RUBE GOLDBERG MEETS THE CONSTITUTION: THE SUPREME COURT, TECHNOLOGY AND THE FOURTH AMENDMENT

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> Rube's drawings depict absurdly-connected machines functioning in extremely complex and roundabout ways to produce a simple end result; because of this Rube Goldberg has become associated with any convoluted system of achieving a basic task . . . While most machines work to make difficult tasks simple, his inventions made simple tasks amazingly complex.[1]

For three-quarters of a century, the Supreme Court has struggled to identify how—or even if—the Fourth Amendment regulates technological surveillance by government investigators. The Court's efforts have not been trivial. Its most important decisions have redefined fundamental concepts governing all searches and seizures, not just those involving the use of technology. Despite the importance of these decisions, the Court repeatedly has

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[1] The Official Rube Goldberg Web Site, http://www.rube-goldberg.com (last visited Oct. 16, 2002). The introductory quotation and the following passage are excerpts from the biographical sketch that can be found at this site:

> Rube Goldberg (1883-1970) was a Pulitzer Prize winning cartoonist, sculptor, and author. . . . Through his `INVENTIONS', Rube Goldberg showed difficult ways to achieve easy results. His cartoons were, (as he said), symbols of man's capacity for exerting maximum effort to accomplish minimal results. Rube believed that there were two ways to do things: the simple way and the hard way, and that a surprising number of people preferred doing things the hard way.

Id.

constructed theories that, at least in practice, function like some Rube Goldberg device for constitutional interpretation. Readers unfamiliar with Rube Goldberg's technological designs might consider the following example:[2]

Rube Goldberg's Self-Operating Napkin

Insert cartoon here

Rube Goldberg TM & © of Rube Goldberg, Inc.

Raising spoon to mouth (A) pulls string (B), thereby jerking ladle (C), which throws cracker (D) past parrot (E). Parrot jumps after cracker, and perch (F) tilts, upsetting seeds (G) into pail (H). Extra weight in pail pulls cord (I), which opens and lights automatic cigar lighter (J), setting off skyrocket (K), which causes sickle (L) to cut string (M) and allows pendulum with attached napkin (N) to swing back and forth, thereby wiping off your chin.

The Rube Goldberg quality of the theories constructed by the Supreme Court to deal with modern technology's impact on Fourth Amendment doctrine is nowhere more obvious than in the Court's initial decision involving technological surveillance, *Olmstead v. United States*.[3] The opinion cobbled together a misguided textual literalism, a parsimonious view of communicative privacy, and a theory of property rights that rejected nearly a half century of precedents to construct a

[2] Rube Goldberg, *Rube Goldberg's Self-Operating Napkin at* http://www.2cs.cmo.edu/~tem/cs_seminars/Rube_Napkin.html (last visited Oct. 8, 2002). A search of the World Wide Web using any standard search engine will lead the reader to this and numerous other sites with additional examples of Goldberg's miraculously convoluted designs.

[3] 277 U.S. 438 (1928), discussed *infra* Part I.

Rube Goldbergesque constitutional theory that effectively insulated emerging electronic surveillance technologies from constitutional scrutiny.

The Court abandoned this literalist property theory in the 1960s, and in the process it revolutionized the very definition of searches regulated by the Fourth Amendment—and the very nature of the rights it protects. The most important decision, *Katz v. United States*,[4] was crafted to allow the judiciary to impose new constitutional limits on technological surveillance, but the analytical device adopted by the Court—the *reasonable expectation of privacy* standard—has failed to achieve that goal. In practice it has frequently provided little more protection of privacy than did the property-based, literalist theories it overturned. Applying the *Katz* "reasonable expectation of privacy" test, the Court repeatedly has concluded that surveillance techniques that would seem to be searches by any logical definition of the term are not searches regulated by the Fourth Amendment. Viewed collectively, these decisions often seem inspired by the kind of logic that produced Rube Goldberg's bizarre contraptions.

For example, placing an electronic beeper in a canister to allow government agents to track the canister's (and therefore the suspects') travels by motor vehicle is not a search.[5] But if the same canister is moved into a home, the same monitoring of the same beeper signal is converted into a search that must satisfy Fourth Amendment standards.[6] Flying a helicopter or an airplane at low altitudes so police officers can see into parts of a home or its curtilage that would otherwise be hidden from public view is not a search.[7] But using a commercially available machine that only measures the heat emitted from the same house is a Fourth Amendment search.[8]

If a Rube Goldberg contraption is a "convoluted system of achieving a basic task,"[9] or a machine that makes "simple tasks amazingly complex,"[10] then the Court's definition of the technologies regulated by the Fourth Amendment surely is

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[4] 389 U.S. 347 (1967), discussed *infra* Part II.

[5] United States v. Knotts, 460 U.S. 276 (1983).

[6] United States v. Karo, 468 U.S. 705 (1984).

[7] California v. Ciraolo, 476 U.S. 207 (1986); Florida v. Riley, 488 U.S. 445 (1989); *see also* Kyllo v. United States, 533 U.S. 27, 33 (2001).

[8] *Kyllo*, 533 U.S. at 27.

[9] *See supra* text accompanying note 1.

[10] *See supra* text accompanying note 1.

such a device. In *Dow Chemical Co. v. United States*,[11] the Court decreed that the Fourth Amendment does not regulate government use of technologies "generally available to the public,"[12] but provided little useful guidance about how to determine which technologies fit that definition. It concluded that using expensive and specialized cameras to take very detailed photographs of private property is not a search if the camera is mounted on a private airplane flying thousands of feet above the planet, but may be a search if the camera is mounted on a privately owned commercial satellite.[13] In its most recent attempt to determine whether the Fourth Amendment regulated use of a technological surveillance device, the Court appeared to announce a simple, direct and comprehensible definition to resolve this issue.[14] Then like some mad designer committed to assembling a complex, blundering, and inefficient contraption, the Court destroyed this clarity by limiting this new test with a modified version of the incoherent *Dow* test.[15]

These three innovations in Fourth Amendment theory resulting from the emergence of modern technological surveillance—the property-based theory that emerged in the 1920s, the expectation of privacy standard that replaced it forty years later, and the attempt to define the technologies that trigger constitutional scrutiny—are the subject of this article. I conclude that each has been a failure. Each has baffled scholars, befuddled judges, and burdened law enforcers. All have diminished individual autonomy and correspondingly expanded government power. The analysis of these three critical innovations proceeds chronologically. We begin at the beginning.

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[11] 476 U.S. 227 (1986).

[12] *Dow Chem. Co.*, 476 U.S. at 238.

[13] *Id.*

[14] *Kyllo*, 533 U.S. at 34 ("We think that obtaining by sense-enhancing technology any information regarding the interior of the home that could not otherwise have been obtained without physical `intrusion into a constitutionally protected area,' constitutes a search. . . . ") (quoting Silverman v. United States, 365 U.S. 505, 512 (1961)).

[15] *Id.*, discussed *infra* Part III.

I. PROPERTY AND LIBERTY: FROM *BOYD* TO *OLMSTEAD*

A. Boyd

The Supreme Court took its first crack at defining the relationship between technological surveillance and the Fourth Amendment in its 1928 decision in *Olmstead v. United States*.[16] The core of the majority opinion rested upon property-based analysis, and this is not surprising. For more than forty years the Supreme Court had linked Fourth Amendment rights to property rights.[17]

The Court crafted its first important theories of the nature and scope of rights protected by the Fourth Amendment[18] in its 1886 opinion in *Boyd v. United States*.[19] The *Boyd* decision held that a court order compelling production of business records in a civil forfeiture action violated both the Fourth Amendment and the Fifth Amendment privilege against self-incrimination.[20] The government wanted the records to prove its claim that the Boyds had imported plate glass without paying the required import duties.[21] The court order did not authorize a physical

[16] 277 U.S. 438 (1928).

[17] *See, e.g.*, Adams v. New York, 192 U.S. 585, 598 (1904) (stating that the Fourth Amendment is "designed to prevent violations of private security in person and property and unlawful invasion of the sanctity of the home.").

[18] The Court had interpreted the Fourth Amendment in earlier cases, but had not previously attempted to establish a comprehensive theory of the Amendment. *See, e.g., Ex Parte* Jackson, 96 U.S. 727 (1877) (search warrant was required to authorize a government search of sealed letters and packages). Most of the early Supreme Court opinions mentioning the Fourth Amendment deal with it only tangentially. *See, e.g., Ex Parte* Milligan, 71 U.S. 2 (1866) (Fourth Amendment is not a limitation on the war-making power); Smith v. Maryland, 59 U.S. 71 (1855) (state statute permitting issuance of a search warrant without requiring an oath does not violate the Constitution because the Fourth Amendment only restricted the national government); Luther v. Borden, 48 U.S. 1, 48 (1849) (Woodbury, J., dissenting) (arguing that the Fourth Amendment was relevant to a trespass action challenging a warrantless search and seizure performed pursuant to a state's declaration of martial law); *Ex parte* Bollman and *Ex parte* Swartwout, 8 U.S. 75 (1807) (Court failed to mention the Fourth Amendment in a decision where defendants were discharged because of a lack of evidence supporting treason charges even though the Fourth Amendment had been cited and argued by defense counsel in support of the claim that no probable cause existed). *Boyd's* persistent significance is apparent both from subsequent praise, *see Olmstead*, 277 U.S. at 474 (Brandeis, J., dissenting) ("*Boyd v. United States* [is] a case that will be remembered as long as civil liberty lives in the United States."), and from critics' felt need to declare its demise a century after the decision. *See* United States v. Doe, 465 U.S. 605, 618 (1983) (O'Connor, J., concurring).

[19] 116 U.S. 616 (1886).

[20] *Boyd*, 116 U.S. at 634-35.

[21] *Id.* at 617-18. The government charged that E.A. Boyd & Sons (hereinafter the Boyds) owed customs duties on thirty-five cases of plate glass. *Id.* The Boyds had supplied plate glass for a new federal building in Philadelphia. Because it came from their existing inventory, they had paid federal import duties on the glass actually used in the project. The government had agreed that the Boyds could import replacement glass without paying duties. The government charged that the Boyds had claimed a tax exemption for far more

search for the papers by government agents, nor did it require the Boyds to give up permanent custody.[22] The order merely directed the Boyds to bring the papers to court for inspection by the government.[23]

It is hard to imagine a milder exercise of government power in a Fourth Amendment dispute. Nonetheless, the Court held that the court order violated the Fourth Amendment:

> It is not the breaking of his doors, and the rummaging of his drawers, that constitutes the essence of the offence; but it is the invasion of his *indefeasible right of personal security, personal liberty and private property*. . . . Breaking into a house and opening boxes and drawers are circumstances of aggravation; but any forcible and compulsory extortion of a man's own testimony or of his private papers to convict him of a crime or to forfeit his goods, is within the condemnation of that judgment. *In this regard, the Fourth and Fifth Amendments run almost into each other*.[24]

Two attributes of the *Boyd* opinion are relevant for understanding how *Olmstead* muddled Fourth Amendment doctrine when the Supreme Court faced the twentieth century problem of wiretapping. The first attribute is implicit in the preceding quotation, and is made explicit elsewhere in the opinion and its progeny. *Boyd* linked Fourth Amendment rights to common law property rules. Under *Boyd*, the government was entitled to search for and seize only those things in which it had a legally identifiable interest or claim rooted in property law.[25] The government could assert such a claim over contraband (which the private citizen has no right to possess), imported goods on which duties had not been paid (the government has a superior legal claim to the property), and stolen property (with the government acting as surrogate for the lawful owner).[26] But the government could assert no

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replacement glass than was permitted by their agreement. *See* Brief for Plaintiffs at app. 1-6, *Boyd*, 116 U.S. 616; Brief for the United States, *id.*, at 1-4. *See also* Gerald F. Uelmen, *2001: A Bus Trip: A Guided Tour of the Fourth Amendment Jurisprudence*, CHAMPION, July 1992, at 6.

[22] *Id.* at 619-20.

[23] *Id.*

[24] *Boyd*, 116 U.S. at 630 (emphasis added).

[25] *See, e.g.*, Gouled v. United States, 255 U.S. 298 (1921); Weeks v. United States, 232 U.S. 383 (1914).

[26] *See, e.g.*, *Boyd*, 116 U.S. at 627 (quoting *Entick v. Carrington* and *Three Other King's Messengers*, 19 Howell's S.Tr. 1029 (1765)) ("The great end for

property interest in the Boyds' private business records, which it wanted to use as evidence to support claims concerning other property, the plate glass,[27] and private papers were the species of personal property accorded the greatest protection from searches and seizures under English common law and both Constitutional Amendments.[28]

These property-based concepts became a fundamental part of Fourth Amendment doctrine and survived until abandoned by the Supreme Court eighty years later.[29] In the first half of that period—the four decades between *Boyd* and *Olmstead*—the Supreme Court reaffirmed the link between property interests and liberty and privacy rights in some of its most important opinions construing the Amendment,[30]

which men entered into society was to secure their property.").

[27] *Boyd*, 116 U.S. at 623 ("The two things differ *toto coelo*. In the one case the government is entitled to the property; in the other it is not."); *id*. at 624. The list of property which the government was entitled to search for and seize later was expanded to include the instrumentalities by which crimes were committed. *Gouled*, 255 U.S. at 298.

[28] See *infra* notes 34-41 and accompanying text.

[29] The Supreme Court began to inter *Boyd* with its decisions in *Schmerber v. California*, 384 U.S. 757 (1966), *Warden, Md. Penitentiary v. Hayden*, 387 U.S. 294 (1967), and *Katz v. United States*, 389 U.S. 347 U.S. (1967). Justice O'Connor declared the process was finally complete 98 years after *Boyd* was decided. *See* United States v. Doe, 465 U.S. 605, 618 (1984) (O'Connor, J., concurring).

[30] Of course, common law property rules also could insulate law enforcement tactics from constitutional scrutiny. If no intrusion upon property rights occurred, the government conduct would not implicate Fourth Amendment rights. Justice Holmes' cryptic (even for Holmes) opinion in *Hester v. United States*, 265 U.S. 57 (1924) is a good example. Federal revenue agents observed activities involving illegal liquor trafficking agents from a vantage point they obtained by trespassing on private property. They pursued the participants in the transaction, arrested them, and recovered contraband alcohol. A unanimous Court concluded that there was no search or seizure within the meaning of the Fourth Amendment for several reasons. The final reason was the one for which the case is best known: the events had occurred in open fields, not in a home or other place protected by the Amendment. *Hester*, 265 U.S. at 59. Holmes cited only a single legal authority, Blackstone, in reaching the conclusion that the distinction between a house and open fields "is as old as the common law." *Id*. The distinction became known as the "open fields" doctrine, which survives in contemporary law, and decrees that the Fourth Amendment protects houses but not open fields from warrantless searches and seizures. *See* United States v. Dunn 480 U.S. 294 (1987); Oliver v. United States 466 U.S. 170 (1984).

The other justifications for the decision in *Hester* anticipated doctrines adopted by the court nearly half a century later. Holmes concluded that no illegal search or seizure occurred because the criminals' own acts disclosed the evidence, reasoning analogous to the contemporary saw that the Amendment does not protect what one knowingly exposes to the public. *See Katz*, 389 U.S. at 351. The Court's fact analysis suggests other contemporary doctrines, including the plain view and hot pursuit exceptions to the warrant rule. *See* Arizona v. Hicks, 480 U.S. 321 (1987); Coolidge v. New Hampshire, 403 U.S. 443 (1971); Warden, Md. Penitentiary v. Hayden, 387 U.S. 294 (1967). The opinion thus has a very "modern" resonance. Yet at the same time the opinion rested largely

including the decisions explicitly announcing the exclusionary and mere evidence rules.[31] The government's authority to search and seize property was limited to approved categories of property, and the exercise of government power was invalid if it intruded into a protected sphere of private property rights, particularly private papers.[32] *Olmstead* applied this property-based theory to wiretapping, but with surprising results.[33]

The second attribute of the *Boyd* opinion that is relevant to this article was its expansive conception of individual rights grounded in a value-driven theory of constitutional interpretation. The *Boyd* Court interpreted both the Fourth and Fifth Amendments more expansively than required by the literal language of either. The Fourth Amendment only governs searches and seizures,[34] and the Court recognized that the statute at issue "does not authorize the search and seizure of books and papers, but only requires the defendant or claimant to produce them."[35] The Fifth Amendment commands that no person "shall be compelled in any criminal case to be a witness against himself."[36] *Boyd* involved a civil forfeiture action and the Boyds were not compelled to testify. The Court could have interpreted the Amendment narrowly, applying it only to criminal cases, and perhaps only to live, in-court testimony. A court applying narrow canons of statutory construction could have concluded that neither Amendment was violated.

Instead, the Supreme Court held that the subpoena for business records (and the authorizing statute) violated both.[37]

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upon the ancient distinction between the home, its curtilage and open fields lying beyond the curtilage. *See Hester*, 265 U.S. at 59. For all of its modernity, the opinion relied upon property law concepts to define Fourth Amendment rights.

[31] *See, e.g.*, *Weeks*, 232 U.S. at 383; *Gouled*, 255 U.S. at 298.

[32] The opinion in *Entick v. Carrington* and *Three Other King's Messengers*, 19 Howell's State Trials 1029 (1765), the most famous of the eighteenth century English cases involving searches for papers pursuant to general warrants, had an even more direct influence on the *Boyd* opinion. *See infra* note 104 and accompanying text.

[33] *See* Olmstead v. United States, 277 U.S. 438 (1928).

[34] "The right of the people to be secure . . . against unreasonable searches and seizures, shall not be violated. . . . U.S. CONST. amend. IV.

[35] Boyd v. United States, 116 U.S. 616, 621 (1886).

[36] U.S. CONST. amend. V.

[37] *Boyd*, 116 U.S. at 634-35, 638. The Justices unanimously agreed that the government action violated the Boyds' Fifth Amendment rights. Two Justices concluded, however, that there had been no search and seizure, and therefore

The Supreme Court construed each Amendment separately,[38] but it also constructed an expansive, structural theory in which the Fourth and Fifth Amendments ran together to create a zone of privacy into which the government could not intrude.[39] Critics of this approach might well consider this the Court's first Fourth Amendment Rube Goldberg contraption.[40] On the other hand, by embracing an interpretive theory that emphasized the values promoted by the Amendments and de-emphasized both the literal terms of the constitutional text and the importance of government efforts at law enforcement, the *Boyd* Court implemented a vision of liberty and privacy so powerful that the opinion continues to be cited more than a century after it was issued.[41]

I have previously described how this interpretive approach affected judicial decision making in disputes involving competing assertions of government power and individual rights:

> [T]he *Boyd* Court eschewed arguments based upon social policy goals. For example, it rejected the government's "argument of utility, that such a search is a means of detecting offenders by discovering evidence." Important societal interests—effective law enforcement and the collection of import duties, then a significant source of revenues for the national government—could not trump fundamental natural rights embodied in the common law and the Constitution. These rights, and the rules devised to enforce them, prevailed over

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no violation of the Fourth Amendment. *Id*. at 639-41 (Miller, J., concurring).

[38] The majority concluded that the Fourth Amendment applied because the *purpose and effect* of the disputed subpoena were equivalent to those produced by a literal search and seizure. *Id*. at 622. The purpose of a search is to discover evidence to be used by the government against suspected wrongdoers. The subpoena for documents, of course, has the same purpose. The effect is that government power has been used to obtain incriminating evidence—likely obtained against the will of the affected people. Had the Boyds failed to produce the documents named in the subpoena, the government's allegations would have been treated as proven. This threat effectively compelled them to produce evidence against themselves. *Id*. at 630. This emphasis upon the government's purpose in obtaining the subpoena and its effect on the interests protected by the Amendment led the Court to the conclusion that a subpoena and a physical search differed only in degree, not kind. *Id*. at 638. This was a dispositive analogy to a Court believing that the Fourth Amendment prohibited all government intrusions into "the sanctity of a man's home and the privacies of life." *Id*. at 630.

[39] *Id*. at 621.

[40] Consider, for example, the withering criticism leveled at Justice Douglas' attempt to construct a comparable structural device enforcing rights found in the "penumbras" of various amendments, including the Fourth and the Fifth. *See* Griswold v. Connecticut, 381 U.S. 479 (1965).

[41] *See* McKune v. Lile, 122 S.Ct. 2017 (2002); Kyllo v. United States, 533 U.S. 27 (2001); United States v. Hubbell, 530 U.S. 27 (2000); Wilson v. Layne, 526 U.S. 603 (1999); Wyoming v. Houghton, 526 U.S. 295 (1999).

conflicting social policies.[42]

Property law served as a mechanism for protecting privacy and liberty as long as the Supreme Court deployed this rights-driven interpretive theory. But when the Court abandoned this expansive theory of constitutional interpretation, Fourth Amendment property concepts proved to be a device for constricting privacy rights and expanding government power to deploy new technologies to monitor behavior in homes and other private places.

B. Olmstead

The Supreme Court's decision in *Olmstead v. United States*,[43] sounded the death knell for the Fourth Amendment theories that integrated property law with an expansive interpretation of constitutional provisions designed to protect individual liberty. Olmstead was the head of a large and successful criminal enterprise that violated prohibition laws by importing liquor from Canada and distributing it to customers in Washington State.[44] Much of the government's proof at trial was the product of wiretaps of the defendants' telephone conversations. Olmstead and his co-defendants were convicted of conspiring to violate the federal prohibition laws, and appealed. In the Supreme Court, a bare majority held that the use of wiretaps to intercept private conversations violated neither the Fourth Amendment nor the Fifth.[45]

The majority quickly disposed of the Fifth Amendment self-incrimination issue. It held that because the defendants were not compelled by the government to talk on the telephone, their conversations were voluntary[46] and therefore

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[42] Morgan Cloud, *The Fourth Amendment During the* Lochner *Era: Privacy, Property, and Liberty in Constitutional Theory*, 48 STAN. L. REV. 555, 577 (1996).

[43] 277 U.S. 438 (1928).

[44] *Olmstead*, 277 U.S. at 456. The Supreme Court concluded that the organization generated annual revenues exceeding two million dollars, a substantial figure in the 1920s. *Id.* at 456.

[45] *Id.* at 455-56.

[46] *Id.* at 462. The requirement of government coercion as an essential element of a Fifth Amendment violation is well-established in the Court's Fifth Amendment decisions. *See, e.g.*, Colorado v. Connelly, 479 U.S. 157 (1986); Miranda v. Arizona, 384 U.S. 436 (1966); Bram v. United States, 168 U.S. 532 (1897); Counselman v. Hitchcock, 142 U.S. 547 (1892). From another perspective, however, the defendants' Fifth Amendment claims were more compelling than

any violation of the privilege against self-incrimination must derive from a violation of the defendant's Fourth Amendment rights.[47]

No Fourth Amendment violation occurred, however, because use of the wiretaps was not a search or a seizure. The majority applied property law concepts with a newly discovered textual literalism that had the practical effect of freeing the government conduct from constitutional scrutiny. "The Amendment itself shows that the search is to be of material things—the person, the house, his papers or his effects. . . . [A warrant] must specify the place to be searched and the person or *things* to be seized."[48]

Applying this concrete view of the Amendment's scope, the majority held that no search had occurred because the government had not committed a physical trespass into a constitutionally protected areas.[49] The wiretaps had been placed on telephone lines outside the suspects' homes and offices.[50] The majority reasoned that telephone lines connecting telephones "are not part of his house or office any more than are the highways along which they are stretched,"[51] and the government's monitoring did not infringe upon the suspects' property-based interests. A physical trespass was the sine qua non of a search.

Similarly, no seizure occurred because spoken words were intangible, and the Fourth Amendment text only applied to tangible property.[52] Overhearing conversations, even by electronic means, did not constitute an exercise of physical dominion over property, and therefore did not fall within the ambit of the Amendment.[53]

The majority acknowledged that a long line of precedents had rejected textual literalism, holding that the Fourth and Fifth Amendments were to be "liberally construed to effect

those raised in earlier cases. The government's surveillance had produced 775 typed pages of notes reporting the defendants' telephone conversations. Presumably these were reports of the defendants' oral statements. The defendants raised the plausible claim that use of the conversations as evidence against them at trial made them unwilling witnesses against themselves. *Olmstead*, 277 U.S. at 471 (Brandeis, J., dissenting).

[47] *Olmstead*, 277 U.S. at 462.

[48] *Id.* at 464.

[49] *Id.* at 464 ("There was no searching . . . There was no entry of the houses or offices of the defendants.").

[50] *Id.* at 457.

[51] *Id.* at 465.

[52] *Id.* at 466.

[53] *Id.*

the purpose of the framers . . . in the interest of liberty,"[54] but concluded that to apply the Fourth Amendment to non-trespassory electronic monitoring would enlarge the language of the text "beyond the possible practical meaning."[55] The majority's concern that the Court had gone too far in applying the Fourth Amendment liberally was apparent,[56] and it responded by drastically narrowing the property-related interests protected by the Fourth Amendment.

Olmstead used property as the glue needed to bind together the parts of a new theoretical construct whose other constituent elements were a rigid textual literalism and a parsimonious vision of the rights protected by the Fourth Amendment. This new construct prompted each of the four dissenters to write opinions. Justice Brandeis' dissent,[57] with its eloquent proclamations about the nature of democracy, individual liberty, and the dynamic nature of constitutional interpretation, is the most famous, and justifiably so.

Brandeis defended as powerfully as one could the idea that the Court must adapt its constitutional theories to encompass technologies unimaginable to those who crafted the founding laws: "Time works changes, brings into existence new conditions and purposes. Therefore a principle to be vital must be capable of wider application than the mischief which gave it birth."[58]

Like his predecessors on the Court who had enunciated an expansive vision of the rights protected by the Fourth Amendment, and who had treated property rules as a vehicle for expanding, not constricting, the limits on government power, Brandeis emphasized the need to protect the values which the constitutional text was designed to preserve in the face of intrusive new technologies.[59] "Discovery and invention

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[54] *Id.* at 465.

[55] *Id.*

[56] *See id.* at 463.

[57] *Id.* at 471 (Brandeis, J., dissenting).

[58] *Id.* at 472-73 (Brandeis, J., dissenting) (quoting Weems v. United States, 217 U.S. 349, 373 (1910)). *See id.* at 472 (citing Supreme Court decisions in which the Court had interpreted the various parts of the Constitution in cases involving "objects of which the fathers could not have dreamed.").

[59] *See* Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193, 193 (1890) ("Political, social, and economic changes entail the recognition of new rights, and the common law, in its eternal youth, grows to meet the demands of society."); *id.* at 195 (calling for legal protection against inventions (like photography) that enabled new invasions of privacy). Almost forty years before *Olmstead* was decided, Warren and Brandeis predicted that

have made it possible for the government, by means far more effective than stretching upon the rack, to obtain disclosure in court of what is whispered in the closet."[60] The *Olmstead* trespass and tangible property doctrines permitted the government to obtain information efficiently and in the process destroy "the right to be let alone—the most comprehensive of rights and the right most valued by civilized men."[61]

Brandeis' dissent is the best known, but Justice Butler's long forgotten dissenting opinion[62] is the most helpful for understanding how radical the majority opinion actually was. Butler explained how the Court's traditional property-based theories could have been employed to encompass technological surveillance. First, the interpretive approach employed in *Boyd* and its progeny taught that the "[C]ourt has always construed the Constitution in the light of the principles upon which it was founded,"[63] and these principles include "the rule of liberal construction that always has been applied to the provisions of the Constitution safeguarding personal rights."[64] The *Olmstead* majority's constricted textual literalism violated these fundamental principles and "sound reason."[65]

Second, such an expansive interpretive theory could enlist an equally vibrant theory of property rights to enforce the values embodied in the Amendment. For example, people use telephones to communicate and these conversations "belong to the parties between whom they pass."[66] Butler analogized private conversations to private property. Conversations "belong" to the speakers, just as property belongs to its owners.[67] By analogy, using technology to intrude upon a private conversation is equivalent to a physical trespass upon private property.[68]

"numerous mechanical devices threaten to make good the prediction that what is whispered in the closet shall be proclaimed from the house-tops." *Id*. *See also id*. at 206.

[60] *Olmstead*, 277 U.S. at 473.

[61] *Id*. at 478.

[62] *Id*. at 485 (Butler, J., dissenting).

[63] *Id*. at 487.

[64] *Id*.

[65] *Id*. at 487-88.

[66] *Id*. at 487.

[67] *See* Warren & Brandeis, *supra* note 59, at 213 (discussing the ownership and control of private letters).

[68] Ironically, this echoes the language in the Supreme Court's most recent decision interpreting the relationship between a new technology and the Fourth Amendment. *See infra* notes 163-73 and accompanying text.

Contract rights, another species of property, also supported application of Fourth Amendment rules to wiretapping. People talking on the telephone utilize physical property, including telephone lines, in which they possess contract rights:

> The contracts between telephone companies and users contemplate the private use of the facilities employed in the service. . . . During their transmission the exclusive use of the wire belongs to the persons served by it. Wire tapping involves interference with the wire while being used. Tapping the wires and listening in by the officers literally constituted a search for evidence. As the communications passed, they were heard and taken down.[69]

What distinguished Butler's dissent from Chief Justice Taft's majority opinion was not the idea that Fourth Amendment rights are linked to property rights. Rather, it was the underlying set of values that animated each writer's analyses. Butler, like Brandeis, expressed the belief that certain parts of the Constitution implement a broad notion of individual liberty, enact potent constraints on government power,[70] and must be construed liberally to achieve the broad purposes underlying the text.[71]

The majority, on the other hand, worried that excluding evidence in these circumstances "would make society suffer and give criminals greater immunity than has been known heretofore."[72] A half century later,[73] the Justices would reject literalist property theories yet deploy similarly instrumentalist reasoning to justify decisions that insulated even more powerful technologies from Fourth Amendment scrutiny.

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[69] *Olmstead*, 277 U.S. at 487. *Olmstead* was overruled almost forty years later in *Katz v. United States*, 389 U.S. 347 (1967).

[70] In this dissent, Brandeis quoted a passage from *Boyd* in which the Court had stressed that the Fourth and Fifth Amendments embody principles that "reach farther than the concrete form of the case there before the [C]ourt . . . ." *Olmstead*, 277 U.S. at 474 (Brandeis, J., dissenting).

[71] *Id.* at 472-79.

[72] *Id.* at 468.

[73] During the intervening decades, the Supreme Court continued to use *Olmstead's* literalist treatment of property rights in cases involving technological surveillance and Fourth Amendment theory. *See, e.g.*, Silverman v. United States, 365 U.S. 505 (1961); Goldman v. United States, 316 U.S. 129 (1942), *overruled by* Katz v. United States, 389 U.S. 347 (1967).

II. *KATZ* AND REASONABLE EXPECTATIONS OF PRIVACY

A. Procedure Over Substance: The Exclusionary Remedy

Olmstead's treatment of property as a limitation upon the scope of privacy rights would dominate Fourth Amendment case law involving technological surveillance for almost 40 years.[74] But a theory that effectively insulated nontrespassory technological monitoring from constitutional scrutiny carried the seeds of its own demise. By mid-century, the invention and use of increasingly sophisticated technologies that permitted investigators to intrude directly into the lives of people pressed the Court to abandon this restrictive property-based theory of the Fourth Amendment.[75] That process began in the early 1960s, and was completed by a pair of 1967 opinions, *Warden, Md. Penitentiary v. Hayden*[76] and *Katz v. United States*.[77]

From a theoretical perspective, this substitution of theories was unnecessary. The Supreme Court could have employed property-based theories to extend the reach of the Fourth Amendment to electronic surveillance. Justice Butler's dissent in *Olmstead* provides one example of how that option—resting upon a broad vision of constitutional liberties implemented by private property rights—could have been developed. Instead, the Warren Court attempted to sever Fourth Amendment doctrine from property rights and rely almost exclusively on procedural limits on government power.

To understand the significance of this undertaking, it is necessary to return briefly to the 1920s. By the time of its 1921 decision in *Gouled v. United States*,[78] the Supreme Court had enunciated a two-pronged test for judging the legality of searches and seizures that had both procedural and substantive "faces."[79] A search or seizure of a home or office satisfied the Fourth Amendment only if government actors had complied with the procedural requirements of the Fourth Amendment's Warrant Clause (oath, probable cause, particularity, and judicial decision making). On the other hand, intrusions not authorized by a valid warrant were both

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[74] *See, e.g.*, *Silverman*, 365 U.S. at 50; *Goldman*, 316 U.S. at 129.
[75] *See Katz*, 389 U.S. at 347.
[76] 387 U.S. 294 (1967).
[77] 389 U.S. 347 (1967).
[78] 255 U.S. 298 (1921).
[79] *See, e.g.*, *Hayden*, 387 U.S. at 313 (Douglas, J., dissenting).

unreasonable and unconstitutional.[80]

If this threshold procedural requirement was satisfied, a second inquiry focusing upon substantive property rights still remained. A unanimous Court emphasized in *Gouled* that even a valid search warrant could not justify the search of a home or office unless the search was for forfeited property, property concealed to avoid payment of duties, required records, counterfeit currency, or various criminal instrumentalities, including burglars' tools, weapons, and gambling implements.[81] An item's classification within this property-based scheme defined the nature and scope of the *substantive* limits imposed by the Fourth Amendment.[82] These property-based substantive limits on government power produced a "mere evidence" rule: the government could not search for and seize property it wanted for use only as evidence.

The Supreme Court overruled *Gouled*'s "mere evidence rule" in *Warden, Md. Penitentiary v. Hayden*.[83] Scholars of the Fourth Amendment typically treat *Katz* as the opinion that cleaved the Fourth Amendment from property rights; in fact, *Hayden* was the opinion that laid the analytical foundation for that theoretical leap. In *Hayden*, the Court acknowledged that Gouled (and a long line of cases) rested upon

> the dual, related premises that historically the right to search for and seize property depended upon the assertion by the Government of a valid claim of superior interest, and that it was not enough that the purpose of the search and seizure was to obtain evidence to use in apprehending and convicting criminals.[84]

This traditional approach also was consistent with the English common law that had influenced the Framers, and which had decreed that the legitimacy of a search and seizure

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[80] *Gouled*, 255 U.S. at 308. *See also* Amos v. United States, 255 U.S. 313 (1921).

[81] *Gouled*, 255 U.S. at 308.

[82] *See id.* at 309 (citing Boyd v. United States, 116 U.S. 616, 623, 624 (1886)):

> [O]nly when a primary right to such search and seizure may be found in the interest which the public or the complainant may have in the property to be seized, or in the right to the possession of it, or when a valid exercise of the police power rends possession of the property by the accused unlawful and provides that it may be taken.

[83] *Hayden*, 387 U.S. at 294.

[84] *Id.* at 303.

"depended upon proof of a superior property interest."[85]

Citing two of its decisions from earlier in the 1960s as authority, the Court then asserted that

> [t]he premise that property interests control the right of the Government to search and seize has been discredited. Searches and seizures may be `unreasonable' within the Fourth Amendment even though the Government asserts a superior property interest at common law. We have recognized that the principal object of the Fourth Amendment is the protection of privacy rather than property, and have increasingly discarded fictional and procedural barriers rested on property concepts.[86]

Again citing Warren Court decisions from the 1960s, including *Mapp v. Ohio*,[87] which had imposed the exclusionary remedy upon the states, the majority declaimed that

> [t]he premise in Gouled that government may not seize evidence simply for the purpose of proving crime has likewise been discredited. The requirement that the Government assert in addition some property interest in material it seizes has long been a fiction, obscuring the reality that government has an interest in solving crime.[88]

In other words, substantive property rights no longer served as a limit on searches and seizures. Fourth Amendment rights were now to be protected only by procedural devices—and in *Hayden* the Court emphasized the procedural protections offered by the exclusionary rule[89]—and not by substantive legal rights derived from property law. Instead, some evanescent and barely articulated concepts of privacy were to be protected. Only months later, the Supreme Court would apply this new formula to the problem of electronic surveillance of conversations, and in the process revolutionize Fourth Amendment theory. Again, it emphasized procedural rights and minimized the importance of substantive rights defined by positive law.

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[85] *Id.* at 304.

[86] *Id.* at 304 (citing Jones v. United States, 362 U.S. 257, 266 (1960); Silverman v. United States, 365 U.S. 505, 511 (1961)).

[87] 367 U.S. 643 (1961). *See also* Schmerber v. California, 384 U.S. 757 (1966).

[88] *Hayden*, 387 U.S. at 306.

[89] Id. at 307-308.

B. Reasonable Expectations of Privacy: Katz *and Warrants*

As early as 1960, the Warren Court had begun to move tentatively away from the traditional use of property law concepts to define the full scope of Fourth Amendment rights.[90] By 1967 (only six months after jettisoning the mere evidence rule in *Hayden*), a bare majority was ready to complete the process in *Katz v. United States*.[91] The facts of the case recalled the investigative techniques used by federal agents forty years earlier in the *Olmstead* case.

FBI agents acting without a warrant attached an electronic "bug" to the outside of a public telephone booth Katz used to place interstate telephone calls. The "bug" transmitted sounds from inside the booth, which permitted government agents to listen to Katz's end of those conversations.[92] Katz was prosecuted for violating a federal anti-gambling statute. At his trial, the government introduced these monitored conversations as evidence against him, and Katz was convicted.[93]

As had been true in *Olmstead*, federal agents had been able to install and use the electronic monitoring device without trespassing upon the suspect's property. Unlike *Olmstead*, where the defendant's conversations had occurred in private homes and offices, Katz had spoken in a public telephone booth, which hardly seemed to be a "constitutionally protected area" under traditional property rules. Nonetheless, the parties argued the issues in terms of the Court's property-based precedents. They disputed, for example, whether a phone booth was a constitutionally protected area, and debated the significance of the absence of a physical penetration into the telephone booth.[94]

The majority's dismissive response to the parties' characterization of the issues signaled that it was performing an act of judicial sleight of hand: it was revolutionizing existing law while pretending that it is merely following established precedent. Although the parties had framed the

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[90] *See, e.g.*, *Silverman*, 365 U.S. at 509–11 (stating that an intangible conversation can be seized under the Fourth Amendment, but finding it unnecessary to decide whether a trespass into a constitutionally protected area was necessary because such an intrusion had actually occurred); Jones v. United States, 362 U.S. 257 (1960) (granting standing to challenge a government search and seizure to a visitor in an apartment although he had no legally enforceable property interest as owner or tenant), *overruled in part on other grounds by* United States v. Salvucci, 448 U.S. 83 (1980).

[91] 389 U.S. 347 (1967).

[92] *Katz*, 389 U.S. at 348.

[93] *Id.*

[94] *See id.* at 349–52. The trespass doctrine had been reaffirmed in *Goldman v. United States*, 316 U.S. 129 (1942).

issues in terms consistent with four decades of case law, the majority opinion dismissed these arguments as if the Court's precedents did not exist. It wrote disparagingly: "Because of the misleading way the issues have been formulated, the parties have attached great significance to the characterization of the telephone booth . . . ."[95] After rejecting this conventional characterization of the issues as "misleading," the majority constructed a new mechanism for determining the nature and scope of Fourth Amendment rights.

The new mechanism explicitly rejected the idea that property law defined the interests protected by the Fourth Amendment. Citing the six-month old decision in *Hayden*, Justice Stewart's majority opinion authoritatively proclaimed that "`[t]he premise that property interests control the right of the government to search and seize has been discredited.'"[96] The opinion overruled the *Olmstead* trespass doctrine and reaffirmed a recent opinion holding that the Fourth Amendment protects intangible conversations as well as tangible property.[97]

The majority's narrow purpose in overruling what was left of *Olmstead* was obvious. It intended to extend the reach of the Fourth Amendment—and therefore the possibility of constitutional judicial review—to encompass new technologies that permitted government agents to monitor private conversations without any physical trespass.[98]

The parts of the opinion overruling *Olmstead* and attempting to eject property law from Fourth Amendment theory were consistent with elements of the Court's recent opinions. But when the majority attempted to design a replacement for property law, the result was so complex, convoluted, incoherent, and ultimately unhelpful, that one wonders whether the Court had turned secretly to Rube Goldberg (who was still alive at the time) for advice.

The obvious replacement for property as an organizing

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[95] *Katz*, 389 U.S. at 351.
[96] *Id.* at 353 (quoting *Hayden*, 387 U.S. at 304).
[97] *Id. affirming* Silverman v. United States, 365 U.S. 505, 511 (1961).
[98] *See, e.g.*, Anthony G. Amsterdam, *Perspectives on the Fourth Amendment*, 58 MINN. L. REV. 349, 384 (1974) (explaining how *Katz* returned the Fourth Amendment to the "grand conception" of *Boyd*); *id.* at 385, 400-03; Melvin Gutterman, *A Formulation of the Value and Means Models of the Fourth Amendment in the Age of Technologically Enhanced Surveillance*, 39 SYRACUSE L. REV. 647, 657 (1988).

principle was *privacy*, the right to be left alone, what Justice Brandeis had called "the right most valued by civilised men" in his famous *Olmstead* dissent.[99] That solution was too simple for the *Katz* majority, however, because "the Fourth Amendment cannot be translated into a general constitutional right to privacy. That Amendment protects individual privacy against certain kinds of governmental intrusion, but its protections go further, and often have nothing to do with privacy at all."[100]

If not property or privacy, just what does the Amendment protect? The *Katz* majority pronounced that it "protects people, not places."[101] This answer was unsatisfactory both as a logical proposition and as an interpretation of the constitutional text.

The text does specify that the Amendment protects "[t]he right of the *people* to be free from unreasonable searches and seizures," but it also specifies that this right extends to a specific category of *places*, houses, and to apparently all personal property ("papers and effects") which have to be kept some *place*.[102] Papers and effects will occasionally be found on a *person* (who also is protected by the Amendment), but surely most personal property is kept most of the time in homes, offices, factories, garages or vehicles. In short, the *property* protected by the Amendment is either a place (houses) or almost always stored in a place.

The Court's attempt to explicate the notion that the Amendment "protects people not places" only compounded the confusion. It explained: "What a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection. But what he seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected."[103]

Under traditional canons of constitutional interpretation, one is entitled to complain that this borders on the nonsensical as Fourth Amendment theory. At the very least, it contradicts the Amendment's text and history. For example, a

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[99] Olmstead v. United States, 277 U.S. 438, 478 (1928) (Brandeis, J., dissenting).

[100] *Katz*, 389 U.S. at 350. The majority continued: "Other provisions of the Constitution protect personal privacy from other forms of governmental invasion. But the protection of a person's general right to privacy—his right to be let alone by other people—is, like the protection of his property and of his very life, left largely to the law of the individual States." *Id.* at 350-351.

[101] *Id.* at 351.

[102] U.S. CONST. amend. IV (emphasis added).

[103] *Katz*, 389 U.S. at 351-352 (citations omitted).

literal application of this passage suggests that the Fourth Amendment does not protect a person's private *papers* from government investigations in his *home* if the person has "knowingly exposed" those papers to members of the public. Yet this fact scenario describes a paradigm case for Fourth Amendment protection—the eighteenth century English cases, including the searches of Lord Camden's home for copies of the seditious *publication*, The North Briton. At this late date it is beyond reasonable debate that the litigation spawned in the 1760s by these searches and seizures inspired the Fourth Amendment's framers,[104] who surely considered such a search within the scope of the Amendment.

The concept that what a person seeks to keep private *may* be protected under the Amendment but what he knowingly exposes is not also seems to eliminate any coherent doctrine of substantive rights protected by the Amendment. It is unclear how the Court expected that its replacement for property rights would operate in future cases, except that whatever rights the Amendment protected could be violated by nontrespassory electronic surveillance of conversations. The Court's capacity to define the nature and scope of Fourth Amendment rights no longer was constrained by the tenets of positive law. This new, amorphous standard granted judges maximum discretion in deciding what government conduct amounted to a search.

Perhaps because it had created a standard that was substantively vacuous, the Court again emphasized the procedural protections offered by the Amendment. Although it found that the manner in which the federal agents had installed and used the "bug" to monitor Katz's telephone conversations was otherwise reasonable,[105] the agents had violated the Fourth Amendment because they had failed to get a judicial warrant. A warrant was required as the antecedent justification for a search, including electronic monitoring of phone calls in public telephone booths. Failure to obtain a warrant triggered the exclusionary rule, the other procedural mechanism used to protect these rights. The notion of a coherent body of positive law that defined the

[104] See Boyd v. United States, 116 U.S. 616 (1886); Morgan Cloud, *Searching through History; Searching for History*, 63 U. CHI. L. REV. 1707 (1996).

[105] *See Katz*, 389 U.S. at 356 ("It is apparent that the agents in this case acted with restraint.").

substantive "face" of Fourth Amendment rights was seemingly excluded from Fourth Amendment theory. Only the procedural mechanisms of the warrant process and the exclusionary rule survived as limits on government power.

Although the Court soon began to interpret the meaning of the awkward *Katz* formula by using an ostensibly more coherent two-part test taken from Justice Harlan's concurring opinion in *Katz*, even this new standard did little to constrain judicial discretion. Justice Harlan had asserted that a protected Fourth Amendment interest exists when two conditions are met: "[f]irst[,] that a person have exhibited an actual (subjective) expectation of privacy and, second, that the expectation be one that society is prepared to recognize as `reasonable.'"[106]

The Court has converted this language into the now well-known two-part "expectations" formula it uses to explain its conclusions in individual cases.[107] Often these conclusions are surprising, particularly in cases involving the use of technology. The *Katz* majority intended to subject at least some technologies to Fourth Amendment scrutiny. Nonetheless, subsequent Supreme Court opinions typically have held that the use of technology was not a search, and therefore did not have to conform to Fourth Amendment standards. The Court has repeatedly concluded that even if the defendant held a subjective expectation that his conduct was private, this was not an expectation our society is willing to recognize as reasonable. Ultimately, the outcomes of these cases have turned on the subjective views of a majority of the Justices about what privacy expectations are objectively "reasonable."

This is not to say that a Court applying the *Katz* expectations standard is wrong to emphasize the second prong. As long as the two part expectations standard is employed to resolve fundamental issues, the Court is correct to focus upon the "objective" prong because the first prong is, for all practical purposes, functionally irrelevant. As Professor Amsterdam noted long ago, an individual's actual subjective expectation can "neither add to, nor can its absence detract from, an individual's claim to Fourth Amendment protection."[108] And this is not the only shortcoming inherent

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

[107] *See, e.g.*, California v. Ciraolo, 476 U.S. 207, 211 (1986).

[108] *See* Amsterdam, *supra* note 98, at 384; *see also* Gutterman, *supra* note 98, at 675–76.

in the now ubiquitous *Katz* standard.[109] After a third of a century, it is fair to conclude that *Katz* is a failure, at least if its original purpose was to ensure that Fourth Amendment standards regulate the use of modern surveillance technologies.

Although the *Katz* opinion held that the warrantless use of an electronic bug on a public telephone booth violated the Constitution, only four years later the Court concluded that no warrant was needed if one party to a conversation approved of its use, even for conversations that occurred in a home.[110] The Court has held that installing an electronic

[109] The Court has applied the expectations test in a wide range of settings. These include motor vehicles: The Court's opinions establish that people have a lessened expectation of privacy in their automobiles and containers located in them. United States v. Ross, 456 U.S. 798 (1982); *see also* California v. Acevedo, 500 U.S. 565 (1991); United States v. Johns, 469 U.S. 478 (1985). Automobile passengers have no privacy interest in the areas under the seat or in an unlocked glove compartment, and therefore lack standing to challenge a search of those areas. Rakas v. Illinois, 439 U.S. 128 (1978). An automobile owner has no reasonable expectation of privacy in a vehicle's identification number, even when police officers must search the vehicle to locate the number. New York v. Class, 475 U.S. 106 (1986). The *Katz* test governs privacy interests in personal and real property: A person claiming ownership of illegal drugs does not have standing to challenge the search that uncovered the contraband if the drugs were located in another's bag because he has no reasonable expectation of privacy in that container. Rawlings v. Kentucky, 448 U.S. 98 (1980). A resident who deposits closed, opaque garbage bags on the curb outside his home has no reasonable expectation of privacy in the contents of those bags. California v. Greenwood, 486 U.S. 35 (1988). A public employee may or may not have a reasonable expectation of privacy in his office. O'Connor v. Ortega, 480 U.S. 709 (1987). Even vigorous attempts to exclude trespassers, including erecting fences and posting no trespassing signs, do not create a reasonable expectation of privacy in open fields, therefore a physical trespass by police officers is not a search. United States v. Dunn, 480 U.S. 294 (1987); Oliver v. United States, 466 U.S. 170 (1984).

[110] *See* United States v. White, 401 U.S. 745 (1971). *See also* Memorandum from John Ashcroft to the Heads and Inspectors General of Executive Departments & Agencies re: *Procedures for Lawful, Warrantless Monitoring of Verbal Communications* (May 30, 2002), *available at* http://www.usdoj.gov/olp/lawful.pdf (last visited Oct. 8, 2002). This Memorandum revised executive branch guidelines, and was issued in part to facilitate the use of electronic surveillance techniques. It asserted:

> The Fourth Amendment to the United States Constitution, Title III of the Omnibus Crime Control and Safe Streets Act of 1968, as amended (18 U.S.C. §2510, *et seq.*), and the Foreign Intelligence Surveillance Act of 1978 (50 U.S.C. §1801, *et seq.*) permit government agents, acting with the consent of a party to a communication, to engage in warrantless monitoring of wire (telephone) communications and oral, nonwire communications. See *United States v. White*, 401 U.S. 745 (1971); *United States v. Caceres*, 440 U.S. 741 (1979). Similarly, the Constitution and federal statutes permit federal agents to engage in warrantless monitoring of oral, nonwire communications when the communicating

beeper to monitor a person's travels in public does not invade a reasonable privacy expectation,[111] but tracking the same beeper in a private home may be a search requiring authorization by a warrant.[112] The latter principle is significant because, in spite of the claim in *Katz* that the Fourth Amendment protects people, not places, it is apparent that the Court believes that a person often has a greater privacy expectation in his home than in other locations.[113] In fact, other than cases involving the kind of electronic surveillance at issue in *Katz*, the Court has usually found that the use of technology to discover information about a suspect was a Fourth Amendment search only if the technology provided some information about activities inside a home.

For example, the Court has concluded that people have no privacy expectation in the numbers dialed from their telephones.[114] If the telephone company uses a machine called a pen register to record those numbers at government request, this is not a search or seizure.[115] Similarly, people have no reasonable expectation of privacy in copies of deposit slips and checks maintained with microfilm technology by their banks.[116] A chemical "field test" that actually destroys the tested material when it is used to determine whether a substance is cocaine is not a search because "no legitimate privacy interest has been compromised" because "Congress has decided . . . to treat the interest in `privately' possessing cocaine as illegitimate."[117]

Perhaps the most perplexing technology cases have involved visual surveillance from flying machines. The Court's three opinions involving aerial surveillance of private property all have held that the government did not engage in conduct amounting to a Fourth Amendment search. Although the Court had previously confirmed that the curtilage surrounding the home receives the same level of Fourth

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parties have no justifiable expectation of privacy.

Id.

[111] United States v. Knotts, 460 U.S. 276 (1983).

[112] United States v. Karo, 468 U.S. 705 (1984).

[113] *See, e.g.*, Kirk v. Louisiana, 122 S. Ct. 2458 (2002); United States v. Ross, 456 U.S. 798 (1982); Steagald v. United States, 451 U.S. 204 (1981); Payton v. New York, 445 U.S. 573 (1980).

[114] Smith v. Maryland, 442 U.S. 735 (1979).

[115] *Smith*, 442 U.S. at 735.

[116] United States, v. Miller, 425 U.S. 435 (1976).

[117] United States v. Jacobsen, 466 U.S. 109, 123 (1984). Similar reasoning led to the conclusion that having trained drug detection dogs sniff travelers' luggage does not constitute a search. United States v. Place, 462 U.S. 696 (1983).

Amendment protection as the home itself,[118] in two of these cases it declared that ocular surveillance of areas within the curtilage that was only possible from a flying machine was not a search.[119] In the third, it permitted use of powerful cameras to enhance visual surveillance from airplanes, and in the process announced a baffling definition of the technologies that trigger Fourth Amendment scrutiny.

In the first of these cases, *California v. Ciraolo*,[120] police officers received an anonymous tip that Ciraolo was growing marijuana in his backyard. The officers' initial attempts to corroborate the tip failed because the yard was enclosed within both a six-foot outer fence and a ten-foot inner fence, which shielded the back yard—part of the home's curtilage—from ground level observation. Displaying admirable initiative, the investigating officers overcame this obstacle to their investigation by obtaining use of a private airplane that allowed them to fly over the home and its backyard. While flying at an altitude of 1000 feet, the officers said they could visually identify marijuana growing in the yard. They also took photographs, and used the tip, their visual observation of the yard, the photographs, and other information to obtain a search warrant. The police officers who executed the warrant seized marijuana plants growing in the yard.[121]

Although the backyard lay within the curtilage,[122] an area that ostensibly receives the Fourth Amendment protections accorded the home, a five-Justice majority concluded that Ciraolo's subjectively held expectation of privacy (demonstrated by the presence of two fences)[123] was not objectively reasonable when extended to aerial surveillance. Apparently that expectation is reasonable only for those who choose to cover their yards with a roof. The best justification for the majority opinion is that airplanes do carry people over the planet, providing a vertical vantage point for some types

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[118] Oliver v. United States, 466 U.S. 170, 180 (1984) (stating that the curtilage "has been considered part of the home itself for Fourth Amendment purposes"); *see also* United States v. Dunn, 480 U.S. 294, 300 (1987) (the common law has always given "the area immediately surrounding a dwelling house the same protection under the law").

[119] See *infra* notes 142-56 and accompanying text.

[120] 476 U.S. 207 (1986).

[121] *Ciraolo*, 487 U.S. at 209–10.

[122] *Id.* at 212–13.

[123] *Id.* at 211.

of viewing. Nonetheless, much of the reasoning in the opinion exhibits the internal logic of another Rube Goldberg contraption.

To make that point, I will act like a Justice applying the expectations test, and both my assumptions and conclusions will be based upon my own life experience. Relying upon that subjective frame of reference, I immediately conclude that it is safe to assume that most people traveling in airplanes are passengers on commercial flights. I also conclude that even if travelers on commercial flights do get fleeting glimpses of individual homes and yards, they are almost never able to associate those observations with a particular yard or person. Obviously, a low-flying private plane offers a more intimate view of property under it, but the *Ciraolo* opinion cited no evidence that any flight other than the police investigative foray had ever occurred over Ciraolo's home, nor any facts suggesting that any pilot of a small private aircraft had ever flown over that home for the purpose of looking into the yard. My subjective conclusion, therefore, is that Ciraolo was objectively reasonable in expecting privacy in his fenced backyard. Like the *Ciraolo* majority, I reach this conclusion without resort to constitutional authority.

Apparently, the only legal authority necessary to justify the majority's conclusion that the existence of air flight had destroyed any expectation of privacy anyone can have in an unroofed yard consisted of the Federal Aviation Administration (FAA) regulations defining navigable airspace and permitting airplanes to fly at an altitude of 1000 feet.[124]

[124] Even when the Justices have claimed that their expectations analysis rests upon established legal standards, they have failed to reach analytical unanimity. For example, in *Oliver v. United States*, 466 U.S. 170 (1983), the majority asserted that in determining whether government acts violate a reasonable privacy expectation relating to a particular place, "the Court has given weight to such factors as the intention of the Framers of the Fourth Amendment, . . . the uses to which the individual has put the location, . . . and our societal understanding that certain areas deserve the most scrupulous protection from government invasion." *Oliver*, 466 U.S. at 178 (citations omitted). The dissenters in *Oliver* countered with a different list of three factors, arguing that the Court had considered: (1) whether the expectation is rooted in entitlements defined in positive law; (2) the nature of the uses to which this type of space can be put; and (3) whether the person asserting the privacy interest manifested it in a way that most people would understand. *Id.* at 189 (Marshall, J., dissenting). Other opinions have asserted that a Fourth Amendment privacy expectation is reasonable "if it is rooted in a `source outside of the Fourth Amendment, either by reference to concepts of real or personal property law or to understandings that are recognized and permitted by society.'" Dow Chem. Co. v. United States, 476 U.S. 227, 248 (1986) (Powell, J., concurring in part and dissenting in part) (quoting Rakas v. Illinois, 439 U.S. 128, 143–44 n.12 (1978)). Expectations analysis seems to be based more on the Justices' subjective values, experiences,

As long as police investigators complied with these air safety regulations, a homeowner's privacy expectations in unroofed yards were unreasonable.

The majority accorded no constitutional significance to the fact that the officers were forced to use an airplane to get to a vantage point that allowed them to peer into Ciraolo's yard. A private airplane surely is not a regular mode of transportation for most people, and looking down on a home in a residential neighborhood from an altitude that is nearly equivalent to the height of the Empire State Building hardly seems a common occurrence. Nonetheless, the majority concluded that this warrantless observation was not a search because it "took place within public navigable airspace . . . in a physically nonintrusive manner."[125] To reach this conclusion the majority both had to ignore a central holding of *Katz*—physical trespass is no longer relevant to determining the existence of a Fourth Amendment violation—and also draw some remarkable analogies.

For example, the majority equated a police officer's naked eye surveillance of a home from an airplane flying in navigable airspace with his observation of a home while traveling on a public thoroughfare.[126] In other words, looking into someone's yard from a public sidewalk is equivalent to using a flying machine to get to a vantage point above the fence surrounding that yard. Perhaps even more remarkably, the Court equated (for constitutional purposes) an intentional police investigation of a particular citizen's home with the possibility that an imaginary private citizen flying in a hypothetical commercial or private airplane might glance down at random properties.[127]

I have noted elsewhere that this reasoning is not entirely illogical: "After all, airplanes are flying up there, and even marijuana growers must know that."[128] But the Court's

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and views of the social good than in any of the various legal criteria they cite.

[125] *Ciraolo*, 476 U.S. at 213 (citation omitted). The Court's reference to the second factor is surprising because *Katz* expressly overruled the trespass doctrine. See *supra* notes 96-100 and accompanying text.

[126] *Ciraolo*, 476 U.S. at 213 (a warrant was not required for such an aerial observation because 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.").

[127] *Id.* at 213–14 ("Any member of the public flying in this airspace who glanced down could have seen everything that these officers observed.").

[128] Morgan Cloud, *Pragmatism, Positivism, and Principles in Fourth Amendment Theory*, 41 UCLA L. REV. 199, 259 (1993).

convoluted reasoning constructed out of such subjective and questionable assumptions is hardly a reassuring model of constitutional analysis. Indeed, by comparison the discredited property-based standards of the past appear to be a model of logical consistency and clarity. Three years after *Ciraolo*, the Court had another opportunity to clarify the constitutional rules governing the use of flying machines to conduct visual surveillance. Instead, acting like a group of mad inventors adding bits and pieces to an already puzzling contraption, the Justices issued an even more fractious and confusing set of opinions.

Although they possessed neither probable cause nor a warrant, law enforcers investigating a lead in *Florida v. Riley*,[129] flew a helicopter only 400 feet above Riley's rural residential property. This permitted them to see inside a greenhouse situated within the curtilage of Riley's mobile home.[130] The greenhouse had a roof, although about ten percent of the roof area was not covered.[131] The holes in the roof did not affect ground level surveillance, because the greenhouse walls were opaque, and trees, shrubs and the home itself stood between the greenhouse and any lawful, nontrespassory ground level observation point. The home and greenhouse were both surrounded by a wire fence and a "Do Not Enter" sign was posted on the property.

A four Justice plurality decided that using the helicopter to permit the officers to see into the greenhouse was not a search, because once again the citizen's subjective expectation (here that the interior of his greenhouse would be free from aerial surveillance) was objectively unreasonable.[132] The nine Justices were unable to agree upon the proper theory for determining whether and when the presence of air travel could defeat such an expectation.

The four joining in the plurality opinion assumed that flights are common and required no proof on the issues.[133] In

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[129] 488 U.S. 445 (1989).

[130] *Riley*, 488 U.S. at 449.

[131] *Id.* at 448.

[132] *See Riley*, 488 U.S. at 450–51 (stating "Riley could not reasonably have expected that his greenhouse was protected from public or official observation" from navigable airspace).

[133] The plurality noted the number of helicopters registered in the United States but not Florida, and cited no evidence of any helicopter flights in the area. *Id.* at 451 n.2. The plurality instead based its judgment upon evidence not in the record: "[T]here is no indication that such flights are unheard of in Pasco County, Florida." The plurality quoted from *Ciraolo* to support the proposition that flights are routine in this country. *Id.* at 450. Later it noted the *absence* of evidence in the court record that "helicopters flying at 400 feet are sufficiently

her concurring opinion, Justice O'Connor argued for a different approach. She concluded that the Court faced an empirical question—how frequently do flights occur—but would have imposed the burden on the party moving to suppress evidence to demonstrate that flights are uncommon.[134] The four dissenters all agreed that this was at least in part an empirical question, but all would have placed the burden of proof upon the state, not the citizen.[135]

On other points, the plurality's reasoning generally recapitulated the factors that were outcome determinative in *Ciraolo*. The police were in a legal location when they looked into the greenhouse because the pilot had complied with FAA regulations defining navigable airspace. These regulations permit helicopters to fly below the levels set for fixed wing aircraft when it is safe to do so. Finally, the aerial surveillance did not amount to a trespassory interference with Riley's use of the property.[136]

Once again Justices found themselves defining Fourth Amendment rights in terms of the officially discredited trespass doctrine. Not surprisingly, dissenters pointed out the doctrinal confusion inherent in an analysis reasserting the importance of a physical trespass to explain why an expectation of privacy is not reasonable under *Katz*.[137] More than twenty years after *Katz*, the Court found itself still unable to escape the messy reality that they could not create a

rare in this country to lend substance to respondent's claim that he reasonably anticipated that his greenhouse would not be subject to observation from that altitude." *Id*. at 451–52. *See also id*. at 457 (Brennan, J., dissenting) (asserting that the plurality's theory is that a privacy expectation "is defeated if a single member of the public could conceivably position herself to see into the area in question without doing anything illegal.").

[134] Justice O'Connor argued that under *Katz* this was an empirical question not answered by the fact that FAA safety regulations were satisfied. "[W]e must ask whether the helicopter was in the public airways at an altitude at which members of the public travel with sufficient regularity. . . . If the public rarely, if ever, travels overhead at such altitudes, . . . Riley cannot be said to have `knowingly expose[d]' his greenhouse to public view." *Id*. at 454–55. (O'Connor, J., concurring) (second alteration in original). She concurred in the judgment, however, because she concluded that the defendant had the burden of proving that his expectation was reasonable, and he had not met her empirical test. *Id*. at 455.

[135] *Id*. at 465–66 (Brennan, J., dissenting); *id*. at 468 (Blackmun, J., dissenting) (asserting the burden of proof should be imposed on the state because of his personal belief that helicopters rarely fly over private property at an altitude of 400 feet, but citing no evidence to support that belief).

[136] *Id*. at 450-452.

[137] *Id*. at 456 (Brennan, J., dissenting).

coherent theory fully severing analysis of Fourth Amendment rights from property concepts. Once again, they found themselves forced to define improper intrusions in terms of the presence or absence of a physical trespass.

Of course, this brings us full circle, back to the fundamental defect in the *Olmstead* formulation of the trespass doctrine. In *Olmstead*, this rationale insulated all nontrespassory technological monitoring of conversations from constitutional scrutiny. Sixty years later, the *Riley* plurality found itself in the awkward position of arguing that using a flying machine to gather information from within the most "constitutionally protected area" was not a search because it was completed without committing a trespass.

One of the most provocative elements of the Court's opinion in *Kyllo v. United States*,[138] its latest foray into the realm of technological searches, is that Justice Scalia may have finally provided a clear, simple answer to this dilemma. His opinion provides at least an outline of a test that would permit regulation of technological intrusions while preserving the apparently unavoidable concept of trespass in Fourth Amendment theory. That topic is discussed in the next Part of this article.

III. WHAT TECHNOLOGY TRIGGERS FOURTH AMENDMENT SCRUTINY?

One might assume that answering this question is the logical starting point for any rational critique of the constitutional status of technological surveillance devices. One might expect, therefore, that the Supreme Court would have developed a carefully crafted answer to such a fundamental question. One would be wrong.

A. The Dow *Standard*

Indeed, if forced to choose among the three theoretical innovations examined in this article, I would quickly award the "Rube Goldberg Award"[139] to the Supreme Court's attempts to define the technologies regulated by the Fourth

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[138] 533 U.S. 27 (2001).

[139] Even thirty years after his death, Rube Goldberg's name lives on in the multitude of contests that bear his name. *See* http://news.uns.purdue.edu/UNS/rube/rube.index.html (college engineering fraternities) (last visited Oct. 8, 2002); http://www.rube-goldberg.com/html/contest.htm (elementary school students) (last visited Oct. 8, 2002); http://www.anl. gov/OPA/rube/ (professional scientists) (last visited Oct. 8, 2002).

Amendment. Until last year, the leading case in the post-*Katz* era was *Dow Chemical Co. v. United States*,[140] an opinion that remains important if only because the flawed test it produced survives in modified form.[141]

Dow had refused to allow a warrantless Environmental Protection Agency (EPA) inspection of Dow's 2,000 acre industrial facility in Midland, Michigan. Dow had endeavored to prevent both ground level and aerial observation of the facility by outsiders, assertedly to protect trade secrets. Dow had fenced the entire area, had employed security guards to patrol the complex, and had reacted vigorously when it detected aerial surveillance of the facility.[142]

To obtain information about the manufacturing facility, the EPA used a powerful camera mounted in a private airplane to take photographs of the facility from altitudes of 12,000, 3,000, and 1,200 feet.[143] The camera captured details not visible to the naked eye from these altitudes. As the district court specifically found, the "use of `the finest precision aerial camera available' permitted the EPA to capture on film `a great deal more than the human eye could ever see.'"[144]

The Supreme Court concluded that use of this sophisticated technology was not a search regulated by the Fourth Amendment because Dow had no reasonable expectation of privacy against aerial observation of its industrial facility.[145] The holding rested in part upon the Court's characterization of the facility's status as a species of property.[146] The fenced industrial complex was not "open fields," it was certainly not a home and the majority rejected the idea that this type of area deserved constitutional protection as "industrial curtilage." Reasoning as if it wanted

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[140] 476 U.S. 227 (1986).

[141] See infra p. 38-39.

[142] *Dow Chem. Co.*, 476 U.S. at 229. *See id.* at 241–42 (Powell, J., concurring in part and dissenting in part). *But see id.* at 237 n.4 (arguing that Dow had not taken significant steps to protect against aerial observation).

[143] *Id.* at 229.

[144] *Id.* at 230.

[145] *Id.* at 239. The Court relied in part on its reasoning in *Ciraolo*. *Id.* Apparently the only way Dow could have created such an expectation would have been to roof the 2,000 acre facility. *See id.* at 237 n.4.

[146] *See id.* at 244 (Powell, J., concurring in part and dissenting in part) (arguing that the majority opinion ignores relevant precedent and relies instead "on questionable assertions" about the means of surveillance and the character of the area observed).

to emphasize the impossibility of completely escaping the clutches of pre-*Katz* property concepts,[147] the majority also found it significant that the aerial surveillance was accomplished without a physical trespass onto private property.[148]

What distinguished *Dow* from some of the Court's other opinions, however, was the Court's barely constrained enthusiasm for the emergence of new technologies and their inevitable use by law enforcers. It mused, for example:

> The photographs at issue in this case are essentially like those commonly used in mapmaking. Any person with an airplane and an aerial camera could readily duplicate them. In common with much else, the technology of photography has changed in this century. These developments have enhanced industrial processes, and indeed all areas of life; they have also enhanced law enforcement techniques.[149]

One would hardly expect Justices praising technological advances that "have enhanced . . . all areas of life" to announce a test that would prevent government agents from taking advantage of technological progress, and they did not. Instead, the *Dow* Court excluded from Fourth Amendment regulation technologies that it found to be *generally available* to the public. Police use of such devices to enhance their sensory abilities did not require a warrant because—like the aerial surveillance of Ciraolo's home and curtilage—it was not a search. The *Dow* Court grudgingly conceded only that warrantless observation of private property by means of "highly sophisticated surveillance equipment *not generally available* to the public . . . *might* be constitutionally proscribed absent a warrant."[150]

This amorphous standard raised more questions than it answered, but it was consistent with key assumptions used to justify the results in *Dow's* companion case, *Ciraolo v.*

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[147] *See id.* at 235 (Court noted one of the issues raised by the case was "whether the common-law `curtilage' doctrine encompasses a large industrial complex such as Dow's").

[148] *Id.* at 234–39. The majority noted, for example: "Any actual physical entry by EPA into any enclosed area would raise significantly different questions, because `[t]he businessman, like the occupant of a residence, has a constitutional right to go about his business free from unreasonable official entries upon his private commercial property.' The narrow issue raised by Dow's claim of search and seizure, however, concerns aerial observation of a 2,000-acre outdoor manufacturing facility without physical entry." *Id.* at 237 (citations omitted).

[149] *Id.* at 231.

[150] *Id.* at 238 (emphasis added).

California.[151] First, although the Fourth Amendment limits only government conduct, *Dow* equated government investigations with observations by members of the general public.[152] Second, the *Dow* "test" did not require proof that members of the public actually used the technology—let alone used it against the party asserting Fourth Amendment rights. The fact that members of the public had adequate access to the technology was sufficient to defeat a party's expectation of privacy against purposeful government surveillance with that technology. Finally, the Court failed to establish any objective or empirical standards for determining when the public's access to the technology satisfied the "generally available" standard.

The best the Court could do was offer hypothetical examples. Although the $22,000 camera[153] used by the EPA was capable of capturing details far beyond the power of human sight, revealing objects as small as 1/2 inch in diameter, it was not a sophisticated technology generally unavailable to the public.[154] Conversely, pictures taken by cameras mounted on satellites *might* fall within the ambit of the Fourth Amendment because these camera were not yet "generally available."

The critical word in the preceding sentence is "yet." *Dow* accepted the premise that technological progress would inevitably dictate that our privacy expectations must decrease as intrusive technologies become more widely dispersed and readily available. The Court's own example confirms this attribute of the *Dow* approach. When the Court decided *Dow* in 1986, members of the general public undoubtedly had little access to satellites that could take photographs of specific locations. That is no longer the case. In the past sixteen years, the number of satellites launched and operated by private commercial entities has expanded, and any private sector actor with the financial wherewithal now can obtain photographs taken by cameras mounted on satellites.[155] If a

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[151] *See supra* notes 120-27 and accompanying text.

[152] *See also Dow Chem. Co.*, 476 U.S. at 234. ("EPA, as a regulatory and enforcement agency, needs no explicit statutory provision to employ methods of observation commonly available to the public at large: we hold that the use of aerial observation and photography is within EPA's statutory authority.").

[153] *Id.* at 242 n.4 (Powell, J., concurring in part and dissenting in part).

[154] *See id.* at 238 n.5; *id.* at 243 (Powell, J., concurring in part and dissenting in part).

[155] For a sample of these opportunities, see for example

majority on the Court now concluded that such technology had become "generally available" to the public, government use of satellites to photograph the activities occurring within residential curtilage would not be a search under *Dow*—although it would have been a search in 1986.

Dow thus articulated a standard that shared the fundamental defect embedded in the *Olmstead* trespass and tangible property doctrines. Both opinions permitted government to employ many new and sophisticated technologies to observe and record the activities people carry on in their private residential and business property free from any constitutional limits.

Despite its affection for new technologies, the *Dow* majority did draw the line at the use of devices that permitted one specific kind of intrusion:

> The mere fact that human vision is enhanced somewhat, at least to the degree here, does not give rise to constitutional problems. An electronic device to penetrate walls or windows so as to hear and record confidential discussions of chemical formulae or other trade secrets would raise very different and far more serious questions.[156]

These "far more serious questions" raised by electronic devices that allowed investigators to learn information about activities occurring inside the walls of a home appeared in the Court's latest Fourth Amendment technology case. The case is noteworthy because it may signal that the Court is ready to attempt to abandon the *Katz* test and to construct yet another constitutional mechanism for evaluating the use of surveillance devices.

B. Kyllo *and Technological Trespass: A Return to Property Law?*

Danny Kyllo was growing marijuana in his Oregon home. In an effort to establish that fact, investigators used a thermal imaging device to measure the relative heat emanating from Kyllo's house. No trespass occurred because the investigators were able to use the device while sitting in an automobile on the streets adjacent to Kyllo's house. A Federal Magistrate Judge concluded that the results of this thermal imaging, the

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http://www.digitalglobe. com (last visited Oct. 8, 2002);
http://www.spaceimaging.com/index_text.htm (last visited Oct. 8, 2002);
http://www.terraserver.com/ (last visited Oct. 8, 2002).

[156] *Dow Chem. Co.*, 476 U.S. at 238-39.

size of Kyllo's utility bills, and informants' tips provided probable cause and issued a search warrant. The searchers discovered an indoor agricultural operation using halide lamps, which had produced the heat detected by the thermal imager, and more than 100 marijuana plants. Kyllo entered a conditional guilty plea, and after protracted legal proceedings, the Ninth Circuit Court concluded that the agents' use of the thermal imager was not a search.[157]

The Supreme Court reversed in an opinion that could prove to be a watershed in Fourth Amendment theory. It is not unusual for a Supreme Court opinion that appears to signal momentous doctrinal change to prove inconsequential over time.[158] But occasionally an opinion really does portend a reshaping of constitutional doctrine,[159] and Kyllo could be one of those cases.[160]

The Ninth Circuit's ultimate ruling that Kyllo had no reasonable expectation of privacy in the heat emanating from his house is understandable. Arguably the warrantless surveillance of his home was less intrusive than the visual surveillance of residential curtilage approved in *Ciraolo* and

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[157] See Kyllo v. United States, 533 U.S. 27, 30-31 (2001) (summarizing the procedural history of the case). For a more detailed discussion of the procedural history of the Kyllo case in the lower courts, see David A. Sklansky, *Back to the Future: Kyllo, Katz, and Common Law*, 72 MISS. L.J. 143, 171-77 (2002).

[158] See, e.g., Lambert v. California, 355 U.S. 225, 232 (1957) (Frankfurter, J., dissenting) ("I feel confident that the present decision will turn out to be an isolated deviation from the strong current of precedents—a derelict on the waters of the law.")

[159] An important recent example is Unites States v. Lopez, 514 U.S. 549 (1995) (for the first time in 60 years, the Supreme Court struck down a federal statute on the grounds that Congress exceeded its powers under the Commerce Clause). Justice Souter complained in dissent that the decision might "portend a return to the untenable jurisprudence from which the Court extricated itself almost 60 years ago." *Id.* at 608. Some commentators worried that Lopez would turn back the clock, and was a first step toward a new era of judicial activism in which the Court would strike down federal and state legislation (the latter on federalism grounds) as it had during the so-called Lochner era of substantive due process theory. *See* Morgan Cloud, *The Fourth Amendment During the Lochner Era: Privacy, Property, and Liberty in Constitutional Theory*, 48 STAN. L. REV. 555, 630-631 (1996). Some of these predictions have proven to be correct. The Court's recent attempts to revise post-1937 theories of federalism suggest the possibility that some Justices might be interested in pre-1928 theories of the Fourth Amendment, as well.

[160] It may not be a coincidence that, like the two earlier decisions that recast Fourth Amendment theory in response to modern technology, Kyllo was decided by a bare 5-4 majority. *Olmstead* and *Katz* split the Justices in part because each opinion worked a radical change in constitutional theory. *Kyllo* may have produced a similar division precisely because it presages doctrinal ferment of comparable magnitude.

Riley:

> 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 Kyllo'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.[161]

Under *Katz*, *Ciraolo*, and *Riley*, the government and the *Kyllo* dissenters could argue plausibly that Danny Kyllo had no expectation of privacy in the temperature of the exterior walls of his house, which serve as a border between the home's interior and the curtilage. A nontrespassory measurement of some physical condition of the exterior wall could rationally be a characterized as a fact knowingly exposed to the public. It is equally plausible to believe that most people would consider this surveillance to be less intrusive than having police officers fly over a home at low altitude and take photographs of a fenced yard or look into a private outbuilding adjacent to the home.

Similarly, the government could claim that enough thermal imaging devices had been manufactured to satisfy *Dow*'s "generally available to the public" standard.[162] Under *Dow*, use of such a common device is not a search, making the requirements of the Warrant Clause irrelevant.

The majority's initial statement of the issue in the case was framed in conventional post-*Katz* terms that suggested that once again the Court might accept the warrantless use of a technological surveillance device: "The case presents the

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[161] *Kyllo*, 533 U.S. at 29-30.

[162] *See, e.g.*, *Kyllo*, 533 U.S. at 47 n.5 (Stevens, J., dissenting) ("The record describes a device that numbers close to a thousand manufactured units; that has a predecessor numbering in the neighborhood of 4,000 to 5,000 units; that competes with a similar product numbering from 5,000 to 6,000 units; and that is `readily available to the public' for commercial, personal, or law enforcement purposes, and is just an 800-number away from being rented from `half a dozen national companies' by anyone who wants one."). Thermal imaging devices are available to the public from vendors who advertise on the internet. *See, e.g.*, http://www.flirthermography.com (last visited September 5, 2002).

question of 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."[163] Similarly, Justice Scalia's initial summary of the controlling law did not hint at changes in theory. He noted, for example, that "[t]he 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,"[164] then summarized the changes in theory wrought by *Katz* and its progeny.[165] This discussion included some pointed barbs about the quality of the Katz model,[166] but Justice Scalia's concerns about *Katz* are well-known,[167] and his discussion of *Ciraolo*, *Dow*, and the Court's other technology cases was unremarkable.

But what followed was extraordinary. First, Justice Scalia reframed the issue confronting the Court in terms that echoed arguments raised by *Katz*'s most provocative critics. He began by noting the impact technology has had on personal privacy:

> 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. . . . The question we confront today is what limits there are upon this power of technology to shrink the realm of guaranteed privacy.[168]

Justice Scalia chose to recast the issue in language that aligned the majority with some of the most trenchant and best-known critics of the Court's modern decisions authorizing government agents to use ever more intrusive technologies without requiring even the procedural protections offered by the warrant process.[169] Indeed, Justice

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[163] *Kyllo*, 533 U.S. at 29.

[164] *Id.* at 31.

[165] Id. at 32-33.

[166] *Id.* at 34 ("The *Katz* test . . . has often been criticized as circular, and hence subjective and unpredictable.").

[167] See, e.g., Minnesota v. Carter, 525 U.S. 83, 97 (1998) (Scalia, J., concurring).

[168] *Katz*, 533 U.S. at 33-34.

[169] *See, e.g.*, Anthony G. Amsterdam, *Perspectives on the Fourth Amendment*, 58 MINN. L. REV. 349, 403 (1974) (the proper analysis is "whether, if the particular form of surveillance practiced by the police is permitted to go unregulated by constitutional restraints, the amount of privacy and freedom remaining to citizens would be diminished to a compass inconsistent with the

Scalia's language was reminiscent of perhaps the most poignant criticism of the two-part expectations test as a sufficient mechanism for preserving liberty in the face of technological surveillance. Thirty years before *Kyllo*, Justice Harlan expressed concerns about how the Court was applying the two-part expectations analysis that he had crafted only four years earlier in his *Katz* concurrence, then offered a constitutional test that anticipated the Court's language in *Kyllo*:

> The first of these assumptions takes as a point of departure the so-called "risk analysis" approach . . . or the expectations approach of Katz. . . . While these formulations represent an advance over the unsophisticated trespass analysis of the common law, they too have their limitations and can, ultimately, lead to the substitution of words for analysis. The analysis must, in my view, transcend the search for subjective expectations or legal attribution of assumptions of risk. Our expectations, and the risks we assume, are in large part reflections of laws that translate into rules the customs and values of the past and present. Since it is the task of the law to form and project, as well as mirror and reflect, we should not, as judges, merely recite the expectations and risks without examining the desirability of saddling them upon society. The critical question, therefore, is whether under our system of government, as reflected in the Constitution, we should impose on our citizens the risks of the electronic listener or observer without at least the protection of a warrant requirement.[170]

This is the kind of value-driven analysis that was the hallmark of the Court's early decisions enforcing an expansive vision of individual liberty with property law concepts, and which was abandoned by the Court in *Olmstead*. One would be naive to expect the Court to return to the property-based concepts of an earlier century (even if it was the Framers' century), but old concepts can be adapted to modern problems, and it may well be that the Court has begun to do this in *Kyllo*—starting with the easiest case, the home.

The majority opinion emphasized that the thermal imager

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aims of a free and open society."); *see also* United States v. White, 401 U.S. 745, 756 (1971) (Douglas, J., dissenting):

> At the same time the concepts of privacy which the Founders enshrined in the Fourth Amendment vanish completely when we slavishly allow an all-powerful government, proclaiming law and order, efficiency, and other benign purposes, to penetrate all the walls and doors which men need to shield them from the pressures of a turbulent life around them and give them the health and strength to carry on.

[170] United States v. White, 401 U.S. 745, 786 (1971).

provided information about the interior of a home, not in some other place.[171] It finessed the problem of extending its analysis to other locations, asserting that "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."[172] Here, however the thermal imager had been aimed at a home,

> for which 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.[173]

It has become common in recent years for the Justices to turn to the common law to support their Fourth Amendment argument, and Justice Scalia deserves no small part of the credit (or blame) for this. Nonetheless, the "ready criterion with roots deep in the common law" he articulated was stunning. The test had several parts, but the core appears to be the functional equivalent of the long forgotten property-based analysis Justice Butler proposed in his *Olmstead* dissent more than seventy years earlier.[174]

> We think that obtaining by sense-enhancing technology any information regarding the interior of the home *that could not otherwise have been obtained without physical `intrusion into a constitutionally protected area,' constitutes a search*—at least where (as here) the technology in question is not in general public use. 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.[175]

The highlighted language suggests the basis for resolving

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[171] The majority rejected Justice Stevens' dissenting argument that thermal imagers only provide "off the wall" surveillance, not "through the wall" intrusions. *Kyllo*, 533 U.S. at 38-39. Justice Stevens' argument seems to embody a kind of bad physics that would make his analysis seem trivial if it were not so consistent (at least in the results it produces) with the Court's treatment of these issues in cases from *Olmstead* to *Dow*.

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

[173] *Id*. at 34.

[174] *See supra* notes 62-68 and accompanying text.

[175] *Id*. at 34-35 (citation omitted (emphasis added).

the Court's seventy-five year struggle to accommodate technology, privacy, and liberty under the umbrella of Fourth Amendment theory. The highlighted language is a creative adaptation of the traditional linkage of property concepts to Fourth Amendment rights with the reality of modern technology. It uses the physical trespass as an objective measure of an intrusion triggering constitutional scrutiny, while extending this protection to analogous non-trespassory intrusions achieved by technological means. It is almost elegant in its simplicity. If the government uses technology to obtain information from within "a constitutionally protected area" that would have otherwise been inaccessible without a physical trespass, it has conducted a search that must satisfy the requirements of the Warrant Clause. And lest anyone think this remarkable passage was a mistake, the Court repeated it near the end of the opinion.[176]

Even if applied solely to surveillance of the home, *Kyllo*'s enunciation of the concept of a technological trespass into a constitutionally protected area is significant because it appears to reject both *Olmstead* and *Katz* and to replace them with a standard that avoids some basic defects of each opinion. But it may well be that the Court will not stop with the home. This amalgam of property law, trespass theory, and technology could readily be extended to other settings.

Consider, for example, the aerial surveillance cases. Applying the new *Kyllo* approach, the Court could properly reach the same outcome in *Dow*. Although the government used an airplane and a sophisticated camera to secure information otherwise obtainable only by means of a physical trespass, the *Dow* opinion stressed that "[w]e find it important that this is not an area immediately adjacent to a private home, where privacy expectations are most heightened."[177] In *Kyllo*'s terms, the outside of an industrial facility is not a "constitutionally protected area." Although the *Dow* Court struggled with the problem of characterizing the industrial facility as open fields or industrial curtilage,[178] the dilemma was unnecessary. In the leading "open fields" cases, the property owners had taken steps to exclude trespassers that were analogous to the steps taken by Dow. They had erected barriers, like fences and gates, to keep unwanted visitors off their private property that was devoted to

[176] *Id.* at 40.
[177] *Dow Chem. Co.*, 476 U.S. at 237 n.4.
[178] *Dow Chem. Co.*, 476 U.S. at 235-37.

essentially commercial purposes. It is hard to understand why the outdoor portion of a 2,000 acre commercial facility that produces chemicals deserves greater protection than a 200 acre farm next to a home that produces agricultural products. "Government has `greater latitude to conduct warrantless inspections of commercial property' because `the expectation of privacy that the owner of commercial property enjoys in such property differs significantly from the sanctity accorded an individual's home.'"[179] Therefore, Court could rationally treat the outdoor areas of the farm and the industrial facility as constitutional equivalents. By simply analogizing the facts of *Dow* to its common law open fields doctrine, the Court could easily include these cases within the new Kyllo "functional equivalent of a trespass" test. The warrantless aerial surveillance in Dow still would satisfy constitutional standards.

Conversely, the outcomes in the cases involving aerial surveillance of the curtilage of homes would be reversed. Because the curtilage is a "constitutionally protected area" under traditional property law concepts, the use of flying machines to obtain information that otherwise could have been gained only by means of a trespass would violate the Fourth Amendment—unless the surveillance had been authorized by a warrant.

As the preceding analysis suggests, the modified trespass theory announced in *Kyllo* can be applied rationally in other fact settings. Had the opinion stopped with this creative innovation, it would have taken a remarkable step in the direction of a coherent doctrine of technological searches. However, this remains an analytical domain in which the logical rules seem to have been dictated by some Rube Goldberg acolyte. Apparently incapable of making a clean break with the detritus of *Katz*, the Court reasserted the worst of its expectations concepts, modified it a bit, then hammered and glued it onto the new technological trespass doctrine. Reconsider the key passage with different language emphasized:

> We think that obtaining by sense-enhancing technology any information regarding the interior of the home that could not otherwise have been obtained without physical `intrusion into a constitutionally protected area,' constitutes a search—*at*

[179] *Id.* at 237-38.

> *least where (as here) the technology in question is not in general public use.*[180]

While the first half of the sentence reclaims notions of property and trespass, the second half clutches madly onto *Katz*'s most defective technological product—the *Dow* test for defining the technologies covered by the Amendment. Well, only half-madly, for the *Kyllo* test adds a minor improvement. It is no longer enough that a technology be "generally available" to the public. For the device to be exempted from constitutional scrutiny, the general public must actually be *using* the thing. If the Court means what it writes here, the Fourth Amendment does not disappear simply because any member of the general public *could* hire a satellite to take photographs; the general public must actually be engaged in that conduct.

Unfortunately, most of the theoretical deficiencies of the *Dow* standard survive. The last clause of the *Kyllo* test still equates government searches with actions by the general public; it still fails to provide any measure for judging when a device is in general public use; and it still allows the apparently inevitable improvement in and dispersion of technology to diminish the scope of personal privacy and liberty. This passage is literally inconsistent with the trespass concepts embodied in the first part of the sentence.

Three quarters of a century after the Court bungled the task in *Olmstead*, the Justices still have failed to craft a coherent, functional test for regulating modern technology while preserving the rights embodied in the Fourth Amendment. Fortunately, *Kyllo* hints at the possibility that the Court is moving—if only in small, tentative steps—to finally replace both the stunted trespass doctrine of *Olmstead* and the dysfunctional expectations analysis spawned by *Katz*.

What should this new approach include? First, it should not merely retain but must also emphasize the notion that the technological equivalent of a physical trespass can trigger a Fourth Amendment violation. Second, it should extend this notion to settings outside of the interior of the home. At the very least, this should include other property that has traditionally received Fourth Amendment protection, including the home's curtilage, closed containers like luggage, and the interior of private commercial buildings.

Finally, and most importantly, it should enunciate an

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[180] *Kyllo*, 533 U.S. at 34-35 (emphasis added).

expansive, value-based theory of the scope of the Fourth Amendment and its role in preserving privacy and liberty—without which our democracy cannot survive. Such a theory animated the Court's most important decisions interpreting this part of the constitutional text until it confronted technological surveillance for the first time in *Olmstead*. This expansive view of constitutional liberty was the impetus for *Katz*, although subsequent decisions have obliterated that element of the decision. Justice Scalia's opinion in *Kyllo* suggests that the Court might be ready to try to reclaim this essential element of our constitutional heritage by replacing the present "convoluted system of achieving a basic task" with a "technological trespass" theory. May they succeed in the effort.