

United States Court of Appeals,
District of Columbia Circuit.
UNITED STATES of America, Appellee
v.
Lawrence **MAYNARD**, Appellant.
Nos. 08-3030, 08-3034.

Decided Aug. 6, 2010.

The appellants, Antoine Jones and Lawrence Maynard, appeal their convictions after a joint trial for conspiracy to distribute and to possess with intent to distribute five kilograms or more of cocaine and 50 grams or more of cocaine base, in violation of [21 U.S.C. §§ 841](#) and [846](#). . . . For the reasons that follow, we reverse Jones's and affirm Maynard's convictions.

I. Background

Jones owned and Maynard managed the “Levels” nightclub in the District of Columbia. In 2004 an FBI-Metropolitan Police Department Safe Streets Task Force began investigating the two for narcotics violations. The investigation culminated in searches and arrests on October 24, 2005. We discuss that investigation and the drug distribution operation it uncovered in greater detail where relevant to the appellants' arguments on appeal.

On October 25 Jones and several alleged co-conspirators were charged with, among other things, conspiracy to distribute and to possess with intent to distribute cocaine and cocaine base. Maynard, who was added as a defendant in superseding indictments filed in March and June 2006, pled guilty in June 2006.

In October 2006 Jones and a number of his co-defendants went to trial. The jury acquitted the co-defendants on all counts but one; it could not reach a verdict on the remaining count, which was eventually dismissed. The jury acquitted Jones on a number of counts but could not reach a verdict on the conspiracy charge, as to which the court declared a mistrial. Soon thereafter the district court allowed Maynard to withdraw his guilty plea.

In March 2007 the Government filed another superseding indictment charging Jones, Maynard, and a few co-defendants with a single count of conspiracy to distribute and to possess with intent to distribute five or more kilograms of cocaine and 50 or more grams of cocaine base. A joint trial of Jones and Maynard began in November 2007 and ended in January 2008, when the jury found them both guilty.

* * *

III. Analysis: Evidence Obtained from GPS Device

Jones argues his conviction should be overturned because the police violated the Fourth Amendment prohibition of “unreasonable searches” by tracking his movements 24 hours a day for four weeks with a GPS device they had installed on his Jeep without a valid warrant. We consider first whether that use of the device was a search and then, having concluded it was, consider whether it was

reasonable and whether any error was harmless.

A. Was Use of GPS a Search?

For his part, Jones argues the use of the GPS device violated his “reasonable expectation of privacy,” [Katz v. United States](#), 389 U.S. 347, 360-61, 88 S.Ct. 507, 19 L.Ed.2d 576 (1967) (Harlan, J., concurring), and was therefore a search subject to the reasonableness requirement of the Fourth Amendment. Of course, the Government agrees the [Katz](#) test applies here, but it argues we need not consider whether Jones's expectation of privacy was reasonable because that question was answered in [United States v. Knotts](#), 460 U.S. 276, 103 S.Ct. 1081, 75 L.Ed.2d 55 (1983), in which the Supreme Court held the use of a beeper device to aid in tracking a suspect to his drug lab was not a search. As explained below, we hold [Knotts](#) does not govern this case and the police action was a search because it defeated Jones's reasonable expectation of *556 privacy. We then turn to the Government's claim our holding necessarily implicates prolonged visual surveillance.

1. *Knotts* is not controlling

The Government argues this case falls squarely within the holding in [Knotts](#) that “[a] person traveling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements from one place to another.” [460 U.S. at 281, 103 S.Ct. 1081](#). In that case the police had planted a beeper in a five-gallon container of chemicals before it was purchased by one of Knotts's co-conspirators; monitoring the progress of the car carrying the beeper, the police followed the container as it was driven from the “place of purchase, in Minneapolis, Minnesota, to [Knotts's] secluded cabin near Shell Lake, Wisconsin,” [460 U.S. at 277, 103 S.Ct. 1081](#), a trip of about 100 miles. Because the co-conspirator, by driving on public roads, “voluntarily conveyed to anyone who wanted to look” his progress and route, he could not reasonably expect privacy in “the fact of his final destination.” [Id. at 281, 103 S.Ct. 1081](#).

The Court explicitly distinguished between the limited information discovered by use of the beeper-movements during a discrete journey-and more comprehensive or sustained monitoring of the sort at issue in this case. [Id. at 283, 103 S.Ct. 1081](#) (noting “limited use which the government made of the signals from this particular beeper”); *see also* [id. at 284-85, 103 S.Ct. 1081](#) (“nothing in this record indicates that the beeper signal was received or relied upon after it had indicated that the [container] had ended its automotive journey at rest on respondent's premises in rural Wisconsin”). Most important for the present case, the Court specifically reserved the question whether a warrant would be required in a case involving “twenty-four hour surveillance,” stating

if such dragnet-type law enforcement practices as respondent envisions should eventually occur, there will be time enough then to determine whether different constitutional principles may be applicable.

[Id. at 283-84, 103 S.Ct. 1081](#).

Although the Government, focusing upon the term “dragnet,” suggests [Knotts](#) reserved the Fourth Amendment question that would be raised by mass surveil-

lance, not the question raised by prolonged surveillance of a single individual, that is not what happened. In reserving the “dragnet” question, the Court was not only addressing but in part actually quoting the defendant's argument that, if a warrant is not required, then prolonged “twenty-four hour surveillance of any citizen of this country will be possible, without judicial knowledge or supervision.” [Id. at 283, 103 S.Ct. 1081](#).^{FN*} The Court avoided the question*557 whether prolonged “twenty-four hour surveillance” was a search by limiting its holding to the facts of the case before it, as to which it stated “the reality hardly suggests abuse.” [Id. at 283, 103 S.Ct. 1081](#) (internal quotation marks deleted).

^{FN*} Indeed, the quoted section of the respondent's brief envisions a case remarkably similar to the one before us:

We respectfully submit that the Court should remain mindful that should it adopt the result maintained by the government, twenty-four hour surveillance of any citizen of this country will be possible, without judicial knowledge or supervision. Without the limitations imposed by the warrant requirement itself, and the terms of any warrant which is issued, any person or residence could be monitored at any time and for any length of time. Should a beeper be installed in a container of property which is not contraband, as here, it would enable authorities to determine a citizen's location at any time without knowing whether his travels are for legitimate or illegitimate purposes, should the container be moved. A beeper thus would turn a person into a broadcaster of his own affairs and travels, without his knowledge or consent, for as long as the government may wish to use him where no warrant places a limit on surveillance. To allow warrantless beeper monitoring, particularly under the standard urged by the government here (“reasonable suspicion”), would allow virtually limitless intrusion into the affairs of private citizens.

Br. of Resp. at 9-10 (No. 81-1802).

In short, [Knotts](#) held only that “[a] person traveling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements from one place to another,” [id. at 281, 103 S.Ct. 1081](#), not that such a person has no reasonable expectation of privacy in his movements whatsoever, world without end, as the Government would have it. The Fifth Circuit likewise has recognized the limited scope of the holding in [Knotts](#), see [United States v. Butts, 729 F.2d 1514, 1518 n. 4 \(1984\)](#) (“As did the Supreme Court in [Knotts](#), we pretermitted any ruling on worst-case situations that may involve persistent, extended, or unlimited violations of a warrant's terms”), as has the New York Court of Appeals, see [People v. Weaver, 12 N.Y.3d 433, 440-44, 882 N.Y.S.2d 357, 909 N.E.2d 1195 \(2009\)](#) ([Knotts](#) involved a “single trip” and Court “pointedly acknowledged and reserved for another day the question of whether a Fourth Amendment issue would be posed if ‘twenty-four hour surveillance of any citizen of this country [were] possible’ ”). See also Renee McDonald Hutchins, *Tied Up in Knotts? GPS Technology and the Fourth Amendment*, 419 *UCLA L.Rev.* 409, 457 (2007) (“According to the [Supreme] Court, its decision [in [Knotts](#)] should not be read to sanction ‘twenty-four hour surveillance of any citizen of this country.’ ” (quoting [Knotts, 460 U.S. at 284, 103 S.Ct. 1081](#))).

Two circuits, relying upon [Knotts](#), have held the use of a GPS tracking device to

monitor an individual's movements in his vehicle over a prolonged period is not a search, [United States v. Pineda-Moreno](#), 591 F.3d 1212 (9th Cir.2010); [United States v. Garcia](#), 474 F.3d 994 (7th Cir.2007), but in neither case did the appellant argue that [Knotts](#) by its terms does not control whether prolonged surveillance is a search, as Jones argues here. Indeed, in [Garcia](#) the appellant explicitly conceded the point. Br. of Appellant at 22 (No. 06-2741) (“Garcia does not contend that he has a reasonable expectation of privacy in the movements of his vehicle while equipped with the GPS tracking device as it made its way through public thoroughfares. [Knotts](#). His challenge rests solely with whether the warrantless installation of the GPS device, in and of itself, violates the Fourth Amendment.”). Thus prompted, the Seventh Circuit read [Knotts](#) as blessing all “tracking of a vehicle on public streets” and addressed only “whether installing the device in the vehicle converted the subsequent tracking into a search.” [Garcia](#), 474 F.3d at 996. The court viewed use of a GPS device as being more akin to hypothetical practices it assumed are not searches, such as tracking a car “by means of cameras mounted on lampposts or satellite imaging,” than it is to practices the Supreme Court has held are searches, such as attaching a listening device to a person's phone. [Id.](#) at 997. For that reason it held installation of the GPS device was not a search. Similarly, the Ninth Circuit perceived no distinction between short- and long-term surveillance; it noted the appellant had “acknowledged” [Knotts](#) controlled the case and addressed only whether [Kyllo v. United States](#), 533 U.S. 27, 121 S.Ct. 2038, 150 L.Ed.2d 94 (2001), *558 in which the Court held the use of a thermal imaging device to detect the temperature inside a home defeats the occupant's reasonable expectation of privacy, had “heavily modified the Fourth Amendment analysis.” [Pineda-Moreno](#), 591 F.3d at 1216.

In a third related case the Eighth Circuit held the use of a GPS device to track a truck used by a drug trafficking operation was not a search. [United States v. Marquez](#), 605 F.3d 604 (2010). After holding the appellant had no standing to challenge the use of the GPS device, the court went on to state in the alternative:

Even if Acosta had standing, we would find no error.... [W]hen police have reasonable suspicion that a particular vehicle is transporting drugs, a warrant is not required when, while the vehicle is parked in a public place, they install a non-invasive GPS tracking device on it for a reasonable period of time.

[Id.](#) at 609-10.

In each of these three cases the court expressly reserved the issue it seems to have thought the Supreme Court had reserved in [Knotts](#), to wit, whether “wholesale” or “mass” electronic surveillance of many individuals requires a warrant. [Marquez](#), 605 F.3d at 610; [Pineda-Moreno](#), 591 F.3d at 1216 n. 2; [Garcia](#), 474 F.3d at 996. As we have explained, in [Knotts](#) the Court actually reserved the issue of prolonged surveillance. That issue is squarely presented in this case. Here the police used the GPS device not to track Jones's “movements from one place to another,” [Knotts](#), 460 U.S. at 281, 103 S.Ct. 1081, but rather to track Jones's movements 24 hours a day for 28 days as he moved among scores of places, thereby discovering the totality and pattern of his movements from place to place.

2. Were Jones's locations exposed to the public?

[16] As the Supreme Court observed in [Kyllo](#), 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.” [533 U.S. at 34, 121 S.Ct. 2038](#). Indeed, the Court has invoked various and varying considerations in applying the test. See [O’Connor v. Ortega, 480 U.S. 709, 715, 107 S.Ct. 1492, 94 L.Ed.2d 714 \(1987\)](#) (“We have no talisman that determines in all cases those privacy expectation that society is prepared to accept as reasonable”) (O’Connor, J., plurality opinion); [Rakas v. Illinois, 439 U.S. 128, 143 n. 12, 99 S.Ct. 421, 58 L.Ed.2d 387 \(1978\)](#) (“legitimation of expectations of privacy must have a source outside the Fourth Amendment,” such as “understandings that are recognized or permitted by society”). This much is clear, however: Whether an expectation of privacy is reasonable depends in large part upon whether that expectation relates to information that has been “expose[d] to the public,” [Katz, 389 U.S. at 351, 88 S.Ct. 507](#).

[17] Two considerations persuade us the information the police discovered in this case-the totality of Jones’s movements over the course of a month-was not exposed to the public: First, unlike one’s movements during a single journey, the whole of one’s movements over the course of a month is not *actually* exposed to the public because the likelihood anyone will observe all those movements is effectively nil. Second, the whole of one’s movements is not exposed *constructively* even though each individual movement is exposed, because that whole reveals more-sometimes a great deal more-than does the sum of its parts.

***559** a. Actually exposed?

The holding in [Knotts](#) flowed naturally from the reasoning in [Katz](#): “What a person knowingly exposes to the public ... is not a subject of Fourth Amendment protection,” [389 U.S. at 351, 88 S.Ct. 507](#). See [Knotts, 460 U.S. at 281-82, 103 S.Ct. 1081](#) (movements observed by police were “voluntarily conveyed to anyone who wanted to look”). The Government argues the same reasoning applies here as well. We first consider the precedent governing our analysis of whether the subject of a purported search has been exposed to the public, then hold the information the police discovered using the GPS device was not so exposed.

(i). Precedent

The Government argues Jones’s movements over the course of a month were actually exposed to the public because the police lawfully could have followed Jones everywhere he went on public roads over the course of a month. The Government implicitly poses the wrong question, however.

[18] In considering whether something is “exposed” to the public as that term was used in [Katz](#) we ask not what another person can physically and may lawfully do but rather what a reasonable person expects another might actually do. See [California v. Greenwood, 486 U.S. 35, 40, 108 S.Ct. 1625, 100 L.Ed.2d 30 \(1988\)](#) (“It is common knowledge that plastic garbage bags left on or at the side of a public street are readily accessible to animals, children, scavengers, snoops, and other members of the public”); [California v. Ciraolo, 476 U.S. 207, 213, 214, 106 S.Ct. 1809, 90 L.Ed.2d 210 \(1986\)](#) (“in an age where private and commercial flight in the public airways is routine,” defendant did not have a reasonable expectation of privacy in location that “[a]ny member of the public flying in this airspace who glanced down could have seen”); [Florida v. Riley,](#)

[488 U.S. 445, 450, 109 S.Ct. 693, 102 L.Ed.2d 835 \(1989\)](#) (“Here, the inspection was made from a helicopter, but as is the case with fixed-wing planes, ‘private and commercial flight [by helicopter] in the public airways is routine’ in this country, and there is no indication that such flights are unheard of in Pasco County, Florida” (quoting [Ciraolo](#))). Indeed, in [Riley](#), Justice O’Connor, whose concurrence was necessary to the judgment, pointed out:

Ciraolo’s expectation of privacy was unreasonable not because the airplane was operating where it had a “right to be,” but because public air travel at 1,000 feet is a sufficiently routine part of modern life that it is unreasonable for persons on the ground to expect that their curtilage will not be observed from the air at that altitude.

....

If the public rarely, if ever, travels overhead at such altitudes, the observation cannot be said to be from a vantage point generally used by the public and Riley cannot be said to have “knowingly expose[d]” his greenhouse to public view.

[488 U.S. at 453, 455, 109 S.Ct. 693](#); see also [id. at 467, 109 S.Ct. 693](#) (Blackmun, J., dissenting) (explaining five justices agreed “the reasonableness of Riley’s expectation depends, in large measure, on the frequency of nonpolice helicopter flights at an altitude of 400 feet”).

* * *

[19] The Government cites as authority to the contrary our statement in [United States v. Gbemisola, 225 F.3d 753, 759 \(2000\)](#), that “[t]he decisive issue ... is not what the officers saw but what they could have seen.” When read in context, however, this snippet too supports the view that whether something is “expose[d] to the public,” [Katz, 389 U.S. at 351, 88 S.Ct. 507](#), depends not upon the theoretical possibility, but upon the actual likelihood, of discovery by a stranger:

The decisive issue ... is not what the officers saw but what they could have seen. At any time, the surveillance vehicle could have pulled alongside of the taxi and the officers could have watched Gbemisola through its window. Indeed, the taxi driver himself could have seen the event simply by looking in his rear-view mirror or turning around. As one cannot have a reasonable expectation of privacy concerning an act performed within the visual range of a complete stranger, the Fourth Amendment’s warrant requirement was not implicated.

[225 F.3d at 759](#). In short, it was not at all unlikely Gbemisola would be observed opening a package while seated in the rear of a taxi, in plain view of the driver and perhaps of others.

(ii). Application

Applying the foregoing analysis to the present facts, we hold the whole of a person’s movements over the course of a month is not actually exposed to the public because the likelihood a stranger would observe all those movements is not just

remote, it is essentially nil. It is one thing for a passerby to observe or even to follow someone during a single journey as he goes to the market or returns home from work. It is another thing entirely for that stranger to pick up the scent again the next day and the day after that, week in and week out, dogging his prey until he has identified all the places, people, amusements, and chores that make up that person's hitherto private routine.

b. Constructively exposed?

The Government does not separately raise, but we would be remiss if we did not address, the possibility that although the whole of Jones's movements during the month for which the police monitored him was not actually exposed to the public, it *561 was constructively exposed because each of his individual movements during that time was itself in public view. When it comes to privacy, however, precedent suggests that the whole may be more revealing than the parts. Applying that precedent to the circumstances of this case, we hold the information the police discovered using the GPS device was not constructively exposed.

(i). Precedent

The Supreme Court addressed the distinction between a whole and the sum of its parts in [United States Department of Justice v. Reporters Committee for Freedom of Press](#), 489 U.S. 749, 109 S.Ct. 1468, 103 L.Ed.2d 774 (1989), which arose not under the Fourth Amendment but under the Freedom of Information Act, [5 U.S.C. § 552](#). There the respondents had requested, pursuant to the FOIA, that the FBI disclose rap sheets compiling the criminal records of certain named persons. Although the “individual events in those summaries [were] matters of public record,” the Court upheld the FBI's invocation of the privacy exception to the FOIA, holding the subjects had a privacy interest in the aggregated “whole” distinct from their interest in the “bits of information” of which it was composed. *Id.* at 764, 109 S.Ct. 1468.^{FN*} Most relevant to the Fourth Amendment, the Court said disclosure of a person's rap sheet “could reasonably be expected to constitute an unwarranted invasion of personal privacy.” *Id.*

^{FN*} The colloquialism that “the whole is greater than the sum of its parts” is not quite correct. “It is more correct to say that the whole is something different than the sum of its parts.” Kurt Koffka, *Principles of Gestalt Psychology* 176 (1935). That is what the Court was saying in [Reporters Committee](#) and what we mean to convey throughout this opinion.

The Court implicitly recognized the distinction between the whole and the sum of the parts in the Fourth Amendment case of [Smith v. Maryland](#), 442 U.S. 735, 99 S.Ct. 2577, 61 L.Ed.2d 220 (1979). There, in holding the use of a pen register to record all the numbers dialed from a person's phone was not a search, the Court considered not just whether a reasonable person expects any given number he dials to be exposed to the phone company but also whether he expects all the numbers he dials to be compiled in a list. *Id.* at 742-43, 99 S.Ct. 2577 (“subscribers realize ... the phone company has facilities for making permanent records of the numbers they dial, for they see a list of their long-distance (toll) calls on their monthly bills”; they “typically know that ... the phone company has facilities for recording” the numbers they dial). The Court explained that

Smith could not reasonably expect privacy in the list of numbers because that list was composed of information that he had “voluntarily conveyed to [the company]” and that “it had facilities for recording and ... was free to record.” [Id. at 745, 99 S.Ct. 2577.](#)

If, for the purposes of the Fourth Amendment, the privacy interest in a whole could be no greater (or no different) than the privacy interest in its constituent parts, then the Supreme Court would have had no reason to consider at length whether Smith could have a reasonable expectation of privacy in the list of numbers he had called. Indeed, Justice Stewart dissented specifically because he thought the difference was significant on the facts of that case. *See id. at 747, 99 S.Ct. 2577* (“such a list [of all the telephone numbers one called] easily could reveal ... the most intimate details of a person's life”).

(ii). Application

The whole of one's movements over the course of a month is not constructively *562 exposed to the public because, like a rap sheet, that whole reveals far more than the individual movements it comprises. The difference is not one of degree but of kind, for no single journey reveals the habits and patterns that mark the distinction between a day in the life and a way of life, nor the departure from a routine that, like the dog that did not bark in the Sherlock Holmes story, may reveal even more.

As with the “mosaic theory” often invoked by the Government in cases involving national security information, “What may seem trivial to the uninformed, may appear of great moment to one who has a broad view of the scene.” [CIA v. Sims, 471 U.S. 159, 178, 105 S.Ct. 1881, 85 L.Ed.2d 173 \(1985\)](#) (internal quotation marks deleted); *see J. Roderick MacArthur Found. v. F.B.I., 102 F.3d 600, 604 (D.C.Cir.1996)*. Prolonged surveillance reveals types of information not revealed by short-term surveillance, such as what a person does repeatedly, what he does not do, and what he does ensemble. These types of information can each reveal more about a person than does any individual trip viewed in isolation. Repeated visits to a church, a gym, a bar, or a bookie tell a story not told by any single visit, as does one's not visiting any of these places over the course of a month. The sequence of a person's movements can reveal still more; a single trip to a gynecologist's office tells little about a woman, but that trip followed a few weeks later by a visit to a baby supply store tells a different story.^{FN*} A person who knows all of another's travels can deduce whether he is a weekly church goer, a heavy drinker, a regular at the gym, an unfaithful husband, an outpatient receiving medical treatment, an associate of particular individuals or political groups-and not just one such fact about a person, but all such facts.

^{FN*} This case itself illustrates how the sequence of a person's movements may reveal more than the individual movements of which it is composed. Having tracked Jones's movements for a month, the Government used the resulting pattern-not just the location of a particular “stash house” or Jones's movements on any one trip or even day-as evidence of Jones's involvement in the cocaine trafficking business. The pattern the Government would document with the GPS data was central to its presentation of the case, as the prosecutor made clear in his opening statement:

[T]he agents and investigators obtained an additional order and that was to install a GPS.... They had to figure out where is he going? When he says ten minutes, where is he going? Again, the pattern developed.... And I want to ... just show you an example of how the pattern worked.... The meetings are short. But you will again notice the pattern you will see in the coming weeks over and over again.

Tr. 11/15/07.

Other courts have recognized prolonged surveillance of a person's movements may reveal an intimate picture of his life. See [Galella v. Onassis, 353 F.Supp. 196, 227-28 \(S.D.N.Y.1972\)](#) (“Plaintiff's endless snooping constitutes tortious invasion of privacy [he] has insinuated himself into the very fabric of Mrs. Onassis' life”) (*aff'd in relevant part* [487 F.2d 986, 994 & n. 12 \(2nd Cir.1973\)](#) (if required to reach privacy issue “would be inclined to agree with” district court's treatment)). Indeed, they have reached that conclusion in cases involving prolonged GPS monitoring. See [People v. Weaver, 12 N.Y.3d 433, 882 N.Y.S.2d 357, 909 N.E.2d 1195, 1199 \(2009\)](#) (Prolonged GPS monitoring “yields ... a highly detailed profile, not simply of where we go, but by easy inference, of our associations-political, religious, amicable and amorous, to name only a few-and of the pattern of our professional and avocational pursuits”); [State v. Jackson, 150 Wash.2d 251, 76 P.3d 217, 224 \(2003\)](#) (en banc) (“In this age, vehicles are used to take people *563 to a vast number of places that can reveal preferences, alignments, associations, personal ails and foibles. The GPS tracking devices record all of these travels, and thus can provide a detailed picture of one's life.”).

A reasonable person does not expect anyone to monitor and retain a record of every time he drives his car, including his origin, route, destination, and each place he stops and how long he stays there; rather, he expects each of those movements to remain “disconnected and anonymous,” [Nader v. Gen. Motors Corp., 25 N.Y.2d 560, 572, 307 N.Y.S.2d 647, 255 N.E.2d 765 \(1970\)](#) (Breitel, J., concurring). In this way the extended recordation of a person's movements is, like the “manipulation of a bus passenger's carry-on” canvas bag in [Bond](#), not what we expect anyone to do, and it reveals more than we expect anyone to know. [529 U.S. at 339, 120 S.Ct. 1462](#).

3. Was Jones's expectation of privacy reasonable?

[20] It does not apodictically follow that, because the aggregation of Jones's movements over the course of a month was not exposed to the public, his expectation of privacy in those movements was reasonable; “legitimation of expectations of privacy must have a source outside the Fourth Amendment,” such as “understandings that are recognized or permitted by society,” [United States v. Jacobsen, 466 U.S. 109, 123 n. 22, 104 S.Ct. 1652, 80 L.Ed.2d 85 \(1984\)](#) (quoting [Rakas, 439 U.S. at 143 n. 12, 99 S.Ct. 421](#)). So it is that, because the “Congress has decided ... to treat the interest in ‘privately’ possessing cocaine as illegitimate,” “governmental conduct that can reveal whether a substance is cocaine, and no other arguably ‘private’ fact, compromises no legitimate privacy interest.” [Id. at 123, 99 S.Ct. 421](#).

[21] The Government suggests Jones's expectation of privacy in his movements was unreasonable because those movements took place in his vehicle, on a pub-

lic way, rather than inside his home. That the police tracked Jones's movements in his Jeep rather than in his home is certainly relevant to the reasonableness of his expectation of privacy; “in the sanctity of the home,” the Court has observed, “all details are intimate details,” [Kyllo, 533 U.S. at 37, 121 S.Ct. 2038](#). A person does not leave his privacy behind when he walks out his front door, however. On the contrary, in [Katz](#) the Court clearly stated “what [one] seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected.” [389 U.S. at 351, 88 S.Ct. 507](#). Or, as this court has said, outside the home, the “Fourth Amendment ... secur[es] for each individual a private enclave, a ‘zone’ bounded by the individual's own reasonable expectations of privacy.” [Reporters Comm. for Freedom of Press v. AT & T, 593 F.2d 1030, 1042-43 \(1978\)](#).

Application of the test in [Katz](#) and its sequellae to the facts of this case can lead to only one conclusion: Society recognizes Jones's expectation of privacy in his movements over the course of a month as reasonable, and the use of the GPS device to monitor those movements defeated that reasonable expectation. As we have discussed, prolonged GPS monitoring reveals an intimate picture of the subject's life that he expects no one to have—short perhaps of his spouse. The intrusion such monitoring makes into the subject's private affairs stands in stark contrast to the relatively brief intrusion at issue in [Knotts](#); indeed it exceeds the intrusions occasioned by every police practice the Supreme Court has deemed a search under [Katz](#), such as a *564 urine test, see [Skinner v. Ry. Labor Executives' Ass'n, 489 U.S. 602, 109 S.Ct. 1402, 103 L.Ed.2d 639 \(1989\)](#) (urine test could “reveal a host of private medical facts about an employee, including whether he or she is epileptic, pregnant, or diabetic”); use of an electronic listening device to tap a payphone, [Katz, 389 U.S. at 352, 88 S.Ct. 507](#) (user of telephone booth “entitled to assume that the words he utters into the mouthpiece will not be broadcast to the world”); inspection of a traveler's luggage, [Bond, 529 U.S. at 338, 120 S.Ct. 1462](#) (“travelers are particularly concerned about their carry-on luggage”); or use of a thermal imaging device to discover the temperature inside a home, [Kyllo, 533 U.S. at 37, 121 S.Ct. 2038](#) (“In the home, all details are intimate details”).

We note without surprise, therefore, that the Legislature of California, in making it unlawful for anyone but a law enforcement agency to “use an electronic tracking device to determine the location or movement of a person,” specifically declared “electronic tracking of a person's location without that person's knowledge violates that person's reasonable expectation of privacy,” and implicitly but necessarily thereby required a warrant for police use of a GPS, [California Penal Code section 637.7](#), Stats.1998 c. 449 (S.B.1667) § 2. Several other states have enacted legislation imposing civil and criminal penalties for the use of electronic tracking devices and expressly requiring exclusion of evidence produced by such a device unless obtained by the police acting pursuant to a warrant. See, e.g., [Utah Code Ann. §§ 77-23a-4, 77-23a-7, 77-23a-15.5](#); [Minn. Stat. §§ 626A.37, 626A.35](#); [Fla. Stat. §§ 934.06, 934.42](#); [S.C.Code Ann. § 17-30-140](#); [Okla. Stat., tit. 13, §§ 176.6, 177.6](#); [Haw. Rev. Stat. §§ 803-42, 803-44.7](#); [18 Pa. Cons.Stat. § 5761](#).

Although perhaps not conclusive evidence of nationwide “societal understandings,” [Jacobsen, 466 U.S. at 123 n. 22, 104 S.Ct. 1652](#), these state laws are indicative that prolonged GPS monitoring defeats an expectation of privacy that our society recognizes as reasonable. So, too, are the considered judgments of

every court to which the issue has been squarely presented. See [Weaver, 12 N.Y.3d at 447, 882 N.Y.S.2d 357, 909 N.E.2d 1195](#) (“the installation and use of a GPS device to monitor an individual's whereabouts requires a warrant supported by probable cause”); [Jackson, 76 P.3d at 223-24](#) (under [art. I, § 7 of Washington State Constitution](#), which “focuses on those privacy interests which citizens of this state have held, and should be entitled to hold, safe from governmental trespass,” “use of a GPS device on a private vehicle involves a search and seizure”); cf. [Commonwealth v. Connolly, 454 Mass. 808, 913 N.E.2d 356, 369-70 \(Ma.2009\)](#) (installation held a seizure). The federal circuits that have held use of a GPS device is not a search were not alert to the distinction drawn in [Knotts](#) between short-term and prolonged surveillance,^{FN*} *565 but we have already explained our disagreement on that collateral point.

FN* One federal district court and two state courts have also held use of a GPS device is not *per se* a search, but none was presented with the argument that prolonged use of a GPS device to track an individual's movements is meaningfully different from short-term surveillance. See [United States v. Moran, 349 F.Supp.2d 425, 467-68 \(N.D.N.Y.2005\)](#) (police used GPS device to track defendant during one-day drive from Arizona to New York); [State v. Sveum, 319 Wis.2d 498, 769 N.W.2d 53, 59 \(Wis.Ct.App.2009\)](#) (“Sveum implicitly concedes that ... using [a GPS device] to monitor *public* travel does not implicate the Fourth Amendment. He contends, however, that because the GPS device permitted the police to monitor the location of his car while it was in his garage ... all of the information obtained from the GPS device should have been suppressed.”); [Stone v. State, 178 Md.App. 428, 941 A.2d 1238 \(2008\)](#) (holding, in light of [Knotts](#), that lower court “did not abuse its discretion in cutting short testimony” about use of GPS device; appellant did not cite [Knotts](#) in his briefs or affirmatively argue use of device was a search).

4. Visual surveillance distinguished

[22] The Government would have us abjure this conclusion on the ground that “[Jones's] argument logically would prohibit even visual surveillance of persons or vehicles located in public places and exposed to public view, which clearly is not the law.” We have already explained why Jones's argument does not “logically ... prohibit” much visual surveillance: Surveillance that reveals only what is already exposed to the public—such as a person's movements during a single journey—is not a search. See [Knotts, 460 U.S. at 285, 103 S.Ct. 1081](#).

Regarding visual surveillance so prolonged it reveals information not exposed to the public, we note preliminarily that the Government points to not a single actual example of visual surveillance that will be affected by our holding the use of the GPS in this case was a search. No doubt the reason is that practical considerations prevent visual surveillance from lasting very long.^{FN*} Continuous human surveillance for a week would require all the time and expense of several police officers, while comparable photographic surveillance would require a net of video cameras so dense and so widespread as to catch a person's every movement, plus the manpower to piece the photographs together. Of course, as this case and some of the GPS cases in other courts illustrate, *e.g.*, [Weaver, 12 N.Y.3d at 447, 459, 882 N.Y.S.2d 357, 909 N.E.2d 1195](#) (holding use of GPS device to track suspect for 65 days was search); [Jackson, 76 P.3d at 223](#) (hold-

ing use of GPS device to track suspect for two and one-half weeks was search), prolonged GPS monitoring is not similarly constrained. On the contrary, the marginal cost of an additional day-or week, or month-of GPS monitoring is effectively zero. Nor, apparently, is the fixed cost of installing a GPS device significant; the Los Angeles Police Department can now affix a GPS device to a passing car simply by launching a GPS-enabled dart.^{FN*} For these practical reasons, and not by virtue of its sophistication or novelty, the advent of GPS technology has occasioned a heretofore unknown type of intrusion into an ordinarily and hitherto private enclave.

^{FN*} According to the former Chief of the LAPD, keeping a suspect under “constant and close surveillance” is “not only more costly than any police department can afford, but in the vast majority of cases it is impossible.” W.H. Parker, *Surveillance by Wiretap or Dictograph: Threat or Protection?*, 42 Cal. L.Rev. 727, 734 (1954). Or as one of the Special Agents involved in the investigation of Jones testified at trial: “Physical surveillance is actually hard, you know. There's always chances of getting spotted, you know, the same vehicle always around, so we decided to use GPS technology.” Tr. 11/21/07 at 114.

^{FN*} “The darts consist of a miniaturized GPS receiver, radio transmitter, and battery embedded in a sticky compound material. When fired at a vehicle, the compound adheres to the target, and thereafter permits remote real-time tracking of the target from police headquarters.” Renee McDonald Hutchins, *Tied Up in Knotts? GPS Technology and the Fourth Amendment*, 55 UCLA L.Rev. 409, 419 (2007); see also Richard Winton, *LAPD Pursues High-Tech End to High-Speed Chases*, L.A. Times, Feb. 3, 2006, at B1. GPS darts are used in exigent circumstances and for only as long as it takes to interdict the subject driver without having to engage in a high-speed chase on a public way.

[23] The Government's argument-that our holding the use of the GPS device was a search necessarily implicates prolonged*566 visual surveillance-fails even on its own terms. That argument relies implicitly upon an assumption rejected explicitly in *Kyllo*, to wit, that the means used to uncover private information play no role in determining whether a police action frustrates a person's reasonable expectation of privacy; when it comes to the Fourth Amendment, means do matter. See 533 U.S. at 35 n. 2, 121 S.Ct. 2038 (“The fact that equivalent information could sometimes be obtained by other means does not make lawful the use of means that violate the Fourth Amendment”). For example, the police may without a warrant record one's conversations by planting an undercover agent in one's midst, *Lopez v. United States*, 373 U.S. 427, 429, 83 S.Ct. 1381, 10 L.Ed.2d 462 (1963), but may not do the same by wiretapping one's phone, even “without any trespass,” *Katz*, 389 U.S. 347, 353, 88 S.Ct. 507, 19 L.Ed.2d 576 (1967). Quite simply, in the former case one's reasonable expectation of control over one's personal information would not be defeated; in the latter it would be. See *Reporters Committee*, 489 U.S. at 763, 109 S.Ct. 1468 (“both the common law and the literal understandings of privacy encompass the individual's control of information concerning his or her person”).

[24] This case does not require us to, and therefore we do not, decide whether a hypothetical instance of prolonged visual surveillance would be a search subject to the warrant requirement of the Fourth Amendment. As the Supreme Court

said in [Dow Chemical Co. v. United States](#), “Fourth Amendment cases must be decided on the facts of each case, not by extravagant generalizations. ‘We have never held that potential, as opposed to actual, invasions of privacy constitute searches for purposes of the Fourth Amendment.’ ” [476 U.S. 227, 238 n. 5, 106 S.Ct. 1819, 90 L.Ed.2d 226 \(1986\)](#) (quoting [United States v. Karo](#), [468 U.S. 705, 712, 104 S.Ct. 3296, 82 L.Ed.2d 530 \(1984\)](#)); see also [City of Ontario v. Quon](#), --- U.S. ---, [130 S.Ct. 2619, 2629, 177 L.Ed.2d 216 \(2010\)](#) (“Prudence counsels caution before the facts in the instant case are used to establish far-reaching premises that define the existence, and extent, of privacy expectations”). By the same token, we refuse to hold this “search is not a search,” [Kyllo](#), [533 U.S. at 32, 121 S.Ct. 2038](#), merely because a contrary holding might at first blush seem to implicate a different but intuitively permissible practice. See [Nat’l Fed’n of Fed. Employees v. Weinberger](#), [818 F.2d 935, 942 \(D.C.Cir.1987\)](#) (“Few legal issues in the Fourth Amendment domain are so pure that they do not turn on *any* facts or circumstances peculiar to the case”). Instead, just as the Supreme Court in [Knotts](#) reserved the lawfulness of prolonged beeper surveillance, we reserve the lawfulness of prolonged visual surveillance.

B. Was the Search Reasonable Nonetheless?

[\[25\]\[26\]\[27\]](#) A search conducted without a warrant is “per se unreasonable under the Fourth Amendment—subject only to a few specifically established and well-delineated exceptions.” [Katz](#), [389 U.S. at 357, 88 S.Ct. 507](#). Here, because the police installed the GPS device on Jones's vehicle without a valid warrant,^{FN*} the Government argues the resulting search can be upheld *567 as a reasonable application of the automobile exception to the warrant requirement. Under that exception, “[i]f a car is readily mobile and probable cause exists to believe it contains contraband, the Fourth Amendment ... permits police to search the vehicle without more.” [Pennsylvania v. Labron](#), [518 U.S. 938, 940, 116 S.Ct. 2485, 135 L.Ed.2d 1031 \(1996\)](#).

FN* The police had obtained a warrant to install the GPS device in D.C. only, but it had expired before they installed it—which they did in Maryland. When challenged in the district court, the Government “conceded ... the violations” of the court's order, “confine[d] its arguments to the issue of whether or not a court order was required[,] and assert[ed] that it was not.” Government's Omnibus Response to Defendant's Legal Motions.

As Jones points out, this argument is doubly off the mark. First, the Government did not raise it below. See [Bryant v. Gates](#), [532 F.3d 888, 898 \(D.C.Cir.2008\)](#) (argument not made in district court is forfeited). Second, the automobile exception permits the police to search a car without a warrant if they have reason to believe it contains contraband; the exception does not authorize them to install a tracking device on a car without the approval of a neutral magistrate. See [Delaware v. Prouse](#), [440 U.S. 648, 662-63, 99 S.Ct. 1391, 59 L.Ed.2d 660 \(1979\)](#) (“Were the individual subject to unfettered governmental intrusion every time he entered his automobile, the security guaranteed by the Fourth Amendment would be seriously circumscribed”).

* * *

IV. Conclusion

Maynard's conviction and sentence are affirmed because neither any of the appellants' joint arguments nor Maynard's individual argument warrants reversal. Jones's conviction is reversed because it was obtained with evidence procured in violation of the Fourth Amendment.

So ordered.

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