Domestic Drone Surveillance: The Court's Epistemic Challenge and Wittgenstein's Actional Certainty

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INTRODUCTION

According to the *Washington Post*, between 2010 and 2012, unmanned aerial vehicles ("UAVs"), commonly known as "drones," were deployed nearly 700 times by U.S. Customs and Border Protection on behalf of local and state law enforcement agencies.[1] In 2015, the Federal

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1. Craig Whitlock & Craig Timber, *Border Patrol Drones Being Borrowed by Other Agencies More Often Than Previously Known*, WASH. POST (Jan. 14, 2014), http://www.governing.com/news/headlines/Police-Agencies-Using-Border-Patrols-Drones-More-Often-Than-Thought.html [https://perma.cc/KNW8-HEAG].

Aviation Administration ("FAA") began accepting applications for drone licenses by law enforcement agencies.[2] Given the number of different ways drones can now aid departments in gathering intelligence, the number of applications will likely only increase. Drones can be equipped with facial recognition software,[3] heat sensors, and other high-tech features, such as microphones capable of detecting gunshots and even personal conversations.[4] Some military grade drones are equipped with "Wi-Fi crackers" and bogus cell phone towers that allow law enforcement to pinpoint a suspect's location while simultaneously intercepting text messages and phone calls.[5] Some of these drones can remain airborne for hours, even days. Tiny drones, also known as "insect drones" or "micro-drones," are currently in development and are said to be capable of going completely undetected.[6]

Although drones can be used for a wide range of positive and beneficial objectives—for example, crop and land surveys, power line and pipeline inspections, forest fire detection, and search-and-rescue missions[7]—some agencies have used drones in ways that raise serious privacy concerns. For example, in 2011, the *Los Angeles Times* reported that police in Grand Forks, North Dakota had used a Predator B Drone—

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2. Ben Wolfgang, *FAA Chief Says Drones Will Force Change at Agency*, WASH. TIMES (Aug. 7, 2012), http://www.washingtontimes.com/news/2012/aug/7/faa-chief-says-drones-will-force-change-at-agency/ [https://perma.cc/WM3B-RPBK].

3. Amanda Ziadeh, *Drones Get Sightline Tracking, Facial Recognition Tech*, GCN (Nov. 7, 2016), https://gcn.com/articles/2016/11/07/drone-partnership.aspx [https://perma.cc/Q9F5-EEJP].

4. Tina Moore, *NYPD Considering Using Drones and Gunshot Detectors to Fight Crime*, N.Y. DAILY NEWS (May 20, 2014, 11:45 PM), http://www.nydailynews.com/new-york/nyc-crime/nypd-drones-fight-crime-article-1.1799980 [https://perma.cc/VQ62-AAXS].

5. Andy Greenberg, *Flying Drone Can Crack Wi-Fi Networks, Snoop on Cell Phones*, FORBES (July 28, 2011), http://www.forbes.com/sites/andygreenberg/2011/07/28/flying-drone-can-crack-wifi-networks-snoop-on-cell-phones/#55284a2f66f9 [https://perma.cc/8SGL-QLJ7].

6. Adam Piore, *Rise of the Insect Drones*, POPULAR SCI. (Jan. 29, 2014), http://www.popsci.com/article/technology/rise-insect-drones [https://perma.cc/T3CJ-VTZG]. Insect drones were recently depicted in the 2015 movie, Eye in the Sky. EYE IN THE SKY (Entertainment One & Raindog Films 2015).

7. Some agencies have used drones for the very purpose of search and rescue. Dee J. Hall, *Fitchburg Man Found Alive*, WIS. ST. J. (Jul. 19, 2014), http://host.madison.com/wsj/news/local/crime_and_courts/fitchburg-man-found-alive-unharmed-after-nearly-three-days-outside/article_f6274133-90b6-5282-98d8-1304bb6d1f8d.html [https://perma.cc/DU43-KGNE].

equipped with "heat sensors and [a] sophisticated radar"—to help locate three individuals suspected of cattle rustling.[8] The drone was fitted with a live-feed camera, enabling law enforcement officials to pinpoint the suspects' exact location.[9] In 2009, the Texas Department of Public Safety launched a bird-sized drone called a "Wasp" over a suspect's house while waiting to execute a search warrant.[10] The drone offered law enforcement officials an aerial view of the property before they raided the residence.

In light of increased drone use, there has been a bipartisan effort in Louisiana to pass legislation regulating drones.[11] These measures are important, and lawmakers are correct in their attempts to clarify what citizens can and cannot do with these machines. In 2016, Governor Edwards signed into law two bills restricting drone use.[12] The first restricts drone use near schools, school property, or correctional facilities.[13] It includes exceptions for police and for situations in which the landowner grants permission.[14] The second subjects drone usage to criminal trespassing laws.[15] Notably, however, neither of these bills regulate the use of drones by police.

Although the use of drones will undoubtedly provide law enforcement agencies with new means of gathering intelligence, these unmanned aircrafts bring with them a host of legal and epistemic complications. This Article examines the domestic use of drones by law enforcement to gather

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8. Brian Bennet, *Police Employ Predator Drone Spy Planes on Home Front*, L.A. TIMES (Dec. 10, 2011), http://articles.latimes.com/2011/dec/10/nation/la-na-drone-arrest-20111211 [https://perma.cc/CV4L-R5ET].

9. *Id.*

10. Peter Fin, *Domestic Use of Aerial Drones by Law Enforcement Likely to Prompt Privacy Debate*, WASH. POST (Jan. 23, 2011, 12:56 AM), http://www.washingtonpost.com/wp-dyn/content/article/2011/01/22/AR2011012204111.html?sid=ST2011012204147 [https://perma.cc/AJ3G-N95K].

11. *Louisiana Lawmakers Want to Get Drones Under Control*, TIMES-PICAYUNE (April 26, 2016, 9:46 AM), http://www.nola.com/politics/index.ssf/2016/04/louisiana_lawmakers_want_to_ge.html [https://perma.cc/VP4G-CFAB].

12. *Edwards Agrees to New Restrictions on Drones in Louisiana*, WDSU NEWS (June 22, 2016, 8:59 AM), http://www.wdsu.com/article/edwards-agrees-to-new-restrictions-on-drones-in-louisiana/3608454 [https://perma.cc/3UVA-R7U9].

13. H.B. 19, 2016 Leg., Reg. Sess. (La. 2016) (codified at LA. REV. STAT. §§ 14:337(A), (D), (E), 14:377(B)(3)(d)) http://www.legis.la.gov/legis/ViewDocument.aspx?d=1012765 [https://perma.cc/6J7R-BV88].

14. *Id.*

15. S.B. 141, 2016 Leg., Reg. Sess. (La. 2016) (passed and signed into law 2016), http://www.legis.la.gov/legis/ViewDocument.aspx?d=1012711 [https://perma.cc/QDZ4-EJWZ].

information. First, Part I considers the Fourth Amendment and the different legal standards of proof that might apply to law enforcement drone use. Part II then explores philosopher Wittgenstein's notion of actional certainty. Part III discusses how the theory of actional certainty can apply to the Supreme Court and its epistemic challenge of determining what is a "reasonable" expectation of privacy. This Part also investigates the Mosaic Theory as a possible reading of the Fourth Amendment.

I. THE FOURTH AMENDMENT: SEARCHES AND PRIVACY

"The purpose of the probable-cause requirement of the Fourth Amendment [is] to keep the state out of constitutionally protected areas until it has reason to believe that a specific crime has been or is being committed."[16] A search passes constitutional muster, then, if law enforcement has probable cause to think a crime has or is occurring[17] or if the search does not constitute an unreasonable intrusion into a constitutionally protected area[18] or does not violate a person's reasonable expectation of privacy.[19] In light of this constitutional framework, this Section first discusses the standard of probable cause as applied to law enforcement use of drone surveillance and then whether drone surveillance violates a person's reasonable expectation of privacy.

A. Reasonable Searches and Probable Cause

The Fourth Amendment has two clauses. First, citizens are protected against unreasonable searches.[20] Second, warrants may be issued only when they describe with particularity the place to be searched and the persons or things to be seized.[21] In *U.S. v. Leon*, the U.S. Supreme Court noted that "[a] Fourth Amendment case may present two separate questions: whether the search was conducted pursuant to a warrant issued in accordance with the second Clause, and, if not, whether it was nevertheless 'reasonable' within the meaning of the first."[22] If a governmental search is found to have violated the Fourth Amendment, the fruits of the search are not admissible as evidence in court because such

16. Berger v. New York, 388 U.S. 41, 59 (1967).
17. *See* Terry v. Ohio, 392 U.S. 1, 27 & n.23 (1968).
18. *See generally* Olmstead v. United States, 277 U.S. 438 (1928).
19. *See generally* Katz v. United States, 389 U.S. 347 (1967).
20. U.S. CONST. amend. IV.
21. *Id.*
22. United States v. Leon, 468 U.S. 897, 961 (1984) (Stevens, J., concurring in part and dissenting in part).

evidence is considered "fruit of the poisonous tree."[23] Thus, the Fourth Amendment—at least in theory—should act as a significant limit on police power.[24] All of the rights contained in the Fourth Amendment have been selectively incorporated so as to apply to the states.[25]

Many searches performed by law enforcement are done without a warrant and without violating Fourth Amendment protections. By only prohibiting "unreasonable" searches and seizures, the language of the Fourth Amendment indicates that "reasonable" searches and seizures by law enforcement are constitutional.[26] A search is deemed reasonable when the police can prove first, that it is more likely than not that a crime has occurred,[27] and second, if a search is conducted, it is probable the police will find either stolen goods or evidence of the crime.[28] These two requirements constitute probable cause to perform a search. Probable cause can be established to obtain a warrant before a search or can be used to justify the reasonableness of a search after the fact.[29]

Judicial decision-making regarding the finding of probable cause, whether before or after a search is conducted, is a notoriously tricky question:

> The nature of probable cause poses a serious cognitive challenge for judges in implementing their role as the guardians of the Fourth Amendment. The cornerstone of reasonableness in searches is the concept of "probable cause." Commonly, a judge

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23. Nardonne v. United States, 308 U.S. 338, 341 (1939).

24. However, some legal scholars worry that in the past three decades the Supreme Court has significantly whittled away the Fourth Amendment's protective power by declaring police activities "that could only be described as 'searches' in common parlance as not constituting 'searches' at all under the Fourth Amendment." Craig M. Bradley, *"Knock and Talk" and the Fourth Amendment*, 84 IND. L.J. 1099, 1100 (2009).

25. John Burkoff, *Law Enforcement Use of Drones & Privacy Rights in the United States* 2 (Univ. of Pittsburg Sch. of Law, Working Paper No. 2014-34, 2014).

26. *See, e.g.*, Craig Lerner, *The Reasonableness of Probable Cause*, 81 TEX. L.R. 951, 952–56 (2003) ("The reality experienced by American citizens today is that they are searched and seized on a regular basis, and for the vast majority of these searches (e.g., airport searches, street stops, DUI checkpoints, urine testing of government employees), the constitutionality seems to turn not on probable cause, but on the reasonableness of the search, factoring in the degree of the intrusion and the gravity of the investigated offense.").

27. Probable cause means that a reasonable and cautious officer would believe that criminal activity is or was taking place. Terry v. Ohio, 392 U.S. 1, 21 (1968).

28. Illinois v. Gates, 462 U.S. 213, 232 (1983).

29. *Id.*

> will assess probable cause before the search has been conducted because the police normally have to obtain a warrant before conducting a search. But with numerous exceptions to the warrant requirement that arise from the inevitable exigencies of law enforcement, the police conduct a search without obtaining a warrant. When faced with such an exigency, the police may avoid the need for a warrant, but they must still have probable cause for the search. The purpose behind allowing an exigency to exempt the police from the warrant requirement is a practical one, but is not supposed to allow the police to be subject to a more lenient standard of review. When searches conducted without a warrant produce incriminating evidence to be used against a criminal defendant, the judge must assess probable cause in full knowledge that the search uncovered incriminating evidence. Judges must assess the facts just as if they did not know that the search uncovered incriminating evidence. The standard remains the same, but the perspective from which judges review a case inevitably differs in hindsight.[30]

There are many circumstances wherein courts are asked to determine whether a warrantless search, seizure, or arrest is reasonable after the fact. Cases where a search is presumed reasonable include circumstances in which a felony arrest is being made in a public place;[31] circumstances in which the search is incident to a lawful arrest;[32] and circumstances in which an officer reasonably believes that criminal activity may be afoot in a public place.[33] The courts have also held that other "exigent" circumstances are likely to justify a warrantless search, such as shots fired, screams heard, or fire emanating from inside a building.[34]

As probable cause itself incorporates an assessment of the likely outcome of the search, it seems vulnerable to the influence of the hindsight bias, which is the tendency persons have of increased confidence in the odds of an outcome once the actual outcome is known.[35] This bias notoriously influences probability judgments[36] and may indicate that

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30. Jeffrey J. Rachlinski et al., *Probable Cause, Probability, and Hindsight*, 8 J. EMPIRICAL LEGAL STUD. 72, 73 (2011).

31. United States v. Watson, 423 U.S. 411, 427 (1976).

32. Chimel v. California, 395 U.S. 752 (1969).

33. Terry v. Ohio, 392 U.S. 1, 30–31 (1968).

34. Kentucky v. King, 563 U.S. 452 (2011).

35. Ulrich Hoffrage, Ralph Hertwig, & Gerd Gigerenzer, *Hindsight Bias: A By-Product of Knowledge Updating?*, 26 J. EXPERIMENTAL PSYCH., 556, 566–81 (2000). The hindsight bias is also known as the "I knew it all along" effect. *Id.* at 566.

36. *Id.*

judges would be more likely to find a search was justified in cases where actual criminal evidence was found than in cases where no evidence was found. Despite one study that found at least some judges are able to avoid this bias,[37] some searches by law enforcement might appear justified by probable cause after the fact in part due to the successful outcome of the search.

Worries regarding after-the-fact justifications of a search highlight the epistemic challenge facing law enforcement and courts in assessing the probabilities regarding probable cause. Determining whether it is more likely than not that a crime has occurred, and whether the proposed search will generate further evidence of this crime, is a difficult task prior to a search. This task is made even more difficult by the realities of in-the-field policing, which results in many probable cause judgments made in hindsight with knowledge of the outcome of the search.

The challenge is even more pronounced when the evidence provided in support of probable cause is supplied by drone surveillance. A drone can be circling for hours, even days, gathering intelligence on a target without probable cause. Information gathered via drone may then be used to obtain a warrant to search once evidence of a crime has been gathered. Then, once a warrant is obtained, the police may enter the specified area of the property and search for items listed on the warrant. Police may then extend the search beyond the specified area of the property or include other items in the search beyond those specified in the warrant if it is necessary to ensure their safety or the safety of others, to prevent the destruction of evidence, to discover more about possible evidence or stolen items that are in plain view, or to hunt for evidence or stolen items that, based upon their initial search of the specified area, they believe may be in a different location on the property.[38] In this way, drone use by law enforcement may increase probable cause judgments made in hindsight after incriminating evidence has already been found, and thereby increase search powers for law enforcement.

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37. Rachlinski, *supra* note 30. The hindsight bias by judges is a real concern. If the judge already knows a particular raid produced incriminating evidence, whether a case can be reasonable and fairly assessed is highly questionable. Inquiry into what can be known cannot presuppose that it already is known. Knowledge can be established only after a certain set of criteria has been met. Even then, some epistemologists are still skeptical. *See* Edmund Gettier, *Is Justified True Belief Knowledge?*, 23 ANALYSIS 121 (1963).

38. *See generally* Phyllis Bookspan, *Reworking the Warrant Requirement: Resuscitating the Fourth Amendment*, 44 VANDERBILT L.J. 473 (1991).

B. Reasonable Expectation of Privacy

Traditionally, constitutional search and seizure jurisprudence has relied upon the trespass doctrine, which states that when law enforcement effects an unreasonable physical intrusion into a constitutionally protected area, a violation of the Fourth Amendment has occurred.[39] The trespass doctrine's requirement of a physical intrusion means that trespass law is less relevant to drone surveillance because no physical intrusion usually occurs when law enforcement uses a drone to provide surveillance thousands of feet in the air in legally navigable airspace.[40]

The FAA dictates where drones may safely fly, but much surveillance can occur from legal airspace. A police officer viewing objects on private property that can be seen from a public vantage point is not subject to Fourth Amendment protection if it is in "plain view"[41]—even with binoculars.[42] The reason this protection is afforded to police is that law enforcement's observation of items in plain view is not deemed a search under the Constitution.[43] Cases involving law enforcement aircraft use have generally held that using airspace to see things in "plain sight" is acceptable.[44] For example, in *Dow Chemical Co. v. U.S.*, the Supreme Court held that the Fourth Amendment did not apply to photographs taken from altitudes of 12,000, 3,000, and 1,200 feet.[45] As one legal scholar has noted, "[a]pplied mechanically, [the public view] doctrine would have devastating implications for surveillance by drones, or any other form of advanced surveillance technology, operating in public spaces. However . . . the Court has acknowledged that, as technology advances, it may need to modify its Fourth Amendment analysis."[46]

One way to avoid this sort of mechanical analysis would be to focus on the 1967 Supreme Court case of *Katz v. U.S.*, which held that although "the Fourth Amendment cannot be translated into a general constitutional 'right to privacy,'"[47] the Amendment "protects people, not places."[48] Thus, what a person "seeks to preserve as private, even in an area accessible to

39. Brooke Hofhenke, *The Fourth Amendment in the Coming Drone Age*, 15 DARTMOUTH L.J. (manuscript at 13) (forthcoming 2017).
40. *Id.* at 15.
41. Coolidge v. N.H., 403 U.S. 443 (1971).
42. United States v. Lee, 35 F.Supp. 2d 657 (N.D. Ind. 2011).
43. Horton v. California, 496 U.S. 128 (1990).
44. California v. Ciraolo, 476 U.S. 207 (1986).
45. Dow Chemical Co. v. U S., 476 U.S. 227 (1986).
46. Hofhenke, *supra* note 39, at 38.
47. Katz v. United States, 389 U.S. 347, 350 (1967).
48. *Id.* at 351.

the public, may be constitutionally protected."[49] In *Katz*, Justice Harlan in a concurring opinion established a twofold requirement for claims that law enforcement has violated the Fourth Amendment by violating a reasonable expectation of privacy.[50] First, a person must have "exhibited an actual (subjective) expectation of privacy," and second, the expectations must be ones "that society is prepared to recognize as 'reasonable.'"[51]

Thus, an unconstitutional search occurs when a subjective expectation of privacy determined to be reasonable under the circumstances has been violated by state action with no probable cause. Many searches performed are warrantless, and in some cases police may search and seize items or evidence when there is no physical trespass and no legitimate expectation of privacy, and thus no search. Establishing a reasonable subjective expectation of privacy would seem to involve exploration of what a person knowingly exposes to the public because details of a person's life that may be publicly known are "not a subject of Fourth Amendment protection."[52]

Complex epistemic issues for a court determining whether a search was "reasonable" present themselves. For example, when law enforcement does not feel the subject of a search has a reasonable expectation of privacy, police will not attempt to secure a warrant. Thus, any challenges to a search will be raised after the search has already been performed, often as a result of the defense's attempt to exclude the fruits of the search. For courts, establishing a subject's expectation of privacy after the search has occurred, however, is difficult. First, it is often difficult to determine what a person "knowingly exposes" to the public. For example, an individual may do her pharmacy shopping in public but still have a subjective expectation that her birth control habits will remain private. Second, establishing expectations of privacy after a search may be subject to the hindsight bias. To expand upon the drug store example, once a court discovers the individual was buying over-the-counter drugs in order to make and sell illegal drugs, it may be less likely that the court will determine that the individual had a reasonable expectation of privacy regarding her shopping habits at the drug store.

These difficult issues might be worse in cases where drone surveillance is used by law enforcement. As an illustration, suppose a drone is deployed to continuously monitor a particular street corner for illegal activity. A man is spotted entering an empty storefront every Friday at 8:00 p.m. A woman is also seen entering through the back door around

49. *Id.*
50. *Id.* at 362 (Harlan, J., concurring).
51. *Id.* at 361.
52. *Id.* at 351 (majority opinion).

the same time. Law enforcement determines the man's pattern of activity is sufficient to provide probable cause that a crime is occurring. Police use this evidence, gleaned without performing a "search"—because the police claim there was no reasonable expectation of privacy with regard to the man's actions—to secure a warrant to perform a physical search of the property on a Friday at 8:30 p.m. They discover the man with a prostitute inside the property and arrest him.

If the man claims he had a reasonable, subjective expectation of privacy with regard to his pattern of movements, even though they were public, how a court would evaluate this claim is questionable. No doubt the man truly hoped and even expected his meeting the prostitute in an empty storefront would remain private, given the precautions he had taken to meet the prostitute away from his home or workplace. The question is whether this expectation was reasonable. Assuming it is ever reasonable for someone to expect criminal activity to remain private, it would seem reasonable in this case.

This example raises several questions. The first is how the court will establish a subject's expectation of privacy when the subject's behavior is already being recorded by law enforcement, particularly after the search is already complete and criminal activity has been exposed. This concern touches upon worries regarding hindsight bias. The second is the way in which the new technology of drone surveillance allows law enforcement access to public action in a new way. The use of drones for surveillance seems to make worse the court's challenge of demonstrating an expectation of privacy because drones allow for continuous or collective monitoring of public action.[53] In light of this technology, the court must determine whether any behavior citizens knowingly expose to the public—behavior such that citizens were traditionally deemed to have no reasonable expectation of privacy[54]—can be interpreted as private nonetheless because the behavior is performed by citizens under the assumption that their lives are not subject to long-term monitoring and analysis by the state.

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53. For example, ordinarily, people have no reasonable expectation of privacy with regard to their license plate number. However, "the analysis changes if the ALPR [automatic license plate reader] is attached to a drone where such technology could, unlike a stationary ALPR, lock on a target's every move for weeks at a time and monitor that individual's movements with pinpoint accuracy." Sean Sullivan, *Domestic Drone Use and the Mosaic Theory* 24–25 (Univ. of N.M. Sch. of Law Legal Studies Research Paper Series, Paper No. 2013-02, 2013), https://ssrn.com/abstract=2212398 [https://perma.cc/6U5B-M2AE].

54. *Id.*

II. THE COURT'S EPISTEMIC CHALLENGE: COMMON SENSE KNOWLEDGE AND ACTIONAL CERTAINTY

While drone surveillance creates difficult legal hurdles for the Court, less obvious are the complicated epistemic challenges underpinning the legal difficulties. At issue is whether the Court will cast behavior citizens *knowingly* expose to the public as private. What citizens knowingly expose to the public and how citizens' actions are linked to this knowledge are two issues that Austrian philosopher Ludwig Wittgenstein discusses in his posthumously published notes entitled, *On Certainty*.[55] To seek clarity from Wittgenstein's discussion, however, we must first turn to the epistemic movement it presupposes, "Common Sense Philosophy."

A. Common Sense Philosophy

"Common sense philosophy" maintains that an ordinary, or "common sense," view of the world is, by and large, correct.[56] Its epistemic focus highlights the fact that human beings not only know that common sense convictions about the world are true, but that human beings know these convictions with certainty.[57] As such, common sense philosophy is often used as a justificatory tool to combat skepticism. One of its leading proponents was the British philosopher G.E. Moore.[58] In his 1925 article, "A Defense of Common Sense," Moore catalogued a "long list of propositions . . . every one of which," he said, "I know, with certainty, to

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55. *See generally* LUDWIG WITTGENSTEIN, ON CERTAINTY (G.E.M. Anscombe & G.H. von Wright eds., D. Paul & G.E.M. Anscombe trans. 1972) [hereinafter ON CERTAINTY].

56. George Edward Moore, *A Defense of Common Sense*, *in* PHILOSOPHICAL PAPERS 33 (1962).

57. Ryan Nichols, *Thomas Reid*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY, https://plato.stanford.edu/entries/reid/#ComSen FirPri [https://perma.cc/8PTN-72P8] (last updated Sept. 23, 2014).

58. Moore, however, was not the first to advocate common sense in an effort to combat skepticism. This thread can be traced back to the 18th century and Thomas Reid's "Scottish School of Common Sense." Against Cartesian skepticism, Reid had claimed.

> [t]he evidence of sense, the evidence of memory, and the evidence of the necessary relations of things, are all distinct and original kinds of evidence, equally grounded on our constitution . . . . To reason against any of these kinds of evidence is absurd . . . . They are first principles; and such fall not within the province of reason, but of common sense.

SELECTIONS FROM THE SCOTTISH PHILOSOPHY OF COMMON SENSE 48 (G.A. Johnston, ed. 1915) (2012).

be true."[59] The propositions contained in this list were such "obvious truisms" that we hardly find occasion to utter them. They included such trivially evident statements as,

> There exists at present a living human body, which is my body . . . there are a large number of other living human bodies, each of which has . . . at some time been born . . . continued to exist for some time after birth . . . been, at every moment of its life after birth, either in contact with or not far from the surface of the earth; and many of these bodies have already died and ceased to exist.[60]

Moore often used "certainty" to place emphasis on what he already "knew," supposing that it might provide even stronger justification against the skeptic. For instance, at the end of his article entitled "Proof of an External World," he says his premises—"Here's one hand, and here's another"—are "among things which I certainly did know."[61] In another article entitled "Certainty," Moore claims to "know with certainty that [he has] clothes on."[62] Therefore, certainty seems to indicate a degree of knowledge—specifically, knowledge in the highest degree.

Moore is far from the only philosopher to characterize certainty in this manner. René Descartes and David Hume both used it to underscore what they knew. Descartes, for instance, said, "I will . . . put aside everything that admits of the least of doubt, as if I had discovered it to be completely false. I will stay on this course until I know something certain, or, if nothing else, until I at least know for certain that nothing is certain."[63] Likewise, Hume, while discussing necessity and human behavior, stated, "I shall say that I know with certainty that he is not to put his hand into the fire and hold it there til [sic] it be consumed."[64] For these philosophers and throughout the Western philosophical canon, certainty indicates knowledge in the highest degree. Despite these assurances of certainty, however, the assurances fail to address the problem of skepticism that the original knowledge claim creates. If certainty is simply a level within the larger body of knowledge, the level of certainty, whether low, moderate,

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59. Moore, *supra* note 56, at 32.

60. *Id.* at 33.

61. George Edward Moore, *Proof of an External World*, *in* PHILOSOPHICAL PAPERS 127, 149–50 (1962).

62. George Edward Moore, *Certainty*, *in* PHILOSOPHICAL PAPERS 227, 227 (1962).

63. RENE DESCARTES, MEDITATIONS ON FIRST PHILOSOPHY 17 (Donald A. Cress, trans., 3rd ed. 1993) (1641).

64. David Hume, *Of Liberty and Necessity*, *in* AN ENQUIRY CONCERNING HUMAN UNDERSTANDING 50, 58 (Dover Pubs., Inc. 2012) (1748) (emphasis added).

or even high, matters little. If all knowledge claims were susceptible to doubt regardless, an emphasis on the degree of knowledge would not sway skeptics. "I know with certainty that p" requires as much justification as "I know that p" requires. The degree of certainty provided appears to be of little consequence.

B. Wittgenstein's On Certainty

For a set of first-draft notes, *On Certainty* contains many new and important ideas. Wittgenstein sets out to examine topics that were brought to his attention after reading Moore, who, in turn, was responding to topics that Descartes's epistemological project had elicited. Wittgenstein clearly believed using common sense philosophy to combat skepticism regarding true knowledge of the external world was correct.[65] He considered common sense truisms like Moore's "The earth exists" or "I have never been far from the surface of the earth"[66] to be the most propositionally basic. He referred to these sorts of statements as "hinge propositions" because so much appeared to turn on them.[67] When expressed explicitly, these propositions represent the most fundamental convictions. Hinge propositions are not founded in evidence because nothing more fundamental exists on the basis of which they could be believed. This important class of propositions has to "stand fast," like hinges fixed on a frame, so that the door—that is, other language games—can turn.[68] In four successive passages in *On Certainty*, Wittgenstein describes these propositions:

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65. Students enrolled in his 1939 seminar, the Philosophy of Mathematics, report that he even adopted the following slogan: "Don't treat your commonsense like an umbrella. When you come into a room to philosophize, don't leave it outside but bring it in with you." WITTGENSTEIN'S LECTURES ON THE FOUNDATIONS OF MATHEMATICS 68 (Cora Diamond ed. 1976). Numerous passages throughout his middle and later periods establish his support for common sense. *See* LUDWIG WITTGENSTEIN, PHILOSOPHICAL REMARKS, 61 (Rush Rhees ed., Raymond Hargraves & Roger White trans., 1975) (1964); LUDWIG WITTGENSTEIN, PHILOSOPHICAL GRAMMAR 19–20 (Rush Rhees ed., Anthony Kenny trans. 1974); *see also id.* at 257, ("*Generality*"); *id.* at 265 ("*The Inadequacy of the Frege-Russell Notation for Generality*"); *id.* at 451 ("*Infinity in Mathematics*"); *id*. at 460 ("*On Set Theory*").

66. Moore, *supra* note 56, at 32.

67. *See, e.g.*, ON CERTAINTY, *supra* note 55, §§ 341, 343, 355.

68. The term "language-game," says Wittgenstein, "is meant to bring into prominence the fact that . . . speaking [a] language is part of an activity, or of [a culture,] a form of life." LUDWIG WITTGENSTEIN, PHILOSOPHICAL INVESTIGATIONS §23 (G.E.M. Anscombe trans. 1972) [hereinafter PHILOSOPHICAL INVESTIGATIONS].

> § 341 [T]he *questions* that we raise and our *doubts* depend on the fact that some propositions are exempt from doubt, are as it were like hinges on which those turn.
> § 342 That is to say, it belongs to the logic of our scientific investigations that certain things are *in deed* not doubted.
> § 343 But it isn't that the situation is like this: We just *can't* investigate everything, and for that reason we are forced to rest content with assumption. If I want the door to turn, the hinges must stay put.
> § 344 *My life* consists in my being content to accept many things.[69]

Although Wittgenstein believed the common sense approach was correct, he also recognized its limitations. Although common sense truisms are often accepted without much thought, Wittgenstein urges readers to consider how strange they sound when uttered, especially when situated within a propositional knowledge claim, such as "I know that p."[70] Not only do the truisms sound odd, they fail to defeat skepticism, which was supposedly the very reason for their existence.[71]

Throughout *On Certainty*, Wittgenstein realizes that although statements he had been calling "hinge propositions" contribute to society's "world view," just as Moore's common sense propositions do, they do not function as propositions, strictly speaking. At sections 204 and 205, Wittgenstein takes an important step in his theory, connecting what he had been calling "hinge propositions" with action:

> § 204 Giving grounds, however, justifying the evidence, comes to an end—but the end is not certain propositions' striking us immediately as true, i.e. it is not a kind of seeing on our part; it is our *acting*, which lies at the bottom of the language-game.
> § 205 If the true is what is grounded, then the ground is not true, nor yet false.[72]

Thus, although the propositional character of the hinge drops out, another non-propositional facet remains. Hinges that stand fast serve to frame the background of thoughts and statements.[73] These certainties are

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69. ON CERTAINTY, *supra* note 55, §§ 341–344.

70. *See id.* § 4.

71. *See generally* Peter Klein, *Skepticism*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY, https://plato.stanford.edu/entries/skepticism/ [https://perma.cc/MYZ3-59WP] (last updated June 2, 2015).

72. ON CERTAINTY, *supra* note 55, §§ 204–205.

73. *See, e.g.*, *id.* § 343 ("If I want the door to turn, the hinges must stay put.").

grounded in human beings' actions, not in their statements. As he stated elsewhere,

> Why do I not satisfy myself that I have two feet when I want to get up from a chair? There is no why. I simply don't. This is how I *act*. . . . Sure evidence is what we accept as sure, it is evidence that we go by in *acting* surely, *acting* without any doubt.[74]

In Wittgenstein's developing, exploratory thought, he gradually, though perhaps not consciously, moved away from the deceptive expression "hinge proposition."[75] Beliefs, or hinges, that stood fast were no longer to be thought of as propositional.[76] This change marks a profound shift in the epistemic landscape: a categorical divide between knowledge and certainty and, in particular, a move away from propositional certainty toward the non-propositional and non-ratiocinated, a certainty manifested in action.[77] Wittgensteinian certainties then, are manifest without further explanation. They are "actional," based on reflexive actions rather than reflexive speech.

In sum, in *On Certainty*, what begins as an analysis of knowledge inevitably leads Wittgenstein to consider what, if any, distinction exists between "knowledge" and "certainty." Whether one "knows that p" or one "knows with certainty that p," Wittgenstein recognizes both are knowledge claims and, as such, are open to skeptical inquiry.[78] The issue here turns on the skeptic's demand for grounds—for example, asking on what grounds does the person make such a claim. On this issue, however, Wittgenstein notes that grounds for certainty are not the same as grounds for knowing because the two concepts are themselves different.[79] As he says, "[t]he difference between the concept of 'knowing' and the concept of 'being certain' isn't of any great importance at all, except where 'I know' is meant to mean 'I *can't* be wrong.'"[80] Thus, "knowing" and "being certain" must be considered distinct concepts because they differ

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74. *Id.* § 196.

75. ON CERTAINTY, *supra* note 55, § 141.

76. *Id.* § 141.

77. *Id.* § 204.

78. This recognition occurs in several places in *On Certainty*. *See, e.g.*, ON CERTAINTY, *supra* note 55, §§ 1, 6–8, 11, 12, 14, 18, 42, 56, 58, 84, 86, 112–122, 160, 174, 178, 181–189, 194, 340, 357, 395, 481, 482.

79. *Id.* § 8.

80. *Id*. For circumstances when it is "of no great importance at all," then, as Wittgenstein says, "[i]n a law-court, for example, 'I am certain" could replace 'I know' in every piece of testimony." *Id*.

not in degree, as it had typically been described, but rather in kind. For Wittgenstein, knowledge and certainty "belong to different categories."[81]

By placing knowledge and certainty in different categories, Wittgenstein began laying the groundwork for a new approach to skeptical problems. Although knowledge claims require justificatory responses when challenged—responses that are propositional in character—certainty claims do not. Certainty, he argues, is altogether different from knowledge.[82] Hinge or common sense propositions may represent the most certain, most fundamental convictions, but society believes them, and not because it can justify them—these core-beliefs "lie beyond being justified or unjustified."[83] Unlike Moore and other philosophers before him, Wittgenstein does not stop here. A fundamental belief—for example, "The earth exists"—is not justified when a person states it, reiterates it, or even supplies further explanation for it. Rather, certainty that the earth exists is exhibited, unreflectively, "in the way [we] *act*."[84] Civilization walks upon the earth, wages war on it, plants trees on it, and buries its dead in it. The convictions that stand fast for civilization frame the background of its thoughts and statements. These certainties are grounded in unreflective actions, not in unreflective utterances. Thus, Wittgenstein, instead of saying, "This is why . . ." or "because . . ." at this point states, "I am inclined to say: 'This is simply what I *do*.'"[85] Of significance is that this action—"what I do"—does not occur at any ratiocinative level. Although it may be a thought that is considered and stated in hindsight, certainty is not actively considered.

This proposition marks a profound shift in thought. Knowledge about the world requires evidence and justification, but evidence for one's fundamental non-reflective convictions—evidence for certainty—is as deep as one can possibly dig. "If I have exhausted the justifications I have reached bedrock and my spade is turned."[86] Bedrock is an apt metaphor, as some scholars have described his method in *On Certainty* as a "new kind of foundationalism."[87] "New" because unlike the traditional

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81. *Id.* § 308.
82. *Id*.
83. *Id.* § 359.
84. *Id.* § 395 (emphasis added).
85. PHILOSOPHICAL INVESTIGATIONS, *supra* note 68, § 217 (emphasis added).
86. *Id.*
87. *See* AVRUM STROLL ET AL., MOORE AND WITTGENSTEIN ON CERTAINTY 6 (1994); Daniéle Moyal-Sharrock, *Logic in Action: Wittgenstein's Logical Pragmatism and the Impotence of Skepticism*, 26 PHIL. INVESTIGATIONS 125, 127–28 (2003); ROBERT BRICE, EXPLORING CERTAINTY: WITTGENSTEIN AND WIDE FIELDS OF THOUGHT, at xi (2014).

propositional foundationalism found in Descartes, Moore, and others, Wittgenstein's foundationalism differs in kind. It is a non-propositional certainty, grounded in unreflective actions.

C. Objections

Not all scholars agree with this assessment of Wittgenstein. Some, such as A.C. Grayling and Martin Kush, believe among the other items uncovered in *On Certainty*, a form of relativism is present.[88] Grayling, in particular, describes it as "classically strong relativism."[89] Two problems exist, however, with Grayling's evaluation of *On Certainty*: first, he does not accurately define relativism; and second, nowhere in his article does he discuss Wittgenstein's move from propositional certainty to non-propositional, non-ratiocinated action.

Grayling defines relativism in a highly subjective way:

> [T]ruth and knowledge are *not* absolute or invariable, but dependent upon viewpoint, circumstances or historical conditions. What is true for me might not be true for you; what counts as knowledge from one viewpoint might not from another; what is true at one time is false at another.[90]

This account of relativism is problematic. Although knowledge may not be "absolute," that does not mean it is merely subjective or "dependent

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88. *See* Martin Kusch, *Wittgenstein's On Certainty and Relativism*, *in* ANALYTIC AND CONTINENTAL PHILOSOPHY: METHODS AND PERSPECTIVES 29 (Harald A. Wiltsche & Sonja Rinofer-Kreidl, eds., 2016), http://www.academia.edu/11693512/Wittgensteins_On_Certainty_and_Relativism [https://perma.cc/5ANM-2ZQ5]. Kusch says it is "a mistake to count the book as a whole as either relativistic or anti-relativistic." *Id.* at 37. He sees some passages that advocate for relativism and others that do not. *Id.* These statements are true for Grayling as well.

89. Grayling actually believes two conflicting themes are present in *On Certainty*: first, a reply to skepticism "of a broadly foundationalist stamp" and second, "classically strong relativism." A.C. GRAYLING, *Wittgenstein on Skepticism and Certainty*, *in* WITTGENSTEIN: A CRITICAL READER 305, 305, 308 (H.J. Glock ed., 2001). Although Grayling asserts these two themes are in conflict, the relativism he finds in *On Certainty* poses a threat to Wittgenstein's reply to foundationalism. Grayling finds this tension so great that he divides his exegesis of *On Certainty* in two. *Id.* at 306–07. He refers to the first theme, the reply to skepticism bearing the stamp of foundationalism, as OC1, and the second theme, relativism, as OC2. *Id.*

90. *Id.* at 308.

upon viewpoint."[91] Knowledge can be both objective and relative.[92] Consider, for instance, a drug that has proven through well-designed, randomized clinical trials to be a highly successful treatment for a particular disease. This knowledge is a matter of objective knowledge. Still, it is relative to existing knowledge and research because in 15 to 20 years, well-designed, randomized clinical trials may show that some newer treatment is still more effective than the drug currently available.

Grayling's definition of relativism stems from a commonly mistaken understanding of antonyms. The antonym of "relative" is "absolute," not "objective."[93] John Rawls, the American moral and political philosopher, once defined this sort of objective knowledge in terms of "provisional . . . fixed points," potentially subject to revision.[94] Knowledge's fallibility, and in some sense relativity, does not mean that knowledge cannot be objective, nor does it mean that society cannot be objectively certain of many different things.[95] The new kind of foundationalism present here occurs when Wittgenstein ties what he calls "hinge propositions" with acting. Grayling overlooks this shift. When formulated explicitly in ordinary language, hinge propositions constitute the most fundamental convictions. Evidence does not support them, according to Wittgenstein—nothing more fundamental exists on the basis of which they could be believed.[96] Like hinges fixed on a frame, this special class of propositions must "stand fast" for the door to turn.

D. Wittgenstein's Actional Certainty and Expectations of Privacy

The epistemic distinction between knowledge and certainty is relevant to the question regarding expectations of privacy over behavior a person knowingly exposes to the public. In keeping with the above interpretation of Wittgenstein, people possess a non-ratiocinated, actional certainty that they are living their lives in private. Citizens know that their daily public movements are exposed to public view in small ways, but they still act with the certainty that their patterns of movement—which Justice Sotomayor and others have noticed express identity and character[97]—will

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91. *Id.*

92. NELSON GOODMAN, FACT, FICTION, AND FORECAST 65–68 (1955).

93. Letter from Dr. Martin Benjamin, Professor Emeritus, Dep't of Philosophy, Mich. State Univ., to Robert Brice (on file with author).

94. JOHN RAWLS, A THEORY OF JUSTICE 19 (1971).

95. *See* GOODMAN, *supra* note 92.

96. ON CERTAINTY, *supra* note 55, § 341.

97. *See, e.g.*, United States v. Jones, 132 S. Ct. 945, 956 (2012) (Sotomayor, J., concurring) ("Awareness that the Government may be watching chills

be private, that is, not scrutinized or evaluated by the government. As such, a particular public task or snapshot of a behavior or action may be exposed to the public and thus be in "plain view."[98] Taken together, however, a compilation of these snapshots reveals a large part of citizens' lives and identities. Admittedly, these lives are lived within the public community. Even so, citizens assume that their life plans, dreams, affiliations, goals, characters, and identities are private unless they engage in a course of specific, mindful action to place them on display.

For instance, citizens assume local police officials do not know their sexual orientation or religious and political affiliations, unless they have yard signs or bumper stickers or take other mindful action to expose themselves, such as attending law enforcement meetings and discussing one's affiliations. Citizens would be surprised if local law enforcement knew details of their lives. They are certain that these aspects of their lives are private, and they are certain that they will remain private unless or until they make them public with some positive, mindful action. Their certainty is presupposed in their unreflective action of living their lives within their communities. Hence, non-reflective actions exhibit a reasonable expectation of privacy regarding character and identities, even if particular actions, within a particular short timeframe, are not private.

The certainty that details of citizens' lives and identities will remain private seems reasonable given the assumed epistemic limitations of those who live nearby. Citizens would not expect other citizens or governmental actors to learn details of their character and identity without their knowledge based upon everyday public interactions or observations of particular behavior. Only those with whom citizens have repeated close contact are likely to learn about their private lives, and by having repeated contact, citizens mindfully choose to expose certain aspects of themselves. For example, a co-worker will know another's professional skills; a dry cleaner will know clothing preferences; and a grocer may learn eating preferences. Citizens choose to interact regularly with these people, knowing that they are exposing certain aspects of their lives to them. Citizens would not expect their dry cleaners, however, to know their eating preferences. Citizens would also not expect governmental actors, whom they have not chosen to interact with, to know their character and identity.

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associational and expressive freedoms. And the Government's unrestrained power to assemble data that reveal private aspects of identity is susceptible to abuse."); People v. Weaver, 909 N.E.2d 1195, 1199–200 (2009) ("What the technology yields and records with breathtaking quality and quantity is a highly detailed profile, not simply of where we go, but by easy inference, of our associations—political, religious, amicable and amorous, to name only a few—and of the pattern of our professional and avocational pursuits.").

98. Coolidge v. N.H., 403 U.S. 443 (1971).

To see how closely tied actional certainty is to a person's expectation of privacy, assume for a moment that a person's life plans, goals, and other personal aspects are not private. This public nature would have an effect on a person's actions. If citizens no longer had an expectation of privacy with regard to affiliations, preferences, and identity when acting in public—that is, if citizens thought their actions might be monitored, surveilled, recorded, and analyzed—citizens would not likely perform their daily actions in the same manner they would perform them had they possessed this expectation. Perhaps citizens would with a few of their actions, but certainly not all of them. Actions would very likely be altered, in some cases even dramatically.[99] Persons act with an unreflective certainty that they are living their lives in private. This expectation is not only a reasonable one to infer, but a necessary one—and it is necessarily tied to unreflective actions.

III. THE FOURTH AMENDMENT: A WITTGENSTEINIAN APPROACH

Following the argument discussed in Part II.D, citizens possess a non-ratiocinated, actional certainty that they are living the whole of lives in private, free from government observance. While a particular public action may be exposed to the public, and thus may be considered in "plain view," a compilation of these snapshots reveals a large part of citizens' lives and identities about which citizens have expectations of privacy. This actional certainty helps inform the analysis regarding citizens' privacy and the use of drones.

A. Reasonable Expectation of Privacy and Actional Certainty

In general, law enforcement has a duty to obtain a warrant before installing a surveillance device on a private citizen's property.[100] In *U.S. v. Jones*, five of the Justices held that by attaching a GPS to the defendant's vehicle, the government physically intruded upon private property.[101] The Court dismissed the government's argument that Jones had no reasonable

99. This example is not simply a hypothetical; a body of evidence supports this proposition. *See* Arthur Beaman et al., *Self-Awareness and Transgression in Children: Two Field Studies*, 37 J. PERSONALITY & SOC. PSYCHOL. 1835, 1835–46 (1979). *See generally* Daniel Nettle et al., '*Cycle Thieves, We Are Watching You': Impact of a Simple Signage Intervention against Bicycle Theft*, PLOS ONE, Dec. 2012, at 1, DOI:10.1371/pone.0051738, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0051738 [https://perma.cc/9QBL-2Q9C].

100. United States v. Karo, 468 U.S. 705 (1984).

101. *Jones*, 132 S. Ct. at 949.

expectation of privacy on a public street and stated that it must protect privacy at least to the degree in which it existed at the time of the adoption of the Fourth Amendment.[102] Justice Sotomayor joined the majority, but also wrote separately to express that under a *Katz* analysis, long-term electronic surveillance would violate a reasonable expectation of privacy.[103] Sotomayor argued that the majority opinion, which focused on the government's placing of the GPS system on the defendant's car as a physical trespass, provided little guidance in cases in which the government can monitor movements without a physical invasion.[104] Justice Sotomayor argued that short-term remote surveillance may also qualify as a constitutional violation in some circumstances.[105] New technologies are capable of painting a detailed picture of one's personal life and are not subjected to the same limitations as traditional forms of surveillance.[106] Additionally, these newer technologies are cheap to purchase and implement.[107] Sotomayor quoted the New York appellate court opinion in *People v. Weaver*[108] at length:

> Disclosed in [GPS] data . . . will be trips the indisputably private nature of which takes little imagination to conjure: trips to the psychiatrist, the plastic surgeon, the abortion clinic, the AIDS treatment center, the strip club, the criminal defense attorney, the by-the-hour motel, the union meeting, the mosque, synagogue or church, the gay bar, and on and on.[109]

Sotomayor noted that "[a]wareness that the Government may be watching chills associational and expressive freedoms. And the Government's unrestrained power to assemble data that reveal private aspects of identity is susceptible to abuse."[110] Sotomayor made clear that citizens may not reasonably expect their movements to be recorded and aggregated such that details of their associations and identity would be revealed.[111] More specifically, she indicated that it might be time to reconsider the notion that an individual has no reasonable expectation of

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102. Hofhenke, *supra* note 39, at 8–9.
103. *Jones*, 132 S. Ct. at 955 (Sotomayor, J., concurring).
104. *Id.*
105. *Id.*
106. *Id*.
107. *Id*.
108. 909 N.E.2d 1195 (2009).
109. *Jones*, 123 S. Ct. at 955 (citing *Weaver*, 909 N.E.2d at 1199).
110. *Id.* at 956.
111. *Id.*

privacy in information that is voluntarily disclosed to a third party.[112] In the digital age, possession of a cell phone often means that the details of every movement are disclosed to a third party.[113] It might be time, Sotomayor says, to stop treating "secrecy as a prerequisite for privacy."[114]

Sotomayor's view fits nicely under the Wittgensteinian approach. Citizens' lives are lived in public spaces within a publicly observable community. Citizens, however, mindfully expose certain moments of their lives to the public, and certain aspects of their lives to certain persons based upon a chosen relationship with them. Nonetheless, citizens act with the certainty that their patterns of behavior are, in fact, private—not dissected or assessed by the government. Indeed, that certainty is presupposed in their unreflective action, which exhibits a reasonable expectation of privacy.

Of interest is that in another *Jones* concurring opinion, Justice Alito indicated that the level of crime might determine the reasonableness of advanced technology monitoring.[115] Alito claimed that the placement of the GPS on the defendant's car did not itself constitute a search under the Fourth Amendment.[116] Alito argued that the Court ought not to have focused on "technical trespass" and instead should have used a *Katz* expectation of privacy test, even though "judges are apt to confuse their own expectations of privacy with those of the hypothetical reasonable person to which the *Katz* test looks."[117] Alito also indicated that what society expects to be reasonable may shift as technology advances[118]: "[u]nder this approach, relatively short-term monitoring of a person's movements on public streets accords with expectations of privacy that our society has recognized as reasonable."[119] Longer-term GPS monitoring, however, in investigations of most offenses—presumably, lesser offenses—impinges upon expectations of privacy.[120]

Justice Alito's allusion that the type of crime being investigated might impact the reasonableness of privacy expectations is alarming. As one legal scholar noted, "Justice Alito's 'level of crime' argument is off-putting mainly because this is not how the Fourth Amendment normally operates; individuals either have a reasonable expectation of privacy,

112. *Id.* at 957.
113. *Id*.
114. *Id.*
115. *Id.* at 958 (Alito, J., concurring).
116. *Id*.
117. *Id.* at 962 (majority opinion).
118. *Id*.
119. *Id.* at 960.
120. *Id*. at 964.

based on the circumstances, or they do not."[121] This Article concurs: persons have actional certainty of privacy regardless of the criminal harm they may cause. In sum, Justice Alito's claim would not fit well under the Wittgensteinian approach because persons have an expectation of privacy that is borne out in their unreflective actions. "Reasonableness" here is neither variable, nor is it provisionally fixed based upon assessments such as severity of crime. Reasonableness is located in what Wittgenstein calls the bedrock, and it is reflected in the certainty of non-propositional, non-ratiocinated actions.[122]

B. The Mosaic Theory of the Fourth Amendment

Justice Sotomayor invoked what is called the "mosaic theory"[123] in her *Jones* concurrence, and this theory is also reflected in Chief Justice Roberts's analysis in *Riley v. California*.[124] Under the mosaic theory of the Fourth Amendment, searches can be analyzed as a collective sequence of steps rather than as individual steps.[125] This theory may serve to explain the reasonableness of expectations of privacy with regard to continuous monitoring and the aggregation of data relating to an individual's life, as drones are designed to do. "Drone surveillance that tracks an individual's movements for hours, days, or weeks may qualify as an unreasonable search absent a warrant. . . . The biggest challenge with the mosaic theory is its lack of clarity as to what the threshold amount of surveillance is before the Fourth Amendment kicks in."[126] In *Jones*, both concurrences agreed that 28 days was too long, but declined to set out a specific timeline or cut-off point.[127]

The mosaic approach recognizes the actional certainty with which citizens live their lives. This approach rejects applying the plain-view

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121. Hofhenke, *supra* note 39, at 17.

122. ON CERTAINTY, *supra* note 55, § 217.

123. The "mosaic theory" label was first used by legal scholar Orin Kerr in a blog post. *See* Orin Kerr, *D.C. Circuit Introduces "Mosaic Theory" of Fourth Amendment*, VOLOKH CONSPIRACY (Aug. 6, 2010, 2:46 PM), http://volokh.com/2010/08/06/d-c-circuit-introduces-mosaic-theory-of-fourth-amendment-holds-gps-monitoring-a-fourth-amendment-search/ [https://perma.cc/JZ62-J9C7].

124. 134 S. Ct. 2473 (2014). In *Riley*, the Court ruled that law enforcement generally may not, without a warrant, search digital information on a cell phone seized from an individual who has been arrested. *See id.* at 2485.

125. *See generally* Orin S. Kerr, *The Mosaic Theory of the Fourth Amendment*, 111 MICH. L. REV. 311 (2012).

126. Hofhenke, *supra* note 39, at 18.

127. United States v. Jones, 132 S. Ct. 945, 955 (2012) (Sotomayor, J., concurring).

doctrine, which might be reasonably applied when a police officer sees clear, decisive steps taken toward commission of a criminal offense—actions that would ground probable cause—but that should not be used to justify long-term surveillance without a warrant. The mosaic approach may be used to support the conclusion that law enforcement must use a warrant every time they deploy a drone. Under the assumption that drone surveillance by law enforcement violates a citizen's reasonable expectation of privacy, probable cause should have to be demonstrated in every case in which a drone was used.[128]

Legal scholar Orin Kerr, however, has argued that courts abandoning a sequential approach to the Fourth Amendment in favor of a mosaic approach is a mistake.[129] Before recent cases that seem to apply the mosaic theory, courts looked at sequences of snapshots of governmental action and assessed it in isolation.[130] Because the mosaic theory rejects the "building block of the sequential approach," Kerr argued, the theory would be difficult to administer.[131] Kerr worried about what specific standard would be developed by the courts under a mosaic analysis; how law enforcement conduct would be grouped into a cohesive whole; and how courts would determine if a mosaic search was reasonable.[132]

Kerr claims three different approaches to determining society's reasonable expectation of privacy have emerged from the mosaic cases.[133] Justice Alito's standard focused on societal expectations about law enforcement practices.[134] Justice Sotomayor, on the other hand, argued that a search occurs when the government can learn details about a person's personal life "at will."[135] Justice Ginsberg focused on whether the government learned more than a stranger could have observed.[136] Justice Sotomayor's argument goes further than Kerr's interpretation, however. In *People v. Weaver*, Justice Sotomayor indicated that a society's reasonable expectation of privacy—even under the most charitable interpretations of "reasonable"—has been violated given the wealth of information that can be extracted from a GPS device.[137] This Article

128. *See* Hofhenke, *supra* note 39 (concluding that use of drone surveillance ought to always require a warrant).
129. Kerr, *supra* note 125, at 344.
130. *Id*. at 315.
131. *Id*.
132. *Id.* at 329.
133. *Id*. at 330.
134. *Id*.
135. *Id*.
136. *Id*. at 331.
137. 909 N.E.2d 1195 (2009).

proposes that the Court continue to use the reasonable expectation of privacy standard in cases in which the mosaic theory is applied; the standard would simply be applied to continuous monitoring instead of specific instances of monitoring.

Kerr worried which sort of government action would constitute a search under the mosaic theory.[138] Designation of law enforcement action as a search based upon physical trespass is certainly easier. The Court already indicated its willingness, however, to turn away from trespass-based searches when necessary and focus on reasonable expectations of privacy in *Katz*.[139] The *Katz* test should be used in cases involving drone surveillance by law enforcement. Given the current state of technology and law enforcement practices, the question is whether citizens would reasonably expect to be subject to continuous surveillance of their movements, when this surveillance is evaluated by computer software looking for patterns of behavior that might indicate criminal activity. The expectation should not depend simply on what individual behaviors a person attempted to keep private, as Sotomayor suggested, but also on whether citizens reasonably expect their patterns of behavior, possibly even discerned by a computer program, to be private.

Assessing society's reasonable expectation of privacy might best be accomplished when observed within a point of contrast between that which persons knowingly expose to the public—to which they have no reasonable expectation of privacy—and the non-ratiocinated, actional certainty that persons have that they are living their lives in private—out of sight from government eyes.[140] Citizens know that while their particular public movements are observable and in "plain view," they nonetheless act with the unreflective certainty that the government is not compiling and assessing these particular movements to observe certain "patterns of behavior."[141] A compilation of these snapshots reveals a large and detailed

138. Kerr, *supra* note 125, at 332.

139. *See generally* Katz v. United States, 389 U.S. 347 (1967).

140. *See* discussion *supra* Part III.

141. *See* United States v. Jones, 132 S. Ct. 945, 956 (2012) (Sotomayor, J., concurring) ("The net result is that GPS monitoring—by making available at a relatively low cost such a substantial quantum of intimate information about any person whom the Government, in its unfettered discretion, chooses to track—may 'alter the relationship between citizen and government in a way that is inimical to democratic society.' I would take these attributes of GPS monitoring into account when considering the existence of a reasonable societal expectation of privacy in the sum of one's public movements. I would ask whether people reasonably expect that their movements will be recorded and aggregated in a manner that

part of citizens' lives: their characters, identities, and affiliations. Through their unreflective actions, citizens clearly exhibit a reasonable expectation that these aspects of their lives will remain private.

Finally, Kerr worried about how long and how in-depth surveillance must be to constitute a search.[142] These factors, however, must be determined by the courts as cases arise. Of the nine Supreme Court Justices, five indicated in *Jones* that 28 days of GPS surveillance, even in absence of a physical trespass, constituted a search.[143] This holding alone, however, might be insufficient to indicate to law enforcement that they cannot deploy drones for continuous monitoring of patterns of behavior. If law enforcement is interested primarily in a specific citizen's patterns of behavior, they ought to have probable cause already to perform drone surveillance on that citizen.

CONCLUSION

Even what a person exposes to the public may warrant an expectation of privacy, especially when taken as a collective whole. This expectation is demonstrated in the certainty of his unreflective actions.[144] That is to say, it is reasonable to assume that people have an expectation of privacy with regard to the details of their lives and identities because this expectation is borne out in their unreflective actions. "Reasonableness" is located in what Wittgenstein calls the "bedrock," and it is one among many of society's core, unreflective convictions that contribute to society's epistemic foundation.[145] Seeing this principle in action is not difficult. Assume that because of government surveillance, anything that could be deduced from public actions, including life plans, goals, and other details, were not private. Consider what effect this lack of privacy would have on citizens' actions—especially those who felt their preferences or identities were not the preferences and identities favored by the government, or those who were worried the government might be biased against them in the future. If citizens no longer had an expectation of privacy, they may not perform their daily actions in the same way they would perform them had they possessed this expectation. They act with the unreflective certainty that they are living their lives in private. Such an expectation is reasonable and, by virtue of our unreflective actions, necessary.

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enables the Government to ascertain, more or less at will, their political and religious beliefs, sexual habits, and so on.").

142. Kerr, *supra* note 125, at 333.

143. *Jones*, 132 S. Ct. at 949.

144. *Supra* Part III.

145. *See* PHILOSOPHICAL INVESTIGATIONS, *supra* note 68, § 217.

Although the use of drones will undoubtedly provide law enforcement agencies with a new means of gathering intelligence, these unmanned aircrafts bring with them a host of legal and epistemic challenges. The principal issue turns on what reasonably constitutes a search. Because drones can remain airborne for extended periods, drone surveillance by law enforcement would violate a reasonable expectation of privacy. In *Katz*, the Supreme Court held that what a person "seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected."[146] Citizens have a reasonable expectation of privacy with regard to information that could be deduced from long-term surveillance of citizen actions. Therefore, a warrant should be required in every case in which law enforcement uses a drone for surveillance of citizen actions.

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