



# KYLLO v UNITED STATES

SUPREME COURT OF THE UNITED STATES

533 U.S. 27

June 11, 2001

[5 – 4]

Note the unusual list of Justices who are on the same side of this issue!  
This is actually a fascinating case.  
See if successive reviews don't alter your thinking back and forth.

**OPINION:** Justice Scalia/Souter/Thomas/Ginsburg/Breyer...This case presents the question whether the use of a thermal-imaging device aimed at a private home from a public street to detect relative amounts of heat within the home constitutes a "search" within the meaning of the Fourth Amendment.

In 1991 Agent William Elliott of the United States Department of the Interior came to suspect that marijuana was being grown in the home belonging to petitioner Danny Kylo, part of a triplex on Rhododendron Drive in Florence, Oregon. Indoor marijuana growth typically requires high-intensity lamps. In order to determine whether an amount of heat was emanating from petitioner's home consistent with the use of such lamps, at 3:20 a.m. on January 16, 1992, Agent Elliott and Dan Haas used [a]...thermal imager to scan the triplex. Thermal imagers detect infrared radiation, which virtually all objects emit but which is not visible to the naked eye. The imager converts radiation into images based on relative warmth - black is cool, white is hot, shades of gray connote relative differences; in that respect, it operates somewhat like a video camera showing heat images. The scan of Kylo's home took only a few minutes and was performed from the passenger seat of Agent Elliott's vehicle across the street from the front of the house and also from the street in back of the house. The scan showed that the roof over the garage and a side wall of petitioner's home were relatively hot compared to the rest of the home and substantially warmer than neighboring homes in the triplex. Agent Elliott concluded that petitioner was using halide lights to grow marijuana in his house, which indeed he was. **Based on tips from informants, utility bills, and the thermal imaging, a Federal Magistrate Judge issued a warrant** authorizing a search of petitioner's home, and the agents found an indoor growing operation involving more than 100 plants. Petitioner was indicted on one count of

manufacturing marijuana. He unsuccessfully moved to suppress the evidence seized from his home and then entered a conditional guilty plea...

The District Court found that the [thermal imager] "is a non-intrusive device which emits no rays or beams and shows a crude visual image of the heat being radiated from the outside of the house"; it "did not show any people or activity within the walls of the structure"; "the device used cannot penetrate walls or windows to reveal conversations or human activities"; and "no intimate details of the home were observed."...A divided Court of Appeals...held that petitioner had shown no subjective expectation of privacy because he had made no attempt to conceal the heat escaping from his home and even if he had, there was no objectively reasonable expectation of privacy because the imager "did not expose any intimate details of Kyllo's life," only "amorphous 'hot spots' on the roof and exterior wall." We granted certiorari.

..."At 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." *Silverman*. **With few exceptions, the question whether a warrantless search of a home is reasonable and hence constitutional must be answered no.**

On the other hand, the antecedent question of whether or not a Fourth Amendment "search" has occurred is not so simple under our precedent. The permissibility of ordinary visual surveillance of a home used to be clear because, well into the 20th century, our Fourth Amendment jurisprudence was tied to common-law trespass...Visual surveillance was unquestionably lawful because "the eye cannot by the laws of England be guilty of a trespass." *Boyd v. United States*...As we observed in *California v. Ciraolo*, "**the Fourth Amendment protection of the home has never been extended to require law enforcement officers to shield their eyes when passing by a home on public thoroughfares.**"

One might think that the new validating rationale would be that examining the portion of a house that is in plain public view, while it is a "search" despite the absence of trespass, is not an "unreasonable" one under the Fourth Amendment. But in fact we have held that visual observation is no "search" at all - perhaps in order to preserve somewhat more intact our doctrine that warrantless searches are presumptively unconstitutional. In assessing when a search is not a search, we have applied somewhat in reverse the principle first enunciated in *Katz*<sup>1</sup>. *Katz* involved eavesdropping by means of an electronic listening device placed on the outside of a telephone booth - a location not within the catalog ("persons, houses, papers, and effects") that the Fourth Amendment protects against unreasonable searches. We held that the Fourth Amendment nonetheless protected *Katz* from the warrantless eavesdropping because he "justifiably relied" upon the privacy of the telephone booth. As Justice Harlan's oft-quoted concurrence described it, a Fourth Amendment search occurs when the government violates a subjective expectation of privacy that society recognizes as reasonable. We have subsequently applied this principle to hold that a Fourth Amendment search does not occur - even when the explicitly protected location of a house is concerned - unless "the individual manifested a subjective expectation of privacy in the object of the challenged search" and "society is willing to recognize that expectation as reasonable." *Ciraolo*. We have applied this test in holding that it is not a search for the police to use a pen register at the phone company to determine what numbers

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<sup>1</sup>Case 4A-2 on this website.

were dialed in a private home, *Smith v. Maryland*, and we have applied the test on two different occasions in holding that aerial surveillance of private homes and surrounding areas does not constitute a search, *Ciraolo*; *Florida v. Riley* (1989).

The present case involves officers on a public street engaged in more than naked-eye surveillance of a home... While we upheld enhanced aerial photography of an industrial complex in *Dow Chemical*, we noted that we found "it important that this is not an area immediately adjacent to a private home, where privacy expectations are most heightened."

It would be foolish to contend that the degree of privacy secured to citizens by the Fourth Amendment has been entirely unaffected by the advance of technology. For example, as the cases discussed above make clear, the technology enabling human flight has exposed to public view (and hence, we have said, to official observation) uncovered portions of the house and its curtilage that once were private. *Ciraolo*. The question we confront today is what limits there are upon this power of technology to shrink the realm of guaranteed privacy.

The *Katz* test - whether the individual has an expectation of privacy that society is prepared to recognize as reasonable - has often been criticized as circular, and hence subjective and unpredictable. While it may be difficult to refine *Katz* when the search of areas such as telephone booths, automobiles, or even the curtilage and uncovered portions of residences are at issue, in the case of the search of the interior of homes - the prototypical and hence most commonly litigated area of protected privacy - there is a ready criterion, with roots deep in the common law, of the minimal expectation of privacy that exists, and that is acknowledged to be reasonable. To withdraw protection of this minimum expectation would be to permit police technology to erode the privacy guaranteed by the Fourth Amendment. **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," *Silverman*, constitutes a search-at least where (as here) the technology in question is not in general public use.** This assures preservation of that degree of privacy against government that existed when the Fourth Amendment was adopted. On the basis of this criterion, the information obtained by the thermal imager in this case was the product of a search.

The Government maintains, however, that the thermal imaging must be upheld because it detected "only heat radiating **from the external surface** of the house." The dissent makes this its leading point, contending that there is a fundamental difference between what it calls "**off-the-wall**" observations and "**through-the-wall**" surveillance. But just as a thermal imager captures only heat emanating from a house, so also a powerful directional microphone picks up only sound emanating from a house - and a satellite capable of scanning from many miles away would pick up only visible light emanating from a house. We rejected such a mechanical interpretation of the Fourth Amendment in *Katz*, where the eavesdropping device picked up only sound waves that reached the exterior of the phone booth. Reversing 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. The dissent's reliance on the distinction between "off-the-wall" and "through-the-wall" observation is entirely incompatible with the dissent's belief, which we discuss below, that thermal-imaging observations of the intimate details of a home are

impermissible. The most sophisticated thermal imaging devices continue to measure heat "off-the-wall" rather than "through-the-wall"; the dissent's disapproval of those more sophisticated thermal-imaging devices is an acknowledgement that there is no substance to this distinction... Surely the dissent does not believe that the through-the-wall radar or ultrasound technology produces an 8-by-10 Kodak glossy that needs no analysis (i.e., the making of inferences). And, of course, the novel proposition that inference insulates a search is blatantly contrary to *United States v. Karo*, where the police "inferred" from the activation of a beeper that a certain can of ether was in the home. The police activity was held to be a search, and the search was held unlawful.

The Government also contends that the thermal imaging was constitutional because it did not "detect private activities occurring in private areas." It points out that in *Dow Chemical* we observed that the enhanced aerial photography did not reveal any "intimate details." *Dow Chemical*, however, involved enhanced aerial photography of an industrial complex, which does not share the Fourth Amendment sanctity of the home. The Fourth Amendment's protection of the home has never been tied to measurement of the quality or quantity of information obtained. In *Silverman*, for example, we made clear that any physical invasion of the structure of the home, "by even a fraction of an inch," was too much and there is certainly no exception to the warrant requirement for the officer who barely cracks open the front door and sees nothing but the nonintimate rug on the vestibule floor. **In the home, our cases show, all details are intimate details, because the entire area is held safe from prying government eyes.** Thus, in *Karo*, the only thing detected was a can of ether in the home; and in *Arizona v. Hicks*, the only thing detected by a physical search that went beyond what officers lawfully present could observe in "plain view" was the registration number of a phonograph turntable. These were intimate details because they were details of the home, just as was the detail of how warm - or even how relatively warm - *Kyllo* was heating his residence.

Limiting the prohibition of thermal imaging to "intimate details" would not only be wrong in principle; it would be impractical in application, failing to provide "a workable accommodation between the needs of law enforcement and the interests protected by the Fourth Amendment."... To begin with, there is no necessary connection between the sophistication of the surveillance equipment and the "intimacy" of the details that it observes - which means that one cannot say (and the police cannot be assured) that use of the relatively crude equipment at issue here will always be lawful. The Agema Thermovision 210 might disclose, for example, at what hour each night the lady of the house takes her daily sauna and bath - a detail that many would consider "intimate"; and a much more sophisticated system might detect nothing more intimate than the fact that someone left a closet light on. We could not, in other words, develop a rule approving only that through-the-wall surveillance which identifies objects no smaller than 36 by 36 inches, but would have to develop a jurisprudence specifying which home activities are "intimate" and which are not. And even when (if ever) that jurisprudence were fully developed, no police officer would be able to know in advance whether his through-the-wall surveillance picks up "intimate" details - and thus would be unable to know in advance whether it is constitutional.

The dissent's proposed standard - whether the technology offers the "functional equivalent of actual presence in the area being searched" - would seem quite similar to our own at first blush. The dissent concludes that *Katz* was such a case, but then inexplicably asserts that if the same listening device only revealed the volume of the conversation, the surveillance would be

permissible. Yet if, without technology, the police could not discern volume without being actually present in the phone booth, Justice Stevens should conclude a search has occurred. *Karo* (Stevens, J., concurring in part and dissenting in part) ("I find little comfort in the Court's notion that no invasion of privacy occurs until a listener obtains some significant information by use of the device...A bathtub is a less private area when the plumber is present even if his back is turned"). The same should hold for the interior heat of the home if only a person present in the home could discern the heat. Thus the driving force of the dissent, despite its recitation of the above standard, appears to be a distinction among different types of information - whether the "homeowner would even care if anybody noticed." The dissent offers no practical guidance for the application of this standard, and for reasons already discussed, we believe there can be none. The people in their houses, as well as the police, deserve more precision.

We have said that the Fourth Amendment draws "a firm line at the entrance to the house," *Payton*. That line, we think, must be not only firm but also bright - which requires clear specification of those methods of surveillance that require a warrant. While it is certainly possible to conclude from the videotape of the thermal imaging that occurred in this case that no "significant" compromise of the homeowner's privacy has occurred, we must take the long view, from the original meaning of the Fourth Amendment forward. "The Fourth Amendment is to be construed in the light of what was deemed an unreasonable search and seizure when it was adopted, and in a manner which will conserve public interests as well as the interests and rights of individual citizens."

**Where, 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.**

**Since we hold the Thermovision imaging to have been an unlawful search, it will remain for the District Court to determine whether, without the evidence it provided, the search warrant issued in this case was supported by probable cause - and if not, whether there is any other basis for supporting admission of the evidence that the search pursuant to the warrant produced.** The judgment of the Court of Appeals is reversed; the case is remanded for further proceedings consistent with this opinion.

**DISSENT:** Justice Stevens/Rehnquist/O'Connor/Kennedy...There is, in my judgment, a distinction of constitutional magnitude between "through-the-wall" surveillance that gives the observer or listener direct access to information in a private area, on the one hand, and the thought processes used to draw inferences from information in the public domain, on the other hand. The Court has crafted a rule that purports to deal with direct observations of the inside of the home, but the case before us merely involves indirect deductions from "off-the-wall" surveillance, that is, observations of the exterior of the home. Those observations were made with a fairly primitive thermal imager that gathered data exposed on the outside of petitioner's home but did not invade any constitutionally protected interest in privacy. Moreover, I believe that the supposedly "bright-line" rule the Court has created in response to its concerns about future technological developments is unnecessary, unwise, and inconsistent with the Fourth Amendment.

There is no need for the Court to craft a new rule to decide this case, as it is controlled by established principles from our Fourth Amendment jurisprudence. One of those core principles... is that...searches and seizures of property in plain view are presumptively reasonable. Whether that property is residential or commercial, the basic principle is the same: "What a person **knowingly** exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection." *California v. Ciraolo*. That is the principle implicated here.

While the Court "takes the long view" and decides this case based largely on the potential of yet-to-be-developed technology that might allow "through-the-wall surveillance," this case involves nothing more than off-the-wall surveillance by law enforcement officers to gather information exposed to the general public from the outside of petitioner's home. All that the infrared camera did in this case was passively measure heat emitted from the exterior surfaces of petitioner's home; all that those measurements showed were relative differences in emission levels, vaguely indicating that some areas of the roof and outside walls were warmer than others. As still images from the infrared scans show, no details regarding the interior of petitioner's home were revealed. Unlike an x-ray scan, or other possible "through-the-wall" techniques, the detection of infrared radiation emanating from the home did not accomplish "an unauthorized physical penetration into the premises," *Silverman*, nor did it "obtain information that it could not have obtained by observation from outside the curtilage of the house." *United States v. Karo* (1984).

Indeed, the ordinary use of the senses might enable a neighbor or passerby to notice the heat emanating from a building, particularly if it is vented, as was the case here. Additionally, any member of the public might notice that one part of a house is warmer than another part or a nearby building if, for example, rainwater evaporates or snow melts at different rates across its surfaces. Such use of the senses would not convert into an unreasonable search if, instead, an adjoining neighbor allowed an officer onto her property to verify her perceptions with a sensitive thermometer. Nor, in my view, does such observation become an unreasonable search if made from a distance with the aid of a device that merely discloses that the exterior of one house, or one area of the house, is much warmer than another. Nothing more occurred in this case.

Thus, the notion that heat emissions from the outside of a dwelling is a private matter implicating the protections of the Fourth Amendment (the text of which guarantees the right of people "to be secure in their...houses" against unreasonable searches and seizures) is not only unprecedented but also quite difficult to take seriously. Heat waves, like aromas that are generated in a kitchen, or in a laboratory or opium den, enter the public domain if and when they leave a building. A subjective expectation that they would remain private is not only implausible but also surely not "one that society is prepared to recognize as 'reasonable.'" *Katz*.

Point well made, but, for some reason, there just seems to be a difference between a police officer smelling marihuana while walking by on the sidewalk and using a high tech machine to take the temperature of the outside of a house. Can you come up with a rational distinction?
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To be sure, the homeowner has a reasonable expectation of privacy concerning what takes place within the home, and the Fourth Amendment's protection against physical invasions of the home should apply to their functional equivalent. But the equipment in this case did not penetrate the walls of petitioner's home, and while it did pick up "details of the home" that were exposed to the public, it did not obtain "any information regarding the interior of the home." In the Court's own

words, based on what the thermal imager "showed" regarding the outside of petitioner's home, the officers "concluded" that petitioner was engaging in illegal activity inside the home. It would be quite absurd to characterize their thought processes as "searches," regardless of whether they inferred (rightly) that petitioner was growing marijuana in his house, or (wrongly) that "the lady of the house [was taking] her daily sauna and bath." In either case, the only conclusions the officers reached concerning the interior of the home were at least as indirect as those that might have been inferred from the contents of discarded garbage, see *California v. Greenwood*<sup>2</sup>, or pen register data, see *Smith v. Maryland*, or, as in this case, subpoenaed utility records. **For the first time in its history, the Court assumes that an inference can amount to a Fourth Amendment violation...**

Just as "the police cannot reasonably be expected to avert their eyes from evidence of criminal activity that could have been observed by any member of the public," *Greenwood*, so too public officials should not have to avert their senses or their equipment from detecting emissions in the public domain such as excessive heat, traces of smoke, suspicious odors, odorless gases, airborne particulates, or radioactive emissions, any of which could identify hazards to the community. In my judgment, monitoring such emissions with "sense-enhancing technology" and drawing useful conclusions from such monitoring, is an entirely reasonable public service...

The interest in concealing the heat escaping from one's house pales in significance to the "the chief evil against which the wording of the Fourth Amendment is directed," the "physical entry of the home" and it is hard to believe that it is an interest the Framers sought to protect in our Constitution.

**Since what was involved in this case was nothing more than drawing inferences from "off-the-wall" surveillance, rather than any "through-the-wall" surveillance, the officers' conduct did not amount to a search and was perfectly reasonable...**

I would not erect a constitutional impediment to the use of sense-enhancing technology unless it provides its user with the functional equivalent of actual presence in the area being searched...

[T]he contours of its new rule are uncertain because its protection apparently dissipates as soon as the relevant technology is "in general public use." Yet how much use is general 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. In any event, putting aside its lack of clarity, this criterion is somewhat perverse because it seems likely that the threat to privacy will grow, rather than recede, as the use of intrusive equipment becomes more readily available.

It is clear, however, that the category of "sense-enhancing technology" covered by the new rule, is far too broad. It would, for example, embrace potential mechanical substitutes for dogs trained to react when they sniff narcotics. But in *United States v. Place*, we held that a dog sniff that "discloses only the presence or absence of narcotics" does "not constitute a 'search' within the meaning of the Fourth Amendment," and it must follow that sense-enhancing equipment that identifies nothing but illegal activity is not a search either. Nevertheless, the use of such a device

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<sup>2</sup> Case 4A-6 on this website.

would be unconstitutional under the Court's rule, as would the use of other new devices that might detect the odor of deadly bacteria or chemicals for making a new type of high explosive, even if the devices (like the dog sniffs) are "so limited in both the manner in which" they obtain information and "in the content of the information" they reveal. If nothing more than that sort of information could be obtained by using the devices in a public place to monitor emissions from a house, then their use would be no more objectionable than the use of the thermal imager in this case.

The application of the Court's new rule to "any information regarding the interior of the home," is also unnecessarily broad. If it takes sensitive equipment to detect an odor that identifies criminal conduct and nothing else, the fact that the odor emanates from the interior of a home should not provide it with constitutional protection. The criterion, moreover, is too sweeping in that information "regarding" the interior of a home apparently is not just information obtained through its walls, but also information concerning the outside of the building that could lead to (however many) inferences "regarding" what might be inside. Under that expansive view, I suppose, an officer using an infrared camera to observe a man silently entering the side door of a house at night carrying a pizza might conclude that its interior is now occupied by someone who likes pizza, and by doing so the officer would be guilty of conducting an unconstitutional "search" of the home.

Because the new rule applies to information regarding the "interior" of the home, it is too narrow as well as too broad. Clearly, a rule that is designed to protect individuals from the overly intrusive use of sense-enhancing equipment should not be limited to a home. If such equipment did provide its user with the functional equivalent of access to a private place - such as, for example, the telephone booth involved in *Katz*, or an office building - then the rule should apply to such an area as well as to a home. See *Katz* ("The Fourth Amendment protects people, not places").

The final requirement of the Court's new rule, that the information "could not otherwise have been obtained without physical intrusion into a constitutionally protected area," also extends too far as the Court applies it. As noted, the Court effectively treats the mental process of analyzing data obtained from external sources as the equivalent of a physical intrusion into the home. As I have explained, however, the process of drawing inferences from data in the public domain should not be characterized as a search.

The two reasons advanced by the Court as justifications for the adoption of its new rule are both unpersuasive. First, the Court suggests that its rule is compelled by our holding in *Katz*, because in that case, as in this, the surveillance consisted of nothing more than the monitoring of waves emanating from a private area into the public domain. Yet there are critical differences between the cases. In *Katz*, the electronic listening device attached to the outside of the phone booth allowed the officers to pick up the content of the conversation inside the booth, making them the functional equivalent of intruders because they gathered information that was otherwise available only to someone inside the private area; it would be as if, in this case, the thermal imager presented a view of the heat-generating activity inside petitioner's home. By contrast, the thermal imager here disclosed only the relative amounts of heat radiating from the house; it would be as if, in *Katz*, the listening device disclosed only the relative volume of sound leaving the booth, which presumably was discernible in the public domain. Surely, there is a significant difference



between the general and well-settled expectation that strangers will not have direct access to the contents of private communications, on the one hand, and the rather theoretical expectation that an occasional homeowner would even care if anybody noticed the relative amounts of heat emanating from the walls of his house, on the other. It is pure hyperbole for the Court to suggest that refusing to extend the holding of *Katz* to this case would leave the homeowner at the mercy of "technology that could discern all human activity in the home."

Second, the Court argues that the permissibility of "through-the-wall" surveillance cannot depend on a distinction between observing "intimate details" such as "the lady of the house [taking] her daily sauna and bath," and noticing only "the nonintimate rug on the vestibule floor" or "objects no smaller than 36 by 36 inches." This entire argument assumes, of course, that the thermal imager in this case could or did perform "through-the-wall surveillance" that could identify any detail "that would previously have been unknowable without physical intrusion." In fact, the device could not and did not enable its user to identify either the lady of the house, the rug on the vestibule floor, or anything else inside the house, whether smaller or larger than 36 by 36 inches. Indeed, the vague thermal images of petitioner's home that are reproduced in the Appendix were submitted by him to the District Court as part of an expert report raising the question whether the device could even take "accurate, consistent infrared images" of the outside of his house. But even if the device could reliably show extraordinary differences in the amounts of heat leaving his home, drawing the inference that there was something suspicious occurring inside the residence - a conclusion that officers far less gifted than Sherlock Holmes would readily draw - does not qualify as "through-the-wall" surveillance, much less a Fourth Amendment violation.

Though the Court is properly and commendably concerned about the threats to privacy that may flow from advances in the technology available to the law enforcement profession, it has unfortunately failed to heed the tried and true counsel of judicial restraint. Instead of concentrating on the rather mundane issue that is actually presented by the case before it, the Court has endeavored to craft an all-encompassing rule for the future. It would be far wiser to give legislators an unimpeded opportunity to grapple with these emerging issues rather than to shackle them with prematurely devised constitutional constraints. I respectfully dissent.

