

SEARCHING SECRETS

NITA FARAHANY*

A Fourth Amendment violation has traditionally involved a physical intrusion—the search of a house, the seizure of a person or his papers. Today, investigators rarely need to break down doors, rummage through drawers, or invade one’s peace and repose to obtain incriminating evidence in an investigation. Instead the government may unobtrusively intercept information from electronic files, transmissions, and communications. In the near future, it will be possible to intercept information directly from suspects’ brains. Courts and scholars have analogized such modern searches to searches of tangible property like containers, treating information by extension as either “content” or “no content.” The analogy is flawed, because it focuses attention exclusively on how and where information is secluded and assigns no value to substantive information itself. This article proposes a new approach to searches of informational property. Rather than drawing upon traditional property law to inform the reasonableness of expectations of privacy when informational property is searched, intellectual property should be the metaphorical guide. Intellectual property recognizes that who authored information—and not just how or where it was stored—informs an individual’s right to exclude others from that information. The exclusive rights of authors—including non-disclosure—are lawful interests recognized by copyright law. Authorship determines whose privacy interests and what types of privacy interests are at stake. Recognizing the secrecy interests of authors has broad implications for the Fourth Amendment in the information age. This framework rediscovers the crucial linkages between the Fourth Amendment and the Copyright Clause. It better describes emerging doctrine, which has required greater government justification for certain categories of information searched. And it provides a normative foundation from which one can determine the privacy interests at stake when the secrets the government seeks are stored in our computers, in our phones, or in our brains.

* Leah Kaplan Visiting Professor in Human Rights at Stanford Law School, Stanford University. Associate Professor of Law & Associate Professor of Philosophy, Vanderbilt University; BA, Dartmouth College; MA, JD, Ph.D., Duke University; ALM, Harvard University. Member, Presidential Commission for the Study of Bioethical Issues. Thanks to Lisa Schultz Bressman, Barbara Fried, Paul Goldstein, Hank Greely, Orin Kerr, Mark Kelman, Larry Kramer, Mark Lemley, Thede Loder, Peter Menell, Nicholas Quinn Rosenkranz, David Sklansky, Christopher Slobogin, Robert Weisberg, [xxx] for their comments and suggestions on earlier drafts. The author is grateful for the excellent research assistance of Eva Dossier, Clare Hatfield, Joseph Kimok, Stephanie Kostiuk, Rachael McClure, Dustin Paige, Govind Persad, and Feras Sadik. *All opinions expressed in this article are the author’s alone and do not reflect those of any institution, entity or organization with which she is affiliated.*

TABLE OF CONTENTS

INTRODUCTION	1
I. FOURTH AMENDMENT FRAMEWORKS	4
<i>A. From Property to Privacy</i>	4
<i>B. The Content/No-Content Dichotomy</i>	6
II. PERSONS, PAPERS, AND THEIR EFFECTS.....	10
<i>A. Copyright and the Fourth Amendment</i>	10
1. There's a "Their" There	13
2. They're Authors	15
<i>B. The Right Legal Referent for the Right to Exclude</i> . 16	
1. Property and the Intrusion Upon Seclusion.....	17
2. Copyright and Privacy.....	20
3. Intrusion Upon Secrecy	23
<i>C. Valuing Authors' Secrets</i>	27
1. Protecting Non-Disclosure	27
2. Minding Inviolable Personality	28
III. THE SECRETS PROTECTED	28
<i>A. Identifying</i>	30
<i>B. Automatic</i>	35
<i>C. Memorialized</i>	39
<i>D. Utterances</i>	46
CONCLUSION.....	51

INTRODUCTION

Can you keep a secret? Under the Fourth Amendment, that depends on whether it's yours to keep. The Fourth Amendment guarantees "the right of the people to be secure in their persons, houses papers, and effects against unreasonable searches and seizures." Fourth Amendment protections arose from physical intrusions upon personal property, but have evolved to protect "people, not places"¹ against unreasonable searches and seizures. Those protections apply irrespective of whether the investigative technique requires physical trespass upon a protected space. Indeed, modern criminal investigations often proceed without physical intrusion upon a suspect's person, house, papers and effects, and even without his concurrent awareness of the search. This is because the objects of modern searches are usually intangible information—like the memory in a cell phone, or files on a computer—rather than tangible property hidden away. But even though the Fourth Amendment touchstone evolved from property to people and their privacy, analogies to the paradigmatic physical search still have a powerful hold on the judicial mind. This analogy has led to persistent confusion in modern cases. Worse yet, it has obfuscated the proper constitutional analogy, which can solve the riddle of informational searches.

The government can already obtain incriminating information from our brains, our emails, our phone calls, and our Internet searches. Investigations to obtain such information implicate the Fourth Amendment only if they intrude upon the lawful privacy interests of individuals. Those interests—the "reasonable expectations of privacy" by individuals—depend upon the interests that society recognizes through law and custom. Traditionally, courts have relied upon property law to inform reasonable expectations of privacy in Fourth Amendment searches. This article proposes that courts should instead turn to intellectual property law to inform reasonable expectations of privacy in searches of informational property.

Historically, violent physical intrusions upon persons, their houses, and their papers were the concern of Fourth Amendment complainants. As investigative techniques have shifted from brute force to sense-enhanced and surreptitious searches, individuals are much less likely to be subjected to government violence against their tangible property. Modern complaints are more concerned with the non-disclosure of personal information—one's papers and their effects. Along with this shifting landscape of Fourth Amendment claims, a default approach has emerged from judicial opinions and scholarship about when an individual has a cognizable Fourth Amendment privacy interest in searches of informational property. That approach dichotomizes "content" and "no-

¹ *Katz v. United States*, 389 U.S. 347, 351 (1967).

content” information and protects the former but not the latter. But as discussed *infra*, applying the tangible property concept of content/no-content lacks descriptive coherence and normative grounding when applied to searches of intangible informational property.

Using the content/no-content approach, courts and scholars have classified e-mail addresses and telephone numbers as content-less information, but the body of an email and the contents of a telephone conversation as content-rich. Warrantless investigations of the former have been found reasonable, and warrantless investigations of the latter per se unreasonable. The intuition that e-mail addresses are different from e-mail contents is sound, but the doctrinal categories used to distinguish between them are not. These different types of information do implicate different privacy interests, but not because phone numbers dialed always lack “content.”

This article argues that individuals do have different privacy interests in the phone numbers, e-mail addresses, and e-mail contents, and that those differences can be better understood through an intellectual property law metaphor. Authors have a right to exclude others from their expressions, as part of the bundle of rights accorded them through intellectual property law. Just as real property law has traditionally informed the reasonableness of expectations of privacy in searches of tangible property, intellectual property law should inform the reasonableness of expectations of privacy in searches of informational property.

Intellectual property law better accounts for the uniqueness of informational property than does real property law. Intellectual property law distinguishes between the rights of informational authors and mere possessors of information, a distinction that is relevant to the Fourth Amendment interests at stake. Asking who authored the information focuses both on whose Fourth Amendment privacy interests are at stake and what type of privacy interests are at stake. Individuals have a cognizable right to non-disclosure of their information when they have authored or originated that information. Informational author can properly claim a secrecy interest in “their” writings and effects. Mere possessors of information also have a right to exclude others from their own copy of the information. That right enable possessors to seclude information, but does not secure the substantive secrecy of the informational content. The approach proposed here ensures an individual interest in secrecy when an individual authors or originates information. By focusing on the intellectual property requirements of authorship, it helps to resolve both old and new riddles in Fourth Amendment law. Searches and seizures of private papers and surreptitious searches of thoughts and memories all implicate an author’s interest in secrecy.

To see the benefit of an intellectual property metaphor, consider how the Fourth Amendment applies to hypothetical—but not far-fetched—brain searches. Suppose a police officer has stopped a motorist he believes

to be intoxicated. Should the motorist remain silent, what information could the policeman glean during a brief and physically unobtrusive stop? The police could use a mobile biometric brain-scanner to gain precise and reliable information about the motorist's identity. Scientists hypothesize that each person's brain has a unique neural fingerprint that would enable precise biometric identification by "reading" the electrical impulses emitted by the firing of neurons in the brain. The police could also bypass the need to have the motorist perform a Breathalyzer test to assess his intoxication by directly measuring his brain's metabolism of glucose.² And rather than asking the motorist whether he had been drinking, the police could probe his brain for episodic memories of his evening. Scientists have made substantial headway in detecting memories stored in the brain, and have already demonstrated detection of past faces, voices, or sounds, and successfully differentiated between specific episodic memories that a subject has recalled. More directly, the police could seek contemporaneous utterances by the motorist and use on-the-spot brain-based lie detection techniques or more sophisticated techniques that seek to "decode" his contemporaneous, conscious, and unspoken thoughts. Some of these warrantless probes of the brain are more reasonable than others, and we can tell the difference by determining when one has a secrecy interest in the contents of one's brain and a right to seclude oneself from others.

Focusing on the intellectual property rights of individuals provides a principled approach to searches of papers and their effects. It describes well emerging intuitions in Fourth Amendment law concerning digital and electronic information, and re-aligns the Fourth Amendment the rights of informational owners. Beginning with the underpinnings of Fourth Amendment law, Part I traces the doctrinal development that has resulted in reliance upon property law to inform expectations of privacy. Part II develops the until-now overlooked metaphor of intellectual property for assessing whether a Fourth Amendment violation has occurred in the search or seizure of informational property. It focuses by example on copyright law and the exclusive rights of authors. And it explains how intellectual property law better describes the reasonableness inquiry for modern searches and seizures. Part III then applies this approach to the spectrum of evidence introduced in *Incriminating Thoughts*. Doing so makes apparent the categories of information in which one has a cognizable secrecy interest, in addition to the privacy interest in seclusion that has traditionally informed the reasonableness of searches and seizures.

What results is a new way to determine the Fourth Amendment interests at stake when the government searches a person, their brain, their papers and their intangible effects.

² Gene Jack-Wang et al., *Regional Brain Metabolism During Alcohol Intoxication*, 24 *Alcoholism* 6 (2000).

I. FOURTH AMENDMENT FRAMEWORKS

A. *From Property to Privacy*

The first clause of the Fourth Amendment provides: “The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated.” In the Court’s first major case interpreting this Clause, it articulated the then-prevailing view that the Fourth Amendment balances the security of an individual’s property interests against societal need for the evidence sought. The sacrosanct nature of property interests meant that even the “bruising of grass” on one’s property required justification.³ In this context, “unreasonable” meant the use of general warrants to infringe upon an individual’s property interest.⁴

In due time, the Court confronted modern investigative techniques that allowed investigators to obtain evidence without any physical interference or trespass upon a person’s real property. In the earliest of such cases, *Olmstead v. United States*,⁵ police placed a wiretap on “ordinary telephone wires from the residences of four of the petitioners.”⁶ Because the wiretap was placed outside of the suspect’s property, the Court found that no Fourth Amendment search had occurred. Instead, the Court held that “voluntary conversations secretly overheard” are not tangible property or “material things” that the Fourth Amendment protects. The phone taps did not intrude upon any tangible property interest that *Olmstead* held, so no search of his home, curtilage, or his papers had occurred.⁷

Justice Brandeis dissented, echoing themes that he had developed in the *Harvard Law Review*⁸ long before. In a prophetic passage, he imagined a future that is now almost upon us.

“Ways may some day be developed by which the Government, without removing papers from secret drawers, can reproduce them in court, and by which it will be enabled to expose to a jury the most intimate occurrences of the home. Advances in the psychic and related sciences may bring means of exploring unexpressed beliefs, thoughts and emotions. . . . Can it be that the Constitution affords no protection against such invasions of individual security?”⁹

³ *Boyd v. United States*, 116 U.S. 616, 627 (1886).

⁴ David A. Sullivan, *A Bright Line in the Sky? Toward a New Fourth Amendment Search Standard for Advancing Surveillance Technology*, 44 *Ariz. L. Rev.* 967, 71 (2002).

⁵ 277 U.S. 438 (1928).

⁶ *Olmstead* at 457.

⁷ 77 U.S. 438, 456-57 (1928).

⁸ Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 *HARV. L. REV.* 193 (1890).

⁹ *Olmstead*, 277 U.S. at 474 (Brandeis, J., dissenting).

Brandeis thought not. He argued that the Fourth Amendment protects against “every unjustifiable intrusion by the Government upon the privacy of the individual, whatever the means employed.”¹⁰ His dissent was prescient in realizing a future in which physically unobtrusive searches can occur. And he foreshadowed the doctrinal shift that ultimately would occur from a focus on trespass upon property to invasion of privacy as the individual interests at stake in Fourth Amendment cases.¹¹

In *Katz v. United States*¹² the Court addressed whether the Fourth Amendment applies to intangible private conversations held in a public glass-enclosed phone booth. FBI agents had attached a device to the outside of a public telephone booth to listen to the occupant’s conversation.¹³ On the government’s theory, this eavesdropping did not implicate the Fourth Amendment, because no trespass upon the defendant’s property had occurred and because he voluntarily held his conversation in a public place. But the Court pointedly rejected the idea that “constitutionally protected areas” are a “talismanic solution to every Fourth Amendment problem.”¹⁴ Instead, what an individual “seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected.”¹⁵ Justice Harlan’s concurred, proposing the expectation-of-privacy analysis that the Court formally adopted in *Smith v. Maryland*.¹⁶ This two-pronged holds that a Fourth Amendment search occurs when an individual had a subjective expectation of privacy and, one that society was prepared to recognize as reasonable.¹⁷

Katz’s “surprise move” was not “only a shift in Fourth Amendment jurisprudential paradigms from a property-based framework to an expectation-of-privacy framework”; it was “one of the Court’s earliest admissions that the Fourth Amendment should acknowledge that technology impacts the daily lives of citizens.”¹⁸ Yet, the Court treated “the meaning of privacy as too obvious to merit extended discussion.” Fifty years later, the meaning of privacy seems anything but obvious, and an extended discussion is essential to make sense of the myriad new searches of the information age.

The privacy test was originally meant to help determine whether a Fourth Amendment interest had been invaded.¹⁹ If so, then a warrant was almost always required.²⁰ Today, the *ex ante* issuance of search warrants is

¹⁰ *Id.* at 479.

¹¹ *Katz v. United States*, 389 U.S. 347 (1967).

¹² 389 U.S. 347 (1967).

¹³ *Id.*

¹⁴ *Id.* at 351, n.9.

¹⁵ *Id.* at 351-52.

¹⁶ *Smith v. Md.*, 442 U.S. 735, 741 (1979).

¹⁷ *Katz v. United States*, 389 U.S. 347, 361 (1967) (Harlan, J., concurring).

¹⁸ Sullivan, *supra* note 4, at 974-75.

¹⁹ U.S. Constitution, Fourth Amendment Annotations (<http://caselaw.lp.findlaw.com/data/constitution/amendment04/01.html#5>).

²⁰ U.S. Constitution, Fourth Amendment Annotations (<http://caselaw.lp.findlaw.com/data/constitution/amendment04/01.html#5>).

now the exception rather than the rule,²¹ so the core of Fourth Amendment analysis is an *ex post* assessment of the reasonableness of the search undertaken.²² The Court now uses the privacy test in two ways—first to ask whether the interest invaded rises to the level that a search has occurred.²³ If a search has occurred, the Court then balances the individual interests invaded against the government and societal interests at stake. Lesser intrusions upon privacy have been found reasonable without the *ex ante* issuance of a warrant.²⁴ Whether as an *ex ante* analysis—asking if a warrant should issue, or an *ex post* assessment—asking after the investigation if the intrusion was a search and also unreasonable—the focus of a Fourth Amendment inquiry is on whether an unlawful intrusion upon individual interests has occurred.²⁵

B. *The Content/No-Content Dichotomy*

In the information age, defendants are less concerned about intrusions upon their real property and more concerned about intrusions upon their information contained therein. When the police search a cell phone, for example, few defendants complain that the police physically opened up their cell phone and searched inside—the microprocessors, the battery, or parts therein. Their primary concern is that the police searched the information stored in the cell-phone memory—the phone numbers dialed, the addresses and substantive content of the text messages sent, the emails, documents, photographs or other information stored. Their privacy interests concern the information in the memory and not the physical contents inside the casing of the phone.

Yet the very purpose of a government search or seizures in a criminal investigation is to uncover information about a crime.²⁶ To decide then whether the search for information exceeds constitutional bounds, courts employ a “general Fourth Amendment approach,” which focuses on the “totality of the circumstances.” Those circumstances include the degree of intrusion upon individual privacy interests, the means used to obtain the information, and the societal need for the evidence sought.²⁷

²¹ William Stuntz, *Warrants and Fourth Amendment Remedies*, 77 VA. L. REV. 881, 28

²² Akhil Amar, *Fourth Amendment First Principles*, 107 Harv. L. Rev. 757, 801 (1994); *United States v. Kriesel*, 508 F.3d 941, 947 (9th Cir.2007) (citing *Samson v. California*, 547 U.S. 843 (2006)).

²³ *Kyllo v. U.S.*, 533 U.S. 27, 33 (2001).

²⁴ U.S. Constitution, Fourth Amendment Annotations

(<http://caselaw.lp.findlaw.com/data/constitution/amendment04/01.html#5>).

²⁵ *Kyllo v. U.S.*, 533 U.S. 27, 33 (2001).

²⁶ James T. Tomkovicz, *Beyond Secrecy for Secrecy's Sake: Toward an Expanded Vision of the Fourth Amendment Privacy Province*, 36 HASTINGS L. J. 645, 664 (1985).

²⁷ *United States v. Knights*, 534 U.S. 112, 118-19 (2001) (internal quotation marks omitted); Richard Posner, *Rethinking the Fourth Amendment*, 1981 Sup. Ct. Rev. 49, 74 (1981) (“A reasonable search is a cost-justified search. The most important cost of a search is the cost to the lawful interests that the search invades. That cost, a function of the intrusiveness of the search, must be weighed against the benefits of the search.”).

In *Smith v. Maryland*²⁸ the Court laid the foundation for extending traditional Fourth Amendment doctrine to modern searches of information. The Court held that the government's use of a pen register—a device that records the phone numbers one dials—was not a Fourth Amendment search. Using a content/no-content dichotomy as its guide, the Court held that “a pen register differs significantly from the listening device employed in *Katz*, for pen registers do not acquire the contents of communications.”²⁹

Scholars³⁰ have built upon *Smith* to argue that the “content” / “no-content” distinction should apply to searches of computers and their electronic contents. This approach treats information on the “outside”—of an envelope, a container, or a computer file—as no-content information. Information on the “inside”—of an envelope, a container, or a computer file—is all content information. From Supreme Court cases on pen registers,³¹ to lower court cases concerning cell phones,³² emails,³³ and

²⁸ 442 U.S. 735 (1979).

²⁹ *Id.* at 741.

³⁰ See e.g., Tracey Maclin, *Symposium: Katz, Kyllo, And Technology: Virtual Fourth Amendment Protection In The Twenty-First Century*, 72 MISS. L.J. 51, 127-28 (2002) (making the analogy between telephone numbers dialed versus the content of the call and email addresses and the content of the email. “Justice Department officials have told members of Congress that *Smith v. Maryland* authorizes federal agents to use Carnivore's pen mode application without triggering Fourth Amendment protections. According to this interpretation, federal agents “use Carnivore to conduct pen register searches because they believe that the addresses found in the TO and FROM lines of an email are the electronic equivalent of the numbers dialed on a telephone.” Under *Smith*'s reasoning, a telephone pen register is not a search because a pen register “does not acquire the contents of communications” and because a telephone user has no reasonable expectation of privacy in the numbers dialed. By using his telephone and voluntarily conveying numerical information to the telephone company, a homeowner “assumes the risk that the company would reveal to police the numbers he dialed.”); Anthony E. Orr, *Note, Marking Carnivore's Territory: Rethinking Pen Registers on the Internet*, 8 MICH. TELECOMM. & TECH. L. REV. 219, 226 (2002); JEFFREY ROSEN, *THE UNWANTED GAZE: THE DESTRUCTION OF PRIVACY IN AMERICA* 63, 70-78 (Random House 2000) (finding email to be a constitutional conundrum because it can be derivative of and pertain to business but may be more similar to private papers and thereby afforded a greater expectation of privacy).

³¹ *Smith v. Maryland*, 442 U.S. 735 (1979).

³² E.g., *U.S. v. Christie*, 624 F.3d 558 (3d Cir. 2011); *State v. Simmons*, 2011 VT 69 (VT 2011); *N.H. v. Mello*, No. 2010-455 (2011).

³³ *U.S. v. Forrester*, 512 F.3d 500 (9th Cir. 2008) (holding that use of computer surveillance techniques that revealed “to” and “from” addresses of e-mail messages, addresses of websites defendant had visited, and total amount of data transmitted to or from defendant's Internet account did not amount to “search” in violation of Fourth Amendment; e-mail and Internet users had no expectation of privacy in to/from addresses of their e-mail messages or Internet protocol (IP) addresses of websites they visited); See, e.g., *United States v. Lifshitz*, 369 F.3d 173, 190 (2d Cir. 2004) (analogizing expectation of email user in privacy of email to expectation of individuals communicating by regular mail); *United States v. Maxwell*, 45 M.J. 406, 418 (C.A.A.F. 1996) (sender of an email generally “enjoys a reasonable expectation that police officials will not intercept the transmission without probable cause and a search warrant”); see also *Quon*, 529 F.3d at

Internet searches,³⁴ treating informational searches like real property searches of containers has taken hold.

When investigators seek only no-content information—things outside of the container—this framework implies that no Fourth Amendment search has occurred. Professor Orin Kerr argues that this outside/inside distinction translates easily to modern informational content, as well: “[A]ddressing (or ‘envelope’) information is the data that the network uses to deliver the communications to or from the user; the content information is the payload that the user sends or receives.”³⁵

Applying the same framework to electronic communications, Kerr explains:

“In the case of e-mail, for example, the subject line, the body of the message, and any attachments count as the contents of the communication. They are the actual message to be sent. Everything else in the e-mail, including the to/from address and the size of the e-mail, counts as non-content information. Internet IP headers provide another easy case. Computers generate IP headers to deliver Internet communications, and most Internet users remain blissfully unaware of their existence. The headers are therefore non-content information rather than the contents of communications. Other examples may be more difficult, but these important cases are straightforward.”³⁶

905 (“[U]sers do have a reasonable expectation of privacy in the content of their text messages vis-a-vis the service provider.”).

³⁴ In *U.S. v. Hambrick*, 225 F.3d 656 (4th Cir. 2000), cert. denied, 121 S. Ct. 832, 148 L. Ed. 2d 714 (U.S. 2001) (unpublished opinion), affirming the lower court's opinion in *U.S. v. Hambrick*, 55 F. Supp. 2d 504 (W.D. Va. 1999), aff'd, 225 F.3d 656 (4th Cir. 2000), cert. denied, 121 S. Ct. 832, 148 L. Ed. 2d 714 (U.S. 2001), the court held that there was no legitimate expectation of privacy in non-content customer information provided to an Internet service provider by one of its customers. In an investigation concerning possible offenses involving child pornography stemming from online chats that the defendant had with another adult, a subpoena seeking only user non-content information, and not any content information, such as e-mail content or file content, was issued and faxed to the defendant's Internet service provider. Based on the subpoena, the detective involved received from the provider the defendant's name, billing address, on-line address (IP address), credit card information, and other identifying information, based on which a search warrant was obtained to search the defendant's residence and, on execution, yielded evidence against the defendant on certain charges pertaining to, inter alia, the transmission and possession of child pornography. The court said that while under certain circumstances, a person may have an expectation of privacy in content information a person does not have an interest in the account information given to the Internet service provider order to establish the e-mail account, which is noncontent information.

³⁵ Orin S. Kerr, *Applying the Fourth Amendment to the Internet: A General Approach*, 62 STAN. L. REV. 1005, 1019 (2010) (recognizing the analogy to a postal address and the contents of the envelope, and telephone calls where the addressing information is the number dialed, the originating number and the duration of the call).

³⁶ Orin S. Kerr, *Applying the Fourth Amendment to the Internet: A General Approach*, 62 STAN. L. REV. 1005, 1030 (2010).

This description has intuitive appeal, and suggests two unarticulated rationales that might support applying a traditional container/property framework to informational searches—awareness by the user of the information created, and individual intent to create a communication. But neither explanation has been offered or developed in support of this dichotomy, and aside from the ability to reuse the existing property framework, it is unclear what normative purpose the dichotomy achieves.

There are substantial descriptive and normative shortcomings to applying a content/no-content approach to informational searches. Consider the problems presented by common and oft-used automated phone lines. Imagine that the police have attached a traditional pen register to a suspected pedophile's phone line to capture the numbers as he dials them from his phone. While enjoying the solitude of his own home, the suspect dials 1-800-WANTSEX. The phone rings, and an automated voice says:

“You must be 18 or older to use this service. If you are under 18 years of age, please hang up now.”

After a brief pause, the automated voice gives the following choices.

“Gender. Please enter ‘1’ if you are female and ‘2’ if you are male. The suspect dials ‘2’”

“Orientation. Please enter ‘1’ for homosexual or ‘2’ for heterosexual. The suspect dials ‘2’”

“Partner. Please enter ‘1’ for under 18 or ‘2’ for adult. The suspect dials ‘1’”

The suspect's conversation is then connected to a live voice on the other end. In the meantime, the pen register has recorded 1-800-WANTSEX221. The content/no-content dichotomy predicts that the numbers 2-2-1 are phone numbers and therefore no-content information. Yet the suspect dialed 2-2-1 in response to prompts, just as he might answer questions in a conversation that followed. This presents a difficult catch-22 for content/no-content proponents. Either 2-2-1 is “no content,” which is plainly wrong, or it is “content,” which undermines the dichotomy. If 2-2-1 is content then numbers are being classified by context rather than location or form.

The dichotomy also fails to value information as a reasonable person would—based on its substance rather than merely its location. With the content/no-content approach, individuals have a reasonable expectation of informational privacy based solely on whether they seclude information or they do not. The dichotomy treats all information on the “inside” as equally valuable, and likewise all information on the “outside” as equally

valueless. Thus when the government intercepts “content” information—whether a cooking recipe or a criminal confession—the government will have equally intruded upon the seclusion of those effects. And while the analogy draws nicely upon existing protection afforded to sealed letters³⁷ that have been entrusted to the post office,³⁸ whether information is visible or invisible, tangible or intangible, sealed or unsealed, are all “distinctions without a difference” when it comes to the substantive secrecy of the information at issue.³⁹

Kerr recognizes that this model has limitations, and asks, “What other line is superior? What precisely are the realistic alternatives?”⁴⁰ Courts and scholars likewise recognize that the dichotomy cannot explain whether and which details may be more intimate than others.⁴¹ As Kerr himself acknowledges, “courts should focus on [] information rather than the physical storage device that happens to contain it.”⁴² As it turns out, the Copyright Clause of the Constitution already guides us to do so.

II. PERSONS, PAPERS, AND THEIR EFFECTS

A. *Copyright and the Fourth Amendment*

Copyright law and its protection of the exclusive rights of authors has gone almost entirely unnoticed in Fourth Amendment law. Article I,

³⁷ Whether the comparison between electronic and traditional modes of communication is apt or not is outside the scope of this article. Are emails in fact like sealed letters, with only addresses made visible to Internet Service Providers, or are they more like postcards, where both the address and content are made visible to the world? In his amicus brief in *United States v. Bach*, Professor Orin Kerr drew this conclusion: “Unlike the traditional telephone network and postal mail system, however, the Internet does not treat content and noncontent information differently. The content is not sealed; both content and non-content information are disclosed to the ISP in a steady stream of data. While a casual user may think of email as the equivalent of sealed postal mail, in fact e-mail works more like a postcard: the content of the message is openly visible to the operators of the network.” *United States v. Bach*, 310 F.3d 1063 (8th Cir. 2002), Orin S. Kerr, Amicus on Behalf of Appellant.

³⁸ *Ex parte Jackson*, 96 U.S. 727 (1878)

³⁹ *Olmstead v. United States*, 277 U.S. 438, 475 (1928) (Brandeis, J., dissenting).

⁴⁰ Orin S. Kerr, *Applying the Fourth Amendment to the Internet: A General Approach*, 62 STAN. L. REV. 1005, 1032 (2010).

⁴¹ *E.g.*, *Dow Chemical Co. v. United States*, 476 U.S. 227, 238(1986) (“It may well be, as the Government concedes, that surveillance of private property by using highly sophisticated surveillance equipment not generally available to the public, such as satellite technology, might be constitutionally proscribed absent a warrant. But the photographs here are not so revealing of intimate details as to raise constitutional concerns.”).

“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; other protections such as trade secret laws are available to protect commercial activities from private surveillance by competitors.” *Dow Chemical Co. v. United States*, 476 U.S. 227, 239(1986)

⁴² Orin S. Kerr, *Searches and Seizures in a Digital World*, 119 HARV. L. REV. 531, 556 (2005).

Section 8 of the Constitution, empowers Congress “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” These “exclusive Rights to ... Writings” inform the reasonable expectations of privacy authors, and provide a useful metaphor for understanding “The right of the people to be secure in their ... papers ... and effects.”

The parallel between the two clauses pertains to the key possessive in each, which secures personal rights to individuals. The Fourth Amendment guarantees to the people the right “to be secure in *their* persons, houses, papers, and effects.” And the Copyright Clause similarly guarantees to authors and inventors “the exclusive Right to *their* respective Writings and Discoveries.” The first possessive has animated much of Fourth Amendment doctrine because courts turn to state property law to determine if an individual can properly claim that the house, papers or effects searched were their own.⁴³ But the parallel possessive in the Copyright Clause as a relevant source of law focus in Fourth Amendment law has escaped notice in search and seizure doctrine. This section demonstrates that intellectual property law analogously provides a metaphor to inform the reasonable expectation of privacy in writings or intangible effects.

The Court has held that the reasonableness of a search turns on whether one has a reasonable expectation of privacy in the place or thing searched. And whether an expectation of privacy is reasonable or not has always turned upon bodies of law outside of the Fourth Amendment. Privacy expectations are reflected in laws or societal norms. So a reasonable expectation of privacy “must have 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.”⁴⁴ And the most consistently recognized subjective and objective expectation of privacy is one that derives, at least in part, “from the right to exclude others from the property in question.”⁴⁵

It is state property law that establishes the right to exclude others.⁴⁶ Protection of the home, for example, receives the most stringent Fourth Amendment protection because of the attendant right to exclude others.⁴⁷

⁴³ Orin S. Kerr, *Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 Mich. L. Rev. 801 (2003). Cf. Sherry F. Colb, *A World Without Privacy: Why Property Does Not Define the Limits of the Right Against Unreasonable Searches and Seizures*, 102 Mich. L. Rev. 889 (2003).

⁴⁴ *Rakas v. Illinois*, 439 U.S. 128, fn. 12 (1978).

⁴⁵ *United States v. Lyons*, 992 F.2d 1029, 1031 (10th Cir.1993); *see also Rakas v. Illinois*, 438 U.S. 128, fn. 12 (1978).

⁴⁶ *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 433 (1982) (Holding that the right to exclude is “one of the most essential sticks in the bundle of rights that are commonly characterized as property.”); *Kaiser Aetna v. U.S.*, 444 U.S. 164, 176 (1979) (Finding the right to exclude to be a fundamental element of private property).

⁴⁷ E.g., *Alderman v. United States*, 394 U.S. 165 (1969); *Mincey v. Arizona*, 437 U.S. 385 (1978); *Payton v. New York*, 445 U.S. 573 (1980).

Lawful possession per state property law provides “an important consideration in determining whether a defendant had a legitimate expectation of privacy in the area searched.”⁴⁸ But property law is not the only source of a right to exclude others. Intellectual property law likewise includes a right to exclude. Of course, the norms underlying the right to exclude others in property law differs from the norms underlying the right to exclude others in intellectual property law. Property rights are designed not only to ensure the productive use of real property but also includes a crucial privacy dimension for individuals. Intellectual property law is by contrast generally understood as a mechanism to encourage the disclosure of inventions and writings to society, rather than a mechanism to secure privacy of authors. Nevertheless, common law copyright historically included within it a strong privacy dimension just as real property law does today. Analogously, just as property law informs searches of real property, intellectual property law may serve as a useful metaphor and legal referent in assessing the reasonableness of searches of intellectual property.

At first glance, it may seem odd that the scope of Fourth Amendment rights might be, to some extent, contingent on the exercise of state power. But in fact, the scope of many constitutional rights is contingent on non-constitutional bodies of law. The Fifth Amendment prohibits the deprivation of property without due process and the taking of private property without just compensation, but state law generally defines property.⁴⁹ This does not mean that state law is dispositive or that states can define these constitutional rights out of existence; the meaning of constitutional “property” is ultimately a federal question.⁵⁰ But, within broad parameters, state law informs the scope of the constitutional right.

Likewise, in the Fourth Amendment context the reasonableness of a search is importantly informed by non-constitutional law. The Court has tied Fourth Amendment interests to what society is prepared to recognize as reasonable.⁵¹ The right to exclude others from property law has until now served as the primary legal referent.⁵² This is not to say that reference to real property law descriptively defines all Fourth Amendment cases. Only that the primary source of law to which the Court has turned to

⁴⁸ U.S. v. Lyons, 992 F.2d 1029, 1031 (10th Cir. 2003).

⁴⁹ RICHARD H. FALLON, JR., DANIEL MELTZER, AND DAVID L. SHAPIRO, HART AND WECHSLER’S: THE FEDERAL COURTS AND THE FEDERAL SYSTEM 530 (Fifth Edition 2003).

⁵⁰ RICHARD H. FALLON, JR., DANIEL MELTZER, AND DAVID L. SHAPIRO, HART AND WECHSLER’S: THE FEDERAL COURTS AND THE FEDERAL SYSTEM 535 (Fifth Edition 2003).

⁵¹ Katz v. United States, 389 U.S. 347 (1967).

⁵² Orin S. Kerr, *Fourth Amendment and New Technologies*, supra note 43, at 809-10 (“Descriptively speaking, the basic contours of modern Fourth Amendment doctrine are largely keyed to property law. Although the phrase ‘reasonable expectation of privacy’ sounds mystical, in most (though not all) cases, an expectation of privacy becomes ‘reasonable’ only when it is backed by a right to exclude borrowed from real property law.”).

inform what constitutes a reasonable expectation of law has until now been real property law. This section illustrates how intellectual property is the far more relevant source of law to inform searches and seizures of intangible property. Just as state property law informs the reasonableness of searches of “houses,” intellectual property law provides important insights as to what constitutes unreasonable searches of “papers and effects.”

1. There’s a “Their” There

Property law and intellectual property law both relate to the key possessive found in the Fourth Amendment. The Fourth Amendment guarantees “the right of the people to be secure in *their* persons, houses, papers, and effects,” thereby securing personal rights to individuals. The Copyright Clause of the U.S. Constitution similarly enables Congress to secure “to Authors and Inventors the exclusive Right to *their* respective Writings and Discoveries.” Congress has done so via the Copyright Act of 1976, which grants exclusive rights to authors and inventors. A patent, for example, gives the patent-holder a right to exclude others from making, selling, or using the patented invention.⁵³ Copyright also contains a right to exclude,⁵⁴ which permits the copyright holder to simply deny others access to or the use of the copyrighted material.⁵⁵ In trade secret law, the

⁵³ *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 703 (Fed. Cir. 1992) (“The enforceability of restrictions on the use of patented goods derives from the patent grant, which is in classical terms of property: the right to exclude. ‘Every patent shall contain ... a grant ... for the term of seventeen years ... of the right to exclude others from making, using, or selling the invention throughout the United States....’ This right to exclude may be waived in whole or in part.”) (quoting 35 U.S.C. § 154); *Cont’l Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 429 (1908) (“As to the suggestion that competitors were excluded from the use of the new patent, we answer that such exclusion may be said to have been of the *very essence of the right conferred by the patent*, as it is the privilege of any owner of property to use or not use it, without question of motive.”) (emphasis added); *Kimberly-Clark Corp. v. Procter & Gamble Distrib. Co., Inc.*, 973 F.2d 911, 914 (Fed. Cir. 1992) (“The rights to which one is entitled by ownership of a patent are principally the right to exclude others from making, using, and selling patented subject matter. 35 U.S.C. § 271(a) (‘Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention ... infringes the patent’). The fact that the Patent and Trademark Office issued patents to both K–C and P & G on the same invention is a serious impediment to the enjoyment of this essential right to exclude.”); *Brooktrout, Inc. v. Eicon Networks Corp.*, 203-CV-59, 2007 WL 1730112 (E.D. Tex. June 14, 2007) (stating that the “right to exclude . . . is the essence of the intellectual property,” i.e. patent, “at issue”).

⁵⁴ *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 392 (2006) (“[A] copyright holder possesses ‘the right to exclude others from using his property.’”) (quoting *Fox Film Corp. v. Doyal*, 286 U. S. 123, 127 (1932)); *Lantern Press, Inc. v. Am. Publishers Co.*, 419 F. Supp. 1267, 1271 (E.D.N.Y. 1976) (“[The] copyright was not identical with the copyrighted work but existed separately from it as the intangible right to exclude all others from printing, publishing, copying or vending the work.”).

⁵⁵ *Authors Guild v. Google, Inc.*, 770 F. Supp. 2d 666, 681 (S.D.N.Y. 2011) (“A copyright owner’s right to exclude others from using his property is fundamental and

right to exclude is crucial to the information being protected as a secret.⁵⁶ That right makes it unlawful to uncover the secret in certain impermissible ways.⁵⁷ Even trademark law contains a limited right to exclude others⁵⁸ from appropriation and misuse of a trademark in the marketplace.⁵⁹

The possessive “their” in the Fourth Amendment extends to each person a privacy interest in his or her own person, house, papers and effects.⁶⁰ “Their” means “of, belonging to, or pertaining to them.”⁶¹ Whether something is theirs depends on property or intellectual property law, which define ownership of one’s own self, houses, papers or effects. One’s interests may be violated whether a search occurs in one’s own home or that of another, but an individual will only be heard to complain when his own privacy interests have been violated. As Justice Scalia has explained, the Fourth Amendment ensures that “each person has the right

beyond dispute. . . . As counsel for Amazon argued: “[T]he law of the United States is a copyright owner may sit back, do nothing and enjoy his property rights untrammelled by others exploiting his works without permission.”) (citing *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 (1932)).

⁵⁶ *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1011, 104 S. Ct. 2862, 2877, 81 L. Ed. 2d 815 (1984) (“With respect to a trade secret, the right to exclude others is central to the very definition of the property interest. Once the data that constitute a trade secret are disclosed to others, or others are allowed to use those data, the holder of the trade secret has lost his property interest in the data.”).

⁵⁷ *Bridgestone Americas Holding, Inc. v. Mayberry*, 878 N.E.2d 189, 192 (Ind. 2007) (“One of the biggest distinctions between a trade secret and ordinary property is the lack of a right to exclude others from a trade secret’s use. Thus, trade secrets may be thought of as a weaker form of property.”) (citing Robert G. Bone, *A New Look at Trade Secret Law: Doctrine in Search of Justification*, 86 Cal. L.Rev. 241, 254 (1998); *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 489–90 (1974)).

⁵⁸ *Mashantucket Pequot Tribe v. Redican*, 403 F. Supp. 2d 184, 190 (D. Conn. 2005) (“The owner of a trademark may enforce the right to exclude others from using the trademark in an action for trademark infringement.”); *Ford Motor Co. v. Lloyd Design Corp.*, 184 F. Supp. 2d 665, 673 (E.D. Mich. 2002) (“To say one has a ‘trademark’ implies ownership and ownership implies the right to exclude others. If the law will not protect one’s claim of right to exclude others from using an alleged trademark, then he does not own a ‘trademark,’ for that which all are free to use cannot be a trademark.”).

⁵⁹ *La Societe Anonyme des Parfums le Galion v. Jean Patou, Inc.*, 495 F.2d 1265, 1271 (2d Cir. 1974) (“[T]he right to exclusive use of a trademark derives from its appropriation and subsequent use in the marketplace. The user who first appropriates the mark obtains an enforceable right to exclude others from using it, as long as the initial appropriation and use are accompanied by an intention to continue exploiting the mark commercially.”) (citing *Trade-Mark Cases*, 100 U.S. 82, 94 (1879); *United Drug Co. v. Theodore Rectanus Co.*, 248 U.S. 90 (1918); *Kohler Manufacturing Co. v. Beeshore*, 59 F. 572, 576 (3d Cir. 1893); *Worden v. Cannaliato*, 285 F. 988, 990 (D.C. Cir. 1924); *American Foods, Inc. v. Golden Flake, Inc.*, 312 F.2d 619 (5th Cir. 1963); *Restatement (Second) of Torts* § 719, comment b (tent. draft 1963)); *Jordan K. Rand, Ltd. v. Lazoff Bros., Inc.*, 537 F. Supp. 587, 593 (D.P.R. 1982) (“[T]he right to use a trademark is unaffected by failure to register, and not even the right to exclude is obtained from registration of the trademark. The ownership of a trademark is acquired by use not by registration.”) (citing *Holiday Inn v. Holiday Inns, Inc.*, 534 F.2d 312 (Cust. & Pat. App. 1976)).

⁶⁰ *Minnesota v. Carter*, 525 U.S. 83, 92 (1988) (Scalia, J., concurring).

⁶¹ *Oxford English Dictionary*, Second edition, 1989; online version June 2011.

to be secure against unreasonable searches and seizures in *his own* person, house, papers and effects.”⁶²

2. They’re Authors

The Fourth Amendment has always protected the security of one’s private papers.⁶³ Yet courts and scholars have overlooked that papers include the protected writings authored by individuals, and not just the papers in their keep. “Writings” include “all forms of writing, printing, engravings, etchings, etc., by which the ideas of the mind of the author are given visible expression.”⁶⁴ Such “writings” are a special and distinct subset of Fourth Amendment “papers.” Lord Camden in *Entick*, the Framers of the U.S. Constitution, and modern courts and scholars today are in near unanimity in their belief that the Fourth Amendment safeguards papers not as “mere parchment[s],” but also the “words, figures, and images the citizen chose to record—his private information.”⁶⁵

“Authors” are those “to whom anything owes its origin; originator; maker.”⁶⁶ The Copyright Act of 1976 defines an “author” as one who creates an original work “fixed in [a] tangible medium of expression.”⁶⁷ An author is one who creates some original expression and fixes that expression in a medium that is capable of being perceived, reproduced, or communicated.⁶⁸ Some modicum of originality is the touchstone of copyright protection.⁶⁹ But the barrier to becoming a copyright author entitled to exclusive rights is quite low—an author need not even intend to

⁶² *Id.* at 92-93(1988) (Scalia, J., concurring) (discussing the founding era materials that confirm that this interpretation of “their” was the understood meaning at the founding of the Constitution. Looking to similar provisions already existing in state constitutions, four had language similar to the Fourth Amendment, while two others avoided any ambiguity by “using the singular instead of the plural.”).

⁶³ Andrew Riggs Dunlap, Note: *Fixing the Fourth Amendment with Trade Secret Law: A Response to Kyllo v. United States*, 90 GEO. L. J. 2175, 2190-91 (2002).

⁶⁴ *Id.* at 58.

⁶⁵ Andrew Riggs Dunlap, Note: *Fixing the Fourth Amendment with Trade Secret Law: A Response to Kyllo v. United States*, 90 GEO. L. J. 2175, 2190-91 (2002) (citing 19 Howell’s State Trials 1030, 1066 (C.P. 1765); NELSON B. LASSON, THE HISTORY AND DEVELOPMENT OF THE FOURTH AMENDMENT AND THE UNITED STATES CONSTITUTION 31-32 (1937); RICHARD A. POSNER, THE ECONOMICS OF JUSTICE 318 (1981); *Zurcher v. Stanford Daily*, 436 U.S. 547, 580 n. 7 (1978) (Stevens, J., dissenting).

⁶⁶ *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 54, 58 (1884)

⁶⁷ 17 U.S.C. § 102 (2006).

⁶⁸ *E.g. Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991) (defining original in copyright to mean independently created by an author rather than copied and containing some minimal degree of creativity); 17 U.S.C. § 101 (2006). Neither fixation nor originality, however, is a significant barrier to copyright. “Fixation can be as simple as jotting one’s thoughts on a notepad, hitting the ‘record’ button on an electronic device, or pressing a camera’s shutter button.” Laura A. Heymann, *How to Write a Life: Some Thoughts on Fixation and the Copyright/Privacy Divide*, 51 William and Mary L. Rev. 825, 834 (2009). And originality requires only a minimal degree of creativity, admitting to far-ranging work from commercial advertisements, to photography. *Id.* at 834.

⁶⁹ *Feist Publ’m v. Rural Telephone Serv. Inc.*, 499 U.S. 340, 347 (1991).

create an expressive work. Mere fortuity “caused by a hand jolted by ‘a clap of thunder’” will suffice.⁷⁰

Although writings are a subset of papers safeguard by the Fourth Amendment, different possessory interests attach to writings than mere parchments. Intellectual property law is addressed to that difference. Intellectual property law governs the exclusive rights in the substance of writings—the expression—while property law governs the exclusive rights in mere parchment.

An author can originate intangible “effects” safeguarded by the Fourth Amendment just as he can originate the “papers” protected by the same. As Shakespeare wrote: “Of those effects for which I did the murder? My crown, mine own ambition, and my queen.” Despite the Court’s proclamation in *Olmstead* that the Fourth Amendment extends only to tangible effects,⁷¹ it has since recognized otherwise and extended Fourth Amendment safeguards to a spoken conversation into a telephone.⁷² In the modern age, intangible effects are often at least as important as tangible ones. Consider the electronic documents stored in a cloud server or text messages and e-mails exchanged with others. Authorship and ownership exists just as much in these effects as printed papers that take tangible form. From 1599 when Shakespeare penned Hamlet to modern day, one’s possessory effects include tangible and intangible thoughts, ambitions, and expressions. Whether personal or impersonal, worn or carried about, spoken aloud, written down, or kept sacrosanct in the brain, these intangible effects⁷³ are secured by copyright and the Fourth Amendment.⁷⁴

B. *The Right Legal Referent for the Right to Exclude*

Searches and seizures of mere parchments implicate different privacy interest than searches of writings and intangible effects. Authors have a special privacy interest in their own written expressions beyond their possessory interest in other physical papers. Scott Turow, for example, may have the exact same seclusion interest in his dog-eared copy of the latest Michael Crichton paperback as he does in the physical pages of his own new, handwritten, unpublished manuscript. But, in addition, he also

⁷⁰ Heymann, *supra* note ___, at 835 (citing *Alfred Bell & Co. v. Catalda Fine Arts, Inc.*, 191 F.2d 99 (2d Cir. 1951) (“A copyist’s bad eyesight or defective musculature, or a shock caused by a clap of thunder, may yield sufficiently distinguishable variations. Having hit upon such a variation unintentionally, the ‘author’ may adopt it as his and copyright it.”)).

⁷¹ 77 U.S. 438, 456-57 (1928).

⁷² See discussion of *Katz v. United States*, 389 U.S. 347 (1967) in Part IA, *supra*.

⁷³ The Fourth Amendment safeguards only one’s lawful effects. *Haywood v. United States*, 268 F. 795 (7th Cir. 1920). One has no lawful possessory interests in stolen goods and therefore cannot claim that an interest in excluding others is at stake when the government searches or seizes such contraband. So, too, with his authored papers and effects. If papers or effects are the implements of a crime—such as counterfeit money and forged securities—then even constitutional authorship will not shroud those effects in privacy.

⁷⁴ *Robbins v. California*, 453 U.S. 420, 426 (1981).

has a qualitatively different, secrecy interest in the content of his own manuscript, which he does not have in Crichton's book.

Because the paradigmatic governmental search involves trespass upon real property, reasonableness inquiries have until now focused primarily upon the physical intrusion on one's seclusion. And yet there are at least two distinct privacy interests that arise in Fourth Amendment cases—seclusion and secrecy.⁷⁵ Although courts rarely make clear which of these privacy interests is implicated in any given case, it turns out that the distinction between seclusion and secrecy can explain and justify the outcome in a wide variety of cases.⁷⁶

1. Property and the Intrusion Upon Seclusion

Intrusion upon seclusion animates much of Fourth Amendment doctrine because lawful possession has traditionally informed expectation of privacy analysis.⁷⁷ The interest in seclusion is the interest in restricting access to one's person or effects by withdrawing from society.⁷⁸ Seclusion involves working in private, staying at home, storing information out of sight, and concealing things beyond the ordinary senses of detection by

⁷⁵ See generally Richard Posner, *The Uncertain Protection of Privacy by the Supreme Court*, 173 SUPREME CT. REV. 174 (1979). In Fourth Amendment law, Professor Slobogin has offered an intriguing proportionality principle of privacy, which uses empirical results about what "society" finds invasive to define the lawful interests underlying privacy. CHRISTOPHER SLOBOGIN, *PRIVACY AT RISK: THE NEW GOVERNMENT SURVEILLANCE AND THE FOURTH AMENDMENT* (2007). Particularly when information lacks a referent as to "how private [those] activities or records are," "surveys of the population should be considered relevant" in determining societal expectations of privacy. Christopher Slobogin, *Privacy and Public Opinion: A Reply to Kerr and Swire*, MINN. L. REV. at p. 6 (forthcoming). This approach has great intuitive appeal in theory, but it is difficult to see how it could be used in practice to gloss Fourth Amendment reasonableness. Orin S. Kerr, *Do We Need a New Fourth Amendment*, 107 MICH. L. REV. 951, 958 (2008) (arguing that "the more intrusive something is, the more it alters the world that existed before."). And while it may seem appealing to reach a democratic consensus on constitutional reasonableness, this approach is in some tension with the countermajoritarian motif of the Bill of Rights. Professor Orin Kerr, the leading scholar on cyber law and the Fourth Amendment, has paved the way for current doctrine, with a prescient focus on searches of electronic evidence. With his vast and deep work in the area he has concluded that no single model can descriptively suffice and proposes that four different models describe Fourth Amendment doctrine.

⁷⁶ In some bodily intrusion cases, courts have recognized separate interests in both physical intrusion upon bodily seclusion and in informational privacy in the bodily information. For example, the court in *People v. Adams*, 597 N.E.2d 574 (Ill. 1992), discussed the distinct individual interests that arise with warrantless and suspicionless HIV testing: "First, the drawing of the blood sample is itself an intrusion on the individual's bodily integrity. Second, the performance of the test on the sample also implicates fourth amendment interests." *Id.* at 579.

⁷⁷ But see William J. Stuntz, *Privacy's Problem and the Law of Criminal Procedure*, 93 Mich. L. Rev. 1016, 1021-22 (1995) (arguing that courts have defined infringement upon a reasonable expectation of privacy as intrusion upon capturing something secret, and that "privacy-as-secrecy dominates the case law.").

⁷⁸ Richard Posner, *Privacy, Secrecy and Reputation*, 28 Buff. L. Rev. 1, 3-4 (1979).

other people.⁷⁹ When roommates complain of lack of privacy, they are speaking of privacy as seclusion.⁸⁰ This is the sense of privacy described by Brandeis and Warren in *The Right to Privacy*.⁸¹ The distinctive feature of the seclusion interest is that it does not differentiate between different types of information that are equally secluded nor does it depend upon authorship of the information secluded.

In *Kyllo*, the Court found the use of thermal imaging to detect heat emanating from a private home was a Fourth Amendment search, because it intruded upon the occupants' seclusion in their home. By treating physical privacy as paramount, the Court assigned to every detail inside the home equal value. Justice Scalia opined: "The Fourth Amendment's protection of the home has never been tied to the quality or the quantity of information obtained."⁸² Instead every physical intrusion upon seclusion in the home "by even one fraction of an inch," is a Fourth Amendment search. In the home, "all details are intimate details, because the entire area is held safe from prying government eyes."⁸³ One could read this case to protect secrecy—in that the Court was concerned with the invasion upon the intimate details that could have been revealed within the home. And yet, while the concern about intimate details is often at the heart of Fourth Amendment privacy inquiries, the intrusion upon those intimate details is measured not by the value of the information revealed but by the physical intrusion upon the space where the information was secluded. In other words, the measure of intrusion does not align with the purported interest in secrecy protected. A better way to describe the case law is a misalignment between the interests sought to be protected—the information itself—and the measure of invasion upon those interests—until now physical intrusion.⁸⁴ Even though thermal imaging did not physically interfere with the home or its occupants, the seclusion inside the home, keeping prying senses out of its occurrences—had been compromised.

Likewise, in bodily intrusion cases, including forcible stomach pumping,⁸⁵ collection of hair,⁸⁶ blood,⁸⁷ urine,⁸⁸ tissue,⁸⁹ or breath

⁷⁹ Richard Posner, *Rethinking the Fourth Amendment*, 1981 SUP. CT. REV. 49, 174 (1981)

⁸⁰ As Richard Posner has described in significant detail over several articles, this notion of privacy can be traced back to the 17th century as "withdrawal from the cares of public life through physical removal to a secluded garden or country estate." Richard Posner, *Privacy, Secrecy and Reputation*, 28 BUFF. L. REV. 1, 4 (1979).

⁸¹ Posner, *Privacy, Secrecy and Reputation*, *supra* note 78, at 5.

⁸² *Kyllo v. United States*, 533 U.S. 27, 37 (2001).

⁸³ *Kyllo*, 533 U.S. at 37.

⁸⁴ This approach also explains the "plain view" doctrine and "open air" cases.

⁸⁵ E.g., *Roching v. California*, 342 U.S. 165 (1952) (holding that pumping a non-consenting suspect's stomach violated his due process rights the same as if he had been forced to give a coerced confession); *Winston v. Lee*, 470 U.S. 753 (1985) (ruling that a criminal suspect cannot be forced to undergo a surgery and general anesthesia to remove a bullet that would provide evidence of guilt because such a procedure was too physically intrusive).

samples,⁹⁰ courts and scholars focus on the physical indignity to the body as the measure of intrusiveness of the search.⁹¹ But they do not generally focus on the content or the authorship of the information sought.

Since *Katz*, Fourth Amendment law has also addressed the concealment of information.⁹² But even in *Katz* the Court ultimately focused on the fact that Katz had secluded himself in the phone booth, and not on his interest in the substantive secrecy of his conversation. Katz had secluded himself from the prying ears of others but not their prying eyes, secluding his voice while he was speaking but not his physical presence while he did so. The police intruded upon the seclusion that Katz had sought, by listening to the sounds he made while conversing inside the phone booth.⁹³

In these cases, the Court has turned to real property law to evaluate the alleged expectation of privacy of the person searched. Property rights to exclude other are strongest when the home or body is searched and weaker in searches of property voluntarily and ordinarily exposed to the public.⁹⁴ An interest in excluding the government from tracking one's automobile, for example, is weaker than an interest in keeping the government out of one's own home because an automobile is used on public thoroughways thereby voluntarily exposing its movements to public view.

⁸⁶ E.g., *United States v. D'Amico*, 408 F.2d 331 (2d Cir. 1969) (finding that the collection of defendant's hair once cut did not implicate his Fourth Amendment privacy interests, thereby suggesting no substantive secrecy interest in his hair sample, only a seclusion interest that he had abandoned).

⁸⁷ E.g., *Skinner v. Rwy Exec. Ass'n*, 489 U.S. 602 (1989) (ruling, with respect to mandatory blood and urine tests for railway employees that "[i]n light of society's concern for the security of one's person . . . it is obvious that [a] physical intrusion, penetrating beneath the skin, infringes an expectation of privacy that society is prepared to recognize as reasonable).

⁸⁸ *Id.*

⁸⁹ E.g., *Brachter v. U.S.*, 149 F.2d 742 (4th Cir. 1945) (cert. denied) (finding that a tissue scraping beneath defendant's fingernails when he was in the stationhouse for questioning was merited because of exigent circumstances that given the opportunity he would destroy the evidence).

⁹⁰ E.g., *Skinner v. Rwy Exec. Ass'n*, 489 U.S. 602 (1989) (holding that breath tests are less physically intrusive and "reveal the level of alcohol in the employee's bloodstream and nothing more . . . breath tests reveal no other facts in which the employee has a substantial privacy interest). Although the Court did not elaborate on what else a blood test might show that would implicate a different privacy interest, the implication seems to be that the Court believed there may be at least some secrecy interest in the content of one's blood, in addition to a seclusion interest in the same.

⁹¹ E.g., David C. Sarnacki, *Analyzing the Reasonableness of Bodily Intrusions*, 68 MARQ. L. REV. 130, 142-43 (1985) (arguing that in bodily intrusion cases, the degree of intrusiveness should be evaluated in terms of the nature of the test, the manner in which it is performed, and the availability of less intrusive alternatives).

⁹² See Brian Hoffstadt, Arnold, *Digital Media*, and The Resurrection of *Boyd*, 81 S. CAL. L. REV. PS 8, 9 (2008)

⁹³ *Katz v. United States*, 389 U.S. 347, 352 (1967).

⁹⁴ See Kerr, *Fourth Amendment and New Technologies*, supra note 43, at 815-27.

The reasonableness of an intrusion upon seclusion depends on the physical intrusiveness of the search, not the content or authorship of the information sought or revealed. The more physically intrusive the search is the greater justification the government will require to render it reasonable.⁹⁵ But whether a search reveals a soccer ball or a sex tape, the seclusion interest invaded is one and the same. The place intruded upon and the manner and means used to accomplish the intrusion inform the reasonableness of the search.

2. Copyright and Privacy

We are accustomed to thinking of intellectual property law as a mechanism for securing the economic interests of authors and inventors. But just as the right to exclude from property law has an important Fourth Amendment privacy implication, the right to exclude from copyright has historically included a crucial privacy dimension. Property rights alone do not define Fourth Amendment privacy interests. A Fourth Amendment interest does not mean that *property law* recognizes a privacy rights for lawful possessors of property, but that the Fourth Amendment confers a privacy interest based on a right to exclude others from the area being searched. Lawful possession is therefore neither the starting nor the ending point of a Fourth Amendment reasonableness inquiry.⁹⁶

Copyright law accords authors a privacy interest in both the secrecy and seclusion of their writings. A mere possessor of intellectual property authored or owned by another has only one of these interests. His rightful interest is in the seclusion—but not in the secrecy—of that information. The Fourth Amendment safeguards the privacy of authors in their papers and their effects. The Fourth Amendment, in turn, confers a privacy interest based on the possessor's right to exclude—a right recognized by copyright law for authors in their expressions.

The most basic principles of copyright predate the Copyright Clause and the Fourth Amendment. At common law, authors enjoyed a broad and exclusive interest in their own expressions. Common-law copyright entitled authors to a broad right of non-disclosure of unpublished writing, to keep their expressive effects concealed.⁹⁷

Scholars have painstakingly detailed the individual interests protected by common law copyright.⁹⁸ Using the example of a private letter as a guide, one scholar persuasively illustrated how the exclusive right of authors protected the privacy of the sender, and how copyright extends to all writers of letters whether those letters contained literary merit or not.⁹⁹ The right to exclude granted to authors applied even if their writings were

⁹⁵ *Id.*

⁹⁶ U. S. v. Salvucci, 448 U.S. 83, 91-92 (1980).

⁹⁷ Judge Jon O. Newman, Copyright Law and the Protection of Privacy, 12 Colum.-VLA J. L. & Arts 459, 462 (1988)

⁹⁸ *Id.* at 462.

⁹⁹ Newman, *supra* note 97, at 464.

of the greatest public interest and importance. When Alan Cranston copied nearly verbatim an earlier and unabridged version of Adolf Hitler's "Mein Kampf" and disseminated it through Noram Publishing Company, the Southern District of New York issued a temporary injunction to enjoin the infringing publishing company from selling the book, notwithstanding the fact that an "average person interested in world events, interested in Hitler to the extent of wondering what kind of man he might be, interested in reading about current events in which Hitler has been taking an active part," would want to read the infringing copy.¹⁰⁰

Brandeis and Warren located their right to privacy in the common-law copyright privilege of authors to exclude others from their unpublished writings.¹⁰¹ Common law copyright gave authors an interest in their "private rights, not just to secure the opportunity for authors to enjoy their right of first publication—that is, the right to reap the economic benefit of their efforts—but also to provide protection for those who preferred not to publish at all."¹⁰² Copyright protected the "production of mind," as "property in every essential sense."¹⁰³ It is the production of mind that copyright uniquely protects and should be safeguarded by the Fourth Amendment.

The 1976 Copyright Revision Act preempted common-law copyright, with respect to "legal or equitable rights that are not equivalent to any of the exclusive rights within the general scope of copyright as specified by" the statute.¹⁰⁴ In the statutory regime, as under the common law, the right not to publish—the secrecy right of authors—also received protection. Both published and unpublished writings came within the ambit of the Act, extending exclusive rights to authors according to the grants and limitations of the Act. And the Copyright Act preserved the privacy interest of authors in their undisclosed expression—irrespective of the economic value that may or may not obtain from doing so. The right of first publication in modern copyright law includes within it the right not right to keep information secret¹⁰⁵ or to not publish at all. The fact that an author is known to be using copyright to keep works unpublished, rather than publish them, does not undermine whether he is entitled to exclusive rights under copyright.¹⁰⁶ And while some have objected that the right not

¹⁰⁰ Houghton Mifflin Co. v. Noram Pub. Co., Inc., 28 F. Supp. 676 (1930).

¹⁰¹ Samuel D. Warren and Louis D. Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193 (1890).

¹⁰² Newman, *supra* note 99, at 466.

¹⁰³ Robert C. Post, *Rereading Warren and Brandeis: Privacy, Property, and Appropriation*, 41 CASE W. RES. L. REV. 647, 654 (1990).

¹⁰⁴ 17 U.S.C. § 301 (b)(3).

¹⁰⁵ *Hartman v. John D. Park & Sons Co.*, 145 F. 358 (E.D. Ky. 1906), *rev'd on other grounds*, 153 F. 24 (6th Cir. 1907), *cert. dismissed*, 212 U.S. 588 (1908) (recognizing "the right to secrecy which the owner of a secret process or an inventor or author who has not obtained a patent or copyright has before publication.").

¹⁰⁶ *Chicago Bd. of Educ. v. Substance, Inc.*, 354 F.3d 624, 627 (7th Cir. 2003) ("For another, federal copyright is now available for unpublished works that the author intends never to see the light of day."); *Salinger v. Random House, Inc.*, 811 F.2d 90, 98 (2nd

to publish is contrary to the aims of copyright, this objection has not generally won doctrinal acceptance.¹⁰⁷

J.D. Salinger made most famous use of the privacy dimension of copyright.¹⁰⁸ When Ian Hamilton undertook to write Salinger's biography, Salinger refused to cooperate, and informed Hamilton that he preferred that a biography not be written about him during his lifetime.¹⁰⁹ Hamilton proceeded anyway and dedicated the next three years to writing the biography that he entitled *J.D. Salinger: A Writing Life*.¹¹⁰

Hamilton drew extensively from several unpublished letters that Salinger had written between 1939 and 1961.¹¹¹ Most were written to Whit Burnett, Salinger's friend and an editor at *Story* magazine. Other recipients included Judge Learned Hand and Ernest Hemingway.¹¹² The recipients or their representatives had donated the letters to the libraries of Harvard, Princeton and the University of Texas.¹¹³ Hamilton paraphrased substantial portions of many of these unpublished letters in a manner that the Court of Appeals for the Second Circuit found close enough to the original to constitute infringement. Hamilton unsuccessfully argued that the paraphrases and excerpts constituted fair use. The Court of Appeals acknowledged that a biographer like Hamilton could report the facts contained within the letters, but Salinger nevertheless had the right to protect the expressive content of his unpublished writings for the term of

Cir. 1987) (holding that potential harm to value of plaintiff's works "is not lessened by the fact that their author has disavowed any intention to publish them during his lifetime ... [h]e is entitled to protect his opportunity to sell his letters"); *Religious Tech. Ctr. v. Lerma*, CIV.A. 95-1107-A, 1996 WL 633131 (E.D. Va. Oct. 4, 1996) ("Relying on *Harper v. Row*, Lerma suggests that where a copyright owner intends never to exploit the right of first publication, the need to protect that right diminishes and the scope of fair use correspondingly expands. Lerma misreads his authorities on this point.").

¹⁰⁷ *Harper & Row Publishers, Inc. v. Nation Enterprises*, 471 U.S. 539, 605 (1985) (Brennan, J., dissenting) (criticizing the majority for permitting Harper and Row to "monopolize information" and alleging that the majority decision jeopardized the "robust debate of public issues that is the 'essence of self-government'"). See also Miranda Oshige McGowan, *Property's Portrait of A Lady*, 85 Minn. L. Rev. 1037, 1113 (2001) ("Salinger's right not to publish arguably frustrates the primary purpose of the copyright laws--making creative works available to society--by delaying publication of such a work at least until after the author's death, and perhaps 70 years longer if the heir does not want to publish the work. Nevertheless, it would be hard to argue that the copyright laws should be changed to make authors bring their works to market against their will.").

¹⁰⁸ *Salinger v. Random House, Inc.*, 811 F.2d 90 (2d Cir.), cert. denied, 484 U.S. 890, 108 S.Ct. 213, 98 L.Ed.2d 177 (1987).

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Salinger v. Random House, Inc.*, 811 F.2d 90, 92 (2d Cir.), cert. denied, 484 U.S. 890, 108 S.Ct. 213, 98 L.Ed.2d 177 (1987).

¹¹² *Id.* at 93.

¹¹³ *Salinger v. Random House, Inc.*, 811 F.2d 90, 93 (2d Cir.), cert. denied, 484 U.S. 890, 108 S.Ct. 213, 98 L.Ed.2d 177 (1987).

his copyright.¹¹⁴ Unpublished works, the court explained, “normally enjoy complete protection against copying any protected expression.”¹¹⁵

Of course, the scope of Fourth Amendment protection of intellectual property is not entirely dependent upon Congress’s policy choices in copyright. Just as states cannot abrogate the Takings Clause by a clever redefinition of “property,” Congress cannot sport away Fourth Amendment protections for intellectual property with a too-clever gerrymandering of copyright law. Instead, a Fourth Amendment privacy interest for authors in their unpublished expressions may align more closely to the English common law approach of giving authors “near complete protection to [their] unpublished private writing, including its factual content.” Common law copyright included within it a much stronger dimension of privacy than modern copyright law, and that history may track more strongly to societal expectations of privacy in their writings and their effects. As an analogical tool, common-law copyright aligns more closely with societal intuitions about secrecy of informational privacy and this historical protection would better untangle expectations of privacy in informational effects.

In short, just as state property law generally informs Fourth Amendment protections against tangible searches, likewise, within broad constitutional parameters, by analogy intellectual property law serves an important metaphor for Fourth Amendment’s protection of intellectual property.¹¹⁶

3. Intrusion Upon Secrecy

The Fourth Amendment privacy interest implicated by an author’s right to exclude others from their expressive conduct is not the same as the privacy interest implicated by the right to exclude others from one’s home. As discussed above, the privacy interest in one’s home is a seclusion interest, and it generally does not turn on what is being secluded. By contrast, copyright entitles authors to keep confidential the substantive content of their expressions. Secrecy can be preserved at least in part by seclusion, or through non-disclosure of intimate, personal, or potentially embarrassing information.¹¹⁷ But the *Salinger* case reveals that substantive

¹¹⁴ *Salinger v. Random House, Inc.*, 811 F.2d 90, 100 (2d Cir.), *cert. denied*, 484 U.S. 890, 108 S.Ct. 213, 98 L.Ed.2d 177 (1987).

¹¹⁵ *Salinger v. Random House, Inc.*, 811 F.2d 90, 97 (2d Cir.), *cert. denied*, 484 U.S. 890, 108 S.Ct. 213, 98 L.Ed.2d 177 (1987).

¹¹⁷ James T. Tomkovicz, *Beyond Secrecy for Secrecy’s Sake: Toward an Expanded Vision of the Fourth Amendment Privacy Province*, 36 HASTINGS L. J. 645, 662 (1985); Daniel Solove, *Conceptualizing Privacy*, 90 CAL. L. REV. 1087, 1105 (2002) (“One of the most common understandings of privacy is that it constitutes the secrecy of certain matters”).

¹¹⁷ James T. Tomkovicz, *Beyond Secrecy for Secrecy’s Sake: Toward an Expanded Vision of the Fourth Amendment Privacy Province*, 36 HASTINGS L. J. 645, 662 (1985); Daniel Solove, *Conceptualizing Privacy*, 90 CAL. L. REV. 1087, 1105 (2002) (“One of

secrecy pertains even if the information is not secluded. Although the recipients had donated Salinger's letters to several libraries, Salinger had only shared the letters with the intended recipients, and therefore still retained a right to exclude Hamilton from broadly publishing the expressive content contained therein. In the Fourth Amendment context, a government search or seizure of undisclosed writings and intangible effects, or of writings and effects shared only with an intended recipient, violates his expectation of privacy in his protected expressions.

Secrecy is a far more important privacy interest than seclusion in the information age. In modern searches, investigators need not break down doors, rummage through drawers, or invade one's peace and repose by even one "fraction of an inch" to obtain incriminating evidence.¹¹⁸ Instead the government may unobtrusively intercept information as it travels in electrical frequencies, electrical wires, radio frequency signals (e.g. Bluetooth or Wi-Fi), or via the GSM family of protocols that communicate between cell phones and towers. The government can intercept unsecured information directly, and it can intercept secured information either from third-party service providers or from the ultimate recipients.¹¹⁹ And in the not-too-distant future, the government could imperceptibly and noninvasively obtain information directly from a suspect's brain.¹²⁰

Justice Brandeis recognized that Fourth Amendment privacy concerns includes a secrecy interest—or the right of non-disclosure of one's secrets:

"The personal effects and possessions of the individual . . . are sacrosanct. . . . Privacy involves the choice of individuals to disclose or to reveal what he believes, what he thinks, what he possesses Those who wrote the Bill of Rights believed that every individual needs both to communicate with others and to keep his affairs to himself. That dual aspect of privacy means that the individual should have the freedom to select for himself the time and circumstances when he will share his secrets with others and decide the extent of that sharing."¹²¹

the most common understandings of privacy is that it constitutes the secrecy of certain matters).

¹¹⁸ E.g., *United States v. Knotts*, 460 U.S. 276 (1983) (finding that the use of beeper device to track the shipment of chloroform to a person's home was not a search because it merely enabled what the naked eye could see, had it been there to see it).

¹¹⁹ *Id.* ("Nothing in the Fourth Amendment prohibited the police from augmenting sensory faculties bestowed upon them at birth with such enhancement as science and technology afforded them in this case).

¹²⁰ Nita A. Farahany, *Incriminating Thoughts*, 64 *Stan. L. Rev.* ___ (2012) (cross-reference section IIC on Memories)

¹²¹ *Warden v. Hayden*, 387 U.S. 294, 323 (1967) (Brandeis, J., dissenting).

In at least a few cases, the Court seems to intuit the intellectual property dimension of the Fourth Amendment without saying so explicitly.¹²² In *Walter v. United States*,¹²³ for example, the Court addressed the warrantless search of the content of films that were obtained without any intrusion upon the owner's property. The film owner had shipped them across state lines in a secure package that was mistakenly delivered to a third party.¹²⁴ The third party opened the box and found individual film boxes that had suggestive drawings and explicit descriptions of their contents. He then tendered the unwatched boxes of film to the FBI. Now in lawful possession of the boxes, the FBI agents watched the films to obtain evidence of their obscene content for use against the film owners in a criminal case. The Court found that although the FBI had not intruded upon the owner's property interests in the films, the agents nevertheless ran afoul of the Fourth Amendment by the warrantless search of the films' contents.¹²⁵ No property or seclusion interest of the film producer had been violated, but the warrantless search unreasonably intruded upon a privacy interest in secrecy.

Parsing the different privacy interests implicated, the Court found that despite the physical unobtrusiveness of the search, there remained an "unfrustrated portion of [Walter's] privacy interests" subject to Fourth Amendment protection.¹²⁶ Walter, the owner of the films, had an interest in the secrecy their contents, which he retained even after he sent them to a third-party recipient. That interest, as the author and originator of the films, is akin to the interests one retains in both the seclusion and secrecy of memorialized letters sent by postal mail or electronic messaging.¹²⁷ Walter's Fourth Amendment interest, like Salinger's copyright interest, is the distinctive interest of copyright owner in the content of his work.

The best reading of *Walter* is that the Court has recognized that individuals sometimes retain an interest in secrecy of the substantive

¹²² E.g. *U.S. v. Miller*, 425 U.S. 435, 442 (1976) ("We must examine the nature of the particular documents sought to be protected in order to determine whether there is a legitimate 'expectation of privacy' concerning their contents.")

¹²³ *Walter v. United States*, 447 U.S. 649 (1980).

¹²⁴ *Id.* at 649.

¹²⁵ *Id.* at 649.

¹²⁶ *Walter v. United States*, 447 U.S. 649, 659 (1980).

¹²⁷ *Ex Parte Jackson*, 96 U.S. 727, 733 (1854) ("Letters and sealed packages of this kind in the mail are as fully guarded from examination and inspection, except as to their outward form and weight, as if they were retained by the parties forwarding them in their own domiciles. The constitutional guaranty of the right of the people to be secure in their papers against unreasonable searches and seizures extends to their papers, thus closed against inspection, wherever they may be. Whilst in the mail, they can only be opened and examined under like warrant, issued upon similar oath or affirmation, particularly describing the thing to be seized, as is required when papers are subjected to search in one's own household. No law of Congress can place in the hands of officials connected with the postal service any authority to invade *the secrecy of letters* and such sealed packages in the mail; and all regulations adopted as to mail matter of this kind must be in subordination to the great principle embodied in the fourth amendment of the Constitution.")

contents of their information. Particularly for expressive materials such as books, films, or private writings, that interest may be informed, at least in part, by intellectual property law. Yet the Court should have determined whether Walter was the *copyright* owner of the films seized. If so, then the secrecy interest they recognized aligns with a source of law that supports a reasonable expectation of privacy in the substantive content of the films.

The Court does not always protect substantive content of writings, and the results can seem inconsistent. In *U.S. v. Miller*,¹²⁸ the government had intercepted evidence against a suspect by directing his bank to make copies of all his check and deposit slips available for their use. The Court held that no Fourth Amendment interest had been frustrated by the investigational technique employed. The checks were “not confidential communications but negotiable instruments to be used in commercial transactions.” All of the documents obtained were co-authored by Miller and his bank.¹²⁹ And while Miller may have conveyed the information to the bank to keep confidential, the Court concluded that the interception had not intruded upon any privacy as secrecy interest he may have had.¹³⁰

Judge Posner laments the result in *Miller* and finds it inconsistent with *Walter*, but when the cases are viewed through the lens of intellectual property, they are easily reconciled. If Walter, is the copyright owner or originator of the films he retained a secrecy interest that remained unfrustrated when his shipment went astray. That secrecy interest must be weighed against the societal interest in the evidence being sought to gauge the reasonableness of the warrantless search. The holding in *Walter* is in accord with *Salinger*. *Salinger* retained an exclusive right to first publication of his letters, even after he mailed them to recipients. By contrast, both Miller and the bank were joint authors of Miller’s commercial banking transactions. Miller used the forms and deposit slips prepared and created by the bank. “When two or more individuals collaborate on a work, they are ‘joint authors’ and each co-owns the copyright in the work.”¹³¹ Miller and the bank each held interest akin to the right of co-authors as tenants-in-common, which gave each an undivided interest in possession and use of the whole.¹³² Both Miller and the bank had full power to exercise the exclusive rights accorded to them by the Copyright Act of 1976.¹³³ When the bank willingly disclosed those transactions, it did so fully within the power granted to it by copyright. By voluntarily abandoning its secrecy interest, the bank preempted Miller’s secrecy interest in the banking transactions.

¹²⁸ *U.S. v. Miller*, 425 U.S. 435, 442-43 (1976).

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ Mark A. Lemley, *Dealing with Overlapping Copyright on the Internet*, 22 Univ. Dayton L. Rev. 547, __ (1997).

¹³² Mark A. Lemley, *Dealing with Overlapping Copyright on the Internet*, 22 Univ. Dayton L. Rev. 547, __ (1997).

¹³³ Mark A. Lemley, *Dealing with Overlapping Copyright on the Internet*, 22 Univ. Dayton L. Rev. 547, __ (1997).

Notice how the analysis in these two cases is simplified by an intellectual property law metaphor. The interest recognized in each case is analogous to the respective interests of the claimants defined by intellectual property law. For both *Walter* and *Miller*, the Court implicitly addressed their respective interests in just this way. But had the Court explicitly invoked intellectual property law, its analysis would have had descriptive and normative grounding and the consistent link the two cases would have been revealed.

C. *Valuing Authors' Secrets*

Protecting authors' interest in the secrecy of their writings and intangible effects gives renewed meaning to the personal security guaranteed by the Fourth Amendment. Fourth Amendment protection of both seclusion and secrecy respects the rights of authors and mere property owners alike, while fostering an environment that will "promote the Progress of Science and useful Arts."¹³⁴

1. Protecting Non-Disclosure

The exclusive right of authors to first publication includes the corollary right to not publish at all. The right and its corollary give authors secrecy in their expressions until they decide to disclose them. That secrecy interest aligns with personally authored memorialized evidence, and includes the silent and audible utterances of an author's expressions.

Safeguarding authors' secrecy promotes the progress of knowledge, by giving authors an enclave in which they can express, edit, and decide which expressions to share. Had J.K. Rowling lacked a right of non-disclosure in her privately kept expressions, she would have had little recourse if someone had obtained and disclosed the final chapter before the first one. The economic value of the series was enhanced by her privacy and ability to choose what, when, and whether to disclose.

The right of non-disclosure—arising from the right of first publication—has been further reified since the Copyright Act took effect. In *Harper & Row, Publishers, Inc. v Nation Enterprises*,¹³⁵ for example, the unpublished memoirs of President Ford were intercepted and partially excerpted in an unauthorized publication. The court held that an author's right of first publication will prevail against a claim of fair use, particularly where unpublished and undisclosed writings are concerned. When unpublished writings have remained undisclosed, an unwarranted intrusion upon the secrecy of those writings cannot be justified as fair use.¹³⁶ The same holds true when balancing Fourth Amendment societal

¹³⁴ US Const. Art I, Sect. 8.

¹³⁵ (1985) 471 US 539, 85 L Ed 588, 105 S Ct 2218, 11 Media L R 1969, 225 USPQ 1073,

¹³⁶ *But cf.* *Birnbaum v. United States*, 588 F.2d 319 (2d Cir. 1978) (reversing a ruling that the plaintiffs' common law copyright in their private letters to and from addresses in the Soviet Union was infringed by CIA opening and copying the contents of those letters.

interests against individual ones. Just as a claimant will not prevail on a when they infringe upon the secrecy of an author's undisclosed writings, so, too, only the most compelling of government justifications will justify intrusion upon secretly authored and secretly memorialized papers or effects.

2. Minding Inviolable Personality

Warren and Brandeis argued that common-law copyright rewarded originality and not just the labor of an author.¹³⁷ Letters, casual correspondence and personal musings in a diary all enjoyed common-law copyright protection. That protection gave individuals autonomy over their own personality—a copy of which they manifested in their communications, their art, their writings, and their expressions.¹³⁸

Inviolable personality is the essence of personhood and self-determination.¹³⁹ To violate the personality is to cause it “mental pain and distress” perhaps worse than the intrusion upon seclusion that one suffers when their physical space has been disturbed.¹⁴⁰ From this follows the idea that one ought to enjoy self-determination about when and how one shares one's expressions.¹⁴¹ At the heart of personality is a decision by an individual as to whether his thoughts, literary, and artistic efforts should remain secret or published to the world.¹⁴²

When an author creates, “he does more than bring into the world a unique object having only exploitive possibilities; he projects into the world part of his personality and subjects it to the ravages of public use.”¹⁴³ Restoring the protection of secrets in the Fourth Amendment will safeguard individuals in their “[t]houghts, emotions, and sensations” that comprise personality itself.¹⁴⁴

III. THE SECRETS PROTECTED

Authors have a privacy interest in keeping secret the expressive content of their unpublished writings and intangible effects. This secrecy interest is distinct from their seclusion interest arising from the mere possession of unauthored papers and effects. Descriptively, a seclusion interest for all and a secrecy interest for authors explains existing riddles

Finding common-law copyright to be a right of first publication, the brief search and copying of those letters did not interfere with that interest).

¹³⁷ *Id.* at 650.

¹³⁸ *Id.* at 662.

¹³⁹ Edward J. Bloustein, *Privacy as an Aspect of Human Dignity: An Answer to Dean Prosser*, 39 N.Y.U. L. REV. 962, 971 (1964).

¹⁴⁰ *Id.* at 650.

¹⁴¹ *Id.* at 651.

¹⁴² *Id.*

¹⁴³ Martin A. Roeder, *The Doctrine of Moral Rights: A Study in the Law of Artists, Authors, and Creators*, 53 HARV. L. REV. 554, 557 (1940).

¹⁴⁴ Robert C. Post, *Rereading Warren and Brandeis: Privacy, Property, and Appropriation*, 41 CASE W. RES. L. REV. 647, 650 (1990).

in Fourth Amendment doctrine. In the information age, however, as a normative matter intellectual property law should serve as a gateway for invoking additional sources of law beyond real property law for recognizing the privacy-as-secrecy interests of individuals.

*Incriminating Thoughts*¹⁴⁵ introduced a new taxonomy to describe categories of evidence sought by investigators of crimes. Used there to challenge the physical/testimonial dichotomy underpinning the privilege against self-incrimination, the article left unanswered how the search and seizure of that same evidence would fare. But the Fifth Amendment does not stand in isolation from the Fourth Amendment, and more often these two protections run hand in hand together.¹⁴⁶

The taxonomy includes four categories of evidence—identifying, automatic, memorialized, and utterances. Those four categories comprise a spectrum because from the first category to the last an individual exerts increasingly more control over the creation of evidence. Individuals exercise little to no control over identifying information including their physical features, given name, social security number, or biometric brain-based identity. They similarly lack meaningful control over automatic evidence produced as the byproduct of their actions—including the postmark affixed to a letter they send, a header attached to an email sent, or the metabolism of alcohol in the brain after drinking. With memorialized information, by contrast—ideas or expressions reduced to writing, photographs, letters, recordings, or memories stored in the brain—individuals have much greater control over the creation and expression of such information. So, too, with utterances—the contemporaneous thoughts, communications, speeches and other expressions of thoughts and emotions, which arise through conscious awareness.

Another way to understand the spectrum is to see that as one moves from left to right through the categories, there is a stronger copyright claim in the latter than the former categories. An individual has the strongest claim of authorship in uttered and memorialized evidence, and the weakest claim of authorship in automatic or identifying evidence. Because memorialized and potentially recorded utterances are the proper subject of copyright protection, a court must balance the intrusion upon both the seclusion and secrecy of the individual against the government interest in the evidence sought.

This section discusses both traditional and futuristic sense-enhanced searches along the spectrum of evidence and authorship. It demonstrates confusion in existing Fourth Amendment doctrine concerning the individual interests at stake and how intellectual property helps to resolve that confusion. With respect to more futuristic sense-enhanced searches, including searches of the brain, scholars have made sweeping claims that individuals have a “reasonable expectation of privacy in the details of

¹⁴⁵ Nita A. Farahany, *Incriminating Thoughts*, 64 Stan. L. Rev. __ (2012).

¹⁴⁶ *Boyd v. United States*, 116 U.S. 616 (1886).

what is in her head, even though the government doesn't have to invade the body."¹⁴⁷ Some have disagreed, finding that because neuroimaging is noninvasive that such investigations are not unreasonable searches. The latter group believes that because a suspect can be subjected to compelled blood or urine tests, "[t]here is no reason to think that similar circumstances would not likewise satisfy the Fourth Amendment's reasonableness requirement for neurological tests."¹⁴⁸ Both extremes ignore the subtle and nuanced challenges that cognitive neuroscience raises for Fourth Amendment law. What's in one's head is far more diverse than mental states or thoughts and includes identifying and automatic processes.¹⁴⁹ Emerging neuroscience could enable the detection of simple static images that reveal present brain trauma, visceral reactions and behavioral dispositions, simple and complex memories, and the present thoughts and visual imagery in the brain.¹⁵⁰ Applying the intellectual property referent helps to better explain how such searches should fare.

A. *Identifying*

Save for the hermit or recluse living his whole life in seclusion, an individual has no cognizable secrecy interest in identifying evidence. Identifying evidence includes information about the suspect's characteristics, his physical likeness, static and descriptive information about the individual, or about individuals with whom he associates.¹⁵¹ It includes a person's name, birth-date, weight, height, clothing size, shoe size, blood type and traces of shed DNA. Such information may help to connect a suspect with the known attributes of the criminal perpetrator,¹⁵² but there is no legal or normative basis for a Fourth Amendment secrecy interest in identifying information.

Individuals have only a minimal interest in seclusion when identifying information is sought. Individuals regularly reveal their identifying characteristics to the world—and therefore fail to seclude those characteristics. But the intellectual property metaphor sheds a new light on why individuals lack a *secrecy* interest in identifying information in a way

¹⁴⁷ Michael S. Pardo, *Neuroscience Evidence, Legal Culture, and Criminal Procedure*, 33 AM. J. CRIM. L. 301, 325 (2006)

¹⁴⁸ Dov Fox, *Brain Imaging and the Bill of Rights: Memory Detection Technologies and American Criminal Justice*, 8 AM. J. BIOETHICS 34, 35 (2008); Other scholars who have considered bodily intrusions and the Fourth Amendment have likewise ignored substantive secrecy concerns and focused instead on the physical intrusiveness of the test. See e.g., David C. Sarnacki, *Analyzing the Reasonableness of Bodily Intrusions*, 68 MARQ. L. REV. 130 (1984).

¹⁴⁹ See generally, Nita A. Farahany, *Incriminating Thoughts*, 64 Stan. L. Rev. __ (2012) (forthcoming)

¹⁵⁰ See generally, Nita A. Farahany, *Incriminating Thoughts*, 64 Stan. L. Rev. __ (2012) (forthcoming)

¹⁵¹ Nita A. Farahany, *Incriminating Thoughts*, 64 STAN. L. REV. __ (2012).

¹⁵² *Id.*

that current doctrine does not. Individuals are denied a secrecy interest not because they have abandoned that information, but because they did not author or originate it. Without a claim of protected authorship, only their real property-based seclusion interest has pertained.

An intellectual property framework of seclusion and secrecy better describes current Fourth Amendment doctrine concerning identifying information. Beginning with *Terry v. Ohio*,¹⁵³ the Court has held that upon probable cause it is per se reasonable for the police to require a motorist to disclose his identity during a brief investigative stop.¹⁵⁴ Until *Hiibel v. Sixth Judicial Dist. Court Of Nevada*,¹⁵⁵ however, the Court had left open whether a suspect could be arrested and prosecuted for refusing to disclose his identity during a stop based on reasonable suspicion. The *Hiibel* court resolved this question by holding that states may require a suspect to disclose his name during an investigative stops because the individual privacy interest in identity is negligible compared to the legitimate government interests promoted by the inquiry. But intellectual property provides the missing legal grounding for that claim. *Hiibel* did not author his name, so he lacks a legally cognizable interest under the Fourth Amendment in maintaining the secrecy of his identity.

Each time the Court has been presented a case involving identifying information, it has assumed but not explained why individuals lack a secrecy interest in their identifying attributes.¹⁵⁶ The Court has held that compelling a suspect to provide physically identifying information such as fingerprints¹⁵⁷ or voice exemplars is per se reasonable because such techniques intrude upon no cognizable individual interest. In a case deciding whether a grand jury subpoena to about 20 persons to give voice exemplars for identifying purposes, neither the seizure—requiring that the person appear—nor the search—using the search exemplar for identification—were held unreasonable.¹⁵⁸ Although the Court could have focused upon an individual interest in seclusion, it appropriately surmised that physical features are so frequently exposed to public view that no

¹⁵³ 392 U.S. 1 (1968).

¹⁵⁴ *INS v. Delgado*, 466 U.S. 210, 216 (1984)

¹⁵⁵ 542 U.S. 177 (2004).

¹⁵⁶ E.g. *U.S. v. Dionisio*, 410 U.S. 1, 14-15 (1973) (“[T]he Fourth Amendment provides no protection for what ‘a per-son knowingly exposes to the public, even in his own home or office.’ The physical characteristics of a person's voice, its tone and manner, as opposed to the content of a specific conversation, are constantly exposed to the public. Like a man's facial characteristics, or handwriting, his voice is repeatedly produced for others to hear. No person can have a reasonable expectation that others will not know the sound of his voice, any more than he can reasonably expect that his face will be a mystery to the world.”)

¹⁵⁷ E.g. *Davis v. Mississippi*, 394 U.S. 721 (1969) (“Detention for fingerprinting may constitute a much less serious intrusion upon personal security than other types of police searches and detentions. Fingerprinting involves none of the probing into an individual's private life and thoughts that marks an interrogation or search.”).

¹⁵⁸ *United States v. Dionisio*, 410 U.S. 1, 10 (1973)

meaningful intrusion upon seclusion has occurred.¹⁵⁹ The Court has held similarly in other identification and location-identification cases, including the use of beepers (the location pinpointed)¹⁶⁰ and biometric information (identification).¹⁶¹

Lower courts grappling with new electronic searches of informational property have also held that individuals lack a secrecy interest in their identifying information. Uniformly these courts have rejected a Fourth Amendment interest in identifying information such as the to/from address fields of emails, or other addressing and routing information conveyed.¹⁶² Treating the to/from address field the same as addressing information on a postal envelope, courts have extended protection to the content of letters but not to the identities of the senders and the recipients.¹⁶³ These cases build upon the foundation of *Smith v. Maryland*,¹⁶⁴ in which the Court held that the government's use of a pen register—a device that records the phone numbers one dials—was not a Fourth Amendment search. Framed in terms of seclusion, the court found that when numbers are conveyed to a third party to connect the call, the caller has failed to seclude the numbers dialed. Using the content/no-content dichotomy as its guide, the Court held that “a pen register differs significantly from the listening device employed in *Katz*, for pen registers do not acquire the contents of communications.”¹⁶⁵ Only New Jersey has held that individuals have a reasonable expectation of privacy in the subscriber information that they provide to Internet service providers, but because of expansive protections of personal information guarded by the New Jersey Constitution and not the U.S. Constitution.¹⁶⁶

Although courts have applied a content/no-content distinction to reach this result, an intellectual property framework is a better guide. Consider

¹⁵⁹ *Id.* at 15.

¹⁶⁰ *Who Knows Where You've Been? Privacy Concerns Regarding the Use of Cellular Phones as Personal Locators*, 18 HARV. J. LAW & TEC 307 (2004)

¹⁶¹ Robin Feldman, *Considerations on the Emerging Implementation of Biometric Technology*, 25 HASTINGS COMM./ENT. L.J. 653 (2004) (discussing the implications for biometric data collection, “the science of identifying people based on their physiological and behavioral characteristics,” and the concerns for privacy of individuals).

¹⁶² See *Quon v. Arch Wireless Operating Co., Inc.*, 529 F.3d 892, 904-05 (9th Cir. 2008); *United States v. Forrester*, 512 F.3d 500, 510 (9th Cir. 2008); see also *Smith v. Maryland*, 442 U.S. 735, 743-44 (1979) (no legitimate expectation of privacy in dialing, routing, addressing, and signaling information transmitted to telephone companies).

¹⁶³ See *United States v. Hernandez*, 313 F.3d 1206, 1209-10 (9th Cir. 2002) (“Although a person has a legitimate interest that a mailed package will not be opened and searched en route, there can be no reasonable expectation that postal service employees will not handle the package or that they will not view its exterior”)

¹⁶⁴ 442 U.S. 735, 742 (1979).

¹⁶⁵ *Id.* at 741.

¹⁶⁶ *State v. Reid*, 945 A.2d 26, 30 (N.J. 2008) (finding that New Jersey recognized “informational privacy” which includes “any information that is identifiable to an individual. This includes both assigned information, such as a name, address, or social security number, and generated information, such as financial or credit card records, medical records, and phone logs.”)

bodily intrusion cases as just one example. Is the body a container, with blood and cells the content inside? If so then the content/no-content distinction would predict that a blood sample is protected while the external surfaces of the body is not. This outcome makes little sense and does not align with current doctrine. An intellectual property framework, by contrast, does not depend on whether the evidence is visible to the naked eye. Instead, individuals have not authored the information and thereby lack a cognizable secrecy claim in their blood. The only relevant interest arises from seclusion—the method by which the government obtains the sample will thereby determine the reasonableness of its seizure.

Intellectual property law also recognizes that expression but not facts are subject to copyright protection because “facts do not owe their origin to authorship.” Rather, “[t]he first person to find and report a particular fact has . . . merely discovered its existence.”¹⁶⁷ Identifying information are facts about the world, which a suspect can rarely if ever claim contains their original expressive content. Consequently individuals have only a privacy interest in seclusion but not in secrecy of identifying information, and where seclusion has been abandoned, no viable privacy interest remains.

The intellectual property framework also guides how sense-enhanced brain-based searches of identifying information would fare in a way that the content/no-content dichotomy cannot. In the hypothetical stop of the motorist introduced *supra*, for example, the police know the identity of a sought-after terrorist, but not that of the motorist. Should the motorist refuse to provide his identity, the police might nevertheless employ biometric technology to quickly and unobtrusively identify him. Biometric identification is an automated process that uses an individual’s physical characteristics to identify them.¹⁶⁸ Biometric technology has already developed for facial recognition, fingerprinting, and iris scans.¹⁶⁹ Emerging techniques in neuroscience now enable identification of an individual based on their brain-wave patterns.¹⁷⁰ Each person’s brain-wave

¹⁶⁷ *E.g. Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 347 (1991) (nothing that even if the compiler of a phone book had “been the first to discover and report the names, towns, and telephone numbers of its subscribers,” that the author did not originate the data, which are instead “bits of information” that are uncopyrightable facts; they existed before Rural reported them and would have continued to exist if Rural had never published a telephone directory. The originality requirement ‘rule[s] out protecting . . . names, addresses, and telephone numbers of which the plaintiff by no stretch of the imagination would be called the author.’”)

¹⁶⁸ *Privacy and Biometrics: Building a Conceptual Framework* 4, National Science and Technology Council (2007), available at <http://www.biometrics.gov/docs/privacy.pdf> (last accessed August 10, 2011).

¹⁶⁹ *Id.* (Fingerprint recognition is one of the most well-known and publicized biometrics. The practice of using fingerprints as a method of recognizing individuals has been in use, manually, since the late nineteenth century).

¹⁷⁰ A. Riera et al., *Unobtrusive Biometric Systems Based on Electroencephalogram Analysis*, 2008 EURASIP Journal on Advances in Signal Processing 1 (2008); *Fingerprints and Faces Can be Faked, But Not Brain Patterns*, Science Daily (Feb. 6,

signal is unique even when they are thinking about the same thing, and cannot be falsified.¹⁷¹ Technology has already been developed that would allow police to ask a suspect to briefly don a non-invasive helmet in which two electrodes take electroencephalographic (EEG) signals from the brain.¹⁷² With the development of a database of brain-wave patterns, this reading could quickly and precisely be compared to the database for on-the-spot identification.¹⁷³

That the police might use such technology to identify individuals is neither far off, nor far-fetched. Already across the country police are rolling out a new investigative device that attaches to the back of an iPhone and enables police to do on-the-spot fingerprint scanning, facial recognition and iris scanning.¹⁷⁴ This biometric technology merely adds to the vast array of identifying information investigators can unobtrusively obtain, including static brain images, blood samples, and shed samples of DNA.¹⁷⁵

Because an individual cannot claim authorship over his biometric data, seclusion is the only recognized privacy interest implicated by the search. When seclusion is the sole cognizable interest at stake, the physical intrusiveness of the search governs its reasonableness. The taking of a few clippings of hair¹⁷⁶ from a suspect in custody intrudes only minimally if at all upon his seclusion. But forcing a suspect to undergo surgery, by contrast, is unreasonable because it imposes upon the individual significant potential physical harm.¹⁷⁷

2009), available at <http://www.sciencedaily.com/releases/2009/02/090205101138.htm>; Will Knight, *Brain Activity Provides Novel Biometric Key*, *New Scientist* (Jan. 16, 2007), available at <http://www.newscientist.com/article/dn10963-brain-activity-provides-novel-biometric-key.html> (last accessed August 10, 2011).

¹⁷¹ C.Eswari & S.K.Ramya, *Biometrics Using Headgear to Scan Brainwaves*, Proceedings of the National Conference on Innovations in Emerging Technology (2011).

¹⁷² *Id.*

¹⁷³ This hypothetical contemplates the biometric read-out provides no information other than the identity of the suspect, or something as simple as “this person matches the suspect sought,” or “this person does not match the suspect sought.” If the device did more, such as reveal the substantive thoughts the suspect was thinking, additional Fourth Amendment interests would be implicated. *See, e.g., United States v. Place*, 462 U.S. 696, 707 (1983) (holding that canine sniffs are “sui generis,” because they are uniquely “so limited both in the manner in which the information is obtained and in the content of the information revealed by the procedure.”).

¹⁷⁴ Emily Steel, *How a New Police Tool for Face Recognition Works*, *WSJ Blogs* (July 13, 2011), available at <http://blogs.wsj.com/digits/2011/07/13/how-a-new-police-tool-for-face-recognition-works/> (last accessed August 9, 2011).

¹⁷⁵ *See generally*, Nita A. Farahany, *Incriminating Thoughts*, 64 *Stan. L. Rev.* ___, (citing to section IIA).

¹⁷⁶ *E.g. U.S. v. D’Amico*, 408 F.2d 331 (2nd Cir. 1969) (Finding that taking a few clippings of hair while in custody was minimally intrusive and therefore not an unreasonable search under the Fourth Amendment because it was such a minor intrusion into or upon the ‘integrity of an individual’s person).

¹⁷⁷ *Winston v. Lee*, 470 U.S. 735 (1985) (finding that the surgical removal of a bullet from underneath the suspect’s collarbone was unreasonable in light of the risks of the

An individual has not bared their biometric-brain activity to the world in the same way that they have revealed their more visible identifying characteristics. So they cannot be said to have abandoned any interest in secluding that information. But where the techniques involved subject the individual to minimal or no physical intrusion, the societal interest in the information sought would often justify as reasonable the warrantless use of biometric brain scanning.

B. Automatic

The content/no-content dichotomy is even less effective when applied to automatically generated information. Automatic evidence encompasses those actions and reactions that occur with little or no conscious control by the individual.¹⁷⁸ To date when scholars have considered such automatic evidence they have lumped it together with “no-content” information. The hypothetical automated phone system example described *supra* reveals that content/no-content does not predict well whether automatic information falls into one category or the other. This is particularly problematic in the information age because much of the information that investigators now seek to discover arises in the form of automated evidence. The routing information in e-mail headers, the log of IP addresses viewed by a browser, the GPS triangulation of a person’s moving location all occur automatically as a byproduct of the voluntary activities of an individual.

In the electronic domain, significant user activity results in automatically generated information concerning their activities. Internet searches and communications; routing information that is automatically attached as e-mails travel from one Internet Service Provider to the next; automated information exchanged between one’s computer and Internet Service Provider routing the user from one Internet Protocol (IP) address, all yield significant automatic logs. The portability of GPS technology and its integration into mobile devices and automobiles enables the triangulation and tracking of a person’s location by querying their cell phone provider or mobile traffic provider. All of these processes occur automatically without the conscious control, active manipulation, or even awareness of the user being tracked.

When it comes to automatically generated information, there is currently no coherent Fourth Amendment approach to disentangling the individual privacy interests at stake. In bodily intrusion cases concerning automatic bodily functions, for example, the Court has sometimes balanced individual interests in seclusion and sometimes secrecy against the legitimate advancement of societal needs.¹⁷⁹ Intrusion upon seclusion

procedure and the fact that the government had other and sufficient evidence of guilt available to it instead).

¹⁷⁸ Nita A. Farahany, *Incriminating Thoughts*, 64 STAN. L. REV. __ (forthcoming 2012).

¹⁷⁹ *E.g.*, *Schmerber v. California*, 384 U.S. 757, 767-768 (1966) (compelled blood tests); *Winston v. Lee*, 470 U.S. 753, 760 (1985) (compelled surgical extraction of a bullet).

of the body occurs when testing penetrates “beneath the skin,” and substantive secrecy is intruded upon by the “ensuing chemical analysis of the sample to obtain physiological data.”¹⁸⁰ The beneath-the-skin analogy seems like the “content” part of the dichotomy. And yet breath-testing procedures, which generally require the expulsion of a deep breath by the suspect for chemical analysis, also arouses the Court’s intuition that the seclusion of body has been infringed.¹⁸¹ These interests are certainly not absolute ones, as the court has found such procedures to be reasonable searches so long as the test is routine and minimally physically invasive.

The use of automatic location-tracking devices has had similarly mixed results, although a consistent focus on seclusion is beginning to emerge. In *U.S. v. Knotts*,¹⁸² for example, law-enforcement officers installed a tracking beeper inside a container of chloroform by consent of the manufacturer, and then used that beeper to track the defendant’s movements as he transported it from one location to the next.¹⁸³ Because the warrantless beeper tracked only the movement of the defendant’s vehicle through public streets, the Court found that no unreasonable search had occurred. *Knotts* had abandoned his interest in seclusion of himself and the container by transporting it through public streets that any onlooker could observe. The police could simply have followed *Knotts*, and that would not have been a search. By contrast the Court in *U.S. v. Karo*¹⁸⁴ held that the warrantless use of a tracking beeper was an unreasonable search because it had tracked *Karo* not only on public thoroughways but also while inside his own home. When he returned home, however, *Karo* had not abandoned his interest in seclusion and so the warrantless tracking implicated a protected Fourth Amendment interest.

Lower courts have divided sharply over the reasonableness of warrantless GPS tracking although invoking seclusion as the relevant concern.¹⁸⁵ In two notable cases with diverging outcomes, two different courts focused on the degree of intrusion upon seclusion that occurs through automatic tracking. The Supreme Court of Washington in *State v. Jackson*,¹⁸⁶ addressed the use of a GPS tracking device placed upon *Jackson*’s impounded vehicle, pursuant to a valid warrant. Over the course of a month the police tracked his movements and logged the time he spent at each site. Through this automated information, the police eventually discovered the location where *Jackson* had hidden the body of his nine-

¹⁸⁰ *Skinner v. Rwy Labor Exec. Ass’n*, 489 U.S. 616, 618 (1985) (“chemical analyses of urine, like that of blood, can reveal a host of private medical facts about an employee, including whether he or she is epileptic, pregnant, or diabetic”).

¹⁸¹ *Id.* at 618.

¹⁸² 460 U.S. 276, 278 (1983).

¹⁸³ *U.S. v. Knotts*, 460 U.S. 276, 278 (1983).

¹⁸⁴ 486 U.S. 705 (1984).

¹⁸⁵ See generally, Adam Koppel, *Warranting a Warrant: Fourth Amendment Concerns Raised by Law Enforcement and Cellular Phone Tracking*, 64 U. MIAMI L. REV. 1061 (2010). <Note – Cite Circuit Split>

¹⁸⁶ *State v. Jackson*, 76 P.3d 217 (Wash. 2003).

year-old daughter. Only because a warrant had issued did the Court find reasonable the ultimate search that had occurred.

The D.C. Circuit came down differently in *U.S. v. Maynard*,¹⁸⁷ concerning the warrantless twenty-four hour surveillance using GPS tracking of the defendant's movements. The defendant's movements were tracked "24 hours a day for 28 days as he moved among scores of places, thereby discovering the totality and pattern of his movements from place to place."¹⁸⁸ The court focused on the intrusion upon Jones's seclusion in his comings and goings, finding that he could not have expected to be tracked 24-hours a day and 28-days straight. The difference between occasional observation and constant and complete surveillance, transformed what would otherwise have been a nominal intrusion to a complete one by revealing the "intimate picture of the subject's life that he expects no one to have." The D.C. Circuit found that the warrantless monitoring was search, and under the totality of the circumstances an unreasonable one.

The D.C. Circuit struggled mightily with whether the intimate details of Maynard's life had been revealed. By driving a car to which a GPS device was attached, Maynard cannot have claimed to have authored or originated expressive writings or intangible effects. While true that Maynard originated the movements that were tracked the resulting log of his activities do not amount to expressive content subject to copyright protection. Because Maynard lacked a legally cognizable claim in the secrecy of his movements, only intrusion upon his seclusion was at stake. And the review of such intrusions will focus on the physical invasiveness of the search, which in GPS tracking cases are usually quite minimal. The private details of Maynard's life concern an interest in secrecy, an interest protected by intellectual property law and not implicated by automatically generated information.

The more challenging cases to come will concern the automated information generated by the interaction between individuals and their electronic devices. Call logs from cell phones generate automatic tracking information, including from where the caller placed the call, at what time of day, in what time zone, and the call duration. The interface between individuals and the Internet will create even more constitutional conundrums. Every keystroke in a web browser sends detailed information to the host server apart from the expressive writings themselves, including the type of computer being used, the operating system of the user, the web browser employed, and each Internet Protocol and URL address viewed. These automated logs create a *transactional* history of every keystroke, every website, and every moment of one's online daily life. From research questions concerning personal health to queries seeking relationship advice, IP addresses provide a window into what's in one's mind. So, too, with emails sent, where as it travels through the virtual world each server

¹⁸⁷ 615 F.3d 544 (D.C. Cir. 2010)

¹⁸⁸ 615 F.3d 544, slip op. at 21 (D.C. Cir. 2010).

encountered adds yet another line of information to the header. These e-mail headers reveal much more than mere identity of the user, from the approximate location of the sender, to the Institutional affiliations they may have. As courts grapple with the reasonableness of investigations seeking automatic evidence in the information age, the analogies to draw from are thin, and a rationale is needed to guide the courts as to whether an interest in seclusion, secrecy, or both apply.

Intellectual property as metaphor will help inform this central conundrum of past and emerging Fourth Amendment law. An individual about whom automatically generated information is being sought will rarely if ever have a legitimate claim to be a copyright author of that information. And real property law does not grant a privacy-as-secrecy interest that he may have in that information. What then, is his basis to exclude the government from the information? If anything, it must rest in secluding the information. But the courts have posited that an individual abandons his interest in secluding information by using technology that voluntarily conveys that information to third parties.

Applying this analysis to the hypothetical stopped motorist predicts how a claim about secrecy concerning bodily functions might fare. The police could one day bypass the use of Breathalyzer or blood-alcohol tests by directly measuring the level of alcohol intoxication in the brain. Using positron emission tomography (PET), a form of brain imaging that provides an index of brain functioning, researchers have shown the brain exhibits decreased brain glucose metabolism in patterns that roughly parallel the regional distribution of particular receptors for neurochemicals in the brain.¹⁸⁹ Newer neuroimaging techniques, such as functional magnetic resonance imaging (fMRI) can likewise detect both the level and nature of the impairment an individual experiences when intoxicated by drugs or alcohol. Measuring the changes in oxygenated and deoxygenated blood flow in the brain, scientists can measure the effects of intoxication on an alcohol or drug impaired motorist.¹⁹⁰ Today, the wide-scale adoption of such techniques would be cost-prohibitive and cumbersome, particularly since the scanners are large and often immobile. But if Moore's law is any guide, one should expect an exponential rate of improvement and increased portability of neuroimaging devices in time.¹⁹¹

¹⁸⁹ Gene-Jack Wang et al., *Regional Brain Metabolism During Alcohol Intoxication*, 24 ALCOHOL CLIN. EXP. RES. 822 (2000)

¹⁹⁰ See e.g., V.D. Calhoun, *Using Virtual Reality to Study Alcohol Effects on the Neural Correlates of Simulated Driving*, 30 APPLIED PSYCHOPHYSIOLOGY AND BIOFEEDBACK 285 (2005) (Providing a brief synopsis of previous work using functional magnetic resonance imaging (fMRI) to study the neural correlates of alcohol intoxication).

¹⁹¹ Artificial General Intelligence, The NanoAge.Com ("Exponential growth in computing power (known as Moore's Law) is the driving force behind AGI. It is believed that a sufficiently powerful computer would be able to run a simulation (or emulation) of a human brain, built by scanning and mapping all regions/details of a biological brain. Near-future neuroimaging technologies should be able to scan the brain in sufficient detail as to create a functional equivalent brain simulation.")

The hypothetical motorist again may have a claim to seclusion of this information. But he would lack any legally cognizable Fourth Amendment claim concerning the glucose-metabolism or other automatic functioning in his brain. Like the search for brain-based biometric evidence discussed *supra*, the intrusion upon his seclusion would be minimal at best because it would not be physically invasive, and would therefore yield to a legitimate societal interests in the evidence sought.

C. Memorialized

At the heart of many traditional and modern criminal investigations is the search for papers and effects that lead to the discovery of a crime. Memorialized evidence includes recorded papers and effects such as written documents, depictions, photographs, stored electronic records, or even encoded memories in the brain. Thoughts are recorded in memorialized writings, notations on calendars, e-mails, text messages, recorded dictation, and replies to electronic invitations and more. Together, these memories create the authored papers and effects to which a Fourth Amendment privacy interest in secrecy applies.

Individuals memorialize everyday activities in both tangible and intangible form. Whether written in a personal diary or encoded in the substructures of their brains, they record the traces of their everyday lives. These memories include people met, the timbre of voices heard, foods eaten, smells and sounds experienced, visual imagery encountered, and imagined ideas.

The information age puts new pressure on the interests implicated by an investigation for memorialized evidence. In Fourth Amendment cases concerning private papers, business records, e-mail messages, and smart phone documents, courts often focus on whether the information was secluded as the sole individual interest implicated by the search. At times, courts have recognized that “a private writing is only the barest extension of a private thought,”¹⁹² and sometimes recognized an interest in its secrecy. But even then, courts have failed to explain why some information merits secrecy and other information does not. Until now there has been no legal principle or referent to explain that difference.

It is well settled that individuals are protected against the unwarranted opening of their sealed letters and packages.¹⁹³ Lower courts have recognized a similar privacy interest in text messages vis-à-vis an individual and their service provider.¹⁹⁴ In *U.S. v. Finley*, for example, the

¹⁹²Judge Jon O. Newman, *Copyright Law and the Protection of Privacy*, 12 COLUM.-VLA J. L. & ARTS 459, 471 (1988).

¹⁹³ E.g., *Ex parte Jackson*, 96 U.S. 727; *United States v. Jacobsen*, 466 U.S. 109, 114 (1984) (“Letters and other sealed packages are in the general class of effects in which the public at large has a legitimate expectation of privacy.”).

¹⁹⁴ *Quon v. Arch Wireless Operating Co., Inc.*, 529 F.3d 892, 905 (9th Cir. 2008); *United States v. Finley*, 477 F.3d 250, 259 (5th Cir.2007) (holding that defendant had a reasonable expectation of privacy in the text messages on his cell phone, and that he consequently had standing to challenge the search).

Fifth Circuit held that when Finley used a cell phone given to him for his use while an employee, he had a possessory interest in the phone and therefore a right to exclude others from reading his text messages and calls made.¹⁹⁵ When the Supreme Court recently addressed the reasonableness of a warrantless search of the text-message transcript log of a government-issued pager, the Court relied upon a workplace exception to find the constitutionally permissible.¹⁹⁶ The Court abstained from addressing the more far-reaching implications of what interests one has in memorialized evidence, cautioning lower courts to tread carefully when doing the same.¹⁹⁷

Although courts have split over whether the privilege against self-incrimination will sometimes shield the use of private papers against a defendant,¹⁹⁸ with near uniformity they have held that the Fourth Amendment does not bar their ultimate discovery. At first,¹⁹⁹ it seemed as if the Supreme Court would extend full Fourth Amendment protection to private papers and books, but the Court has since concluded that the search for private papers implicates no greater interests than any other memorialized evidence.²⁰⁰

The Court's failure to honor the intellectual property interest of authors in Fourth Amendment cases explains its misguided reasoning in *Andresen v. Maryland*.²⁰¹ After issuance of a warrant, investigators searched the defendant's office and seized papers, including a "memoranda written in petitioner's handwriting."²⁰² These were the private papers of the defendant, not "corporate records," generated by the defendant in the course of his personal legal business.²⁰³ The Court found that "[t]here is no special sanctity in papers, as distinguished from other forms of property, to render them immune from search and seizure."²⁰⁴ The Court altogether missed the important connection between copyright and the Fourth Amendment and thereby improperly focused on only the physical seclusion of Andresen's papers during the investigation. Finding the intrusion upon seclusion to have been minimal, and also that "the petitioner was not treated discourteously during the search,"²⁰⁵ the Court held that no unreasonable search and seizure had occurred. It may have held differently if Andresen's secrecy interest in the papers that he authored had been factored into the reasonableness of the search.

¹⁹⁵ *United States v. Finley*, 477 F.3d 250, 259 (5th Cir.2007).

¹⁹⁶ *City of Ontario, California v. Quon*, 130 S. Ct. 2619 (2010).

¹⁹⁷ *City of Ontario, California v. Quon*, 130 S. Ct. 2619, __ (2010).

¹⁹⁸ Cross-reference to *Incriminating Thoughts*, Memories Section on Papers

¹⁹⁹ *Boyd v. United States*, 116 U.S. 616 (1886).

²⁰⁰ 427 U.S. 463 (1976)

²⁰¹ 427 U.S. 463 (1976)

²⁰² *Andresen v. Maryland*, 427 U.S. 463, 469 (1976).

²⁰³ *Andresen v. Maryland*, 427 U.S. 463, 469 fn. 2 (1976).

²⁰⁴ *Andresen v. Maryland*, 427 U.S. 463, 474 (1976), *citing* *Gouled v. United States*, 255 U.S. 298, 309 (1921).

²⁰⁵ *Andresen v. Maryland*, 427 U.S. 463, 477 (1976),

The Court has, however, implicitly relied upon an intellectual property law metaphor to *deny* suspects a secrecy interest in the writings authored by others. In *Fisher v. United States*,²⁰⁶ for example, the Court correctly intuited that authorship triggers a distinct Fourth Amendment interest, without noticing the crucial linkage to copyright authorship. The Court upheld a subpoena for papers prepared by a defendant's accountant. No unreasonable search of the defendant had occurred because the papers were the accountant's, and the defendant was not their author.²⁰⁷ Had the defendant been the author and the search directed at tax records he himself had prepared, the Court implied that a privacy interest in secrecy might have applied.²⁰⁸

In *U.S. v. Miller*,²⁰⁹ discussed *supra*, the Court also implicitly focused on authorship in deciding whether secrecy applied, reasoning that “[o]n their face, the documents subpoenaed here are not respondent's ‘private papers.’ . . . [but] pertain to transactions to which the bank was itself a party.”²¹⁰ Neither Miller nor the bank could claim sole authorship of the memorialized records that the government had subpoenaed. As joint authors to the transactions, both parties had the right to disclose the transactional records to third parties. The same rationale holds true when the government has subpoenaed papers from a corporation, where a corporate officer has authored papers on a corporation's behalf. The corporation is the aggrieved author and only it can claim that *their* privacy interest has been intruded upon in challenging the reasonableness of a search.²¹¹ Likewise, Fourth Amendment complainants generally fail when the government seizes books and papers that the defendant neither authored nor owned.²¹²

By overlooking the linkage between secrecy interest and copyright authorship, lower courts have had virtually no guidance on how to weigh the individual interests at stake in government searches of private papers. Consequently, in cases like *DiGiuseppe v. Ward*,²¹³ the Second Circuit

²⁰⁶ 425 U.S. 391 (1976).

²⁰⁷ *Fisher v. United States*, 425 U.S. 391, 409 (1976).

²⁰⁸ *Fisher v. United States*, 425 U.S. 391, 414 (1976).

²⁰⁹ 425 U.S. 435 (1976).

²¹⁰ *U.S. v. Miller*, 425 U.S. 435, 440 (1976).

²¹¹ *Haywood v. U.S.*, 268 F. 795 (7th Cir. 1920) (Authors of business documents cannot complain about the privacy of business documents because the author is the corporation, not the individual).

²¹² *Moy Wing Sun v. Prentis*, 234 Fed. 24 (7th Cir. 1916); *Tsui Shee v. Backus*, 243 Fed. 551 (9th Cir. 1917); *United States v. Silverthorne*, 265 Fed. 853 (1920). The owner may, however, object. *See Newberry v. Carpenter*, 107 Mich. 567, 65 N. W. 530 (1895) (“No intimation is found in any statute of this state, or in any decision of this court, that a prosecutor may cause to be seized the property of third parties, the possession, ownership, and use of which are not prohibited by law, and which are useful and required in the legitimate prosecution of their businesses, and their private inclosures to be entered for that purpose. Such seizures are unwarranted, unreasonable, and prohibited by the constitution of the United States and of this state.”); *Owens v. Way*, 141 Ga. 796 (1914).

²¹³ 698 F.2d 602 (2d Cir. 1983).

found no privacy interest in the secrecy of a prisoner's diary. After a sweep of the prison following a riot, a prison guard seized the diary and read its contents. The inmate made no claim that he intended to disseminate or publish the diary, so the court overlooked the copyright implications and focused on First Amendment interests instead. Reading the diary, the court found, did not intrude upon his "right to speak, nor, of course, upon his right to listen, to believe, or to associate."²¹⁴ And likening the reading the diary to the inevitable intrusion upon seclusion that search of the prison necessitated after the riot, the court ultimately held that no unreasonable intrusion upon the seclusion of the inmate's papers had occurred.²¹⁵ Like the Court in *Andresen*, the court missed a crucial dimension of the prisoner's privacy interest at stake. Had the Second Circuit applied intellectual property as a relevant legal referent to the prisoner's privacy interest in his expressive writings, it would have recognized that the prisoner had both seclusion and secrecy interests in his diary. It would then have balanced the prisoner's secrecy and seclusion interests against the government's interest in the evidence sought, and decided whether these intrusions rendered the search unreasonable.

Intellectual property provides the much-needed legal referent to guide courts in deciding the reasonableness of an expectation of privacy in memorialized evidence. Authors have a statutory right to exclude others from their unpublished works, including their diaries, their emails, text messages and private papers. Of course, authors don't always keep their writings secret or secluded. Indeed, copyright law contemplates that authors can and should be incentivized to share their writings and discoveries with others. When authors share with others, they may do so in a limited fashion—such as in the exchange of private letters or in the exchange of private communications with a priest or attorney. They might instead share broadly, by publishing their writings and discoveries for anyone and everyone to see. Once they release their writings and effects to the world their rights are similarly limited and circumscribed by copyright law.²¹⁶ The question of how strongly a secrecy interest applies in each of these contexts is fruitful area to explore in future research.

When an author shares with others he may demonstrate a willingness to forego some of his privacy interests in the seclusion and secrecy of his expressions. The more broadly he shares the more telling his decision to forego the privacy interest he may have held.²¹⁷ The person with whom an

²¹⁴ *DiGuiseppe v. Ward*, 698 F.2d 602, 605 (2d Cir. 1983).

²¹⁵ *DiGuiseppe v. Ward*, 698 F.2d 602, 605 (2d Cir. 1983). Nevertheless, the court took some pains to mention that the prison guard seemed uninterested in the contents of the diary and used it primarily to find information concerning the riots.

²¹⁶ Laura A. Heymann, *How to Write a Life: Some Thoughts on Fixation and the Copyright Divide*, 51 *William and Mary L. Rev.* 825, 838 (2009)

²¹⁷ Judge Jon O. Newman, *Copyright Law and the Protection of Privacy*, 12 *Colum.-VLA J. L. & Arts* 459, 472 (1988) ("[T]he private writing of a private thought is entitled to protection in the name of privacy only so long as the writer maintains the writing within his or her grasp.").

author shares, for example, gains a possessory interest in the expression shared. That possessory interest bestows upon the recipient the right to disclose what he has learned, although the right to publish—and the right to exclude others from expressive content—remains with the author.²¹⁸

This feature of intellectual property law could well provide important insights into Fourth Amendment cases, particularly where the government serves a subpoena on the recipient rather than the author of information.

The secrecy interest that authors hold in memorialized information should hold irrespective of whether the information has been stored in tangible form, electronically on a computer, or in memories in their brain. In the brain, memories are encoded by memory type with each memory type mediated by different neural structures.²¹⁹ Memories are quite personal to the experience of an individual. Two individuals looking across a courtyard, for example, will focus on different aspects of the scene before them. The memory they encode of that moment will be a personally curated expression of their experience.

It may already be possible to access memories in the brain, including simple recognition memory, recall of past voices and faces, or even detailed episodic memories in the conscious mind.²²⁰ If the hypothetical motorist had been drinking before driving, for example, his experience, the timing, location and sensory associations of that evening will have been stored within his brain. Episodic memory describes the class of neurological memories related to particular biographical episodes or life events. These memories include the content of the experience, and the spatial and temporal context in which it occurred.²²¹ Such memories are formed as individual events become bound to the specific temporal context in which the event took place.²²² Through neuroimaging studies, it is now possible to detect and differentiate between specific memories in the brain,²²³ including both the “what” and the “when” of those

²¹⁸ Nimmer on Copyright, § 5.04 at 5-32 (1985). (“[T]he general rule is that the author of a letter retains the ownership of the copyright or literary property contained therein the recipient of the letter acquires ownership of the tangible physical property of the letter itself.”). In re McCormick’s Estate, 80 Pa. D. & C. 413 (1952) (holding that the children of a deceased serviceman had a possessory interest in the letters that he sent to them while at war). In *Grigsby v Breckinridge*, 65 Ky 480 (1867), the court stated that the recipient of a private letter holds the general property rights in the letter, qualified only by the author’s right to publish it or prevent its publication.

²¹⁹ Morris Moscovitch et al, *Functional neuroanatomy of remote episodic, semantic and spatial memory: a unified account based on multiple trace theory*, 207 J. ANAT. 35, 39 (2005).

²²⁰ Cross reference to *Incriminating Thoughts*, Section on Memorialization

²²¹ Addis DR, Wong AT, Schacter DL, *Age-Related Changes In The Episodic Simulation Of Future Events*, 19 PSYCHOL SCI 33 (2008).

²²² Yuji Naya and Wendy A. Suzuki, *Integrating What and When Across the Primate Medial Temporal Lobe*, 333 SCIENCE 773 (Aug. 5, 2011).

²²³ E.g., Jesse Rissman, Henry T. Greely, and Anthony Wagner, *Detecting Individual Memories Through the Decoding of Memory States and Past Experiences*, 107 PNAS 9849 (2010); Martin J. Chadwick et al., *Decoding Individual Episodic Memory Traces in the Human Hippocampus*, 20 CURRENT BIOLOGY 544 (2010) (“Now that we have shown

memories.²²⁴ Using techniques such as functional magnetic resonance imaging (fMRI), one can predict an individual's mental states by studying the patterns of blood oxygen-level-dependent (BOLD) signals across the brain and decoding those patterns with multivariate pattern classification techniques.²²⁵ Although portable and robust memory detection may never materialize and on-the-spot memory detection may be the musings of science fiction, these advancements nevertheless present an opportunity to both ask and answer when an investigation for memorialized evidence exceeds reasonable Fourth Amendment bounds.

With intellectual property as a metaphor, one has a secrecy interest in their brain-based memories if those memories contain expressive content. And because the expressive content must be intruded upon to glean any facts contained therein, the secrecy interest applies irrespective of a copyright fact/expression dichotomy. Indeed the challenge for brain-based evidence should not be whether memories contain expressive content, but whether they are sufficiently “fixated” in the brain to warrant a copyright privilege to exclude others. Fixation is the legal moment at which constitutional authorship begins. The Copyright Act of 1976 confers the exclusive rights to copyright owners—the right to publish, to copy, and to distribute writings—from the moment original expression has been fixed in a tangible medium.²²⁶

Fixation is the act of preserving something, even if only temporarily, in a tangible medium of expression.²²⁷ Whether that expression is a hasty text, a literary tome, or a memory recorded in the brain, once fixed the expression is subject to federal copyright law.²²⁸

The statutory language concerning fixation makes plain a “difference between the work entitled to copyright protection and the material object

that it is possible to directly access information about individual episodic memories in the human hippocampus in vivo and noninvasively, this offers new opportunities to examine important properties of episodic memory, to explore possible functional topographies, and to examine neural computations within hippocampal subfield.”)

²²⁴ Yuji Naya and Wendy A. Suzuki, *Integrating What and When Across the Primate Medial Temporal Lobe*, 333 *SCIENCE* 773, 774 (Aug. 5, 2011) (“Our data show that PRC neurons integrate time and item information by modulating their stimulus-selective response properties across temporally distinct stimulus presentations.”)

²²⁵ E.g., Jesse Rissman, Henry T. Greely, and Anthony Wagner, *Detecting Individual Memories Through the Decoding of Memory States and Past Experiences*, 107 *PNAS* 9849 (2010); Martin J. Chadwick et al., *Decoding Individual Episodic Memory Traces in the Human Hippocampus*, 20 *CURRENT BIOLOGY* 544 (2010).

²²⁶ *Harper & Row Publishers v. Nation Enterprises*, 471 U.S. 539, 546 (1985); Section 106 provides in pertinent part:

“Subject to sections 107 through 118, the owner of copyright under this title has the exclusive rights to do and authorize any of the following:

“(1) to reproduce the copyrighted work in copies . . . ;

“(2) to prepare derivative works based upon the copyright work;

“(3) to distribute copies . . . of the copyrighted work to the public . . .”

²²⁷ Heymann, *supra* note __ at 829.

²²⁸ *Id.* at 855-56 (2009)

in which the work is fixed.”²²⁹ Although legal rights now attach to the latter, the former is the focal subject of copyright protection. Fixation may give tangible evidence of the copyrightable expression, but it is the expression that is subject of the copyright, and not the tangible good. Having reduced it to tangible form, property rights can then attach, which enables authors to realize the economic incentives at the heart of copyright.²³⁰ Where Fourth Amendment interests are concerned, however, the economic interests are of less concern than the privacy interests in first publication, and the right not to publish by its corollary. In that context whether fixed in external tangible form, or fixed as memory in the brain, an author should enjoy a privacy interest in both modes of expression.

Cases concerning fixation in the information age are consistent with this approach. Courts have readily accorded copyright protection to the “electronic bits and bytes” of a software program even though some other equipment like a computer and some other programs like an operating system are required to make it run.²³¹ Modern courts have embraced temporary fixation in software loaded into random-access memory (RAM) and video games displays that can be perceived only when the game is played.²³² In *MAI Systems Corp. v. Peak Computer, Inc.*, for example, the Ninth Circuit held that when a maintenance company loaded the software into RAM to “view the system error log and diagnose the problem with the computer,” fixation was satisfied while in RAM.²³³ Other courts addressing software and temporary electronic fixation have held similarly, drawing from the language of the Copyright Act that the form, manner, and medium of fixation are unimportant.²³⁴ These cases all suggest that

²²⁹ *Id.* at 848-49.

²³⁰ *Id.* at 849.

²³¹ *Id.* at 850.

²³² *Id.*

²³³ Heymann, *supra* ___, at 850-51.

²³⁴ *E.g.*, *Tandy Corp. v. Personal Micro Computers, Inc.*, 524 F. Supp. 171 (N.D. Cal. 1981) (holding that a computer program is a “work of authorship” subject to copyright, and a silicon chip upon which program is imprinted is a “tangible medium of expression.” Basing its decision in part on the legislative history of the Copyright Act, which stated that “it makes no difference what the form, manner or medium of fixation may be—whether it is in words, numbers, notes, sounds, pictures or any other graphic or symbolic indicia, whether embodied in a physical object in written, printed, photographic, sculptural, punched, magnetic, or other stable form, and whether it is capable of perception directly or by means of any machine or device “now known or later developed.”); *Apple Computer, Inc., v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983), cert. denied, 464 U.S. 1033 (1984) (holding that the Apple proprietary operating system, fixed in a read-only-memory (ROM) chip is protected by copyright. The court rejected the arguments that a computer program is not protected when fixed in object code; that a computer program is not protected when fixed on a ROM chip rather than on a printout; and that an operating system program is not the proper subject of copyright); *M. Kramer Mfg. Co., Inc. v. Andrews*, 783 F.2d 421 (4th Cir. 1986) (holding that video games and other computer programs stored on disk or ROM are copyrightable). *But Cf.* *Cartoon Network v. CSC Holdings*, 536 F.3d 121 (2d Cir. 2008), cert. denied, 129 S. Ct. 985 (2009) (holding that copies of a television program loaded into RAM are not fixed for purposes of copyright statutes).

even transient fixation is sufficient to evoke exclusive rights for authors. Whether flickering on a computer monitor or flickering in the brain, both are now perceivable and should come within the ambit of exclusive rights accorded to authors.

In short, fixation addresses a technical rather than substantive concern about protecting authored expression. That technical hurdle supposed it “impossible to ‘copy’ an ‘idea,’” when it existed solely as “a conception in someone's mind.”²³⁵ But modern neuroimaging techniques may now enable the detection and reproduction of what exists in the mind just as easily as one perceives the bits and bytes inside a computer program. When expressed on paper, on a computer, on a cell phone, or in the brain, authors of memorialized information have a legal basis in intellectual property for an expectation of a privacy interest in secrecy. Consequently, whether unpublished and undisclosed, written or held in the mind, authors should be accorded a Fourth Amendment secrecy interest in their undisclosed writings and their effects.

D. Utterances

Utterances are thoughts, visual images, words or statements that are verbalized or recalled to the conscious mind. Spoken aloud or ruminated silently in the brain, both are categories of uttered evidence just the same. This category of evidence is the primary focus of Fifth Amendment protections.²³⁶ But Fourth Amendment interests are also implicated when investigators seek to discover the verbal and silently ruminated utterances of a suspect.

Evoked and voluntary utterances implicate different constitutional interests. Evoked utterances arise by compelling a suspect to respond—either silently or aloud—to questions or prompts. Voluntary utterances are instead given freely and without government demand. Voluntary divulgements are beyond the scope of Fifth Amendment privilege against self-incrimination because the utterances have not been compelled. With evoked utterances, by contrast, only extraordinary societal justification or prosecutorial immunity will justify government compulsion of such evidence.²³⁷

Evoked utterances also implicate Fourth Amendment interests in seclusion of one's person, when a person is seized and forced to respond to government interrogations. Circumscribed by the Court's ruling in *Terry v. Ohio*,²³⁸ the reasonableness of a warrantless stop and brief questioning by a government official based on reasonable suspicion will depend upon the length of the detention and methods used to evoke answers. In general, brief and minimally physically intrusive detentions do

²³⁵ *Gund, Inc., v. Smile Intern., Inc.*, 691 F. Supp. 642, 644 (E.D.N.Y. 1988),

²³⁶ Nita A. Farahany, *Incriminating Thoughts*, 64 *Stan. L. Rev.* __ (2012).

²³⁷ For a detailed description and discussion of these categories, see Nita A. Farahany, *Incriminating Thoughts*, 64 *Stan. L. Rev.* __ (2012).

²³⁸ 392 U.S. 1 (1968).

not raise Fourth Amendment concerns. Here again the Fifth and not the Fourth Amendment holds the relevant protective interest of being safeguarded by the privilege against self-incrimination.

When defendants challenge voluntary utterances that investigators have intercepted, courts have focused almost exclusively on the seclusion of those utterances. Yet a suspect knowingly risks abandoning such seclusion when they speak aloud. In *Silverman v. United States*,²³⁹ for example, police officers described incriminating conversations they overheard by means of an electronic listening device. They installed a “spike-mike” several inches into the party wall of the criminal suspect, thereby trespassing upon his home. The Court ignored the “frightening paraphernalia, which the vaunted marvels of an electronic age may visit upon human society.”²⁴⁰ The Court focused only on the method of intrusion and not the conversation overheard, holding that the “eavesdropping was accomplished by means of an unauthorized physical penetration.” the intrusion upon the seclusion in the home from prying ears was an unreasonable search.²⁴¹

When the Court in *Katz v. United States*²⁴² moved beyond trespass to privacy, it similarly found that the interception of the telephone booth user’s conversation was unreasonable.²⁴³ In so holding, the Court reasoned that Katz had used the seclusion of the phone booth, and as such he was entitled to assume “that the words he utters into the mouthpiece [would] not be broadcast to the world.”²⁴⁴

By uttering thoughts aloud to others, a conversant may assume the risk that his words will be repeated, recorded, and used against him. In *United States v. White*,²⁴⁵ a plurality of the Court held that transmission of a conversation by a wired informant to government agents implicated no Fourth Amendment interests.²⁴⁶ It considered the individual interests at stake in intercepting voluntary utterances, and expressly declined to recognize a secrecy interest in such conversations.²⁴⁷ It held similarly in *U.S. v. Caceres*, where a majority repudiated any privacy exists in the

²³⁹ 365 U.S. 505 (1961).

²⁴⁰ *Silverman v. United States*, 365 U.S. 505, 509 (1961).

²⁴¹ *Silverman v. United States*, 365 U.S. 505, 509 (1961).

²⁴² 389 U.S. 347 (1967)

²⁴³ *Id.* at 348.

²⁴⁴ *Id.* at 352.

²⁴⁵ *U.S. v. White*, 401 U.S. 745 (1971) (plurality opinion) (finding *Katz* inapplicable because *Katz* involved no revelation to the Government by a party to conversations with the defendant nor did the Court indicate in any way that a defendant has a justifiable and constitutionally protected expectation that a person with whom he is conversing will not then or later reveal the conversation to the police).

²⁴⁶ *U.S. v. White*, 401 U.S. 745 (1971) (plurality opinion) (“It would be a dubious service to the genuine liberties protected by the Fourth Amendment to make them bedfellows with spurious liberties improvised by farfetched analogies which would liken eavesdropping on a conversation, with the connivance of one of the parties, to an unreasonable search or seizure.”)

²⁴⁷ *U.S. v. White*, 401 U.S. 745, 752 (1971) (plurality opinion).

voluntary utterances made to others, including government agents.²⁴⁸ State and federal courts have used the same reasoning to find that eavesdropping or recording of conversations by a willing informant or undercover agent implicates no individual Fourth Amendment interests.²⁴⁹ Courts have consequently approved the use of informant statements based on notes of conversations,²⁵⁰ secret transmission of conversations by radio²⁵¹ and the use of tape recorders²⁵² to share their conversations with the government. These cases suggest that where utterances are concerned, the only expectations of privacy that will be found reasonable is one based in seclusion.

Intellectual property law provides new insight for why individuals may lack a Fourth Amendment secrecy interest in their utterances. In general, one cannot claim copyright protection for an entirely unfixed conversation,²⁵³ speech, or even performance under the Copyright Act with an exception for musical concerts.²⁵⁴ For a speech or conversation to

²⁴⁸ U.S. v. Caceres, 440 U.S. 741 (1979).

²⁴⁹ See, e.g., U.S. v. Davis, 326 F.3d 361 (2d Cir. 2003) (“It is firmly established that audio recordings, obtained without a warrant and through hidden recording devices by an invited guest, do not violate the Fourth Amendment.”) Snellgrove v. State, 569 N.E.2d 337 (Ind. 1991) (holding that “the Fourth Amendment provides no protection to the wrongdoer who mistakenly believes that a person to whom he voluntarily confides his wrongdoing will not reveal it”); State v. Grullon, 212 Conn. 195 (1989) (“Just as an undercover police agent, without having first obtained a warrant, may take notes reciting a conversation with a defendant, so the agent may simultaneously record the conversation or transmit it to recording equipment”); Hoback v. State, 689 S.W.2d 569, 571 (1985) (“The rule that an accused relies on a colleague at his own risk is well established. We have relied upon decisions of the United States Supreme Court in holding that recordings made with the consent of an informant are admissible).

²⁵⁰ U.S. v. Santillo, 507 F.2d 629, 631 (3d Cir. 1975) (rejecting a secrecy interest in a voluntary conversation, because the “possibility of repetition is a well-known risk that the prudent man weighs before disclosing confidential information.”).

²⁵¹ U.S. v. White, 401 U.S. 745 (1971); Lee v. U.S., 343 U.S. 747 (1952); Ansley v. Stynchcombe, 480 F.2d 437 (5th Cir. 1973); U.S. v. Lippman, 492 F.2d 314 (6th Cir. 1974); U.S. v. Ryan, 548 F.2d 782 (9th Cir. 1976); U.S. v. Butera, 677 F.2d 1376 (11th Cir. 1982).

²⁵² E.g., Lopez v. U.S., 373 U.S. 427 (1963) (When an individual converses with a government informant who records the conversation, he has voluntarily disclosed the contents of his mind. No intrusion into a secluded area not accessible by the human eye or human ear is involved.).

²⁵³ See e.g., Taggart v. WMAQ Channel 5 Chicago, 2000 WL 1923322 (S.D. Ill. Oct. 30, 2000) (granting defendants’ motion to dismiss plaintiff’s copyright claim to a news interview because the mere spoken words in an interview were not enough to generate a proprietary interest).

²⁵⁴ 3 Entertainment Law 3d: Legal Concepts and Business Practices § 16:3 (“Unfixed works, such as unrecorded extemporaneous speeches and improvisational jazz solos, are not protected by federal copyright law, but may be protected by state law.”); 1 Information Law § 4:7 (“[U]nrecorded live performances per se are not protected authorship. Traditionally, direct transmission of those performances did not constitute a protected work even if displayed briefly on a machine necessary to transmit or receive the broadcast. Instead, under special rules adopted to create protection for “live” broadcasts, for copyright protection there must be prior or simultaneous recording of the performance. In such cases, the recorded performance constitutes the protected work; the

be sufficient fixed for copyright protection, it must be fixed with the consent of the performer.²⁵⁵ Beyond that, the extent and the medium of fixation necessary to satisfy the statutory requirements of copyright are a subject of considerable debate. Courts have grappled with and rejected copyright protection for utterances as: words spoken on the telephone,²⁵⁶ an orally given lecture,²⁵⁷ a conversation between two individuals,²⁵⁸ a live, unrecorded movie pitch,²⁵⁹ and, choreography that has never been filmed

broadcaster (director, camera person, or producer) can prevent rebroadcast of the recorded performance, but nothing would disallow another party from recording the same performance.”); David Nimmer, *The End of Copyright*, 48 Vand. L. Rev. 1385, 1409 (1995) (“One basic bedrock provision in the interpretation of [the Copyright] clause has been that its reference to ‘Writings’ denotes fixation [N]o respectable interpretation of the word ‘Writings’ embraces an untaped performance of someone singing at Carnegie Hall.” (internal citations omitted)). 1 Lindey on Entertainment, Publ. & the Arts § 1:42.70 (3d ed.) (“As part of the Uruguay Round Agreements Act (“URAA”) that brought the United States into the World Trade Organization (“WTO”), Congress enacted civil and criminal statutes to protect against the unauthorized recording of live musical performances, and the unauthorized sale and distribution of recordings of live performances. Prior to that time, there was no federal protection for live performances, although several states had laws that prevented the unauthorized recording and sale of live concert tapes.”).

²⁵⁵ *Fleet v. CBS, Inc.*, 50 Cal. App. 4th 1911, 1920 (Cal. Ct. App. 2d Dist. 1996) (“A work is fixed in a tangible [form] of expression for purposes of the Act, only if recorded ‘by or under the authority of the author.’ (17 U.S.C. § 101.)”).

²⁵⁶ Words spoken over a telephone are not copyrightable if not recorded. *Hillips v. Inc. Magazine, CIV. A.* 86-5514, 1987 WL 8047 (E.D. Pa. Mar. 18, 1987) (“The plaintiff does not allege that the ideas transferred by her over the telephone to the defendant were embodied in a copy or phonorecord and therefore, were fixed at the time of transfer. Therefore, these unfixed ideas were not copyrightable and were not protected under the copyright laws when communicated to and used by the defendant.”). *See also* *Feldman v. Twentieth Century Fox Film Corp.*, 723 F. Supp. 2d 357, 364 (D. Mass. 2010) (“[C]opyright protection is only available for ‘original works of authorship fixed in any tangible medium of expression.’ Plaintiff’s private telephone conversations, which are not ‘fixed,’ therefore, are not copyrightable.”) (citations omitted).

²⁵⁷ An orally given lecture was found not to be protected by copyright. *Fritz v. Arthur D. Little, Inc.*, 944 F. Supp. 95, 99 (D. Mass. 1996) (“If Fritz came up with new course material extemporaneously-delivered orally while teaching-and Kiefer took notes thereon and then included them in IA Inc. I’s course materials, this in itself would not amount to actionable copying. See 17 U.S.C. § 102(a). According to the “independent creation” doctrine, Kiefer’s use of Fritz’s oral “creations” would not constitute infringement. Kiefer’s notes would be independent creations based on a non-copyrighted source. See *Grubb*, 88 F.3d at 4; *Concrete Machinery Co.*, 843 F.2d at 605 n. 6. In contrast, if Fritz proceeded to set his new ideas down on paper, only then satisfying the fixity requirement of the copyright statute, 17 U.S.C. § 102(a), he could have a valid copyright in these written expressions. . . . Fritz’s subsequently created course materials are protected against copying, but not extemporaneously spoken words upon which they were based.”).

²⁵⁸ “A conversation between two individuals, however profound, is not fixed in a tangible medium and would therefore be ineligible for [federal] copyright protection. The audio recording of that same conversation is considered a fixed sound recording, and could therefore be protected.” David A. Costa, *Vernor v. Autodesk: An Erosion of First Sale Rights*, 38 Rutgers L. Rec. 1, 2 (2011)

²⁵⁹ A live, unbroadcast, unrecorded movie pitch was found to be “fixed” for Copyright Act purposes in note cards and an outline, and so received copyright protection. *Metrano*

or notated.²⁶⁰ Courts may have intuited that individuals lack a secrecy interest in their utterances because they are not protected by any source of law—real or intellectual property—nor by societal custom or norms.

Nevertheless, the emerging and future ability to detect utterances in the brain may challenge both the fixation requirement in copyright, as discussed *supra*, which may impact whether a Fourth Amendment secrecy interest applies to utterances. In the hypothetical stop of the motorist, the police could evoke uttered responses from the motorist while he is held in brief detention during a *Terry*-like stop. Equipped with brain-based lie detection technology—which relies on the increased level of blood oxygenation when a person lies than well they tell the truth—the police could ask if he had been drinking or was the terrorist whom they sought. Even if the motorist remained silent, neuroimaging technology could one day enable the police to gain accurate answers to their questions. If researchers succeed in commercialization of remote EEG detection technology, then the police could administer an on-the-spot brain based lie detection test during interrogations. Likewise in asking motorist to recall his evening, the police evoke his uttered responses by asking him to consciously recall his life events that had transpired. Using similar neuroimaging devices the police could intercept and record the memories that he recalled to his mind.

The police could even “eavesdrop” on the motorist’s inward conversations. While stopped the motorist might ruminate over his evening and consciously delight in the drinking and misdeeds he had done. If the police use sense-enhanced neuroimaging technology to intercept these ruminations, they may intrude upon both his secrecy and seclusion interests in his thoughts.

Courts and scholars in intellectual property law have begun to recognize that neuroscience may impact the concept of fixation in copyright law. In *Blue Pearl Music Corp. v. Bradford*,²⁶¹ for example, the Court of Appeals noted that copies of the musical work at issue could exist in the “defendant’s head.” One scholar used a hypothetical case of a musical or spoken performance given to an individual with photographic or otherwise perfect memory, to argue that “if the brain is a computer,” then the person with perfect memory seeing the performance would fix it.²⁶² If copyright is meant to protect the expressive work of the author’s

v. Fox Broad. Co., No. CV-00-02279 CAS (JWJX), 2000 WL 979664, at *4 (C.D. Cal. Apr. 24, 2000).

²⁶⁰ “[C]horeography that has never been filmed or notated, an extemporaneous speech, ‘original works of authorship’ communicated solely through conversations or live broadcasts, and a dramatic sketch or musical composition improvised or developed from memory and without being recorded or written down,” do not receive copyright protection.” H.R. Rep. No. 1476, 94th Cong., 2d Sess. 131, reprinted in [1976] U.S. Code Cong. & Ad. News 5659, 5747.

²⁶¹ 728 F.2d 603, 606 n.3 (3d Cir. 1984).

²⁶² David Nimmer, *Brains and Other Paraphernalia of the Digital Age*, 10 Harv. J. L. & Tech. 1 (1996).

brain, and such expressive content can be reproduced directly from his brain, then neurological memory may satisfy the purpose and requirements of fixation. These interesting and emerging issues in copyright law may challenge whether and to what extent a Fourth Amendment privacy interest in secrecy attaches to uttered evidence.

Irrespective of how the debate over fixation resolves, there is a vast difference between audible voluntary utterances and silent utterances in the brain. When a suspect remains silent and chooses not to share his thoughts, he has not yielded any privacy interest in secluding his utterances. When balancing government interests against the fortress of seclusion around the brain, only extraordinary circumstances should justify an intrusion upon the seclusion of those utterances. This conclusion follows naturally from the oft-repeated claim that the Fourth Amendment is at the least a safeguard from the government “probing into one’s private life and thoughts.”²⁶³

CONCLUSION

Now that the government can search informational property without physically intruding on tangible property, the contours of individual interests at stake in modern searches and seizures is of paramount concern. Yet in an era where the government may unobtrusively intercept information from electronic files, communications—even directly from suspects’ brains—the individual interests at stake in searches and seizures couldn’t be any murkier.

Asking who authored the information could solve the central conundrum plaguing Fourth Amendment doctrine. The answer tells us both whose privacy interests and what type of privacy interests are at stake. Individuals have a cognizable right to non-disclosure of their information when information is properly viewed as “their” papers or effects.

Under federal copyright law, Congress has conferred exclusive right to authors, which includes a right of first publication and a corollary right to non-disclosure. Until now, Fourth Amendment doctrine has ignored the relevance of these exclusive rights. But just as the right to exclude others from real property implicates privacy interest in the Fourth Amendment, so, too, do exclusive rights of authors. This approach aligns individual interest in secrecy with whether an individual authored or originated the information. And it respects for all the existing privacy interest of seclusion for information originated by others.

Now the questions left unanswered in *Incriminating Thoughts* have a more complete and satisfying answer. The Fifth Amendment robustly protects evoked utterances, while the Fourth Amendment robustly protects the secrecy of memorialized evidence, and may provide additional protection for utterances. Identifying information are facts in the world, which one discovers but not does originate. Automatic evidence arises as a

²⁶³ Davis v. Mississippi, 394 U.S. 721, 727 (1969).

byproduct of our everyday activities, but lacks expression by the person to whom it pertains. When a government investigation seeks information, the spectrum serves as a guide. For identifying and automatic evidence, the government must not unreasonably intrude upon seclusion. When authored memorialized and uttered evidence is sought, the government must not unreasonably intrude either upon one's seclusion and one's secrecy.

This approach advances legitimate social interests in the investigation of a crime, and brings Fourth Amendment protections in alignment with other constitutional guarantees. Rather than becoming a tool of suppressing progress, the Fourth Amendment now joins with the Copyright Clause to promote the Progress of Science and useful Arts.