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What Were They Smoking: The Supreme Court's Latest Step in a Long, Strange Trip through the Fourth Amendment

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WHAT WERE THEY SMOKING?: THE SUPREME COURT'S LATEST STEP IN A LONG, STRANGE TRIP THROUGH THE FOURTH AMENDMENT

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

I. INTRODUCTION

In *Kyllo v. United States*,[1] the United States Supreme Court addressed whether the use of a thermal imager, which detects the patterns of heat escaping from a house, constitutes a search and requires a warrant under the Fourth Amendment.[2] The Court held that "[w]here, as here, the Government uses a device that is not in general public use, to explore details of the home that would previously have been unknowable without physical intrusion, the surveillance is a 'search' and is presumptively unreasonable without a warrant."[3] The Court based its holding on its belief that the technology employed gave investigators information about the inside of Kyllo's home that they would not otherwise have been able to get without a physical invasion,[4] and that the technology used is not in wide use.[5]

This note examines the history of the Court's approach to technology and the Fourth Amendment. Physical encroachment without a warrant is a clear violation of the Fourth Amendment.[6] As technology has advanced, the government has been able to gain information that it previously would not have been able to obtain without physically encroaching on the defendant's property. Because of the government's constantly advancing technological abilities, the Court has

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[1] 533 U.S. 27 (2001).
[2] *Id.*
[3] *Id.* at 40.
[4] *Id.* at 34.
[5] *Id.*
[6] *See* discussion *infra* Parts II. A–B.

struggled to provide a clear answer to what is and what is not allowed under the Fourth Amendment. This note argues that the Court wrongly decided *Kyllo v. United States* based on its fear about what future technology will allow the government to do and out of frustration with its own confused past regarding this issue, which is filled with numerous cases that probably should have been decided differently. Instead, the Court should have confined its holding to the technology that was before it and established a test that would have been easy to apply in future cases as technology develops.

II. BACKGROUND

A. THE ORIGINAL PURPOSE OF THE FOURTH AMENDMENT

The Fourth Amendment to the United States Constitution states:

> 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.[7]

The Fourth Amendment was the direct result of the colonists' experience with the British writs of assistance.[8] "In order to enforce the revenue laws, English authorities made use of writs of assistance . . . authorizing the bearer to enter any house or other place to search for and seize 'prohibited and uncustomed' goods, and commanding all subjects to assist in these endeavors."[9] Once issued, the writs lasted for "the lifetime of the sovereign and six months thereafter."[10] The insistence on freedom from the intrusions of unreasonable "searches and seizures" came late to the colonies.[11] However, it was deeply rooted in "a maxim much celebrated in England" that "[e]very man's

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[7] U.S. CONST. amend. IV.

[8] CONGRESSIONAL RESEARCH SERVICE, LIBRARY OF CONGRESS, *Fourth Amendment — Search and Seizure, in* THE CONSTITUTION OF THE UNITED STATES OF AMERICA, ANALYSIS AND INTERPRETATION, ANNOTATIONS OF CASES DECIDED BY THE SUPREME COURT OF THE UNITED STATES TO JUNE 29, 1992, S. DOC. NO. 103–6, at *Fourth Amendment, Search and Seizure* 1199 (Johnny H. Killian & George A. Costello eds., 1996), *available at* http://www.access.gpo.gov/congress/senate/constitution/con015.pdf (last updated Sept. 27, 2002).

[9] *Id.* at 1200.

[10] *Id.*

[11] *Id.* at 1199; *see also* Matthew L. Zabel, Comment, *A High-Tech Assault on the "Castle": Warrantless Thermal Surveillance of Private Residences and the Fourth Amendment*, 90 NW. U. L. REV. 267, 271 (1995).

house is his castle."[12]

The Fourth Amendment only applies to "searches" and "seizures."[13] In order for a defendant to have evidence suppressed based on a violation of the Fourth Amendment, the defendant must show that either a search or seizure has occurred.[14] Under the common law, there was no doubt about what constituted a search: physical invasion of a property interest.[15] As will be seen below, a physical invasion of the home was the factor that the Court depended on to determine whether there was a search for Fourth Amendment purposes up until 1967.[16] Then, in *Katz v. United States*,[17] the Court issued an opinion that appeared to greatly enhance Fourth Amendment protections as it completely changed how the use of technology in investigations was analyzed. Instead of basing its analysis on whether there was a physical encroachment of a constitutionally protected area, the *Katz* holding was based on whether the defendant had a reasonable expectation of privacy.[18] However, as will be demonstrated below, the practical effect of this opinion appears to have been substantially less than what it was probably assumed it would be at the time of its issuing.

B. PRE–KATZ FOURTH AMENDMENT CASES INVOLVING THE USE OF TECHNOLOGY[19]

One of the earliest cases to raise the issue of the Fourth Amendment as it applied to an investigation that did not involve physical trespass onto the defendant's property was *Olmstead v. United States*.[20] The issue in *Olmstead* was whether evidence collected through phone taps that had been installed without trespass on the defendant's property violated the Fourth Amendment.[21] In holding that

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[12] CONGRESSIONAL RESEARCH SERVICE, *supra* note 8, at 1199 (citing Semayne's Case, 5 Coke's Rep. 91a, 77 Eng. Rep. 194 (K.B. 1604)).

[13] U.S. CONST. amend. IV.

[14] Zabel, *supra* note 11, at 273.

[15] CONGRESSIONAL RESEARCH SERVICE, *supra* note 8, at 1205.

[16] *See, e.g.*, Silverman v. United States, 365 U.S. 505 (1961); Goldman v. United States, 316 U.S. 129 (1942); Olmstead v. United States, 277 U.S. 438 (1928).

[17] 389 U.S. 347 (1967).

[18] *Id.* at 347.

[19] Breaking down the cases between pre–*Katz* and post–*Katz* cases was also done in Zabel, *supra* note 11, at 271.

[20] 277 U.S. 438 (1928).

[21] *Id.* at 457.

a wiretap was not a violation of the Fourth Amendment, the Court stated that the well–known purpose of the Fourth Amendment "was to prevent the use of governmental force to search a man's house, his person, his papers and his effects; and to prevent their seizure against his will."[22] The Court limited the Fourth Amendment protections to searches involving "material things."[23] The Court also noted that a person installs a telephone with the purpose of projecting his voice outside of his home, implying that if this had not been the case, perhaps the defendant would have prevailed.[24]

Justice Brandeis's dissent in *Olmstead* bears a strong resemblance to the line of reasoning that the Court has adopted in *Kyllo*.[25] He argued that, when applying the Constitution, it is important to not only consider what has been, but what may be.[26] When the Fourth Amendment was adopted, the ways for the government to invade someone's privacy were necessarily simple.[27] As technology advances, however, "[s]ubtler and far–reaching means of invading privacy" will be developed.[28]

Fourteen years after *Olmstead*, the Supreme Court decided *Goldman v. United States*.[29] *Goldman* allowed investigators further latitude in what they could do without violating the Fourth Amendment. In *Goldman*, federal investigators had placed against the wall of an adjoining office a microphone that was so sensitive that it could pick up conversations taking place in the office on the other side of the wall.[30] As in *Olmstead*, the Court held that eavesdropping was not a violation of the Fourth Amendment. It then went further and removed the only limitation on non–physical searches that it had appeared to erect in *Olmstead*—that the police were limited to monitoring information that the defendant intentionally projected beyond the walls of his house.[31] The petitioner argued that this case should be distinguished from *Olmstead* because the defendant here was not in-

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[22] *Id.* at 463.
[23] *Id.* at 464.
[24] *Id.* at 466.
[25] *Id.* at 474 (Brandeis, J., dissenting).
[26] *Id.* (Brandeis, J., dissenting).
[27] *Id.* at 473 (Brandeis, J., dissenting).
[28] *Id.* (Brandeis, J., dissenting).
[29] 316 U.S. 129 (1942).
[30] *Id.* at 131.
[31] *Id.* at 129; *see Olmstead*, 277 U.S. at 465.

tentionally projecting his voice beyond the confines of the office that was being surveyed.[32] The Court rejected this argument, saying only that "the distinction is too nice for practical application of the Constitutional guarantee, and no reasonable or logical distinction can be drawn between what federal agents did in the present case and state officers did in the *Olmstead* case."[33]

In its next major case involving the Fourth Amendment and technology, *Silverman v. United States*,[34] the Court did rule in favor of the defendant, holding that the attachment of a microphone to a heating duct in the defendant's house violated the Fourth Amendment.[35] However, its reasoning did not expand the protections available to the subjects of police investigations as it rested its decision on the fact that the police had physically encroached on the defendant's property to gather information.[36] The Court explicitly distinguished this case from *Goldman*, stating that, unlike in *Goldman*, the police accomplished their eavesdropping "by means of an unauthorized physical encroachment within a constitutionally protected area."[37] At this point, it was clear that there were few, if any, limits on what government agents could do if they could avoid a physical encroachment on the defendant's property.

C. KATZ V. UNITED STATES: A TURNING POINT FOR TECHNOLOGY AND FOURTH AMENDMENT LAW?

What was originally thought to be a turning point for Fourth Amendment law came in 1967 when the Court decided *Katz v. United States*.[38] Up until this time, the Court had only found searches to violate the Fourth Amendment when a physical encroachment on the defendant's property had occurred.[39] In *Katz*, the Court explicitly announced that physical encroachment was no longer a deciding factor in determining whether a Fourth Amendment search had oc-

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[32] *Goldman*, 316 U.S. at 135.

[33] *Id.*

[34] 365 U.S. 505 (1961).

[35] *Id.* at 505.

[36] *Id.* at 509.

[37] *Id.* at 510.

[38] 389 U.S. 347 (1967).

[39] *See, e.g.*, *Silverman*, 365 U.S. 505. *Cf. Goldman*, 316 U.S. 129; Olmstead v. United States, 277 U.S. 438 (1928).

curred.[40] FBI agents had attached a microphone to the outside of a phone booth that the agents believed the defendant was using to place illegal bets.[41] The Court dramatically overruled its previous cases, stating that the Fourth Amendment "protects people, not places."[42] It further stated that, while physical penetration of a protected area was once thought important to Fourth Amendment analysis, it had expressly held that the Fourth Amendment applies not only to cases where tangible property has been invaded, but also to statements that have been recorded without any physical trespass.[43]

The most enduring portion of the *Katz* decision came not from the majority opinion, but from a concurring opinion by Justice Harlan. In his opinion, Justice Harlan outlined a two–part test that he believed the Court was relying on to determine whether there was a violation of the Fourth Amendment.[44] The first part of the test is to determine whether the subject of the search exhibits a subjective expectation of privacy.[45] If he does, the Court must then decide whether that expectation of privacy is one that society would find reasonable.[46] This two–part test has been employed regularly in cases since *Katz*, particularly those that involve the use of technology by the investigators.[47]

Perhaps not surprisingly, there was a dissent in the *Katz* case objecting to the application of the Fourth Amendment to a fact pattern that a literal interpretation of the Amendment's words would not cover.[48] In that dissent, Justice Black argued that the words of the Fourth Amendment only cover tangible items.[49] Furthermore, Justice Black argued that the Fourth Amendment only covers items that can be described (for purposes of securing a warrant), while a conversa-

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[40] *Katz*, 389 U.S. at 347.

[41] *Id.* at 348.

[42] *Id.* at 351.

[43] *Id.* at 353. The Supreme Court cites *Silverman* in support of its proposition that there need not be a physical invasion of property in order for a Fourth Amendment violation to occur. This appears to be a misrepresentation of *Silverman*, as that case did involve a physical trespass, and the Supreme Court explicitly mentioned that as being an important reason for why the search in question violated the Fourth Amendment.

[44] *Id.* at 361 (Harlan, J., concurring).

[45] *Id.* (Harlan, J., concurring).

[46] *Id.* (Harlan, J., concurring).

[47] *See* discussion *infra* Part II.D.

[48] *Katz*, 389 U.S. at 364 (Black, J., dissenting).

[49] *Id.* at 365 (Black, J., dissenting).

tion cannot be described before it occurs.[50]

Justice Black then took issue with the majority's application of the Fourth Amendment to Katz's case, arguing that it does not fit with what could have been the original meaning of the Fourth Amendment.[51] According to Black, eavesdropping was common at the time that the Fourth Amendment was adopted.[52] The Fourth Amendment was aimed at stopping breaking, entering, and ransacking—not eavesdropping.[53] With this decision, Black argued, the Court had mistakenly reinterpreted the Fourth Amendment as protecting privacy rather than protecting against unreasonable searches.[54]

D. POST–KATZ FOURTH AMENDMENT CASES INVOLVING THE USE OF TECHNOLOGY

Since *Katz*, the Supreme Court has consistently applied what has become known as the *Katz* test (the two–part test outlined in Justice Harlan's concurrence) to determine whether the use of technology by government officials in criminal investigations violates the Fourth Amendment.[55] However, while the Court's reasoning in Fourth Amendment cases has changed since *Katz*, its frequent siding with law enforcement has not.[56] Indeed, *Katz* appears to have been an extremely short–lived, high–water mark for Fourth Amendment protections.[57]

The Court's first post–*Katz* analysis came when it decided *Smith v. Maryland*[58] in 1979. At issue was whether the warrantless recording of phone numbers that the defendant had dialed from his

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[50] *Id.* (Black, J., dissenting).

[51] *Id.* at 366 (Black, J., dissenting).

[52] *Id.* (Black, J., dissenting).

[53] *Id.* at 367 (Black, J., dissenting).

[54] *Id.* at 373 (Black, J., dissenting).

[55] *Id.* at 361 (Harlan, J., concurring). *See, e.g.*, California v. Greenwood, 486 U.S. 35 (1988); Dow Chem. Co. v. United States, 476 U.S. 227 (1986); California v. Ciraolo, 476 U.S. 207 (1986); United States v. Karo, 468 U.S. 705 (1984); United States v. Knotts, 460 U.S. 276 (1983); Smith v. Maryland., 442 U.S. 735 (1979).

[56] *See, e.g.*, *Greenwood*, 486 U.S. 35; *Dow Chem. Co.*, 476 U.S. 227; *Ciraolo*, 476 U.S. 207; *Knotts*, 460 U.S. 276; *Smith*, 442 U.S. 735.

[57] *See* Jonathan Todd Laba, Comment, *If You Can't Stand the Heat, Get Out of the Drug Business: Thermal Imagers, Emerging Technologies, and the Fourth Amendment*, 84 CAL. L. REV. 1437, 1444 (1996).

[58] 442 U.S. 735 (1979).

house violated the Fourth Amendment.[59] The Court held that, because the defendant was voluntarily turning the numbers over to a third party (the phone company), he had not exhibited a subjective expectation of privacy[60] and, even if he had, it was not one that society would see as reasonable.[61] Because its fact pattern is similar to that in *Olmstead*, this case provides an excellent opportunity to see how *Katz* changed the landscape of Fourth Amendment cases involving the use of technology.[62] In both cases, the investigators intercepted information after it had left the suspects' homes via the telephone.[63] However, in *Olmstead*, the Court upheld the wiretap because there was no physical invasion.[64] In contrast, the Court in *Smith v. Maryland* upheld the recording of dialed phone numbers because the defendant had not exhibited an expectation of privacy.[65] Although the result was the same in both cases, the reasoning used in *Olmstead* would have a much narrower application than that employed in *Smith*.[66] The *Olmstead* reasoning would only protect people from physical encroachments on their property, whereas the reasoning employed in *Smith* (as borrowed from *Katz*) protects people in any situation where they have a reasonable belief that what they are doing is being conducted in privacy.[67]

After *Smith*, it was difficult to tell what practical effect *Katz* had had for defendants.[68] On the one hand, *Katz* had clearly extended Fourth Amendment protections beyond the walls of the home or office to anywhere that the defendant expected privacy that society would find reasonable.[69] However, *Smith* indicated the possibility that the defendant was going to have to do more than just expect privacy.[70] He was going to have to give an outward signal of his expectation.[71] A clearer indication of the direction of Fourth Amendment

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[59] *Id.* at 737.

[60] *Id.* at 742.

[61] *Id.* at 743.

[62] *Compare Smith*, 442 U.S. 735, *with* Olmstead v. United States, 277 U.S. 438 (1928).

[63] *See Olmstead*, 277 U.S. at 457; *Smith*, 442 U.S. at 737.

[64] *Olmstead*, 277 U.S. at 465.

[65] *Smith*, 442 U.S. at 743.

[66] *Compare Smith*, 442 U.S. 735, *with Olmstead*, 277 U.S. 438.

[67] *See Smith*, 442 U.S. at 743; *Olmstead*, 277 U.S. at 465.

[68] *See Smith*, 442 U.S. at 743; *Olmstead*, 277 U.S. at 465.

[69] *See Katz v. United States*, 389 U.S. 347 (1967).

[70] *See Smith*, 442 U.S. 735.

[71] *Id.*

protections came four years later in *United States v. Knotts*,[72] in which the Supreme Court once again upheld the constitutionality of a criminal investigation that employed technology, based on the *Katz* test.[73] After being tipped off to the fact that the defendant was buying large amounts of chemicals known to be used in drug manufacturing, narcotics officers placed a beeper (a device that emits a radio signal that officers can use to identify its location) into a barrel of the chemicals that was eventually sold to one of the defendant's friends.[74] The officers used the beeper to track where the chemicals were taken.[75] The defendant challenged the constitutionality of the beeper, but the Court upheld its use based on the *Katz* test.[76] The Court reasoned that a person who travels on public thoroughfares does not have a reasonable expectation of privacy.[77] The officers could have seen the information that the beeper gave them with naked–eye surveillance and the fact that they relied on a beeper to assist them did not alter the situation.[78]

Three months later, law enforcement officers claimed another victory when the Supreme Court decided *United States v. Place*,[79] a case which has often played a central role in lower courts' decisions of thermal imager cases.[80] In this case, police detained the defendant's luggage, based on what the Court agreed was a "reasonable belief" that he was carrying narcotics, and subjected the luggage to a sniff test by a drug–detecting dog.[81] The Court dealt with two issues in this case. First, it held that "when an officer's observations lead him reasonably to believe that a traveler is carrying luggage that contains narcotics," the officer is permitted to detain the luggage briefly to investigate the circumstances that aroused his suspicion.[82] Second, the Court considered whether exposure of the luggage to a narcotics

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[72] 460 U.S. 276 (1983).

[73] *Id.* at 285.

[74] *Id.* at 278.

[75] *Id.*

[76] *Id.* at 285.

[77] *Id.* at 281.

[78] *Id.* at 282.

[79] 462 U.S. 696 (1983).

[80] *See, e.g.*, United States v. Robinson, 62 F.3d 1325 (11th Cir. 1995); United States v. Penny–Feeny, 773 F. Supp. 220 (D. Haw. 1991).

[81] *Place*, 462 U.S. at 703.

[82] *Id.* at 706.

detection dog violated the Fourth Amendment.[83] The Court held that, although it had previously determined that people have a privacy interest in the contents of their luggage that is protected by the Fourth Amendment, this privacy interest was not violated by a "canine sniff."[84] The Court reasoned that a "canine sniff" does not require opening the luggage and it does not expose non–contraband items.[85] So, although the sniff does tell the officers something about the contents of the luggage, the information potentially gained is limited.[86]

In a brief respite from its continued degradation of Fourth Amendment protections, the Supreme Court finally used the *Katz* test to declare the use of technology unconstitutional in *United States v. Karo*.[87] The result of this case is surprising because the fact pattern is almost identical to that presented in the *Knotts* case, which had been decided the other way only a year earlier.[88] Similar to *Knotts*, a Drug Enforcement Agency (DEA) agent in *Karo* placed a beeper in a can of chemicals with the intent to sell it to the defendant so that he could track the defendant's movements after he learned that the defendant had ordered large amounts of chemicals that are known to be used in drug manufacturing.[89] As in *Knotts*, the officers in *Karo* then used the beeper and visual surveillance to follow the defendant to his house as he drove over public roads.[90] However, according to the Court, the critical fact difference between this case and *Knotts* was that the officers continued to monitor the beeper after it was taken into a home and they later used it to help them determine that it had been moved to a different home.[91] In *Knotts*, the officers had stopped tracking the beeper after it was taken into the home.[92] The Court reasoned that, although using a beeper is less intrusive than a physical search which would reveal critical details about the inside of a house, it could not be allowed.[93]

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[83] *Id.*

[84] *Id.* at 707.

[85] *Id.*

[86] *Id.*

[87] 468 U.S. 705 (1984).

[88] *Compare Karo*, 468 U.S. 705, *with* United States v. Knotts, 460 U.S. 276 (1983).

[89] *Karo*, 468 U.S. at 708. *See supra* notes 72–78 and accompanying text (describing the *Knotts* case).

[90] *Karo*, 468 U.S. at 708. *See supra* notes 72–78 and accompanying text.

[91] *Karo*, 468 U.S. at 715.

[92] *Knotts*, 460 U.S. at 278–79.

[93] *Karo*, 468 U.S. at 715.

The Court quickly reverted back to approving potentially invasive investigative police tactics when it decided *California v. Ciraolo*.[94] After receiving an anonymous tip that the defendant was growing marijuana in his backyard, police flew over the yard in an airplane at 1000 feet with experts trained to identify marijuana.[95] The police were forced to fly over the yard because the defendant had erected a six–foot outer fence and a ten–foot inner fence around it, preventing people from viewing the yard at ground level.[96] The Court held that this was a sufficient manifestation of an expectation of privacy on the defendant's part.[97] However, the Court felt that this expectation of privacy was not one that society would find reasonable and, therefore, the defendant had failed the second prong of the *Katz* test.[98] The Court reasoned that any member of the public flying over the house could have glanced down and seen what the officers had seen.[99] This case was one of the most invasive investigations that the Court had upheld as not violating the Fourth Amendment since *Katz*. The dissent pointed out that photographs taken of the backyard during the fly–over revealed not just marijuana but also a swimming pool and a patio.[100] The dissent also pointed out that the technology used (specifically, the airplane) allowed police officers to conduct the investigation in a way that only would have been possible with physical invasions at the time the Fourth Amendment was adopted.[101]

The same day that *Ciraolo* was decided, the Court decided *Dow Chemical Co. v. United States*,[102] in which it upheld the use of the most sophisticated technology to be challenged since *Katz*.[103] This case involved another fly–over and photographing by investigators at heights of 12,000 feet, 3000 feet, and 1200 feet.[104] However, in this case, the airplane and the camera were significantly more sophisticated than those used by the general public.[105] The aircraft used by

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[94] 476 U.S. 207 (1986).
[95] *Id.* at 209.
[96] *Id.*
[97] *Id.* at 211.
[98] *Id.* at 214.
[99] *Id.* at 213–14.
[100] *Id.* at 216 (Powell, J., dissenting).
[101] *Id.* at 222 (Powell, J., dissenting).
[102] 476 U.S. 227 (1986).
[103] *Id.* at 238–39.
[104] *Id.* at 229.
[105] *Id.* at 242 n.4 (Powell, J., concurring in part and dissenting in part).

the investigators was designed to provide stability for purposes of shooting overhead photographs.[106] The camera was a $22,000 camera designed for mapmakers, and described by its maker as the "finest precision aerial camera available."[107] The camera was capable of stereoscopic examination, which allows for depth perception.[108] Photographs taken from 1200 feet using this camera could be enlarged to a scale of one–inch equals twenty–feet, without any significant loss in resolution or detail.[109] The district court concluded that the technology employed here allowed investigators to see details that they would not have been able to see otherwise unless they were directly above the facilities being observed.[110] However, the Court downplayed the significance of the technology involved here, referring to it as "a conventional, albeit precise, commercial camera."[111] The Court then went on to clarify why this technology is acceptable by comparing it to a technology that would not be permissible—but only confused the situation further.[112] The Court stated that "highly sophisticated surveillance equipment not generally available to the public, such as satellite technology, might be constitutionally proscribed absent a warrant. But the photographs here are not so revealing of intimate details as to raise constitutional concerns."[113] However, there is no intelligible reason for distinguishing between the photographs taken by the camera used in this case and those taken by a satellite.[114] If anything, the technology employed by investigators in *Dow Chemical* would be more likely to reveal intimate details than the potentially proscribed satellite technology that the Court distinguishes it from.[115] One is left to wonder if Dow could have done anything to protect itself from an overhead search.[116] The company had taken elaborate steps to guard its security, erecting a substantial and sophis-

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[106] *Id.* (Powell, J., concurring in part and dissenting in part).

[107] *Id.* (Powell, J., concurring in part and dissenting in part).

[108] *Id.* (Powell, J., concurring in part and dissenting in part).

[109] *Id.* at 243 (Powell, J., concurring in part and dissenting in part).

[110] *Id.* (Powell, J., concurring in part and dissenting in part).

[111] *Id.* at 238.

[112] *Id.*

[113] *Id.*

[114] *Id.* at 244 (Powell, J., concurring in part and dissenting in part) ("[T]he Court relies on questionable assertions concerning the manner of the surveillance . . . .").

[115] *See id.* at 243 (Powell, J., concurring in part and dissenting in part).

[116] *Id.* at 241; Laba, *supra* note 57, at 1460.

ticated security system.[117] It even took steps to prevent the exact kind of search that investigators employed in this instance, tracking down planes that had flown overhead and confiscating any pictures that were taken of its plant.[118] However, because the Court was unimpressed with the quality of technology employed in this case, Dow's efforts were all for naught.[119]

Unfortunately, despite its confusing reasoning, *Dow Chemical* has become a frequently cited case in Fourth Amendment challenges involving technology.[120] While the discussion of technology in this case was confusing, courts have relied on *Dow Chemical* for the proposition that conducting investigations from the air over a house is constitutionally permissible[121] and for the proposition that the area surrounding a home, as compared to that surrounding a commercial complex, enjoys heightened protection.[122] The Court made a point of mentioning in *Dow Chemical* that it found it important that the investigation did not involve an area adjacent to a home, where privacy concerns are most heightened.[123] Furthermore, the Court noted that Dow had made no efforts to conceal its operations from the air,[124] although it appears that the size of the plan made this impossible.[125]

Two years later, the Supreme Court again upheld the constitutionality of a search that seemed to push the boundaries of Fourth Amendment rights when it decided *California v. Greenwood*.[126] Acting on information that the defendants were involved in narcotics trafficking, police twice obtained the defendant's garbage from garbage collectors.[127] Based on evidence that they collected from the garbage, police obtained a warrant to search the defendant's home,

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[117] *Dow Chemical*, 476 U.S. at 229.

[118] *Id.* at 241–42 (Powell, J., concurring in part and dissenting in part).

[119] *Id.* at 231.

[120] *See, e.g.*, Florida v. Riley, 488 U.S. 445, 460 n.3 (1989); United States v. Cusumano, 67 F.3d 1497, 1500 (10th Cir. 1995); United States v. Robinson, 62 F.3d 1325, 1329 (11th Cir. 1995); United States v. Ford, 34 F.3d 992, 996 (11th Cir. 1994); United States v. Field, 855 F. Supp. 1518, 1529 (W.D. Wis. 1994); United States v. Domitrovich, 852 F. Supp. 1460, 1473 (E.D. Wash. 1994).

[121] *See, e.g.*, California v. Ciraolo, 476 U.S. 207, 215 (1986).

[122] *See, e.g.*, *Field*, 855 F. Supp. at 1529.

[123] Dow Chem. Co. v. United States, 476 U.S. 227, 237 n.4 (1986).

[124] *Id.*

[125] Laba, *supra* note 57, at 1460.

[126] 486 U.S. 35 (1988).

[127] *Id.* at 37–38.

which resulted in more evidence of narcotics trafficking.[128] The trial court dismissed the charges against the defendant, holding that the warrantless search of garbage violated state law.[129] However, the case that the trial court drew its authority from also held that warrantless trash searches violated federal law.[130] After the Court of Appeals affirmed the lower court's decision, the United States Supreme Court granted certiorari and reversed.[131]

The Court relied on the *Katz* test to arrive at its conclusion, holding that a person who leaves his garbage on the side of a public street does not manifest a reasonable expectation in its privacy.[132] The Court reasoned that, because garbage left on a street is easily accessible to anyone[133] and because police are not required to avert their eyes to avoid seeing something that has been left in plain view,[134] searching garbage without a warrant does not violate the Fourth Amendment.[135] The dissent made the point that searching through someone's garbage is likely to reveal intimate details beyond any criminal activity about what is going on inside the house that produced it—perhaps more details than an actual, physical search of the house would.[136] If this is true, it would appear to be a substantial expansion of the limitations on warrantless searches identified in *Place*.[137] In that case, the Court had stated that it was important that the permitted "canine sniff" would not reveal non–contraband items.[138]

E. CIRCUIT COURT SPLIT ON THE CONSTITUTIONALITY OF THERMAL SCANS

Nearly all federal district, appellate and state courts that have dealt with the issue of whether use of a thermal scanner constitutes a

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[128] *Id.* at 38.
[129] *Id.*
[130] *Id.* (citing People v. Krivda, 486 P.2d 1262 (Cal. 1971)).
[131] *Id.* at 39.
[132] *Id.*
[133] *Id.* at 40.
[134] *Id.* at 41.
[135] *Id.* at 44–45.
[136] *Id.* at 50 (Brennan, J., dissenting).
[137] *See* United States v. Place, 462 U.S. 696 (1983).
[138] *Id.* at 707.

search have held that it does not.[139] The courts have relied on a large range of reasoning to arrive at their conclusions. The Eighth and Ninth Circuits have held that the use of a thermal detector without a warrant is constitutional because the detection of heat emanating from a house is similar to the detection of odors emanating from luggage, which has been held to be constitutional.[140] The Eighth Circuit also reasoned that because the heat coming off of a house is waste that is being discarded from the house, it is similar to garbage and because searching garbage has been held to be constitutional, detection of heat is as well.[141] The Seventh and the Eleventh Circuits have relied on the *Katz* test and held that because the defendant did not take affirmative action to prevent heat from leaving his house, he did not

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[139] *See* United States v. Robinson, 62 F.3d 1325 (11th Cir. 1995) (holding that a private homeowner who did not take any affirmative action to prevent the heat from his marijuana growing operation from emitting from his house had not exhibited a subjective expectation of privacy); United States v. Ishmael, 48 F.3d 850 (5th Cir. 1995) (holding that because a thermal scanner does not reveal any intimate details inside the structure being scanned, its warrantless use is not a violation of the Fourth Amendment); United States v. Myers, 46 F.3d 668 (7th Cir. 1995) (holding that because the defendant not only did not take affirmative steps to prevent heat from leaving his house, but actually vented the heat from his house, he had not manifested a subjective expectation of privacy); United States v. Ford, 34 F.3d 992 (11th Cir. 1994) (holding that because the defendant had not exhibited either a subjective or objective expectation of privacy in heat vented from his mobile home, thermal imagery did not constitute an impermissible search); United States v. Pinson, 24 F.3d 1056 (8th Cir. 1994) (holding that detection of heat emanating from a house is analogous to detection of odors emanating from luggage or the search of garbage left outside for collection and therefore does not require a warrant); United States v. Domitrovich, 852 F. Supp. 1460 (E.D. Wash. 1994) (holding that because the defendant had knowingly exposed vapors and heat to public observation, he could not claim an actual expectation of privacy in the heat emanating from his marijuana growing operation); United States v. Penny–Feeney, 773 F. Supp. 220 (D. Haw. 1991) (holding that because the defendants had voluntarily vented heat from their garage, they had not manifested a subjective expectation of privacy in it).

But see United States v. Cusumano, 67 F.3d 1497 (10th Cir. 1995), *vacated by* 83 F.3d 1247 (1996) (holding that because a thermal scanner not only tells its user that heat is coming off of a home, but also tells its user the pattern in which that heat is coming off of the home, it reveals intimate details about the inside of the house being scanned and is therefore a violation of the Fourth Amendment); United States v. Field, 855 F. Supp. 1518 (W.D. Wis. 1994) (holding that because there is nothing a homeowner can do to stop heat from leaving his house, and because a thermal imager reveals the general location of heat–producing items behind a wall, it constitutes a search); Commonwealth of Pennsylvania v. Gindlesperger, 743 A.2d 898 (Pa. 1999) (holding that because the detection of heat emanating from a house can potentially provide intimate details about what is going on inside the house, the use of a thermal imager without a warrant is unconstitutional).

[140] *See Pinson*, 24 F.3d 1056; United States v. Kyllo, 190 F.3d 1041 (9th Cir. 1999) (Noonan, J., dissenting), *rev'd*, 533 U.S. 27 (2001).

[141] *Pinson*, 24 F.3d at 1058–59.

manifest a subjective expectation of privacy; therefore, the courts held that viewing that heat without a warrant was not a violation of the Fourth Amendment.[142] As will be argued below, each of these justifications for upholding the use of a thermal imager without a warrant is misplaced.

III. FACTS AND PROCEDURAL HISTORY OF KYLLO V. UNITED STATES[143]

A. FACTS

1. The Case

One interesting fact about the *Kyllo* case is that Danny Lee Kyllo was not the original target of the investigation that ultimately led him to the Supreme Court—that target was a man by the name of Sam Shook.[144] During their investigation of Mr. Shook, investigators came to believe that his daughter, Tova Shook, was also involved in the manufacturing and distribution of marijuana.[145] Mr. Kyllo happened to live next door to Ms. Shook and his estranged wife lived with Ms. Shook.[146] The officer who initially became suspicious of Mr. Kyllo was told erroneously that Mr. Kyllo lived with his wife, and that she "had been arrested the month before for delivery and possession of a controlled substance . . . ."[147] He also learned that Mr. Kyllo "had once told a police informant that he and [his wife] could supply marijuana . . . ."[148] All of this led the officer to subpoena Mr. Kyllo's electrical usage records (which could be done without a warrant).[149] Upon comparing them to a spreadsheet that was meant to show the level of electricity a house normally consumes, the officer concluded that Mr. Kyllo's electricity usage was abnormally high.[150]

The results of the preliminary investigation led the police agent

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[142] *See Robinson*, 62 F.3d 1325; *Myers*, 46 F.3d 668.

[143] 533 U.S. 27 (2001).

[144] United States v. Kyllo, 37 F.3d 526, 528 (9th Cir. 1994).

[145] *Id.*

[146] Brief for Petitioner at 2, Kyllo v. United States, 533 U.S. 27 (2001) (No. 99–8508).

[147] United States v. Kyllo, 190 F.3d at 1043.

[148] *Id.*

[149] *Id.*

[150] *Id.*

to believe that Mr. Kyllo was growing marijuana in his house.[151] Based on this belief, the police officer and a member of the Oregon National Guard conducted a thermal scan of the house.[152] The scan showed an abnormally high amount of heat coming off of some areas of the house.[153] Based on the thermal scan and the evidence that had been collected before the scan, a search warrant was issued.[154]

2. The Technology

While the facts of the case are not in dispute, there is some inconsistency regarding the capabilities of the thermal scanner used by the investigators. Both the majority and dissenting opinions are in agreement that the thermal scanner used on Kyllo's home measured the heat being emitted from the outside of the walls of the house.[155] However, there appears to be little agreement on how much this tells the officers about what is going on inside the home.

According to Mr. Kyllo, "thermal imaging is intended to, and does, discern activity in the home"[156] and a thermal detector "turn[s] the walls of private homes into mere conduits of invisible information."[157] However, others have offered a more benign view of what thermal imagers are capable of, stating that they only tell the police that there is a heat source inside of the home.[158] It appears that there are a variety of thermal imagers available and while some are only capable of providing crude images of where heat is coming from, others have the capability to unveil more detail.[159]

In this case, the trial court found that the thermal imager that the police used "is a non–intrusive device which emits no rays or beams and shows a crude visual image of the heat being radiated from the

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[151] *Id.*

[152] *Id.* at 1044.

[153] *Id.*

[154] *Id.*

[155] Kyllo v. United States, 533 U.S. at 35; *Id.* at 42–43 (Stevens, J., dissenting).

[156] Brief for Petitioner at 21, Kyllo v. United States, 533 U.S. 27 (2001) (No. 99–8508).

[157] *Id.*

[158] *See, e.g.*, Michael L. Huskins, Comment, *Marijuana Hot Spots: Infrared Imaging and the Fourth Amendment*, 63 U. CHI. L. REV. 655, 661 (1996) ("Infrared imagers cannot produce an image of an object or person inside the interior of a home. Infrared imaging can only indicate whether an enclosed structure contains a heat source, and from this information, police can draw inferences about activities occurring inside the structure's walls.").

[159] *See, e.g.*, Jeffrey P. Campisi, *The Fourth Amendment and New Technologies: The Constitutionality of Thermal Imaging*, 46 VILL. L. REV. 241, 245 (2001).

outside of the house."[160] It further found:

> [T]he use of the thermal imaging device here was not an intrusion into Kyllo's home. No intimate details of the home were observed, and there was no intrusion upon the privacy of the individuals within the home. The device used cannot penetrate walls or windows to reveal conversations or human activities. The device recorded only the heat being emitted from the home.[161]

B. PROCEDURAL HISTORY

After he was indicted for manufacturing marijuana, Mr. Kyllo filed a motion to suppress evidence, challenging the warrantless use of the thermal imaging device, and requesting a '*Franks* hearing'[162] regarding false statements made to the magistrate who issued the search warrant.[163] The court agreed to hear evidence regarding false statements made about Mr. Kyllo's electricity usage only.[164] The court ruled that the magistrate judge was not deliberately or recklessly misled by false statements or omissions when he issued the warrant.[165] On the warrantless use of the thermal imaging device, based on legal argument alone, the court denied Kyllo's motion to suppress because "[n]o intimate details of the home were observed, and there was no intrusion upon the privacy of the individuals within the home."[166]

In its first opinion in this case, the Ninth Circuit vacated the district court's ruling.[167] On the matter of the false and misleading statements about Mr. Kyllo's power usage, the court held that the district court's finding was not clearly erroneous as to whether they were knowingly or recklessly made,[168] and the court ultimately af-

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[160] United States v. Kyllo, No. CR. 92–51–FR, 1996 WL 125594, at *2 (D. Or. Mar. 15, 1996), *aff'd*, 190 F.3d 1041 (9th Cir. 1999), *rev'd*, 533 U.S. 27 (2001).

[161] *Id.*

[162] *See generally* Franks v. Delaware, 438 U.S. 154, 154 (1978) (holding that a defendant can challenge a facially valid affidavit by making a substantial preliminary showing that an affidavit contained intentionally or recklessly made false statements, and that purged of those statements, there would not be sufficient support for a finding of probable cause).

[163] Brief for Petitioner at 3, Kyllo v. United States, 533 U.S. 27 (2001) (No. 99–8508).

[164] *Id.*

[165] United States v. Kyllo, 809 F. Supp. 787, 791 (D. Or. 1992), *aff'd in part, vacated and remanded in part*, 37 F.3d 526 (9th Cir. 1994).

[166] *Id.* at 792.

[167] United States v. Kyllo, 37 F.3d 526 (9th Cir. 1994).

[168] *Id.* at 529.

firmed that finding.[169] The court did, however, hold that the district court had erred in denying Mr. Kyllo a *Franks* hearing on the matter of whether false and misleading statements were made about his marital status.[170] The court held that Mr. Kyllo had shown that statements about his marital status were false and it was possible that, without those statements, the affidavit would not have been sufficient to establish probable cause.[171] Unlike the statements about Mr. Kyllo's power usage, clear proof was not required because the issue was only whether an evidentiary hearing should be held.[172] Also, in regard to the use of the thermal imager, the case was remanded back to the district court for "an evidentiary hearing on the intrusiveness of the thermal imaging device."[173] The court stated that in order to determine whether the warrantless use of a thermal imager violates the Fourth Amendment, it would need "some factual basis for gauging the intrusiveness of the thermal imaging device, which depends on the quality and the degree of detail of information that it can glean."[174]

On remand, the district court based its analysis of the thermal imager on the *Katz* test.[175] After finding that the specific thermal imager used only recorded the heat being emitted from the house and was unable to reveal intimate details of the inside of the home, the court held that "Kyllo did not have a reasonable expectation of privacy in the heat emanating from his home."[176] The court also held that the investigator had not deliberately or recklessly omitted facts about Kyllo's marital status from the record.[177] The result was that Kyllo's motion to suppress evidence was denied.[178]

Kyllo appealed to the Ninth Circuit again and this time the court reversed the district court's holding that a thermal image scan is not a search under the Fourth Amendment.[179] Holding that Kyllo had a

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[169] *Id.* at 531.

[170] *Id.* at 530.

[171] *Id.*

[172] *Id.*

[173] *Id.* at 531.

[174] *Id.* at 530.

[175] United States v. Kyllo, No. CR. 92-51-FR, 1996 WL 125594, at *2 (D. Or. Mar. 15, 1996), *aff'd*, 190 F.3d 1041 (9th Cir. 1999), *rev'd*, 533 U.S. 27 (2001).

[176] *Id.* at *2.

[177] *Id.* at *4.

[178] *Id.* at *5.

[179] United States v. Kyllo, 140 F.3d 1249 (9th Cir. 1998), *withdrawn*, 184 F.3d 1059 (9th

subjective expectation of privacy in the signature of the heat escaping from his home[180] and finding that the expectation was one society would acknowledge as reasonable,[181] the Ninth Circuit reversed the lower court's ruling and held the warrantless use of the thermal imager violated the Fourth Amendment.[182] In arriving at this conclusion, the court added a substantial amount of its own factual findings to the findings of the district court on the specific thermal scanner used in the case.[183] While the district court had limited its focus to the scanner's ability to see through the exterior walls of a house,[184] the Ninth Circuit also considered what the scanner was capable of when pointed at windows and used from long distances.[185] In response to this line of argument, the dissent stated: "Whatever its Star Wars capabilities, the thermal imaging device employed here intruded into nothing. Rather, it measured the heat emanating from and on the outside of a house."[186]

The government petitioned for a rehearing.[187] While that request was pending, the author of the previous opinion retired.[188] A new judge was selected for the panel over Mr. Kyllo's objections.[189] That new judge sided with the previously dissenting judge, creating a new majority.[190] In the court's new opinion, the previously dissenting judge reiterated that whatever capabilities the technology employed here might have, the thermal imaging device used against Mr. Kyllo intruded into nothing.[191] The court then performed an analysis based on the *Katz* test.[192] With regard to the first prong, the court held that Mr. Kyllo had exhibited no subjective expectation of privacy in the heat escaping from his home, because he had made no attempt to conceal those emissions.[193] The court analogized the detection of

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Cir. 1999).

[180] *See id.* at 1252–54.

[181] *Id.* at 1255.

[182] *Id.*

[183] *See id.* at 1254.

[184] United States v. Kyllo, No. CR. 92–51–FR, 1996 WL 125594, at *2.

[185] *See* United States v. Kyllo, 140 F.3d at 1254.

[186] *Id.* at 1255.

[187] Brief for Petitioner at 8, Kyllo v. United States, 533 U.S. 27 (2001) (No. 99–8508).

[188] *Id.*

[189] *Id.*

[190] *Id.*

[191] United States v. Kyllo, 190 F.3d 1041, 1046 (9th Cir. 1999), *rev'd*, 533 U.S. 27 (2001).

[192] *See id.* at 1045.

those emissions.[193] The court analogized the detection of heat emanating from a home to the detection of odors emanating from luggage, concluding that thermal detection is similar to a constitutionally allowed "canine sniff."[194] The court also held that because the technology did not reveal any intimate details of Mr. Kyllo's life, but instead only "amorphous 'hot spots' on the roof and exterior wall" of the house, it was not an invasion of privacy that society would deem unreasonable.[195] The court further rejected Kyllo's argument that the omission of information regarding his marital status invalidated the warrant, upholding the district court's finding as not clearly erroneous that the omission was not done knowingly or recklessly.[196] Not surprisingly, a dissenting opinion carried forward the reasoning of the prior majority opinion.[197]

The defendant filed a petition for certiorari with the United States Supreme Court[198] and the Court agreed to hear arguments on whether a warrantless thermal scan of a residence violated the Fourth Amendment.[199]

IV. SUMMARY OF OPINIONS

A. THE MAJORITY OPINION

In *Kyllo v. United States*, the Court reversed the court of appeals, with Justice Scalia writing for the majority.[200] The Court began by laying down the presumption that a warrantless search of a home is unconstitutional;[201] the critical question was whether a search had occurred.[202] The Court began its opinion by distinguishing this case from the *Ciraolo* decision, which appeared to create the most obstacles for the Court's decision.[203] The *Ciraolo* decision held that police

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[193] *Id.* at 1046.

[194] *See id.*

[195] *Id.* at 1046–47.

[196] *Id.* at 1047.

[197] *See id.* at 1047–51 (Noonan, J., dissenting).

[198] Kyllo v. United States, 530 U.S. 1305 (2000).

[199] Kyllo v. United States, 533 U.S. 27, 29 (2001).

[200] In the majority opinion of *Kyllo v. United States*, 533 U.S. 27 (2001), Justice Scalia was joined by Justices Souter, Thomas, Ginsburg, and Breyer.

[201] *Kyllo*, 533 U.S. at 31.

[202] *Id.*

[203] *See id.* at 32; *see generally* California v. Ciraolo, 476 U.S. 207 (1986).

could observe a house (despite its special protected status in Fourth Amendment law) from a public area and that they did not need to shield their eyes from observing something in which a person had not exhibited a subjective expectation of privacy.[204] The Court distinguished this case from *Ciraolo* by arguing that this case involved more than naked-eye surveillance, and that *Ciraolo* had "reserved judgment as to how much technological enhancement" of the senses would be too much for Fourth Amendment purposes.[205] The Court then signaled that, despite *Ciraolo*, an important factor in deciding this case was the fact that the heat detected was in an area immediately adjacent to a home, which also distinguished it from *Dow Chemical*.[206] The Court recognized that while the *Katz* test has been criticized as subjective and unpredictable, Fourth Amendment protection is at its highest when a search reveals activity taking place inside a home.[207] The Court then stated its holding: "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—at least where (as here) the technology in question is not in general public use."[208] This holding appears to embrace a new test for sense-enhancing technology, rather than an application of the *Katz* test.[209] This new test would be a substantial change in Fourth Amendment law.

The Court then anticipated the obvious objection to this holding—that the thermal detector measures heat emanating from the outside of the house, but does not reveal what is going on inside the home.[210] The Court analogized the use of a thermal scanner to pick up heat emanating from a home to the use of a microphone to pick up sound waves emanating from a phone booth and thereby defining it as similar to the unconstitutional search that was conducted in *Katz*.[211] The Court argued that to allow this technology based on the

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[204] *Ciraolo*, 476 U.S. at 213.

[205] *Kyllo*, 533 U.S. at 33.

[206] *See id.* (citing Dow Chem. Co. v. United States, 476 U.S. 227, 237 n.4 (1986)).

[207] *See id.* at 34.

[208] *Id.* (quoting Silverman v. United States, 365 U.S. 505, 512 (1961)).

[209] *See generally Katz v. United States*, 389 U.S. 347, 361 (1967) (Harlan, J., concurring).

[210] *See Kyllo*, 533 U.S. at 35 n.2.

[211] *Id.* at 35.

fact that it only measures heat on the outside of a house would leave homeowners at the mercy of this technology as it becomes more sophisticated and provides police with more nuanced information about what is going on behind the walls that the heat is coming from.[212] While the dissent argued that Fourth Amendment protections should only be available to searches that reveal intimate details about the inside of the home,[213] the majority took the position that when it comes to the home, all details are intimate.[214] Furthermore, limiting searches to only those that do not disclose intimate details does not give homeowners or law enforcement officers a workable standard.[215] According to the Court, even the crudest thermal detection technology could provide law enforcement officers with intimate details about what is going on inside the house (*e.g.*, "what hour each night the lady of the house takes her daily sauna and bath . . . .").[216] The Court concludes that a firm, bright line must be drawn at the entry of the home, and "details of the home that would . . . have been unknowable without physical intrusion" before the invention of the technology in question are significant enough to warrant Fourth Amendment protection.[217]

The Court drew its opinion to a close with an anomalous statement—stating that it must construe the Amendment in light of its original meaning in order to protect the interests and rights of individuals.[218] It is difficult to tell what the Court meant by this remark because it did not elaborate clearly on what it thought the original meaning of the Fourth Amendment was.[219] As indicated above, it has traditionally appeared that the Fourth Amendment was originally only meant to protect against physical encroachment on the defendant's property. The only attempt that the Court made to explain its interpretation of the original meaning of the Fourth Amendment was to offer a dictionary definition of the word "search" as used at the time the Fourth Amendment was adopted.[220] However, while the

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[212] *See id.* at 35–36.

[213] *Id.* at 44 (Stevens, J. dissenting).

[214] *Id.* at 37.

[215] *Id.* at 38.

[216] *Id.*

[217] *Id.* at 40.

[218] *See id.*

[219] *See id.*

[220] *Id.* at 32 n.1 (quoting NOAH WEBSTER, AN AMERICAN DICTIONARY OF THE ENGLISH

quoted definition did not necessarily contradict the Court's holding, it did little to support it. The only examples the Court offered were searches of physical tangible items, thereby potentially bolstering the conclusion that the Fourth Amendment was only meant to protect against physical searches.[221]

The Court concluded by remanding the case back to the district court to determine whether the search warrant would have been issued if the thermal scan had not been conducted.[222]

B. DISSENTING OPINION

The dissent, written by Justice Stevens, was unimpressed with the capabilities of the technology employed in this case.[223] In the dissent's view, this case merely involved the observation of something outside of the home using a fairly crude technology.[224] The dissent argued that there is a difference between technology that gives its user direct access to information in a private area and technology that only allows its user to make inferences about what may be going on inside that private area.[225] Furthermore, the dissent argued, there is no reason to craft a new rule.[226] Old rules about what is allowed under the Fourth Amendment are adequate to resolve this case: "'searches and seizures inside a home without a warrant are presumptively unreasonable,' [b]ut . . . searches and seizures of property in plain view are presumptively reasonable."[227] While the Court placed heavy emphasis on the fact that this investigative technique was directed at a house, where Fourth Amendment protections are most stringent, the dissent believed that this fact was irrelevant in this case because it is well–established law that "what a person knowingly exposes to the public is not a subject of Fourth Amendment protection."[228]

LANGUAGE 66 (6th ed. 1989) (1828)). *See generally* CONGRESSIONAL RESEARCH SERVICE, *supra* note 8, at 1200–01 (briefly discussing the 1789 Congressional debates surrounding the ratification of the Fourth Amendment).

[221] *Kyllo*, 533 U.S. at 32 n.1.

[222] *Id.* at 40.

[223] *See id.* at 41 (Stevens, J., dissenting). Justice Stevens was joined by Chief Justice Rehnquist and Justices O'Connor and Kennedy.

[224] *Id.* (Stevens, J., dissenting).

[225] *See id.* (Stevens, J., dissenting).

[226] *Id.* (Stevens, J., dissenting).

[227] *Id.* at 42 (Stevens, J., dissenting)(quoting Payton v. New York, 445 U.S. 573, 586 (1980)).

[228] *Id.* (Stevens, J., dissenting) (quoting California v. Ciraolo, 476 U.S. 207, 213 (1986))

The dissent took issue with the Court basing its decision on yet–to–be–developed technology.[229] The technology employed in this case did not penetrate the walls of the house or obtain any information regarding the inside of the house.[230] Indeed, for the dissent, all the technology had actually done was reveal something that was put into the public domain that the police could probably detect through the use of their ordinary senses anyway (*e.g.*, by observing snow melting at a faster rate on some parts of the house than others).[231] The unobtrusiveness of the technology involved was evidenced by the Court's statement that, based on the thermal scan, the agents concluded that the defendant was growing marijuana inside the house.[232] According to the dissent, the fact that the agents "concluded" that marijuana was growing inside, instead of actually knowing that marijuana was growing inside, shows the lack of detail about the interior of the home that the technology provides.[233] The agents could have incorrectly concluded that the lady of the house was taking her daily sauna.[234] The only reason that they were able to correctly infer that marijuana was growing inside was because of the other aspects of the investigation that they had conducted, such as the subpoenaing of the utility bills.[235] In fact, the information that the agents gleaned from the thermal scan was not any more intrusive than the information gained from the subpoenaed utility records which also allowed the investigating agent to infer what was going on inside Mr. Kyllo's house.[236]

Following its discussion why it did not think that the technology employed in this case was particularly threatening, the dissent then implied that a balancing test would be appropriate in this case, stating that the use of a mere "sense–enhancing technology" like the one used here seems to be a reasonable public service when compared to the trivial privacy interest that is threatened by its use.[237] The privacy

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(citation omitted).

[229] *Id.* (Stevens, J., dissenting).

[230] *See id.* at 42–43 (Stevens, J., dissenting).

[231] *Id.* at 43 (Stevens, J., dissenting).

[232] *Id.* at 44 (Stevens, J., dissenting).

[233] *See id.* (Stevens, J., dissenting).

[234] *Id.* (Stevens, J., dissenting).

[235] *See id.* (Stevens, J., dissenting).

[236] *Id.* (Stevens, J., dissenting).

[237] *See id.* at 45 (Stevens, J., dissenting).

interest seemed particularly trivial to the dissent when compared to the evil that the Fourth Amendment was meant to protect against: the physical entry of the home.[238]

After explaining its view of the technology involved in this case and the Fourth Amendment, the dissent then took issue with the new rule that the Court fashioned to resolve this case, criticizing it as being both too narrow and too broad.[239] According to the dissent, the Court's rule is too narrow because it bases the resolution on the widespread nature of the technology employed.[240] As the technology in question becomes more widespread, the Fourth Amendment protection would decrease instead of increase.[241] The dissent determined that the Court's rule is too broad for three reasons. First, it prohibits "mechanical substitutes" for "sense–enhancing technology" that have already been approved by the Court, such as canine sniffs, and there is no compelling reason to do that.[242] Second, the Court's rule appears to protect information simply because it emanated from the inside of a home, even if the information was detected outside of the home.[243] Third, the Court's new rule treats the mental process of interpreting data gathered from the outside of the home as equivalent to the physical search of the home's interior.[244]

Finally, the dissent distinguished this case from *Katz* by pointing out that the investigation in *Katz* allowed officers to listen to the conversation taking place in the booth, giving them the functional equivalency of presence inside the booth.[245] The dissent argued that, for the equivalent to have happened here, the thermal scanner would have not only had to tell its user that heat was being generated inside the house, but also what was generating the heat.[246] What the technology employed here actually provided would have been equivalent to a technology telling the police how loud Katz's conversations were, but not what he was saying.[247]

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[238] *Id.* at 46 (Stevens, J., dissenting).

[239] *Id.* at 47 (Stevens, J., dissenting).

[240] *See id.* at 47 (Stevens, J., dissenting).

[241] *See id.* (Stevens, J., dissenting).

[242] *Id.* at 47 (Stevens, J., dissenting).

[243] *Id.* at 48 (Stevens, J., dissenting).

[244] *Id.* at 49 (Stevens, J., dissenting).

[245] *Id.* (Stevens, J., dissenting); *see generally Katz v. United States*, 389 U.S. 347 (1967).

[246] *Kyllo*, 533 U.S. at 49 (Stevens, J., dissenting).

[247] *Id.* at 49–50 (Stevens, J., dissenting).

V. ANALYSIS

The Court incorrectly suppressed evidence in *Kyllo v. United States*[248] because it based its resolution of the case on capabilities that the technology used against Mr. Kyllo did not actually have and because the rule that the Court fashioned to resolve the case is built upon facts that are likely to change.[249] This weakness in the Court's rule perpetuates the problem presented by technological advances to Fourth Amendment protections—which is that these inevitable advances constantly change the capabilities of law enforcement officers.[250] The Fourth Amendment has proven itself to be particularly susceptible to technological advancement as new technologies allow law enforcement officers to conduct investigations that would not have been possible at the time of the Amendment's adoption.[251] The Supreme Court's history on this issue has, if anything, confused the matter further as the standards for Fourth Amendment analysis have changed[252] and the Court has arrived at different conclusions in cases involving similar fact patterns.[253] The Court has done little to alleviate the confusion with this decision; it has prohibited, without explanation, an investigation that was significantly less intrusive than ones that it has upheld in the past.[254] With this case, the Court missed an opportunity to clarify its stance on the Fourth Amendment, to protect the rights of citizens, to allow law enforcement officers to keep pace with the advancing technologies of criminals, and to create a rule that would not need constant revisitation by the courts as technology advances.

A. THE ORIGINAL INTENT OF THE FOURTH AMENDMENT

One of the more confusing aspects of the Court's opinion is to what extent it bases its conclusion on the original intent of the Fourth Amendment. In one sentence near the end of its opinion, the Court

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[248] 533 U.S. 27 (2001).

[249] *See id.* at 41 (Stevens, J., dissenting).

[250] *See* Daniel J. Polatsek, *Thermal Imaging and the Fourth Amendment: Pushing the Katz Test Towards Terminal Velocity*, 13 J. MARSHALL J. COMPUTER & INFO. L. 453, 463 (1995).

[251] *See id.*

[252] *See* Katz v. United States, 389 U.S. 347, 352–53 (1967).

[253] *Compare* United States v. Karo, 468 U.S. 705, 721 (1984), *with* United States v. Knotts, 460 U.S. 276, 285 (1983).

[254] *See* California v. Ciraolo, 476 U.S. 207 (1986).

states that the original meaning of the Fourth Amendment compels its conclusion.[255] Given the likelihood that the fact pattern presented in this case is far beyond anything the drafters of the Fourth Amendment thought was possible, it is unfortunate that the Court makes little effort to explain how its analysis is based on the original meaning of the Amendment. The small effort that it does make is to offer the following definition of the term "search" as used at the time the Fourth Amendment was adopted: "'[t]o look over or through for the purpose of finding something; to explore; to examine by inspection; as, to *search* the house for a book; to *search* the wood for a thief.'"[256] This definition hardly provides support for the notion that the passive detection of heat coming off of the outside of a building qualifies as a search, as the examples that it offers only refer to searching physical properties for tangible items.[257] If anything, it detracts from the Court's conclusion.[258]

The dissent takes issue with the Court's statement, indicating that the original meaning of the Fourth Amendment compels the dissent's conclusion, by providing its own explanation of what the Fourth Amendment was meant to guard against: physical entry of a home.[259] The dissent's characterization of the original meaning of the Fourth Amendment appears to be the more accurate one.[260] As evidenced by the Court's own history, the earliest understanding of the Fourth Amendment in light of challenges to it by technological advances was that it only protected against physical invasions of private property.[261] That form of analysis changed with the *Katz* decision (which, notably, included a dissent from Justice Black arguing that the movement away from basing Fourth Amendment protections on physical intrusions violated the original meaning of the Fourth Amendment).[262] However, since *Katz*, the Court has only declared

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[255] Kyllo v. United States, 533 U.S. 27, 40 (2001).

[256] *Id.* at 32 n.1 (quoting NOAH WEBSTER, AN AMERICAN DICTIONARY OF THE ENGLISH LANGUAGE 66 (6th ed. 1989)(1828)). *See generally* CONGRESSIONAL RESEARCH SERVICE, *supra* note 8, at 1200–01 (briefly discussing the 1789 Congressional debates surrounding the ratification of the Fourth Amendment).

[257] *Kyllo*, 533 U.S. at 32 n.1.

[258] *See id.*

[259] *Id.* at 46 (Stevens, J., dissenting).

[260] *See id.* (Stevens, J., dissenting).

[261] *See, e.g.*, Silverman v. United States, 365 U.S. 505, 512 (1961); Goldman v. United States, 316 U.S. 129, 135 (1942); Olmstead v. United States, 277 U.S. 438, 466 (1928).

[262] Katz v. United States, 389 U.S. 347, 366 (1967) (Black, J., dissenting).

conduct that did not involve physical encroachment as being unconstitutional one time in *United States v. Karo*.[263] Except for *Katz* and *Karo*, the Court has a long history of allowing government investigations that did not involve physical invasions of private property.[264] This does not necessarily mean that all investigations that do not physically invade private property should be allowed.[265] It is only meant to point out the absurdity of basing a holding on the premise that a non–physical search of property violates the *original meaning* of the Fourth Amendment.[266]

The idea that the Fourth Amendment was originally meant to prohibit only physical searches can be found outside of the Court's own history as well.[267] The wording of the Amendment raises doubts about the Court's argument in that it only protects people's right "to be secure in their persons, houses, papers, and effects . . . ."[268] The wording only refers to tangible items[269] and any ambiguity in support of the Court's view (to the effect that it only protects against physical searches) is further diminished by the history leading up to its adoption.[270] The Fourth Amendment was written in response to the hated 'writs of assistance' employed against the colonists by the British.[271] The writs allowed their bearers to conduct physical searches of a household, virtually without limit (even by time).[272] Furthermore, in his dissent to the *Katz* opinion, Justice Black contends that eavesdropping was common and the failure of the Fourth Amendment's drafters to outlaw this indicates that they did not have any great con-

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[263] 468 U.S. 705 (1984). *See also* California v. Ciraolo, 476 U.S. 207, 213 (1986) ("The observations by Officers Shutz and Rodriguez in this case took place within public navigable airspace in a physically nonintrusive manner . . . .") (citation omitted); Dow Chem. Co. v. United States, 476 U.S. 227 (1986); Smith v. Maryland, 442 U.S. 735 (1979).

[264] *See, e.g.*, Silverman v. United States, 365 U.S. 505 (1961); Goldman v. United States, 316 U.S. 129 (1942); Olmstead v. United States, 277 U.S. 438 (1928).

[265] *See* United States v. Karo, 468 U.S. 705 (1984).

[266] *See Katz*, 389 U.S. at 365 (Black, J., dissenting).

[267] CONGRESSIONAL RESEARCH SERVICE, *supra* note 8, at 1199; *see also* Zabel, *supra* note 11.

[268] U.S. CONST. amend. IV.

[269] *Katz*, 389 U.S. at 365 (Black, J., dissenting).

[270] *See* CONGRESSIONAL RESEARCH SERVICE, *supra* note 8, at 1199–1201; Zabel, *supra* note 11.

[271] CONGRESSIONAL RESEARCH SERVICE, *supra* note 8, at 1199; *see also* Zabel, *supra* note 11, at 271.

[272] CONGRESSIONAL RESEARCH SERVICE, *supra* note 8, at 1200.

cern about non–physical invasions of a person's property.[273]

All this is not meant to say that the Court would necessarily be wrong in extending Fourth Amendment protections beyond physical violations—only that it should take one of two possible roads to do so. Either it should be honest that it is extending the Fourth Amendment beyond its original understanding[274] or it should only prohibit investigations that involve a physical invasion (or the equivalent of a physical invasion) into a constitutionally protected area.[275] In this case, the Court has chosen neither of these options. Without explanation, the Court has claimed to base its conclusion on the Fourth Amendment, even though that conclusion has little support in either the Court's own historical understanding of the Fourth Amendment's protections or the history of the adoption of the Fourth Amendment.[276] The Court also failed to consider whether the information gathered by the technology used in this case could have been gathered without physical invasion before the technology was invented.[277] The only knowledge that the thermal detector used in the present case gave investigators was that the outside of the house was unusually warm and, according to the fact finding court, this was all the thermal detector was capable of.[278] However, it was possible to tell that the outside of a building was warm before the invention of thermal detectors (*e.g.*, by noticing that snow is melting faster on some parts than on others).[279]

In sum, the Court has extended the Fourth Amendment to prohibit activity that its original understanding would not have prohibited and it has done this despite the fact that its holding is at odds with the Court's own history. The Court's claim that it is basing its decision on the original meaning of the Fourth Amendment deserves significantly more explanation than the Court has given it.

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[273] *Katz*, 389 U.S. at 366 (Black, J., dissenting).

[274] *See id.* at 364 (Black, J., dissenting).

[275] *See* Kyllo v. United States, 533 U.S. 27, 46 (2001) (Stevens, J., dissenting).

[276] *See, e.g.*, Silverman v. United States, 365 U.S. 505 (1961); Goldman v. United States, 316 U.S. 129 (1942); Olmstead v. United States, 277 U.S. 438 (1928).

[277] *See Katz*, 389 U.S. at 366 (Black, J., dissenting) (pointing out that eavesdropping was commonly done at the time the Fourth Amendment was adopted). Arguably, eavesdropping reveals more intimate information than a thermal detector.

[278] United States v. Kyllo, No. CR. 92–51–FR, 1996 WL 125594, at *2 (D. Or. Mar. 15, 1996), *aff'd*, 190 F.3d 1041 (9th Cir. 1999), *rev'd*, 533 U.S. 27 (2001).

[279] *Kyllo*, 533 U.S. at 43 (Stevens, J., dissenting).

B. THE UNRESOLVED DIFFICULTIES IN APPLYING THE KATZ TEST

The *Katz* test has proven to be a difficult test to apply. Since its creation, it has "been criticized as circular, and hence subjective and unpredictable."[280] The Court's own application of this test has contributed to the confusion surrounding what the Fourth Amendment does and does not protect.[281] Whatever the status of the debate overall, applying the *Katz* test to the fact pattern presented in this case would lead to a particularly unsatisfying result.[282] Perhaps that is why the Court appears to have avoided doing so in *Kyllo*.[283] Instead of relying on the two–pronged approach outlined in Harlan's concurrence in the *Katz* test,[284] which the Court had done in every Fourth Amendment case involving the use of technology since it had been announced,[285] the Court based its conclusion on the fact that this case involved the thermal scanning of a home and that the technology used was not widespread.[286] While the Court should be applauded for abandoning the *Katz* test and avoiding the unsatisfying result that it would have produced, the Court still missed an opportunity to provide those on both sides of government investigations with a clear rule that would be easy to apply as different technologies become available.

The problem with applying the *Katz* test to the fact pattern in this case comes with the first prong of the two–prong test. In order for a person to be protected by the Fourth Amendment, the *Katz* test indicates that he must manifest a subjective expectation of privacy.[287] The practical effect of this rule is that a defendant must have undertaken a substantial, outwardly visible effort to indicate that he meant

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[280] *Id.* at 34.

[281] *See supra* text accompanying notes 102–125 (discussion of Dow Chem. Co. v. United States, 476 U.S. 227 (1986)). *Compare also* United States v. Karo, 468 U.S. 705 (1984), *with* United States v. Knotts, 460 U.S. 276 (1983).

[282] *See* Susan Moore, Note, *Does Heat Emanate Beyond the Threshold?: Home Infrared Emissions, Remote Sensing, and the Fourth Amendment Threshold*, 70 CHI.–KENT L. REV. 803, 841 (1994).

[283] *Kyllo*, 533 U.S. at 34.

[284] Katz v. United States, 389 U.S. 347, 361 (1967) (Harlan, J., concurring).

[285] *See, e.g.*, California v. Greenwood, 486 U.S. 35 (1988); California v. Ciraolo, 476 U.S. 207 (1986); Dow Chem. Co. v. United States, 476 U.S. 227 (1986); United States v. Karo, 468 U.S. 705 (1984); United States v. Place, 462 U.S. 696 (1983); United States v. Knotts, 460 U.S. 276 (1983).

[286] *Kyllo*, 533 U.S. at 34.

[287] *Katz*, 389 U.S. at 361 (Harlan, J., concurring).

for his activity to be private.[288] In *Katz*, the fact that the defendant had entered a phone booth and closed the door behind him was sufficient to meet this requirement.[289] However, in this case, the laws of thermodynamics would seem to render it impossible for anyone to satisfy this prong of the *Katz* test.[290] In its opinion, the Ninth Circuit did apply the *Katz* test and held that, because Mr. Kyllo took no affirmative action to conceal the heat emanating from his home, he had not manifested a subjective expectation of privacy.[291] Other circuit courts have upheld scanning of escaping heat because of its similarity to searching through discarded garbage (which was approved of in *California v. Greenwood*) since it indicated that the defendant did not have a subjective expectation of privacy in it.[292] The problem with these arguments is that, unlike garbage, it is impossible to prevent heat from leaving a home when the air surrounding it is cooler than the interior of the house.[293] The laws of thermodynamics dictate that, while insulation can slow the process down, heat inevitably dissipates.[294] This means that the only way Mr. Kyllo could have passed the first prong of the *Katz* test was if he had "incorrectly but sincerely believed" that he could do something to prevent the excess heat from leaving his house.[295]

Some have also argued that a thermal scan is similar to the

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[288] *See, e.g., Dow Chem. Co.*, 476 U.S. at 241 (Powell, J., concurring in part and dissenting in part) "Dow appears to have done everything commercially feasible to protect the confidential business information and property located within the borders of the facility." *Id.* Yet this was not enough to satisfy the *Katz* test.

> A pattern has developed in these cases. Where the defendant has failed to meet the first prong of the *Katz* test, the courts have held that even if the defendant could have established a subjective expectation of privacy, such expectation would not be one that society was prepared to recognize as reasonable. As such, the defendant would fail to satisfy the second prong of the *Katz* test as well.

Gregory L. Kelley, Comment, *The Warrantless Use of Thermal Imagery*, 12 T.M. COOLEY L. REV. 597, 602 (1995) (citation omitted).

[289] *Katz*, 389 U.S. at 361 (Harlan, J., concurring).

[290] Huskins, *supra* note 158, at 663.

[291] United States v. Kyllo, 190 F.3d 1041, 1046 (9th Cir. 1999) (Nooning, J., dissenting), *rev'd*, 533 U.S. 27 (2001).

[292] California v. Greenwood, 486 U.S. 35 (1988); *see also* United States v. Penny–Feeney, 773 F. Supp. 220, 226 (D. Haw. 1991).

[293] Huskins, *supra* note 158, at 663.

[294] *Id.*

[295] *Id.* at 669.

Court–approved "canine sniff" of luggage.[296] Like a dog's nose, the thermal scanner merely heightens one of the senses of the investigating officers.[297] However, critics of this analogy point out that unlike a dog sniff, a thermal imager reveals all heat emanating from a home, whether that heat is being produced by legal or illegal behavior.[298] A dog sniffing luggage will only tell officers whether there is illegal contraband inside.[299]

Regardless of the weaknesses in the arguments already advanced for allowing a thermal scan, based on the Court's history, it is clear that Mr. Kyllo would not have prevailed if the Court had relied on the *Katz* test. One gets the sense from reading over the Court's post–*Katz* Fourth Amendment cases that, at least from the perspective of the people claiming that their Fourth Amendment rights were violated, the first prong of the *Katz* test has only a few small teeth to it.[300] In *Dow Chemical*, the Court acknowledged that Dow had maintained elaborate security around the perimeter of its facilities to prevent people from viewing the very thing that the investigators were trying to see.[301] However, the Court's holding seemed to indicate that anything short of preventing every possible investigation into the plant would not be enough to satisfy the first prong of the *Katz* test.[302] The Court held that, despite all of Dow's efforts to keep people from seeing its plant, it still had not satisfied the first prong of the *Katz* test because the plant could potentially be seen from an airplane, or it could be viewed from a hill top.[303] The Court made this decision despite the substantial efforts that Dow took to prevent even the unlikely scenarios that the Court came up with, even going so far as to track down airplanes that it had observed flying overhead and confiscating their film.[304]

The lack of protection provided by the first prong of the *Katz* test also came into question when the Court decided *California v. Green-*

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[296] *See* United States v. Place, 462 U.S. 696, 707 (1983).

[297] *See Penny–Feeney*, 773 F. Supp. at 226.

[298] Brief for Petitioner at 33, Kyllo v. United States, 533 U.S. 27 (2001) (No. 99–8508).

[299] *Place*, 462 U.S. at 707.

[300] *See* Moore, *supra* note 282, at 831.

[301] Dow Chem. Co. v. United States, 476 U.S. 227, 229 (1986).

[302] *See id.*

[303] *See id.* at 234. The Court does not say whether there actually were hills surrounding the plant, but considering the efforts that Dow undertook to keep people from seeing its plant, it seems unlikely that it was located in a valley.

[304] *Id.* at 229, 242 n.3.

wood.[305] In that case, the Court held that the defendant had not satisfied the first prong of the *Katz* test because he had placed his garbage outside—meaning that doing something as necessary as disposing of one's garbage potentially waives one's right to Fourth Amendment protection.[306]

After looking over the Court's history regarding the first prong of the *Katz* test, we might start to wonder whether Mr. Kyllo could have done anything to satisfy it. The answer would appear to be no.[307] The Court's holdings in *Dow Chemical* and other cases that have employed the *Katz* test have consistently held that trying to guard privacy is not enough.[308] The defendant actually would have had to succeed. However, the laws of thermodynamics indicate that Mr. Kyllo could not have succeeded.[309] The question, then, is, if it is not possible to satisfy a test, why have it in the first place? Furthermore, not only are the protections offered by the first prong of the *Katz* test weak, but the Ninth Circuit's focus on the actions of Mr. Kyllo seems to be a strange way of determining whether the actions of the government agents were a violation of the Fourth Amendment.[310]

The good news is that, while the Court did mention the *Katz* test in *Kyllo* and never indicated any problems with it, the Court never actually applied the *Katz* test. This is a strong indication of a departure from the Court's previous Fourth Amendment decisions as the Court has always relied on the *Katz* test to resolve similar issues.[311] Instead, the Court came up with a new two–prong test (although it never explicitly said that this is what it was doing).[312] The new two–prong test is for cases involving sense–enhancing technology.[313] The first prong is to ask whether the technology reveals information regarding the inside of a constitutionally protected area that, prior to the invention of the technology, could not have been gotten without physical

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[305] 486 U.S. 35 (1988).

[306] *Id.* at 40–41.

[307] *See* Laba, *supra* note 57, at 1445.

[308] *See, e.g.*, California v. Ciraolo, 476 U.S. 207 (1986).

[309] Huskins, *supra* note 158, at 669.

[310] *See* Zabel, *supra* note 11, at 288.

[311] *See, e.g.*, California v. Greenwood, 486 U.S. 35 (1988); Ciraolo, 476 U.S. at 207; Dow Chemical Co. v. United States, 476 U.S. 227 (1986); United States v. Knotts, 460 U.S. 276 (1983); Smith v. Maryland, 442 U.S. 735 (1979).

[312] Kyllo v. United States, 533 U.S. 27, 34 (2001).

[313] *Id.*

intrusion.[314] The second prong is to ask whether the technology in question is within general public use.[315] While the Court should be commended for not relying on the *Katz* test to resolve this case, this new test that the Court has fashioned does little to deal with the subjectiveness and unpredictability for which the *Katz* test has been criticized.[316] As the dissent points out, a judge will still need to make a subjective determination of whether a challenged technology has pervaded the public use enough to no longer require a warrant.[317] This rule does nothing to increase predictability.[318] In fact, it lessens it, as technologies that require a warrant at one point will often cease to require one at other times as they become more widespread. More problematic than that, only the Court will know when the use of a once–prohibited technology becomes permissible.[319] Furthermore, the Court appears to have misapplied the first prong of its new test as the technology employed here does not reveal anything that would have previously required a physical invasion into a constitutionally protected area.[320] The dissent's proposed standard for evaluating sense–enhancing technologies would have provided a much more workable solution for those involved in government investigations (on either side) and would not have required any adjustment as technology advances (as the Court's standard will).[321] That proposed standard is to only prohibit sense–enhancing technology when "it provides its user with the functional equivalent of actual presence in the area being searched."[322]

C. THE PROBLEM WITH CONSIDERING POTENTIAL TECHNOLOGIES IN RESOLVING FOURTH AMENDMENT CASES

There are many problems with basing the resolution of a Fourth Amendment case on the capabilities of technology, either now or in the future. The greatest difficulty in resolving challenges to Fourth Amendment protections by new technology is the inevitability of

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[314] *Id.* (quoting Silverman v. United States, 365 U.S. 505, 512 (1961)).
[315] *Id.*
[316] *Id.*
[317] *Id.* at 47 (Stevens, J., dissenting).
[318] *Id.* (Stevens, J., dissenting).
[319] *Id.* (Stevens, J., dissenting).
[320] *Id.* at 43 (Stevens, J., dissenting).
[321] *Id.* at 47 (Stevens, J., dissenting).
[322] *Id.* (Stevens, J., dissenting).

technological change and advancement.[323] People routinely use technologies today that could not have been imagined by the Fourth Amendment's drafters, and, 200 years from now, people will be using technologies that we cannot imagine. For this reason, it seems like a good idea for the court to draw a bright line that cannot be moved as technology advances.[324] While the Court has drawn a bright line with this decision, it has drawn it around the wrong thing. Instead of attempting to draw a bright line around constitutionally protected physical areas, as the Court did with the home in this case, the Court should draw a bright line that separates more invasive technologies from less invasive ones.[325] For example, a thermal detector that only gives vague information about the heat coming off of the outside of a home might be allowed since, on its own, that would not tell its user anything about what is going on inside the home. However, if thermal detectors develop to a point that they can give their users accurate information about what is going on behind a wall (or, the equivalent of actual, physical presence behind the wall), that might be forbidden without a warrant.[326] Based on different descriptions of thermal detectors in academic literature, it appears that they present a wide range of capabilities to their users.[327] In this case, the district court found that the thermal detector the officers used "cannot and did not show any people or activity within the walls of the structure."[328] However, others state that some thermal detectors can detect people behind windows, "or behind a wall where the wood is thin," and other details about what is going on inside a house.[329] The Court attempts to resolve the dispute by issuing a blanket prohibition on the use of sense–enhancing technology that is not within the general pub-

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[323] *See* Dow Chem. Co. v. United States, 476 U.S. 227, 240 (1986) (Powell, J., concurring in part and dissenting in part) ("For nearly 20 years, this Court has adhered to a standard that ensured that Fourth Amendment rights would retain their vitality as technology expanded the Government's capacity to commit unsuspected intrusions into private areas and activities.").

[324] *See* Huskins, *supra* note 158, at 677.

[325] *Id.*

[326] *Id.*

[327] *See, e.g., id.* at 661; M. Annette Lanning, Note, *Thermal Surveillance: Do Infrared Eyes in the Sky Violate the Fourth Amendment?*, 52 WASH. & LEE L. REV. 1771, 1773–74 (1996).

[328] United States v. Kyllo, No. CR. 92–51–FR, 1996 WL 125594, at *2 (D. Or. Mar. 15, 1996), *aff'd*, 190 F.3d 1041 (9th Cir. 1999), *rev'd*, 533 U.S. 27 (2001).

[329] Campisi, *supra* note 159, at 265.

lic use.[330] However, this is problematic, not only for the practical reasons discussed below but also because it creates instability in the law as the technology advances and the number of people using it increases.[331] Rather than trying to resolve the issue by arguing over what the technology is and is not capable of, the Court should have adopted the dissent's standard, which would have made the problem presented by advancing technology moot.[332]

The dissent's proposed standard is to base the constitutionality of sense–enhancing technology on its ability to give investigators the functional equivalent of physical presence in a constitutionally protected area.[333] In other words, did the thermal scanner used on Mr. Kyllo's home reveal information which investigators could have only otherwise gotten by standing inside of the home?[334] Even the Court's opinion does not indicate that it did.[335] The Court bases its argument that the thermal scanner gave investigators intimate details about what was going on inside the home on the fact that it allowed them to infer, based on knowing that there was a large amount of heat coming off of the house, that marijuana was growing inside.[336] However, the fact that it had to be inferred indicates how little the thermal scanner told investigators about what was going on inside the home.[337] Indeed, it was only because of the other investigation that the officers had done that they correctly inferred that marijuana was growing inside the house.[338] As the Court points out, the thermal detector may allow investigators to determine at what hour each night the lady of the house takes her daily sauna.[339] However, this would only be true if investigators already knew that there was a lady of the house, that the house was equipped with a sauna, that the lady used the sauna on a daily basis, and that there were no other sources of unusually high amounts of heat in the house.[340] Without all that information, none of

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[330] Kyllo v. United States, 533 U.S. 27, 34 (2001).

[331] *Id.* at 47 (Stevens, J., dissenting).

[332] *See id.* (Stevens, J., dissenting).

[333] *Id.* (Stevens, J., dissenting).

[334] *See id.* (Stevens, J., dissenting).

[335] *Id.* at 35.

[336] *Id.* at 30.

[337] *Id.* at 44 (Stevens, J., dissenting).

[338] United States v. Kyllo, 190 F.3d 1041, 1043 (9th Cir. 1999), *rev'd*, 533 U.S. 27 (2001).

[339] Kyllo v. United States, 533 U.S. 27, 38 (2001).

[340] *See id.* at 50–51 (Stevens, J., dissenting).

which the thermal imager could provide its user, the belief that the lady of the house is taking her daily sauna is nothing more than a guess.[341]

Furthermore, the Court makes no effort to distinguish thermal scans from other, constitutionally allowed investigative techniques (one of which was undertaken in this very case).[342] The quality of the information provided by a thermal scan is no greater than the quality of information provided by electricity bills.[343] Indeed, electricity bills may give investigators an even clearer picture of what is going on inside the house that is consuming the electricity than they can get from a thermal scan.[344] Unlike a thermal scan, electricity bills can measure with precision the amount of electricity being used by the house, and it can provide information about the house at any time of day, whereas a thermal scan must normally be conducted at night to prevent the heat from the sun from interfering with it.[345] As with a thermal scan that shows a high amount of heat coming off of a house, an electrical bill that shows a house uses an abnormally high amount of electricity would be useless on its own.[346] However, combined with other information, it could give investigators a clearer picture of what is going on inside the house.[347] Furthermore, as with thermal scanners, it is conceivable that the technology surrounding the measurement of electricity usage will advance as well.[348] One could imagine a utility company wanting to provide its customers with a way to pinpoint which appliances are using the most electricity so that they can gain greater control over their electricity usage.[349] This information could be used by an investigator to tell exactly what is happening inside the house.[350] Why the Court should be concerned about the future capability of thermal scanners when it has not been concerned

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[341] *See id.* (Stevens, J., dissenting).

[342] *See id.* at 30.

[343] Douglas A. Kash, *Prewarrant Thermal Imaging as a Fourth Amendment Violation: A Supreme Court Question in the Making*, 60 ALB. L. REV. 1295, 1306 (1997).

[344] *Id.*

[345] Zabel, *supra* note 11, at 281.

[346] Huskins, *supra* note 158, at 664.

[347] *Id.*

[348] *See, e.g.*, Carlene Hempel, *Coming: Houses So Smart They Run Themselves*, THE NEWS AND OBSERVER (Raleigh, N.C.), Oct.15, 2001 at D1; Roger Harris, *Kitchen of the Future Not Quite Ready*, SCRIPPS HOWARD NEWS SERVICE, July 4, 2001.

[349] *See, e.g.*, Hempel, *supra* note 348; Harris, *supra* note 348.

[350] *See, e.g.*, Hempel, *supra* note 348; Harris, *supra* note 348.

about the future capability of electric bills is not an obvious answer.[351]

In short, there are a number of problems with basing the resolution of constitutional issues on the capabilities of the technology involved. By doing this, the Court has set itself up to have to revisit this issue again at some point in the future. While the dissent's proposed resolution to this case would draw a bright line indicating what government investigators are and are not allowed to do, the Court will likely be called on again to determine when this and other technologies have sufficiently entered the general use of society so as not to require a warrant.[352]

D. THE CONSEQUENCES OF REQUIRING A WARRANT FOR A THERMAL SCAN

There are practical consequences to the Court's decision for those responsible for fighting crime as well.[353] Technology is not only employed by those who investigate crime, but by those who commit it as well.[354] Illegal drug manufacturers have been some of the most aggressive about employing technology to further their trade.[355] Marijuana growers possess advanced technology, including "'computerized irrigation systems, hydroponic basins, heating systems [and] growing lamps,' which allow for four full growing cycles per year."[356] It seems safe to assume that, like thermal imaging technology, none of the indoor marijuana growing technology[357] existed at the time of the adoption of the Fourth Amendment.

Certainly, basing a decision on what to allow under the Fourth Amendment from the technology criminals have available to them

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[351] There was never any question that the subpoenaing of Mr. Kyllo's utility bills without a warrant was permissible. Mr. Kyllo only challenged that what he argued was a distorted image of his electrical usage, which was presented to the magistrate who ultimately issued the warrant. *See* United States v. Kyllo, 37 F.3d 526, 528 (9th Cir. 1994).

[352] Kyllo v. United States, 533 U.S. 27, 34 (2001).

[353] *See* Huskins, *supra* note 158, at 686.

[354] Zabel, *supra* note 11, at 279.

[355] *See, e.g., id.*

[356] Kash, *supra* note 343, at 1296 (quoting Mindy G. Wilson, Note, *The Prewarrant Use of Thermal Imagery: Has This Technological Advance in the War Against Drugs Come at the Expense of Fourth Amendment Protections Against Unreasonable Searches?*, 83 KY. L. J. 891, 892 (1995)).

[357] *See, e.g.*, Zabel, *supra* note 11, at 279 n.97.

would be a dangerous idea.[358] As the technologies that criminals use become more sophisticated, our Fourth Amendment protections would erode, which is exactly what the Court is trying to prevent.[359] However, it seems reasonable to weigh what would be required to stop those criminals who engage in behaviors that were not formerly possible against the protections that we would lose by allowing the technology in question.[360] As the dissent points out in *Kyllo v. United States*, the interest being protected is in the heat coming off of the outside of people's homes.[361] This is generally not something that most people who are not growing marijuana inside their house care about.[362] In contrast, the service that a thermal scan provides is extremely valuable.[363] A scan of Mr. Kyllo's electrical bills on its own would probably not have produced enough evidence to determine that he was growing marijuana inside his house.[364] Nor would a thermal scan have revealed enough information. Yet, knowing that Mr. Kyllo was consuming an abnormally high amount of electricity, which was apparently being converted into heat, the government was able to correctly infer that Mr. Kyllo was running an indoor growing operation.[365]

There would be dangers in allowing the government to conduct thermal scans without a warrant.[366] It is easy to imagine that police would be tempted to drive up and down streets, scanning houses, looking for ones that were abnormally hot.[367] However, there are a number of practical considerations that would keep police officers from doing this. Most important are the same ones that keep the police from randomly conducting any of the investigative techniques that they are allowed to engage in without a warrant (*e.g.*, searching through trash, subpoenaing electrical records, conducting naked–eye surveillance): time and money.[368] Combine the fact that conducting a

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[358] *See id.* at 281.

[359] *See id.*

[360] *See* Kyllo v. United States, 533 U.S. 27, 45 (2001) (Stevens, J., dissenting).

[361] *Id.* at 46 (Stevens, J., dissenting).

[362] *Id.* at 45 (Stevens, J., dissenting).

[363] *Id.* (Stevens, J., dissenting).

[364] *See* United States v. Kyllo, 190 F.3d 1041, 1043 (9th Cir. 1999) (Nooning, J., dissenting), *rev'd*, 533 U.S. 27 (2001).

[365] *Id.* at 1044.

[366] Huskins, *supra* note 158, at 690.

[367] *See id.*

[368] *But see id.*

thermal scan takes time and costs money with the fact that, on its own, a thermal scan tells its user almost nothing about what is going on inside a house—even when an unusual amount of heat is coming off of it—and it is hard to identify any incentives that law enforcement officers would have to do this.[369]

The Court should also have considered that having the police conduct thermal scans before getting a warrant may help them avoid the ultimate intrusion of a physical search, as it would allow them one more check to confirm whether there is likely to be marijuana growing inside.[370]

The Court needs to consider that a thermal scan provides police officers with information about crime that is becoming increasingly difficult to obtain as criminals become more and more sophisticated.[371] The Court's blanket prohibition on this useful technology, while perhaps going a long way towards protecting our Fourth Amendment rights, makes it substantially more difficult for government agents to detect crime—all to maintain privacy in something that most people have very little interest in protecting.[372] The dissent's proposed standard would protect the rights that the Fourth Amendment was meant to protect, while providing police officers with a valuable weapon in fighting crime.[373] Considering the substantial reasons to both employ this technology and to ban it entirely, this question is one that legislators are better suited to deal with than the courts.[374] The courts should set a minimum standard to protect our rights, such as the dissent's proposed "actual physical presence" standard. If a legislature wants to raise that standard further, they can. Also, if people decide it is more important to prevent marijuana farms than it is to conceal the heat coming off of their houses, then that is a decision they should be able to make.

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[369] *But see id.*

[370] *See* United States v. Karo, 468 U.S. 705, 715 (1984)

> The monitoring of an electronic device such as a beeper is, of course, less intrusive than a full-scale search, but it does reveal a critical fact about the interior of the premises that the Government is extremely interested in knowing and that it could not have otherwise obtained without a warrant.

Id.

[371] Zabel, *supra* note 11, at 279–80.

[372] Kyllo v. United States, 533 U.S. 27, 45 (2001) (Stevens, J., dissenting).

[373] *Id.* at 45–46 (Stevens, J., dissenting).

[374] *Id.* at 51 (Stevens, J., dissenting).

VI. CONCLUSION

In *Kyllo v. United States*, the Court held that the use of sense-enhancing technology, which is not in use by the general public and provides its user with information about the interior of a home that would not have been previously possible without a physical intrusion, is prohibited by the Fourth Amendment of the Constitution.[375] The Court reasoned that when it comes to the home, Fourth Amendment protections are heightened.[376] The Court felt that while a thermal scan does not provide a perfect snapshot of what is going on inside the home, the fact that it provides any information about what is going on inside the home is enough to warrant its prohibition.[377]

The Court should be commended for breaking away from the form of analysis that it has taken in Fourth Amendment cases for the last thirty-four years (*i.e.*, the *Katz* test). However, the new test that the Court has employed here is not clearly better and suffers from many of the same problems that the *Katz* test does. The Court should not have taken into consideration the extent to which the technology involved is used in society.[378] It also should not have based its analysis on what the technology used may be capable of.[379] Instead, the Court should have used this opportunity to draw a bright line that would not fade or move over time. It should have based the constitutionality of the use of technology on whether the technology provides its user with the functional equivalent of presence in a constitutionally protected area.[380]

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[375] *Id.* at 34.
[376] *Id.*
[377] *Id.* at 36–37.
[378] *Id.* at 34.
[379] *Id.*
[380] *Id.* at 47 (Stevens, J., dissenting).