Court applied the test in a number of cases to address technological innovations.⁵⁵ However, in many of those cases, the Supreme Court interpreted the reasonableness doctrine narrowly, by relying on the “knowing exposure” concept,⁵⁶ which diminished an individual’s expectation of privacy as unreasonable, thus diluting the doctrine’s original objective.⁵⁷

Although the Supreme Court never overturned the trespass theory,⁵⁸ the reasonableness doctrine became the primary means of weighing the government’s ability to conduct searches and seizures under the Fourth Amendment’s search and seizure clause against individual privacy interests.⁵⁹ As American jurisprudence became increasingly ill-adapted to address new technological realities, privacy advocates found a champion of privacy rights in Supreme Court Justice Antonin Scalia.⁶⁰

In *Kyllo v. United States*, Justice Scalia, writing for the majority, held that the government’s warrantless use of thermal imaging in order to determine whether the defendant was growing marijuana plants inside

51. *Id.* at 361 (Harlan, J., concurring).

52. *See* WEAVER ET AL., *supra* note 35, at 200 (noting that although a concurrence, Justice Harlan’s formula was subsequently approved by the court following the *Katz* decision).

53. *Katz*, 389 U.S. at 359 (Stewart, J. majority).

54. *See generally* WEAVER ET AL., *supra* note 35, at 197-216.

55. *See, e.g.*, *Smith v. Maryland*, 442 U.S. 735, 741 (1979); *California v. Ciraolo*, 476 U.S. 207, 211 (1986).

56. WEAVER ET AL., *supra* note 35, at 203 (“[T]he Court has chosen repeatedly to construe the REOP test narrowly by relying on an expansive concept of ‘knowing exposure’ in order to find privacy expectations to be unreasonable.”).

57. *See id.*

58. *See United States v. Jones*, 132 S. Ct. 945, 947 (2012) (“The *Katz* reasonable-expectation-of-privacy test has been added to, but not substituted for, the common-law trespassory test.”).

59. *See* WEAVER ET AL., *supra* note 35, at 200.

60. *See Kyllo v. United States*, 533 U.S. 27 (2001).

his home clearly constituted a search within the meaning of the Fourth Amendment's search and seizure clause.⁶¹ Although the Supreme Court's holding turned upon the reasonableness doctrine, Justice Scalia simultaneously attempted to revive the trespass theory, noting: "we think 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,' constitutes a search."⁶² However, it was not until *United States v. Jones*, when Justice Scalia fully revived the trespass theory, albeit somewhat modified.⁶³

In *United States v. Jones*, Justice Scalia used the trespass theory to find that the U.S. government had violated the defendant's Fourth Amendment rights by attaching a GPS (Global-Positioning-System) device to his car without obtaining a warrant.⁶⁴ Just as in *Katz*, where the trespass theory would not have protected individual privacy interests, the reasonableness doctrine would not have protected individual privacy interests in the *Jones* case.⁶⁵

Justice Scalia addressed the purported inconsistency between the Court's rulings in the two opinions, by noting that although "later cases, of course, have deviated from [the] exclusively property-based approach. . . . Fourth Amendment rights do not rise or fall with the *Katz* formulation."⁶⁶ Justice Scalia's revitalization of the trespass theory represents another change in the Court's interpretation of the Fourth Amendment in the face of technological advancements in order to protect individual privacy rights, which otherwise may have been undone had the Court solely relied upon the reasonableness doctrine.

However, even though the Court has broadened protections for individual privacy concerning warrantless searches, there exists countless exceptions to the warrant requirement,⁶⁷ such as the search incident to arrest exception.⁶⁸ However, in 2014, in *Riley v. California*, the Supreme Court took a major step in extending individual privacy protections by holding that the search incident to arrest exception does not apply to cell phone information.⁶⁹ In *Riley*, the Court once again reexamined the

61. *Id.* at 29.

62. *Id.* at 34.

63. *See Jones*, 132 S. Ct. at 947.

64. *Id.*

65. *See id.*; *see also Katz v. United States*, 389 U.S. 347, 353 (1967).

66. *Jones*, 132 S. Ct. at 950.

67. *See WEAVER ET AL.*, *supra* note 35, Chapter 4.

68. *Id.* at 278 ("The search incident to legal arrest exception is one of the oldest and well-established exceptions to the warrant requirement. It provides that, when the police make legal arrest, they have the right to make a search incident to that arrest.").

69. *Riley v. California*, 134 S. Ct. 2473, 2494-95 (2014).

Fourth Amendment and analyzed the reasonableness doctrine in the context of technological advancements.⁷⁰ Specifically, the Court analyzed government interests *vis-à-vis* individual privacy interests as it related to searching cell phone information.⁷¹ The Court reasoned that cell phones contain innumerable functions, and that “[t]he term ‘cell phone’ is itself misleading shorthand [as] many of these devices are in fact minicomputers.”⁷² The Court was wary of the possible privacy intrusion, noting “the storage capacity of cell phones has several interrelated consequences for privacy.”⁷³ Ultimately, the Court held that “the search incident to arrest exception does not apply to cell phones” because “cell phones, as a category, implicate privacy concerns far beyond those implicated by the search of a cigarette pack, a wallet, or a purse,” given the amount of personal information a cell phone can store.⁷⁴

IV. PROTECTING OUR PRIVACY: THREE REASONS WHY THE SUPREME COURT SHOULD NEVER ALLOW SEARCH WARRANTS FOR MIND UPLOADING DEVICES

The Supreme Court has tackled difficult Fourth Amendment privacy challenges before, and each time the Court has come to an agreement, rationalizing their decision by either creating new guidelines or reiterating antiquated doctrines.⁷⁵ Although the founding fathers likely never anticipated the privacy challenges that cell phones and the Internet would present, the Court, nevertheless, used the Constitution and previous decisions concerning technological advancements as a guiding light in interpreting the Fourth Amendment’s search and seizure clause.⁷⁶ Just as the Court has done in the past concerning technological advancements, the Court could once again broadly interpret the Constitution and apply the tests of its previous decisions⁷⁷ in order to

70. *See id.*

71. *Id.* at 2488, 2494-95.

72. *Id.* at 2489.

73. *See id.*

74. *Id.* at 2488-89, 2494.

75. *See generally* *Olmstead v. United States*, 277 U.S. 438 (1928) (holding that using wiretaps to capture conversations does not constitute a search and therefore did not require a search warrant); *Goldman v. United States*, 316 U.S. 129 (1942) (holding that the use of a detectaphone in order to amplify sound waves of conversations does not constitute a search and therefore did not require a search warrant); *Katz v. United States*, 389 U.S. 347 (1967) (holding that the use of a listening device put on top of a phone booth did constitute a search and required a search warrant); *Riley*, 134 S. Ct. 2473 (holding that the search incident to arrest exception did not apply to cell phones and required a search warrant).

76. *See Riley*, 134 S. Ct. at 2482-93.

77. *See United States v. Jones*, 132 S. Ct. 945, 949-52 (2012).

exclude searches and seizures of mind uploading devices, even those obtained by valid search warrants, from the purview of justifiable warrantless searches under the Fourth Amendment. Although the Supreme Court's decisions and its interpretation of the Fourth Amendment, as it relates to privacy, have mainly involved warrantless searches by the government, the guidelines and rules which they have established are nonetheless compelling in substantiating a precedent that search warrants should not be applicable to mind uploading devices.

A. *Reasonable Expectation of Privacy*

The reasonable expectation of privacy test created in *Katz v. United States* may provide one of the many reasons why the issuance of a search warrant for a mind uploading device is not favorable nor advisable. As previously noted, in *Katz*, the Supreme Court focused on advances in technology that were being used by the police to capture an individual's conversation in a phone booth without obtaining a warrant.⁷⁸ In order to better protect individuals, the reasonable expectation of privacy test was formulated.⁷⁹ Justice Harlan described the test as a two-step inquiry: first, did the individual exhibit an expectation of privacy, and second, is that expectation of privacy one which society is prepared to recognize as reasonable.⁸⁰ The test essentially required that an individual manifest an expectation of privacy that society could deem as reasonable.⁸¹

Although *Katz* differentiated between a place and a person, as Justice Stewart noted in his opinion "the Fourth Amendment protects people, not places,"⁸² the reasonable expectation of privacy guarantees could still be applied to an individual's mind uploading device in order to afford such individual protection from government intrusion. Similar to *Katz* where the Court held that an individual had a reasonable expectation of privacy when he entered a public phone booth,⁸³ by applying the same test to an individual's mind uploading device, it is not difficult to assume that an individual who has chosen to upload his mind would also have a reasonable expectation of privacy for information stored on that device.

However, even with a search warrant, the Court could justify its decision to extend exceptional protection over such a device by

78. See *Katz*, 389 U.S. at 348.

79. *Id.* at 361-62 (Harlan, J. concurring).

80. *Id.*

81. *Id.*

82. *Id.* at 351 (Stewart, J. majority).

83. *Id.*

explaining that an individual who has uploaded their mind for preservation purposes has done so with the reasonable expectation that the device would never be subjected to inspection, even in the face of a valid search warrant, because of the vast amount of personal data that it contains. Furthermore, in Justice Harlan's description of the reasonable expectation of privacy test, which concerns whether an individual's expectation of privacy is one which society is prepared to deem reasonable,⁸⁴ it is not difficult to conclude that society would be prepared to recognize an individual's expectation that their mind uploading device be protected, in spite of a search warrant, as reasonable given the private nature of the device.

B. *The Trespass Theory*

Although the reasonable expectation of privacy test provides a foundation for establishing the protections needed for mind uploading devices, the trespass theory may further contribute to that foundation in forming such a rule. As was noted in Part III, the trespass theory was one of the original doctrines used to analyze and identify whether a search had been performed as it related to the Fourth Amendment.⁸⁵ It is based on the idea that there are certain constitutionally protected areas, such as the home, and that any government, physical intrusion into such an area without a warrant is a violation of the Fourth Amendment's search and seizure clause.⁸⁶ Unlike the reasonable expectation of privacy test which focuses on the privacy expectation of people, the trespass theory focuses on physical intrusions into places.⁸⁷

By applying the trespass theory to a mind uploading device, it becomes easy to see how the theory could ensure protection from government inspection, even in spite of a search warrant. Similar to the reasoning in *Kyllo v. United States*,⁸⁸ the search of an individual's mind uploading device would not necessarily be a physical intrusion as the government would not be using physical means in obtaining the sensitive information. However, by using Justice Scalia's reasoning in *Kyllo*,⁸⁹ one could easily analogize a mind uploading device to that of the individual's brain. Just as Justice Scalia noted that the use of thermal imagers to scan an individual's home amounted to a search under the Fourth Amendment

84. *Id.*

85. *See supra* notes 39-40 and accompanying text.

86. *See supra* notes 39-40 and accompanying text.

87. *See Kyllo v. United States*, 533 U.S. 27, 31 (2001), *see also Katz*, 389 U.S. at 347.

88. *See Kyllo*, 533 U.S. at 31-41.

89. *See id.*

because it could not have otherwise been done without physical intrusion,⁹⁰ a similar argument could be made concerning an individual's mind uploading device because such an intrusion would be analogous to surgically removing an individual's brain and analyzing it. By obtaining a search warrant for a mind uploading device, the government would be obtaining information that it could not otherwise have obtained without physically intruding into that person's brain. Furthermore, as was implied in *Jones*, the founding fathers would no doubt have considered the search of a mind uploading device as an inexcusable intrusion into a person's privacy.⁹¹

C. Government Interests Versus Privacy Interests

This Comment asserts it is likely that when mind uploading devices do become available to the masses, they will become a new target for the government in criminal investigations. As was noted previously in Part I, the United States government recently attempted to compel Apple to create software it does not have in order to search Syed Farook's iPhone.⁹² Although the cause seems noble in this instance, it may be a portentous indication of what is to come in the future if mind uploading becomes a reality for Americans. Similar to the circumstances surrounding Apple, the government may seek search warrants for mind uploading devices by noting the strong government interests in their information such as protecting the public from dangerous criminals;⁹³ however, even though the government interests may be substantial, it is likely that the privacy interests of such a search would be far more reaching.

In *Riley v. California*, the Supreme Court explained the balance test between government interests *vis-à-vis* individual privacy interests in determining whether to exempt a search from the warrant requirement.⁹⁴ The Court noted that "the ultimate touchstone of the Fourth Amendment is 'reasonableness,'" and as such, the government could not search a cell phone incident to the arrest of an individual without a warrant to

90. See *id.* at 34.

91. See *United States v. Jones*, 132 S. Ct. 945, 949 (2012).

It is important to be clear about what occurred in this case: The Government physically occupied private property for the purpose of obtaining information. We have no doubt that such a physical intrusion would have been considered a "search" within the meaning of the Fourth Amendment when it was adopted.

Id.

92. See Lichtblau & Benner, *supra* note 6.

93. *Id.*

94. *Riley v. California*, 134 S. Ct. 2473, 2484 (2014).

gather evidence of criminal wrongdoing.⁹⁵ Among many of the Court's rationalizations in upholding the requirement of a search warrant for an individual's cell phone, the Court indicated the storage capacity of the phone as a major factor in indicating that the privacy interests of the individual far outweighed those of the government.⁹⁶ The Court noted instances of how "the storage capacity of cell phones has several interrelated consequences for privacy."⁹⁷ Specifically, the Court mentioned three scenarios as to why the search of an individual's mobile phone without a warrant was unjustifiable:

First, a cell phone collects in one place many distinct types of information—an address, a note, a prescription, a bank statement, a video—that reveal much more in combination than any isolated record. Secondly, a cell phone's capacity allows even just one type of information to convey far more than previously possible. The sum of an individual's private life can be reconstructed through a thousand photographs labeled with dates, locations, and descriptions . . . Third, the data on a phone can date back to the purchase of the phone, or even earlier.⁹⁸

Although *Riley* concerned the privacy interests an individual has in information stored on a cell phone as it related to the search incident to arrest exception, the Court's reasoning as to why a search warrant was required is directly applicable to why the search of an individual's mind uploading device should never be allowed, even with a valid search warrant. Just as the Court in *Riley* analyzed the privacy implications from an unjust search of an individual's cell phone by noting the vast amount of personal information that is stored on that phone, the search of a mind uploading device would have far greater consequences as it would contain a much larger amount of personal information. With a mind uploading device, the government would essentially be able to read a person's mind: they would have access to old memories, past thoughts, potential incriminating evidence of prior indiscretions. The erosion of privacy would be extraordinary.

Furthermore, in *Maryland v. King*, the Supreme Court, considering the warrantless search of an individual's DNA during the process after which he or she had been arrested, held that such a search was reasonable and did not violate the individual's privacy interests because the region of the DNA used to identify the individual "does not show more far-

95. *Id.* at 2482.

96. *See id.* at 2489.

97. *Id.*

98. *Id.*

reaching and complex characteristics like genetic traits.”⁹⁹ The Court reasoned that since the region of the DNA analyzed by the police can only prove identity, the individual’s privacy interests did not outweigh the government’s interests in identifying the individual.¹⁰⁰

However, once again, although this case concerned a warrantless search, it is also applicable to the search of a mind uploading device. Unlike DNA, a search of a mind uploading device could not only provide the information for which a search warrant had been issued, it could also reveal vast amounts of information about the individual—from his or her first day at school to much more intimate and private details of his or her life.

Expanding upon the Court’s reasoning in *King*, a search warrant for particular information contained within a mind uploading device should be disallowed because the device would “show more far-reaching and complex characteristics” of that individual than a Court could have ever reasonably expected.¹⁰¹

V. CONCLUSION

Although the United States Supreme Court’s analysis of the Fourth Amendment has varied over time, the Court has ultimately refined their interpretation of the amendment in order to provide an answer that protects individual privacy interests in the face of new technological advancements. As mind uploading devices, whether in the form that this Comment supposes or not, become a part of Americans’ lives, it is imperative that the Supreme Court once again reevaluate its interpretation of the Fourth Amendment in order to protect individual privacy interests as they relate to the government’s attempt to obtain search warrants for mind uploading devices. Because mind uploading devices contain such personal and sensitive information, the Supreme Court should establish a hard-line rule, based upon the Constitution as well as the principles and doctrines which they have outlined in their previous cases concerning the Fourth Amendment and its relation to technological advancements, against allowing the government to search or seize mind uploading devices.

99. *Maryland v. King*, 133 S. Ct. 1958, 1967 (2013).

100. *Id.*

101. *Id.*