NOTE

WHY THE UNITED STATES SUPREME COURT'S RULING IN *KYLLO v. UNITED STATES*[1] IS NOT THE FINAL WORD ON THE CONSTITUTIONALITY OF THERMAL IMAGING

In 1991 Agent William Elliott of the United States Department of Interior began to suspect that Danny Kyllo was using his home for the indoor cultivation of marijuana.[2] This suspicion arose out of findings gleaned by a joint task force organized to investigate a possible marijuana production and distribution ring.[3] The initial investigation centered on Sam Shook, the father of Kyllo's neighbor.[4] After discovering information that suggested Kyllo's involvement in the growing and distribution of marijuana, Agent Elliott contacted Oregon state law enforcement officers who provided him with additional information that strengthened the suspicions against Kyllo.[5] Agent Elliot subpoe-

1. Kyllo v. United States, 533 U.S. 27, 121 S. Ct. 2038 (2001).

2. *Id.* at 2041.

3. United States v. Kyllo, 809 F. Supp. 787, 789 (D. Or. 1992), *aff'd in part*, United States v. Kyllo, 26 F.3d 134 (9th Cir. 1994), *opinion superseded*, United States v. Kyllo, 37 F.3d 526 (9th Cir. 1994), *rev'd*, United States v. Kyllo, 140 F.3d 1249 (9th Cir. 1998), *opinion withdrawn*, United States v. Kyllo, 184 F.3d 1059 (9th Cir. 1999), *opinion superseded*, United States v. Kyllo, 190 F.3d 1041 (9th Cir. 1999), *cert. granted*, Kyllo v. United States, 530 U.S. 1305 (2000), *rev'd*, Kyllo v. United States, 121 S. Ct. 2038 (2001). The joint task force was comprised of the United States Department of Interior, the Bureau of Land Management, the Tillamook County Sheriff's Department, and the Oregon State Police Bureau.

4. *See id.* The investigation of Sam Shook eventually began to focus on Tova Shook who resided at 890 Rhododendron Drive, Florence Oregon. Kyllo resided at 878 Rhododendron Drive.

5. United States v. Kyllo, 140 F.3d 1249, 1250-51 (9th Cir. 1998), *opinion withdrawn*, United States v. Kyllo, 184 F.3d 1059 (9th Cir. 1999), *opinion superseded*, United States v. Kyllo, 190 F.3d 1041 (9th Cir. 1999), *cert. granted*, Kyllo v. United States, 530 U.S. 1305 (2000), *rev'd*, Kyllo v. United States, 121 S. Ct. 2038 (2001). The information included that: Kyllo lived with his wife, Luanne, in one unit of a triplex in Florence Oregon, the triplex was also occupied by others who were suspects in the drug investigation, Kyllo allegedly told a police informant that he and Luanne could supply the informant with marijuana, and the previous month, Luanne had been arrested for delivery and possession of a controlled substance.

naed Kyllo's utility records and compared the use of electricity in Kyllo's triplex with a chart developed by the Portland General Electric Company.[6] That chart serves as a guide for estimating average power usage relative to square footage, type of heating and accessories, and the number of people living in the residence.[7] Based upon the comparisons between average electrical usage and Kyllo's utility records, Elliot concluded that Kyllo's use was abnormally high, a common indicator of indoor marijuana cultivation.[8] In order to determine if heat was emanating from Kyllo's home in levels consistent with the use of high intensity bulbs required for indoor growth, Elliott requested Staff Sergeant Daniel Haas of the Oregon National Guard to examine the triplex with an Agema Thermovision 210 thermal imaging device.[9] The scan was conducted from the passenger seat of Elliott's vehicle from across the street in front of Kyllo's house as well as from the street behind the house.[10] The scan showed that the roof over the garage and a side wall of petitioner's home radiated more heat than the rest of the home and were substantially warmer than the neighboring homes of the triplex.[11] Elliott and Haas concluded that the emanating heat indicated Kyllo was using halide lights to grow marijuana in his house.[12] Based upon the thermal imaging, utility bills, and tips from informants, Elliot was able to obtain a warrant authorizing the search of petitioner's home.[13] The search led to the discovery of an indoor growing operation involving more than 100 marijuana plants.[14] Kyllo's motion to

6. United States v. Kyllo, 809 F. Supp. 787, 790 (D. Or. 1992), *aff'd in part*, United States v. Kyllo, 26 F.3d 134 (9th Cir. 1994), *opinion superseded*, United States v. Kyllo, 37 F.3d 526 (9th Cir. 1994), *rev'd*, United States v. Kyllo, 140 F.3d 1249 (9th Cir. 1998), *opinion withdrawn*, United States v. Kyllo, 184 F.3d 1059 (9th Cir. 1999), *opinion superseded*, United States v. Kyllo, 190 F.3d 1041 (9th Cir. 1999), *cert. granted*, Kyllo v. United States, 530 U.S. 1305 (2000), *rev'd*, Kyllo v. United States, 121 S. Ct. 2038 (2001).

7. *Id.* at 790.

8. *See* United States v. Pinson, 24 F.3d 1056, 1057 (8th Cir. 1994). Indoor marijuana growth is dependent upon high intensity light bulbs that use between four hundred and one thousand-watt bulbs. Use of high intensity bulbs will result in greater electricity use.

9. United States v. Kyllo, 140 F.3d 1249, 1251 (9th Cir. 1998), *opinion withdrawn*, United States v. Kyllo, 184 F.3d 1059 (9th Cir. 1999), *opinion superseded*, United States v. Kyllo, 190 F.3d 1041 (9th Cir. 1999), *cert. granted*, Kyllo v. United States, 530 U.S. 1305 (2000), *rev'd*, Kyllo v. United States, 121 S. Ct. 2038 (2001).

10. Kyllo v. United States, 121 S. Ct. 2038, 2041 (2001).

11. *Id.*

12. *Id.*

13. *Id.*

14. *Id.*

suppress the seized evidence was denied, and thereafter he entered a conditional guilty plea.[15]

After a tangled procedural history, bouncing back and forth between the Federal District Court in Oregon and the Ninth Circuit Court of Appeals,[16] the United Supreme Court granted certiorari in September 2000[17] more than eight years after the thermal image scan had been conducted on Kyllo's triplex.[18]

WHAT IS A THERMAL IMAGER?

Before examining thermal imaging and its impact upon the Fourth Amendment, a brief synopsis of the technology is needed to better understand the constitutional implications. Objects with a temperature above absolute zero emit infrared radiation; the hotter an object becomes, the more infrared radiation is emitted.[19] The emitted radiation is not visible to the human eye because infrared energy occurs at a rate one thousand times slower than visible light.[20] A thermal imager detects infrared emissions, and then converts the heat readings into a two-dimensional picture, typically black and white.[21] The picture depicts various shades of gray according to how much radiation the object releases.[22] Hotter objects are lighter in color due to the fact they radiate more infrared energy, while the cooler objects

15. *Id.*

16. United States v. Kyllo, 809 F. Supp. 787, 790 (D. Or. 1992), *aff'd in part*, United States v. Kyllo, 26 F.3d 134 (9th Cir. 1994), *opinion superseded*, United States v. Kyllo, 37 F.3d 526 (9th Cir. 1994), *rev'd*, United States v. Kyllo, 140 F.3d 1249 (9th Cir. 1998), *opinion withdrawn*, United States v. Kyllo, 184 F.3d 1059 (9th Cir. 1999), *opinion superseded*, United States v. Kyllo, 190 F.3d 1041 (9th Cir. 1999), *cert. granted*, Kyllo v. United States, 530 U.S. 1305 (2000), *rev'd*, Kyllo v. United States, 121 S. Ct. 2038 (2001).

17. *See* Kyllo v. United States, 530 U.S. 1305 (2000).

18. United Sates v. Kyllo, 809 F. Supp. 787 (D. Or. 1992), *aff'd in part*, United States v. Kyllo, 26 F.3d 134 (9th Cir. 1994), *opinion superseded*, United States v. Kyllo, 37 F.3d 526 (9th Cir. 1994), *rev'd*, United States v. Kyllo, 140 F.3d 1249 (9th Cir. 1998), *opinion withdrawn*, United States v. Kyllo, 184 F.3d 1059 (9th Cir. 1999), *opinion superseded*, United States v. Kyllo, 190 F.3d 1041 (9th Cir. 1999), *cert. granted*, Kyllo v. United States, 530 U.S. 1305 (2000), *rev'd*, Kyllo v. United States, 121 S. Ct. 2038 (2001).

19. Thomas D. Colbridge, *Thermal Imaging: Much Heat but Little Light*, FBI Law Enforcement Bull., Dec. 1997, at 18.

20. 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).

21. *See* Colbridge, *supra* note 19, at 18.

22. *Id.*

appear darker.[23] A thermal imager is not capable of measuring the actual temperature of the environment, but detects temperature differentials between the objects and the air temperature.[24] A thermal imaging device does not transmit rays or beams that can penetrate the home; instead it passively scans thermal energy that is radiated from the home.[25]

The United States Army first developed the thermal imager to assist soldiers in locating enemies during combat.[26] Today, thermal imagers serve numerous functions that include finding missing persons, detecting "hot spots" in forest fires hidden by smoke, identifying inefficient insulation, detecting overloaded powerlines,[27] assisting in fugitive apprehensions and detecting illegal border crossings.[28]

As law enforcement officials throughout the United States have cracked down on the drug problem which plagues the nation, those who previously had grown marijuana outdoors turned to indoor cultivation where the risk of detection was significantly lower. Thermal imagers have therefore recently been employed by law enforcement agencies in the war on drugs to detect excess heat emanating from private residences - a common indicator of an indoor marijuana farm.[29] The high intensity bulbs used for indoor cultivation produce heat of 150 degrees or more Fahrenheit.[30] However, the optimal growing temperature for marijuana plants is between 68 and 72 degrees Fahrenheit.[31] Therefore this excess heat must be vented from indoors in order to maintain ideal growing conditions; the necessity of venting excess heat works to the advantage of law enforcement officials who could scan the suspect's home to determine if emissions were indicative of indoor marijuana operations.[32] The two interests at battle in

23. *Id.*

24. *Id.*

25. Wilson, *supra* note 20, at 897.

26. Matt Greenberg, Casenote, *Warrantless Thermal Imaging May Impermissibly Invade Home Privacy: United States v. Kyllo, 140 F.3d 1249 (9th Cir. 1998), Withdrawn, 1999 WL 548267 (9th Cir. 1999), Superseded on Rehearing by 1999 WL 694733 (9th Cir. 1999)*, 68 U. Cin. L. Rev. 151, 155 (1999).

27. Doyle Baker, Feature, *More Heat than Light: Judicial Discord Regarding Thermal Heat and Imagery and the Fourth Amendment*, 32-FEB Prosecutor 16, (1998).

28. Colbridge, *supra* note 19, at 19.

29. *Id.*

30. United States v. Pinson, 24 F.3d 1056, 1057 (8th Cir. 1994).

31. *Id.* at 1057.

32. *See id.*

the thermal imaging cases are the government's war on drugs and concerns for American civil liberties.[33]

FOURTH AMENDMENT GUARANTEES

The Fourth Amendment of the United States Constitution guarantees citizens their privacy will not be unreasonably invaded by providing:

> (t)he right of 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.[34]

The basic purpose of the Fourth Amendment is to safeguard the privacy and security of individuals against arbitrary invasion by the government.[35]

The Constitution does not prohibit all searches or seizures, but only those that are unreasonable.[36] A search is reasonable when conducted according to the warrant requirement of the Fourth Amendment.[37] "The warrant procedure is designed to guarantee that a decision to search private property is justified by a reasonable government interest."[38] The determination of reasonableness is based upon a balancing test, weighing the need for government search or seizure against the individual right to privacy as guaranteed by the Fourth Amendment.[39] The balancing test to determine when the right of privacy must yield to the right of search is to be determined by a judicial officer, not a police officer or government agent.[40] The need for the judgment by a judicial officer to be interposed between the citizen and the police is to ensure a neutral drawing of inferences from the evidence, as opposed to a drawing of inferences by a law enforcement officer who is "engaged in the often competitive enterprise of ferreting out crime."[41] If upon weighing the evidence the neutral judicial officer decides there is a valid public interest that justifies the intrusion, then there exists probable cause to issue a search warrant limited to the

33. Joan Biskupic, *Justices Rule for Privacy*, USA Today, June 12, 2001, at 10A.
34. U.S. CONST. amend. IV.
35. Camara v. Municipal Court, 387 U.S. 523, 528 (1967).
36. Carroll v. United States, 267 U.S. 132 (1925).
37. *See Camara*, 387 U.S. 523.
38. *Id.* at 539.
39. Terry v. Ohio, 392 U.S. 1, 21 (1968).
40. Johnson v. United States, 333 U.S. 10, 14 (1948).
41. *Id.*

necessary scope of investigation.[42] Searches conducted outside the prescribed judicial process, without prior approval, are *per se* unreasonable and therefore unconstitutional, unless within one of the limited exceptions.[43]

All evidence obtained by searches and seizures in violation of the Fourth Amendment is inadmissible against the defendant based upon the exclusionary principle.[44] The Fourth Amendment protections against arbitrary government intrusion do not extend to conduct that is not considered a search or seizure.[45] Therefore, whether government conduct is classified as a search or seizure is the pivotal question in Fourth Amendment analysis; if there is no search or seizure, there is not a constitutional question.

42. *Camara*, 387 U.S. at 539.

43. Katz v. United States, 389 U.S. 347 (1967). Exceptions to the warrant requirement include: searches incidental to arrest, during hot pursuit, conducted with consent of the suspect, and possibly searches for national security reasons. *Katz*, 389 U.S. at 358 nn.20-23.

44. Mapp v. Ohio, 367 U.S. 643, 655 (1961).

45. Baker, *supra* note 27, at 16.

THE SUPREME COURT'S RULING ON THERMAL IMAGING

In what has been characterized as an unusual alignment of justices, in a 5-4 ruling the United States Supreme Court, majority opinion written by Justice Anton Scalia,[107] held "where . . . the Government uses a device that is not in general public use, to explore details of a private home that would previously have been unknowable without physical intrusion, the surveillance is a Fourth Amendment 'search', and is presumptively unreasonable without a warrant."[108]

The Court began its analysis by focusing on the guarantees of privacy and the emphasis placed by the Fourth Amendment on the home, stating that "[a]t the very core [of the Fourth Amendment] stands the right of a man to retreat into his own home and there be free from unreasonable governmental intrusion."[109] With few exceptions, the warrantless search of a home is unreasonable.[110] The Court goes on to note that this case is not a simple one under the existing precedent, due to the fact that well into the twentieth century, Fourth Amendment analysis was tied to common law trespass.[111] The majority explains that the question the Court must confront is "what limits there are upon this power of technology to shrink the realm of guaranteed privacy."[112]

The majority rejected the distinction between "off-the-wall" observations and "through-the-wall" surveillance.[113] The dissent argues that there should be a differentiation between scans that simply detect emitted heat, referred to as "off-the wall," and scans that can detect

107. Edward Walsh, *High-Tech Devices Require a Warrant*, The Washington Post, June 12, 2001, at A1. The majority opinion included Justices Scalia, Thomas, Souter, Ginsburg, and Breyer.

108. *Kyllo*, 121 S. Ct. at 2046.

109. *Id.* at 2041 (quoting Silverman v. United States, 365 U.S. 505, 511 (1961)).

110. *Id.* at 2042.

111. *Id.*

112. *Id.* at 2043.

113. *Id.* at 2044.

activity within the house, "through-the-wall."[114] The dissent states that a scan determined to be "through-the-wall" should be found to constitute an unreasonable search in violation of the Fourth Amendment; while a finding of "off-the-wall" imaging should be considered reasonable without the issuing of a warrant.[115] The majority compares the argument that the thermal imager detected only radiated heat from external surfaces with the fact that a microphone placed outside the house would pick up only sound emanating from within.[116] The Court found that such a mechanical interpretation had been rejected in *Katz*,[117] The Court stated:

> [r]eversing that approach would leave the homeowner at the mercy of advancing technology—including imaging technology that could discern all human activity in the home. While the technology used in the present case was relatively crude, the rule we adopt must take account of more sophisticated systems that are already in use or in development.[118]

The majority of the Court also rejects the Government's argument that the imaging was constitutional because it did not "detect private activities occurring within private areas," because in the home "*all* details are intimate details, [and] the entire area is held safe from prying government eyes."[119] The Fourth Amendment's guarantee of sanctity to the home has never been tied to the quality of the information obtained during the investigation.[120] The majority felt holding the use of thermal imagers as unconstitutional was necessary in order to maintain a "firm line at the entrance to the house."[121]

Also the limitation of use of the thermal imager to scan for only those details which are not "intimate" would be impossible for law enforcement officials to apply because an officer would not be able to know in advance whether his scan would pick up intimate details, and would be unable to determine upfront whether his scan was constitutional.[122] Such an unpredictable definition would be counterproduc-

114. *Id.* at 2047.
115. *See id.*
116. *Id. See also Katz*, 389 U.S. 347.
117. *Id.*
118. *Kyllo*, 121 S. Ct. at 2044.
119. *Id.* at 2045 (emphasis in original).
120. *Id.* at 2045. There is no connection between the sophistication of the surveillance equipment and the "intimacy" of the details, noting for example that the Agema Thermovision 210 used to scan Kyllo's home could disclose at what hour each night the lady of the house takes her daily bath, which most would consider intimate.
121. *Id.* at 2046 (quoting Payton v. New York, 445 U.S. 573, 590 (1980)).
122. *Id.*

tive to the officers trying to gather information for a probable cause hearing.[123] An "intimate" details standard would be absolutely unworkable, requiring constant litigation to determine what society considers intimate.[124] The majority also found the government's argument that the thermal image scan did not reveal details about the home unpersuasive, because the exact purpose of using the thermal imager is to determine whether marijuana is being grown inside the home.[125]

The majority of the Court agrees with the government that the Fourth Amendment never required "law enforcement officers to shield their eyes when passing by a home on public thoroughfares."[126] This statement preserves the lawfulness of warrantless visual surveillance and upholds the plain view doctrine.[127] However, the majority feels the use of a thermal imager involves more than naked-eye surveillance.[128] In previous cases, the Court reserved judgment on how much technological enhancement of ordinary perception would still be considered visual observation.[129] In *Dow Chemical Company*, the Court upheld enhanced aerial photography of an industrial plant, but was careful to note that the area viewed was not an area "immediately adjacent to a private home, where privacy expectations are most heightened."[130] It also found that the camera used was not a unique sensory device, which is a crucial question in the *Kyllo* analysis.[131] The Court therefore rejects the notion that a thermal image scan can be analogized to the plain view doctrine, at least as long as the scanner is not in general public use.[132]

The pivotal factor in the Court's bright-line test is that the device used by the government must not be in general public use in order to constitute an unreasonable search without a warrant.[133] The dissent takes issue with this element and posits that the majority is introducing uncertainty into the Fourth Amendment analysis, rather than drawing a bright-line.[134] The dissent states, "[h]ow much use is gen-

123. *See id.*
124. *See id.*
125. *Id.* at 2043 n.2.
126. *Id.* at 2042 (quoting California v. Ciraolo, 476 U.S. 207, 213 (1986)).
127. *Id.*
128. *Id.* at 2043.
129. *Dow Chemical*, 476 U.S. at 237.
130. *Kyllo*, 121 S. Ct. at 2043.
131. *Id.*
132. *Id.*
133. *Id.* at 2046.
134. *Id.* at 2050.

eral public use is not even hinted at by the Court's opinion, which makes the somewhat doubtful assumption that the thermal imager used in this case does not satisfy that criterion."[135] The dissent is not only concerned about the vagueness of the rule, but is also fearful that the "threat to privacy will grow, rather than recede, as the use of intrusive equipment becomes more readily available."[136] The majority's response to this criticism is answered in footnote six of the majority opinion, which states that the dissenters' disagreement is not with the majority, but rather with the Supreme Court's precedent.[137] The majority referred to the holding in *Ciraolo*,[138] which denominated the flights in public airways as routine, therefore preventing the defendant from having a reasonable expectation that his plants could not be observed from 1,000 feet above.[139] The Supreme Court concludes that the use of a thermal imager is not routine, and therefore declines to reexamine the factor already established by precedent.[140]

The dissent also challenges the majority's lack of judicial restraint.[141] The dissent contends that the issue should have properly been resolved with reference solely to the capabilities of the Agema Thermovision 210.[142] However, the majority opinion states that although "the technology used in the present case was relatively crude, the rule we adopt must take account of more sophisticated systems that are already in use or in development."[143] The dissent believes such questions about future advances and capabilities would be best decided at a later date, thus giving legislators an opportunity to grapple with the emerging technology, rather than shackling them with premature constitutional guidelines.[144]

IS *KYLLO'S* HOLDING SOUND?

The bright-line rule announced in *Kyllo* appears to be more fuzzy than bright. The dissent's attacks show the gaping holes in the majority's holding. What exactly is the definition of "general public use"? How does one go about identifying whether a device meets this defini-

135. *Id.*
136. *Id.*
137. *Id.* at 2046 n.6.
138. California v. Ciraolo, 476 U.S. 207 (1986).
139. *Id.*
140. *Kyllo*, 121 S. Ct. at 2046 n.6.
141. *Id.* at 2052.
142. *Id.*
143. *Id.* at 2044.
144. *Id.* at 2052.

tion? Does general public use imply that commercial availability is enough? Does it mean that one in ten people must own a thermal imager, or does it mean one out of ten thousand must own? Does general public use imply that one must be able to go to the local discount store to pick up a thermal imager? Does general public use mean one is able to obtain access to a thermal imager over the Internet? Considering that thermal imaging is not limited to law enforcement, at what point does it become so prevalent enough to be considered in general public use? These are a small sampling of possible questions behind the Court's bright-line established in *Kyllo* requiring the device to be in "general public use" in order to be classified as a reasonable search without a warrant. However, the Court gives no guidance as to how the element of "general public use" should be applied. A bright-line rule is typically intended to establish clear-cut procedure for analyzing an issue. However, this holding makes it impossible to clearly assess when the use of technology will be considered a search within the Fourth Amendment.

The application of this bright-line is not only ambiguous, but even suggests by its very language it is merely temporary. Bill Stuntz, a Harvard Law School Professor, stated, "[t]wenty years from now you may be able to buy thermal imaging technology at a Wal-Mart. . . . [t]hen either we get less privacy or the court has to draw another line."[145] The approach taken by the Court seems to open more questions than resolve answers. One of the overriding questions is, how long will the holding of *Kyllo* survive?

Lack of judicial restraint is another reason the Court's decision presents such problems. Judicial restraint is the philosophy of limiting decisions to the facts of each case, deciding only those issues that must be decided to resolve the case, and avoiding unnecessarily decisions on constitutional issues. The Court violated all the aspects of this philosophy. Instead of simply addressing the limited factual situation presented and the limited technology that is currently available, the Court decided to make a ruling with possible future advances in mind and unnecessarily decided constitutional issues that were not before the Court. The Court's ruling is based on the belief that one day thermal images will be capable of seeing through the walls of a home, and detecting all activities going on inside. The Court's approach in *Kyllo* is opposite of that taken by the Supreme Court in *Silverman v. United States*,[146] where the Court stated:

145. *See* Walsh, *supra* note 107, at A1.
146. Silverman v. United States, 365 U.S. 505 (1961).

> [t]he facts of the present case, however, do not require us to consider the large questions which have been argued. We need not here contemplate the Fourth Amendment implications of these and other frightening paraphernalia which the vaunted marvels of an electronic age may visit upon human society.[147]

The Court's abandonment of the deeply instilled philosophy of judicial restraint reeks havoc on its ruling by unnecessarily looking to possible future advances and conflicts. As a result, the holding of *Kyllo* will be short-lived before revamping or completely abandoning the decision becomes a necessity.

CONCLUSION

Perhaps American homes are more private today than they were before June 11, 2001. But the question remains: how long will this privacy last? Will the ruling established by the Supreme Court in *Kyllo* with the stated objective of protecting privacy, actually result in a reduction of American civil liberties? Only time will answer this question; yet it is unlikely that *Kyllo* will be the United States Supreme Court's last word on the issue of thermal imaging and its Fourth Amendment implications.

Sarilyn E. Hardee

147. *Id.*