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Passing the Sniff Test: Police Dogs as Surveillance Technology

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Passing the Sniff Test: Police Dogs as Surveillance Technology

IRUS BRAVERMAN†

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INTRODUCTION

Since the attacks on September 11, New York's subways, train stations, parks and tourist destinations have been prowled by police dogs—large, pointy-eared, unnervingly observant beasts deeply unconvinced of our innocence. They sniff at backpacks and train their eyes on passersby, daring us to make a move.¹

Until his retirement in 2011, Franky the Labrador Retriever worked as a drug-detection dog with the Miami-Dade Police Department.² Because Franky was a friendly animal, he was deployed extensively in airports, sports arenas, and other public places.³ During his seven-year tenure on the force, Franky sniffed out more than 2.5 tons of marijuana, 80 pounds of cocaine, and almost \$5 million in drug-contaminated currency.⁴ Recently, Franky's nose sparked a legal debate.⁵ In the fall of 2012, the United

1. Burkhard Bilger, *Beware of the Dogs*, NEW YORKER, Feb. 27, 2012, at 47.

2. Curt Anderson, *Decided By a Nose? Court Ponders Drug Dog's Sniff*, CHICAGO POST-TRIBUNE (Jan. 3, 2012, 2:24 PM), <http://posttrib.suntimes.com/news/9794473-418/decided-by-a-nose-court-ponders-drug-dogs-sniff.html>.

3. *Id.*

4. *Id.*

5. See Madison Gray, *To Sniff or Not to Sniff? Supreme Court to Decide if Drug Dog's Nose Went Too Far*, TIME MAGAZINE (Jan. 10, 2012),

States Supreme Court heard oral argument in *Florida v. Jardines*, an appeal from a Florida Supreme Court decision holding Franky's sniffs from the front door of a residence were a Fourth Amendment search.⁶

Franky is not unique in any way.⁷ Thousands of dogs just like him work in police units across the country, constituting a new omnipresence in the modern surveillance state.⁸ These dogs have fundamentally altered the course of law enforcement in the United States, their widespread use ushering in a new model of policing.⁹ Counterbalancing this ubiquity is the Fourth Amendment's protection against unreasonable searches and seizures.

The courts have assumed different and, at times, contradictory approaches when considering whether or not to define the dog sniff as a Fourth Amendment search. Until now, these approaches have greatly depended upon the definition of dog sniffs as *either* a natural biological occurrence *or* an advancing technology.¹⁰ On one end, some courts have held that "a dog is not a technology—he or she is . . . a man's best friend . . . [a] member[] of [the] family.

<http://newsfeed.time.com/2012/01/10/to-sniff-or-not-to-sniff-supreme-court-to-decide-if-drug-dogs-nose-went-too-far/>.

6. *Jardines v. Florida*, 73 So. 3d 34, 36-37 (Fla. 2011), *cert. granted*, 132 S. Ct. 995 (2012).

7. *Matheson v. Florida*, 870 So. 2d 8, 12 (Fla. Dist. Ct. App. 2003) ("Law enforcement use of narcotics detection dogs has become commonplace.").

8. *See infra* Part IV.B.

9. Jane Yakowitz Bambauer, *How the War on Drugs Distorts Privacy Law*, 64 STAN. L. REV. ONLINE 131, 131 (May 9, 2012), <http://www.stanfordlawreview.org/online/war-on-drugs-privacy-law>.

10. For the definition of advancing technologies, see Brief for National Association of Criminal Defense Lawyers and the American Civil Liberties Union as Amici Curiae Supporting Petitioner at 5-6 *Kyllo v. United States*, 533 U.S. 27 (2001) (No. 99-8508) ("Today, technology enables the authorities to breach secrecy without physical intrusion. At a minimum, a technological advance that is an effective substitute for physical intrusion and poses the same threats to privacy should be governed by the Fourth Amendment. A new device must be constrained by the Constitution whenever it enables officials to learn any confidential information that previously could have been learned only by means of physical intrusion."); *Id.* at 23 ("[U]nfettered exploitation of tools made possible by science and technology could destroy constitutional liberties. The Court announced, and has since refined, a doctrine designed to protect Fourth Amendment freedoms against ever more powerful surveillance devices.").

The same cannot be said of cars, blenders, and thermal images.”¹¹ On the opposite end, certain other courts have held that “the officers’ use of a dog is not a mere improvement of their sense of smell, as ordinary eyeglasses improve vision, but is a significant enhancement accomplished by a different, and far superior, sensory instrument.”¹² When perceived as an advancing technology, courts have been inclined to define dog sniffs as searches and are more likely to scrutinize them through the Fourth Amendment lens. Conversely, if the sniffs are perceived as a natural extension of the officer’s sense of smell, they are viewed with “superstitious awe”¹³ and are therefore unlikely to be defined as Fourth Amendment searches and to trigger constitutional protections.

This Article draws on science and technology studies (STS) scholarship to claim that the courts’ dominant relationship to the police dog’s work relies on the tacit and problematic assumption of a nature/human dichotomy, such that the dog must be located on one side of this dichotomy or the other. Generally, STS scholarship moves away from technological determinism and social constructivism to a more systemic understanding of how technology and society coproduce each other—namely, how two or more variables in a system affect and, essentially, create each other.¹⁴ In determining whether certain intrusions amount to a search, the courts have relied on the now-discredited metaphysics of nature. By grounding their analysis in a nature/technology distinction, the courts import a series of satellite concepts—autonomy, purity, stasis, etc.—into the search inquiry.

11. *Fitzgerald v. Maryland*, 864 A.2d 1006, 1015 (Md. 2004).

12. *United States v. Thomas*, 757 F.2d 1359, 1367 (2d Cir. 1985) (citations omitted).

13. See *Illinois v. Cruz*, 643 N.E.2d 636, 662 (Ill. 1994); Andrew E. Taslitz, *Does the Cold Nose Know? The Unscientific Myth of the Dog Scent Lineup*, 42 HASTINGS L.J. 15, 27-28 (1990). There is also a third way of perceiving the sniffs: as a low-level technology. When viewed from this perspective, the location from which the sniff was performed takes on heightened importance, as depicted later in the Article. See *infra* Part II.E.

14. Sheila Jasanoff, *The Idiom of Co-production*, in STATES OF KNOWLEDGE: THE CO-PRODUCTION OF SCIENCE AND THE SOCIAL ORDER 2-3 (Sheila Jasanoff, ed., 2006); see Hans Harbers, *Introduction: Co-production, Agency, and Normativity*, in INSIDE THE POLITICS OF TECHNOLOGY: AGENCY AND NORMATIVITY IN THE CO-PRODUCTION OF TECHNOLOGY AND SOCIETY 11 (Hans Harbers ed., 2005).

Because the police dog enters legal discourse on the side of the natural, the very analytical structure employed assumes its inevitable outcome: where an officer's use of an infrared detector would surely be a search, the same officer's use of a police dog means no search has occurred, no search warrant is required, no suppression claim will lie, and no conviction will be reversed.

Applying the insights of STS scholarship to K-9 sniffs, I contend that rather than placing the police dog in *either* the "nature" box *or* that of "technology," it should be understood as existing in *both* realms—namely, as a "biotechnology," a human-nature hybrid and coproduction. But beyond describing how this socio-legal magic works ("a dog is not a technology and therefore you will be incarcerated for seven years"), this Article also makes a few positive and normative claims. First, I claim that STS scholarship and contemporary literature on the politics of nature has rendered the nature/technology binary obsolete. Second, I argue that an accurate understanding of the cultural history and socialization of detection dogs precludes their designation as simply "natural." Alongside their existence as living entities, detection dogs are also technologies in every relevant sense of the term.¹⁵ As artifacts, as historical developments with future potentialities, and as biotechnologies—police dogs are humanly crafted means to humanly formed ends and desires. The "bio" component in "biotechnology" refers to the dog's aliveness, which does nothing to negate its technological aspects but rather strengthens them. I claim, in other words, that the Constitution and the practical realization of rights are being refabricated by many courts on the basis of a categorical error, plain and simple.

This Article not only dismantles the nature/technology distinction, but also the division between animals and humans. Accordingly, my third normative claim is that the proper unit of constitutional analysis is not simply "the dog," but the "dog-handler-trainer-breeder" assemblage. Acknowledging this will yield the "right" answer by the courts—namely, that although the police dog is a living and natural entity, it is also an advancing technology and,

15. The Oxford Dictionary defines technology as "the application of scientific knowledge for practical purposes." CONCISE OXFORD ENGLISH DICTIONARY 1480 (12th ed. 2011).

therefore, its sniffs should trigger all relevant Fourth Amendment protections, including a warrant, probable cause requirements, and remedies in case of a violation.

Broadly, this Article is divided into two halves. The first half (Parts I–II) provides a detailed review of the relevant case law regarding dog sniffs from the Supreme Court and from lower courts, with a focus on the implicit and explicit relationship of these decisions to the categories of nature and technology. The second half (Parts III–VII) introduces and draws on STS scholarship about working animals to suggest that police dogs are “biotechnologies,” bred and trained for the purpose of drug detection and referred to interchangeably as nature and machines by their human coworkers.

Specifically, Part I sketches the facts of Florida’s *Jardines* decision as well as other central United States Supreme Court cases that bear on the relationship of dogs to nature and technology. Part II explores these and other cases in more detail and also studies the oral arguments before the Supreme Court in the *Jardines* case on October 31, 2012. These observations set the stage for the definition and discussion of “biotechnology” in Part III, which provides an analysis of how the STS literature has approached the topic of working animals. Part IV focuses on the history of dogs in human service and, specifically, in the service of war and detection. Moving from the general history of working dogs to the more specific history of breeding practices, Part V focuses on the discourse of pedigree improvement for dogs and on the methods and criteria for breeding police dogs. Part VI builds on the demonstrated relationship between breeding and technological advancement to explore in depth the particular institutional practices of breeding and cotraining police detection dogs in the United States. This part also examines the effects of the perceived infallibility of detection dogs. Finally, Part VII considers the police officers’ perception of detection dogs and the fused relationship between these dogs and machines.

I. A JURISPRUDENCE OF SNIFFS: A REVIEW

A. *Franky Goes to Court*

On December 5, 2006, Miami-Dade police detectives and United States Drug Enforcement Administration agents set

up surveillance outside a house, after getting an anonymous tip that it contains a marijuana grow operation.¹⁶

[Officer] Bartelt arrived with [canine] Franky and the two went up to the house, where Franky quickly detected the odor of pot at the base of the front door and sat down as he was trained to do [for a positive alert]. The sniff [of the house's exterior] was used to get a search warrant from a judge. The house was searched and its lone occupant, Joelis Jardines, was arrested trying to escape out the back door. Officers pulled 179 live marijuana plants from the house, with an estimated street value of more than \$700,000.¹⁷

Jardines was charged with marijuana trafficking.¹⁸ He was also charged with grand theft for the stolen electricity that was required to power the extensive marijuana operation.¹⁹ His attorney disputed the search. The sniff performed by Franky, Jardines's lawyer argued, was "an unconstitutional law enforcement intrusion into the home."²⁰ The trial judge agreed and suppressed the evidence seized during the search, but an intermediate appeals court reversed this decision, concluding that "no illegal search occurred. The officer had the right to go up to [the] defendant's front door."²¹ The Florida Supreme Court in turn reversed the appeals court, ruling that:

Such a public spectacle unfolding in a residential neighborhood will invariably entail a degree of public opprobrium, humiliation and embarrassment for the resident, for such dramatic government activity in the eyes of many—neighbors, passers-by, and the public at large—will be viewed as an official accusation of crime. . . . [T]here is simply nothing to prevent the agents from applying the procedure in an arbitrary or discriminatory manner, or based on whim and fancy, at the home of any citizen.²²

16. Anderson, *supra* note 2.

17. *Id.*

18. *Jardines v. Florida*, 73 So. 3d 34, 38 (Fla. 2011).

19. *Id.* at 37.

20. Anderson, *supra* note 2.

21. *Jardines*, 73 So. 3d at 38.

22. *Id.* at 49. Florida's Supreme Court decision applies only to dog sniffs conducted outside houses. As one scholar notes:

The court did not invalidate warrantless dog sniffs outside other types of homes, such as apartments. In fact, the court distinguished *Stabler v.*

Jardines has generated considerable attention, including several amici curiae briefs filed by various states and organizations in support of Florida's petition.²³ The case is also being closely monitored by law enforcement agencies nationwide, which depend on dogs for a wide variety of their everyday work.²⁴ "If the Florida Supreme Court's decision is upheld," warns an amicus curiae brief in support of Florida, "it could have a profound chilling effect on law-enforcement efforts to combat illegal drugs."²⁵ The brief concludes by stating that "[t]he Court should instead reverse the judgment below to ensure that detection dogs retain their

[Florida] (which held that a dog sniff conducted at an apartment door was not a search) on the ground that an apartment is a "temporary dwelling," and not accorded the same status as a genuine "private residence."

Joseph Magrisso, *Protecting Apartment Dwellers from Warrantless Dog Sniffs*, 66 U. MIAMI L. REV. 1133, 1144 (2012); see *Stabler v. Florida*, 990 So. 2d 1258, 1261, 1263 (Fla. Dist. Ct. App. 2008), *rev'd*, 90 So. 3d 267 (Fla. 2012).

23. Several Amici Curiae briefs were filed in support of petitioner Florida. See, e.g., Brief for National Police Canine Association and Police K-9 Magazine as Amici Curiae Supporting Petitioner, *Florida v. Jardines*, 132 S. Ct. 995 (2012) (No. 11-564); Briefs for the States of Texas, Alabama, Arkansas, Arizona, Colorado, Delaware, Hawaii, Idaho, Iowa, Kansas, Kentucky, Maine, Michigan, Nebraska, New Hampshire, New Mexico, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, and Wisconsin as Amici Curiae Supporting Petitioner, *Florida v. Jardines*, 132 S. Ct. 995 (2012) (No. 11-564); Brief for United States as Amici Curiae Supporting Petitioner, *Florida v. Jardines*, 132 S. Ct. 995 (2012) (No. 11-564); Brief for Wayne County, Michigan as Amici Curiae Supporting Petitioner, *Florida v. Jardines*, 132 S. Ct. 995 (2012) (No. 11-564). On the other hand, the case of *Harris v. Florida*, 71 So. 3d 756 (Fla. 2011), *cert. granted*, 132 S. Ct. 1796 (2012), had less briefs filed in support of the state. See, e.g., Brief for Virginia, Delaware, Hawaii, Kansas, Missouri, Nebraska, Oregon, Texas, and Utah as Amici Curiae Supporting Petitioner, *Florida v. Harris*, 132 S. Ct. 1796 (2012) (No. 11-817); Brief for National Police Canine Association and Police K-9 Magazine as Amici Curiae Supporting Petitioner *Florida v. Harris*, 132 S. Ct. 1796 (2012) (No. 11-817); see *infra* Part II.A (discussing *Harris*).

24. Anderson, *supra* note 2.

25. Brief for the States of Texas, Alabama, Alaska, Arizona, Arkansas, Colorado, Delaware, Hawaii, Idaho, Iowa, Kansas, Kentucky, Maine, Michigan, Nebraska, New Hampshire, New Mexico, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, and Wisconsin as Amici Curiae Supporting Petitioner at 9 *Florida v. Jardines*, 132 S. Ct. 995 (2012) (No. 11-564).

proper place at the forefront of state and federal efforts against the production and distribution of illegal drugs.”²⁶

B. *Prior Supreme Court Sniff Cases*

In its petition to the United States Supreme Court, Florida argued that the Florida Supreme Court’s decision conflicts with numerous previous rulings by the Court—*United States v. Place* in particular—all holding that a dog sniff is not a search.²⁷ In *Place*, DEA agents detained a man at an airport and used a trained narcotics dog to perform a sniff test on his luggage.²⁸ The Court explained that although a brief seizure of the man’s luggage was appropriate, the officers could not conduct a full search of this luggage without probable cause.²⁹ However, the Court held that the sniff test at issue was not a search under the Fourth Amendment because it did not involve opening or otherwise exposing noncontraband items to public view, and because it was specifically designed to reveal the presence of contraband.³⁰ The Court also held that the dog sniff was *sui generis*.³¹ I will return to this decision in the next part of this Article.

Over a decade later, in *Illinois v. Caballes*, the Supreme Court again upheld the use of a dog sniff test, this time in the context of an automobile search.³² The majority opinion reinforced the Court’s conclusion in *Place* that an investigatory technique that only reveals illegal conduct is not a search under the Fourth Amendment because an individual has no reasonable expectation of privacy in such conduct.³³ Justice Ginsburg wrote a dissenting opinion that

26. *Id.*

27. 462 U.S. 696 (1983); Brief for Petitioner at 3 *Florida v. Jardines*, 73 So. 3d 34 (2011) (No. 11-564).

28. *Place*, 462 U.S. at 699.

29. *Id.* at 706.

30. *Id.* at 707.

31. *Id.*

32. *Illinois v. Caballes*, 543 U.S. 405, 409 (2005).

33. *See id.*; *see also Place*, 462 U.S. at 707. The reasonable expectation of privacy test was set forth by the Supreme Court in its decision *Katz v. United States*, 389 U.S. 347, 350-53 (1967). There, the Court considered whether police use of an electronic listening device attached to the exterior of a public phone

observed the dangerous precedent established by the majority's judgment. In her words, "[t]he Court has never removed police action from Fourth Amendment control on the ground that the action is well calculated to apprehend the guilty."³⁴

In a separate dissenting opinion, Justice Souter argued that the *sui generis* treatment of the dog sniff test by the Court is based on the faulty assumption that the sniff test is infallible, and that it therefore could not expose legal conduct or property.³⁵ Souter argued, by contrast, that "[t]he infallible dog . . . is a creature of legal fiction."³⁶ Although this argument did not persuade a majority of the Justices in the automobile context, it remains to be seen whether the current Supreme Court can be convinced that a sniff test of a home crosses an important Fourth Amendment line. The *Jardines* case will thus provide the Court with the opportunity to consider whether its previous dog sniff decisions apply equally in the context of the home, which has traditionally enjoyed heightened Fourth Amendment protections.³⁷

booth to overhear Katz's telephone conversations amounted to a search. *See id.* at 348, 350. Shifting from its previous focus on physical trespasses into private property, the Court announced that the "Fourth Amendment protects people, not places" and established the "reasonable expectation of privacy" test. *Id.* at 351, 360-61 (Harlan, J., concurring). Harlan's concurring opinion outlined a two-pronged test for deciding the reasonableness of privacy expectations: "[F]irst, that a person . . . exhibited an actual (subjective) expectation of privacy and, second, that the expectation be one that society is willing to recognize as 'reasonable.'" *Id.* at 361 (Harlan, J., concurring). The Court made note of *Katz* in *Illinois v. Caballes*: "When an officer observes an object left by its owner in plain view, no search occurs because the owner has exhibited 'no intention to keep [the object] to himself.'" 543 U.S. at 416 n.6.

34. *Caballes*, 543 U.S. at 422 (Ginsburg, J., dissenting).

35. *Id.* at 411-13 (Souter, J., dissenting); *Concerning the Fourth Amendment Implications of a Police Dog Sniff at the Front Door of a Suspect's Home*, ELECTRONIC PRIVACY INFO. CENTER (Jan. 19, 2012, 11:13 AM), <http://epic.org/amicus/jardines/default.html>.

36. *Caballes*, 543 U.S. at 411.

37. *See* Leslie A. Lunney, *Has the Fourth Amendment Gone to the Dogs?: Unreasonable Expansion of Canine Sniff Doctrine To Include Sniffs Of the Home*, 88 OR. L. REV. 829, 890-93 (2009) (discussing the conflict between recognizing dogs as technology or finding that detection dogs are not advanced technology) (Lunney is now known as Leslie Shoebottom); *see also* *California v. Ciraolo*, 476 U.S. 207, 213 (1986) (holding that the Fourth Amendment does not

C. *Does Geography Matter? From the Home to the Airport via the Car*

In a major ruling from 2001, the Supreme Court concluded “that police could not use thermal imaging technology to detect heat from marijuana grow operations from outside a home because the equipment could also detect lawful activity.”³⁸ “We have said that the Fourth Amendment draws ‘a firm line at the entrance to the house,’” the Court ruled in *Kyllo v. United States*.³⁹ Writing for the majority, Justice Scalia noted that the thermal device could detect such intimate details as “at what hour each night the lady of the house takes her daily sauna and bath.”⁴⁰ Also in *Kyllo*, Justice Scalia first introduced the “general public use” test, implying that the government may use technologies that are in general public use to conduct a warrantless search of a home.⁴¹

extend to “public navigable airspace”); *Florida v. Royer*, 460 U.S. 491, 505 (1983) (holding that it would be “feasible to investigate the contents of . . . bags in a more expeditious way” through the use of drug-sniffing dogs); Abigail Brown, *Something Smells Afoul: An Analysis of the End of a District Court Split*, 36 NOVA L. REV. 201, 206, 220 (2011) (arguing that *Kyllo* should not be applied to a dog-sniff case and raising questions about whether a dog is a technology, whether a dog is in public and general use, and whether a dog sniff is a physical intrusion of a home).

38. *Kyllo v. United States*, 533 U.S. 27, 29, 40 (2001); Anderson, *supra* note 2.

39. *Kyllo*, 533 U.S. at 40 (2001) (citing *Payton v. New York*, 445 U.S. 573, 590 (1980)).

40. *Id.* at 29, 38; *see also* Jeannie Suk, *Is Privacy a Woman?*, 97 GEO. L.J. 485, 487-89 (2009) (critiquing the “lady of the house” test set forth in *Kyllo* as being problematically paternalistic).

41. *Kyllo*, 533 U.S. at 34 (“We think that obtaining by sense-enhancing technology any information regarding the interior of the home that could not otherwise have been obtained without physical ‘intrusion into a constitutionally protected area’ constitutes a search—at least where (as here) the technology in question is not in general public use.”) (citations omitted). For criticisms of this test, *see id.* at 46-47 (Stevens, J., dissenting) (“Despite the Court’s attempt to draw a line that is ‘not only firm but also bright,’ the contours of its new rule are uncertain because its protection apparently dissipates as soon as the relevant technology is ‘in general public use.’ Yet how much use is general public use is not even hinted at by the Court’s opinion, which makes the somewhat doubtful assumption that the thermal imager used in this case does not satisfy that criterion. In any event, putting aside its lack of clarity, this criterion is somewhat perverse because it seems likely that the threat to privacy will grow, rather than recede, as the use of intrusive equipment becomes more readily

Jardines will provide the Supreme Court with the opportunity to articulate two alterations in Fourth Amendment jurisprudence.⁴² First, the Court might expand the trespass rationale recently articulated by Justice Scalia in *United States v. Jones*.⁴³ There, the Court held that federal authorities' attachment of a Global Positioning System (GPS) device to a vehicle, and its use to monitor the vehicle's movements for twenty-eight days, was a search under the Fourth Amendment.⁴⁴ The Court explained that the "Fourth Amendment jurisprudence was tied to common-law trespass, at least until the latter half of the 20th century."⁴⁵ With this historical foundation in mind, the

available.") (citations omitted); see also Ken Lammers, *Canine Sniffs: The Search That Isn't*, 1 N.Y.U. J.L. & LIBERTY 845, 852-53 (2005) (distinguishing between *Caballes* and *Kyllo* in the context of dog sniffs); Lunney, *supra* note 37, at 855. Lunney argues that "canine sniffs of the home are 'searches' within the Fourth Amendment and, similar to the thermal imager warrants required after *Kyllo*, must be supported by a dog sniff warrant." *Id.* at 834. The author also suggests that courts that focus only on the illegality of the item misapply *Kyllo*'s standard. *Id.* at 867-68. She notes that *Kyllo* distinguished between advancing and routine technology, holding that a warrant is not required when the routine technology is in general public use. See *id.* at 900-01. Lunney then determines that "[a] canine sniff of the home is problematic both because of its intrusiveness and because it implicates the privacy concerns expressed in *Kyllo*. Therefore, a canine home-sniff is a 'search' under the Fourth Amendment and must be treated accordingly." *Id.* at 902. My argument in this Article is very much in line with Lunney's, except mine offers a broad analysis of the inseparability of nature and technology and relies on interdisciplinary literature.

42. See Bambauer, *supra* note 9, at 131.

43. 132 S. Ct. 945, 952-53 (2012).

44. *Id.* at 948-49. Justice Scalia's opinion explains that the Fourth Amendment was intended to protect against government trespass upon physical areas, limited to "persons, houses, papers, and effects." *Id.* at 949. The use of a GPS tracker on a vehicle to monitor the vehicle on public roadways constituted a search because of its intrusion on an "effect" rather than an unprotected physical entity. *Id.* at 950. The government physically trespassed into the defendant's private property for the purpose of obtaining information. *Id.* at 951-52.

45. *Id.* at 949-50 (citations omitted); see also *id.* at 950 ("[F]or most of our history the Fourth Amendment was understood to embody a particular concern for government trespass upon the areas ('persons, houses, papers, and effects') it enumerates.") (citations omitted); *id.* at 951 n.5 ("A trespass on 'houses' or 'effects,' or a *Katz* invasion of privacy, is not alone a search unless it is done to obtain information; and the obtaining of information is not alone a search unless it is achieved by such a trespass or invasion of privacy.").

Court reasoned that federal agents had “encroached on a protected area” of Jones’s vehicle when attaching the GPS device.⁴⁶ Thus, the installation of the GPS amounted to a “classic trespassory search” under the Fourth Amendment.⁴⁷ A favorable outcome for *Jardines* would reinforce the notion that, despite the lack of physical trespass in this case, and because “the home is a formidable privacy fortress,” *all* information contained within its walls should be protected “from government detection unless that information is knowingly exposed to the public.”⁴⁸ Such a favorable outcome would expand *Jones*’s narrow trespass grounds and reinstate *Katz*.⁴⁹

Second, *Jardines* will provide the Supreme Court with the opportunity to revisit its previous dog sniff decisions, mainly *United States v. Place* and *Illinois v. Caballes*.⁵⁰ These cases have protected dog sniffs from constitutional scrutiny by holding that sniffs of luggage and vehicles, respectively, did not constitute searches.⁵¹ The reasoning behind both holdings is simple: because the dog sniff can disclose only the presence or absence of illegal narcotics, “a search incident to a dog’s [positive] alert cannot offend reasonable expectations of privacy,”⁵² mostly because society should not be willing to recognize such privacy interests.⁵³ Specifically, in *Caballes*, the Court found that the use of a

46. *Id.* at 952.

47. *Id.* at 954.

48. Bambauer, *supra* note 9, at 131.

49. *Kyllo v. United States*, 533 U.S. 27, 42 (2001) (citations omitted) (explaining that “[w]hat a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection”).

50. Bambauer, *supra* note 9, at 131 (citations omitted).

51. *Id.* at 131; see David A. Sklanski, *Back to the Future: Kyllo, Katz, and Common Law*, 72 *Miss. L.J.* 143, 150 (2002) (“[I]nvestigative tactics that are not deemed searches or seizures escape judicial review altogether under the Fourth Amendment.”).

52. Bambauer, *supra* note 9, at 131.

53. Namely, this pertains to the objective prong in *Katz*. *Katz v. United States*, 389 U.S. 347, 361 (Harlan, J., concurring). Sklanski explains that the Court tends to rely more on the objective prong of the *Katz* test because of the odd consequences that transpire from relying on the subjective prong. Sklanski, *supra* note 51, at 157 (explaining that the subjective prong “has the odd consequence that people who suspect the government are spying on them may lose, for that every reason, much of their protection against what they fear”).

trained narcotics dog subsequent to a lawful traffic stop did not infringe on the expectation of privacy protected by the Fourth Amendment.⁵⁴ In a concurring opinion in *Place*, Justice Blackmun argued that a dog sniff could be considered a “minimally intrusive” search and justified in certain circumstances based on the already-existing reasonable suspicion of criminal activity.⁵⁵ His rationale was that because a suspicion already exists that the suspect has contraband, there is less likelihood of a false alert by the dog.⁵⁶

D. *Criticisms of the Supreme Court’s Sniff Jurisprudence*

The narrow test prescribed by the Supreme Court in *Place*⁵⁷ (and, subsequently, in *Caballes*⁵⁸) has been subject to extended criticism. One such criticism is that using canine sniffs as investigative techniques may threaten individual liberties, and that they are not sufficiently guarded by Fourth Amendment jurisprudence.⁵⁹ Another critique of *Place* is that it ignored the context of the search and did not acknowledge the differences between sniffs of a person and sniffs of an object.⁶⁰ *Place* dealt with an object (luggage) and not a person, which might explain this decision.⁶¹ Still others have criticized *Place*’s interpretation of privacy, arguing that odors can be highly intimate and that dogs often engender anxiety and fear.⁶² Finally, critics have

54. *Illinois v. Caballes*, 543 U.S. 405, 410 (2005); cf. George M. Dery III, *Who Let the Dogs Out? The Supreme Court Did in Illinois v. Caballes by Placing Absolute Faith In Canine Sniffs*, 58 RUTGERS L. REV. 377, 378 (2006).

55. *United States v. Place*, 462 U.S. 696, 723 (1983) (Blackmun, J., concurring).

56. *Id.*

57. *Id.*

58. *Caballes*, 543 U.S. at 409.

59. See, e.g., Amanda S. Froh, *Rethinking Canine Sniffs: The Impact of Kyllo v. United States*, 26 SEATTLE U. L. REV. 337, 354 (2002–2003).

60. *Id.* at 354.

61. *Id.* at 353–54.

62. See *Caballes*, 543 U.S. at 421 (Ginsburg, J., dissenting) (“A drug-detection dog is an intimidating animal.”); Arnold H. Loewy, *The Fourth Amendment as a Device for Protecting the Innocent*, 81 MICH. L. REV. 1229, 1246–47 (1983) (“[T]he very act of being subjected to a body sniff by a German Shepherd may be offensive at best and harrowing at worst to the innocent sniffer.”); Jon S.

pointed out that police dogs often alert when drugs are not present, resulting in unnecessary and suspicionless searches.⁶³ Along these lines, Jane Yakowitz Bambauer argues that what is “[c]uriously missing from any Supreme Court opinion is a reflection on how contraband-detecting dogs fundamentally change law enforcement” in the United States.⁶⁴ Although “[p]olice dogs are old technology, their widespread use ushers in a new model of policing,” she argues.⁶⁵ She also notes that “[l]ike pattern-based data mining, dog sniffs produce tradeoffs inherent in dragnet-style law enforcement. They redistribute the burden of unproductive searches from the few-but-stereotypically ‘suspicious’ to the entire population.”⁶⁶

Vernick et al., *Technologies to Detect Concealed Weapons: Fourth Amendment Limits on a New Public Health and Law Enforcement Tool*, J.L. MED. & ETHICS, Dec. 2003, at 567, 571 (“[T]he body and its odors are highly personal’ and ‘dogs often engender irrational fear.”) (citation omitted); see also Timothy C. Stone, *State v. Rabb: Dog Sniffs Close to Home*, 80 ST. JOHN’S L. REV. 1123, 1145 n.12 (2006) (noting that dog sniffs can be “intrusive”).

63. Froh, *supra* note 59, at 355.

64. Bambauer, *supra* note 9, at 131.

65. *Id.*

66. Bambauer, *supra* note 9, at 131-32; see also Robert Bird, *An Examination of the Training and Reliability of the Narcotics Detection Dog*, 85 KY. L.J. 405, 430-31 (1997). Bird’s analysis can serve to explain Bambauer’s dense statistical statement in the main text. In his words:

The use of statistical analysis reveals that even a very high accuracy rate can produce an unreasonable amount of false positives under certain conditions [in a random population]. . . . [S]uccessful canines will have difficulty establishing high accuracy rates on their own, and will likely be most successful when used in tandem with the suspicions of law enforcement. Therefore, narcotics detection dogs are most reliable against an individual item or person where police first suspected the presence of narcotics before using the drug dog. During such a search, the relevant population sniffed will already have been narrowed by police expertise. Traffic stops, questioning of suspicious individuals, and examinations of suspect packages exemplify this type of narrowing, and courts should more readily rely on dog alerts in these settings. Canines are less reliable when police use less of their own expertise. This reasoning applies to sniffs directed at a suspicious locale, such as an airport or border crossing, rather than a person or item. These sniffs retain some qualities of individualization: police are monitoring suspicious areas. However, the dogs are sniffing in a somewhat random manner and searching for narcotics over a large area. Here, courts should accept only well-trained canines as reliable

Congruent with this line of critique, I contend that the Supreme Court's sniff jurisprudence is grounded in a cultural, historical, and conceptual misconception. Although it does so only implicitly, the Supreme Court essentially relates organic beings and artificial technologies as two independent and dichotomous categories: one strongly situated in nature, the other in society.⁶⁷ This nature/culture schism translates into the judicial realm as follows. On the one hand, that which is natural is constructed by the Court as less invasive, less sophisticated,⁶⁸ and having less of a "creeping" potential.⁶⁹

drug detectors because the sheer number of items examined can trigger unacceptable false alerts.

Id. at 427, 430 (citations omitted). The importance of teamwork for successful detection supports my claim in this Article that the dog does not operate independent of human influence and that, at the very least, this human influence should be subject to judicial scrutiny.

67. See *infra* Part II.D; see, e.g., Transcript of Oral Argument at 19, *Florida v. Jardines*, 132 S. Ct. 995 (2012) (No. 11-564) [hereinafter "Transcript of Oral Argument, *Jardines*"] ("So you have to treat him like a guy, to think that he is not like technology in terms of augmenting what a human being can do.").

68. See, e.g., *United States v. Jones*, 132 S. Ct. 945, 962 (2012); *Kyllo v. United States*, 533 U.S. 27, 35-36 (2001) ("Reversing that approach would leave the homeowner at the mercy of advancing technology. . . . [T]he rule we adopt must take account of more sophisticated systems that are already in use or in development."); *United States v. Jacobsen*, 466 U.S. 109, 142 (1984) (Brennan, J., dissenting) ("[T]he use of techniques like the dog sniff at issue in *Place* constitutes a search. . . . The same would be true if a more technologically sophisticated method were developed to take the place of the dog."); *United States v. Place*, 462 U.S. 696, 707 (1983) ("[A] canine sniff. . . is much less intrusive than a typical search") (internal quotation marks omitted); Transcript of Oral Argument, *Jardines*, *supra* note 67, at 17-18 ("[T]his isn't a case where if you allow a dog to sniff today, he might use x-ray vision in the future. That's not going to happen.").

69. The term "surveillance creep" was first used by the Weberian French sociologist and legal scholar Jacques Ellul. See JACQUES ELLUL, *THE TECHNOLOGICAL SOCIETY* (1964). Ellul points to what he calls "*la technique*": a cultural orientation toward means rather than ends, which makes the insertion into social life of many artifacts and technical processes seem desirable. *La technique* is already an "unnatural" construct, but it is characteristic of human society rather than simply industrial society: "technique is absorbed into man's psychology and depends upon that psychology and upon what has been called technical motivation." *Id.* *La technique* "constructs the social world that the machine needs, feeding on itself and expanding in an all-embracing and usually irreversible fashion." See also DAVID LYON, *SURVEILLANCE STUDIES: AN OVERVIEW* 52 (2007) ("Ellul was among one of the first to note the effects of technologized

Therefore, this practice is usually deemed a nonsearch that does not trigger Fourth Amendment protections.⁷⁰ On the other hand, that which is labeled an advancing technology—for example, the infrared machine in *Kyllo*⁷¹ or the GPS device in *Jones*⁷²—is depicted by the Court as actually or potentially invasive and thus in need of checks, balances, and regulation.⁷³ Along these lines, the Supreme Court has incorrectly insinuated that police dogs are organic creatures that are familiar and familial.⁷⁴ Implicit in this paradigm is the reasoning that a dog, even when performing the same task as a nonorganic device, is actually doing something different; it is simply performing its natural, God-given⁷⁵ thing: breathing.⁷⁶ The machine, on the other hand, is perceived as an estranged “other” constructed by humans and, as such, triggering a range of Fourth Amendment

policing; it requires that more and more be supervised in the hope of apprehending more effectively those who violate the rules and laws. *La technique* in police work steadily and increasingly puts everyone under subtle surveillance.”). Lyon draws on Gilles Deleuze and Felix Guattari to characterize surveillance creep as “rhizomic; more like a creeping plant than a central tree trunk with spreading branches.” See David Lyon, *Surveillance After September 11*, SOC. RES. ONLINE 6.3, 2001.

70. *Illinois v. Caballes*, 543 U.S. 405, 409 (2005) (“[T]he use of a well-trained narcotics-detection dog . . . generally does not implicate legitimate privacy interests.”)

71. *Kyllo*, 533 U.S. at 33-34.

72. *Jones*, 132 S. Ct. at 962-63 (Alito, J., concurring).

73. See *id.* at 962 (implying that *Katz* is not sufficiently capable of addressing the dangers and complexities of advanced technology cases and speculating that “concern about new intrusions on privacy may spur the enactment of legislation to protect against these intrusions”).

74. Cf. *United States v. Place*, 462 U.S. 696, 719 (1983) (Brennan, J., concurring) (suggesting that dog sniffs are at least as intrusive as certain electronic detection devices but stating that “[o]bviously, a narcotics detection dog is not an electronic detection device”).

75. The argument of the canine as a God-given entity was stressed repeatedly by counsel for the state in the *Jardines* arguments. See *infra* note 172 and accompanying text.

76. *Florida v. Jardines*, 9 So. 3d 1, 5 (Fla. Dist. Ct. App. 2008), *cert. granted*, 132 S. Ct. 995 (2012) (noting that “[a] dog’s nose is not, however, a ‘device,’” and suggesting that this is the reason why dog sniffs are considered *sui generis*). This also explains why the petitioner in *Jardines* repeatedly characterizes the dog sniff as “breathing” or obtaining information “merely by breathing.” Brief of Petitioner at 14, 21, 28 *Florida v. Jardines*, 132 S. Ct. 995 (2012) (No. 11-564).

protections.⁷⁷ Counter to such reasoning, this Article argues that the contraband detector dog is *both* natural and breathing and *also* very much a sophisticated and increasingly advancing technology, produced by humans for human ends.

E. Jacobsen's "Yes/No" Scope

At this stage, I would like to pause on the facts and decision in *United States v. Jacobsen*.⁷⁸ Although this case involved a chemical test rather than a dog sniff, the Court nonetheless applied the logic of *Place* in its ruling.⁷⁹ Of all Supreme Court cases, *Jacobsen* most clearly brings to light the slippery slope—the interchangeability, even—between K-9s and mechanical surveillance techniques.

In *Jacobsen*, federal drug enforcement agents were alerted by private freight workers to a parcel, consisting of a cardboard box wrapped in brown paper, which contained a tube made of duct tape.⁸⁰ The workers had opened the tube to reveal plastic bags of white powder.⁸¹ The agents, who had later arrived to the scene, removed one of the bags, opened it, and performed a field test that identified the substance as cocaine.⁸² The Court found the removal of the contents of the package by the agents was reasonable⁸³ and that the chemical field test was not a search.⁸⁴ The Court also found *United States v. Place* to be controlling and analogous, stating that the chemical test, just like the dog sniff, only revealed whether contraband was present.⁸⁵ "It could tell [the officer] nothing more, not even whether the

77. See *Kyllo v. United States*, 533 U.S. 27, 34 (2001); *United States v. Jacobsen*, 466 U.S. 109, 137-38 (1984) (Brennan, J., dissenting).

78. *United States v. Jacobsen*, 466 U.S. 109, 109 (1984); see also *Fitzgerald v. Maryland*, 864 A.2d 1006, 1011-12 (discussing *Jacobsen* and *City of Indianapolis v. Edmond*, 531 U.S. 32 (2000)).

79. *Jacobsen*, 466 U.S. at 121-23.

80. *Id.* at 111.

81. *Id.*

82. *Id.* at 112.

83. *Id.* at 121-23.

84. *Id.* at 124-25 (citing *United States v. Place*, 462 U.S. 696, 707 (1983)).

85. *Id.* at 122.

substance was sugar or talcum powder,” the Court explained.⁸⁶ The Court then held that due to the test’s narrow scope, it “does not compromise any legitimate interest in privacy.”⁸⁷

More broadly, *Jacobsen* held that there is no privacy interest in contraband: “Congress has decided . . . to treat the interest in ‘privately’ possessing cocaine as illegitimate; thus governmental conduct that can reveal whether a substance is cocaine, and no other arguably ‘private’ fact, compromises no legitimate privacy interest.”⁸⁸ The Court rejected *Jacobsen*’s attempt to distinguish *Place* on a theory that the physical examination of his effects was more of an intrusion than the dog’s exterior sniff, stating that “the reason [*Place*’s sniff] did not intrude upon any legitimate privacy interest was that the governmental conduct could reveal nothing about noncontraband items. That rationale is fully applicable here.”⁸⁹ Read together, *Place* and *Jacobsen* establish that there is no search when government officials are legally present in a location, and when government action reveals only whether contraband is present or not. This rationale is also the state’s central argument in the pending case of *Jardines*: Franky’s sniff “detects only contraband and because one does not have a ‘legitimate’ privacy interest in contraband, a dog sniff is not a search under the Fourth Amendment.”⁹⁰

The dissent’s opinion in *Jacobsen* is as important for my purposes as that of the majority. In their dissent, Justices Brennan and Marshall warned that the *Place* Court “was dangerously incorrect,” and that the majority’s reasoning in *Jacobsen* “is fundamentally misguided and could potentially lead to the development of a doctrine wholly at odds with

86. *Id.*

87. *Id.* at 123.

88. *Id.* This test is in line with the Court’s statement that “the ‘reasonable person’ test presupposes an innocent person.” *Florida v. Bostick*, 501 U.S. 429, 438 (1991).

89. *Jacobsen*, 466 U.S. at 124 n.24.

90. Petition for a Writ of Certiorari at 9, 11, *Florida v. Jardines*, 132 S. Ct. 995 (No. 11-564); see also *United States v. Brock*, 417 F.3d 692, 696 (7th Cir. 2005) (“[T]he majority of our sister circuits . . . have held that canine sniffs used only to detect the presence of contraband are not Fourth Amendment searches.”).

the principles embodied in the Fourth Amendment.”⁹¹ In the dissent’s words:

Combining this approach with the blanket assumption, implicit in *Place* and explicit in this case, that individuals in our society have no reasonable expectation of privacy in the fact that they have contraband in their possession, the Court adopts a general rule that a surveillance technique does not constitute a search if it reveals only whether or not an individual possesses contraband.⁹²

A crucial component of the Supreme Court’s holdings in *Place* and *Jacobsen* is their focus on the limited scope and nature of the test⁹³—rather than on the nature of the object tested—in determining whether a legitimate privacy interest exists.⁹⁴ Such a conclusion is supported by *City of Indianapolis v. Edmond*.⁹⁵ While holding a highway checkpoint program designed to discover and interdict illegal narcotics unconstitutional, the Supreme Court noted that the program’s use of dogs to sniff the outside of automobiles was in fact constitutional.⁹⁶ The Court wrote:

Just as in *Place*, an exterior sniff of an automobile does not require entry into the car and is not designed to disclose any information other than the presence or absence of narcotics. Like the dog sniff in *Place*, a sniff by a dog that simply walks around a car is “much less intrusive than a typical search.”⁹⁷

The three dissenting justices in *Edmond* agreed with the majority that, “[w]e have already held, however, that a ‘sniff test’ by a trained narcotics dog is not a ‘search’ within the meaning of the Fourth Amendment because it does not require physical intrusion of the object being sniffed and it does not expose anything other than the contraband

91. *Jacobsen*, 466 U.S. at 136 (Brennan, J., dissenting).

92. *Id.* at 137.

93. This is also referred to as the “limited disclosure theory.” See Stone, *supra* note 62, at 1125 n.13.

94. See Froh, *supra* note 59, at 343-47 (suggesting two situations in which “no search” exists: when there is no reasonable expectation of privacy or the intrusion is limited).

95. 531 U.S. 32, 47-48 (2000).

96. *Id.* at 40, 48.

97. *Id.* at 40 (citations omitted).

items.”⁹⁸ Both the majority and the dissent in *Edmond* thus focused on the narrow “yes/no” scope of the sniff rather than on the identity of the sniffed object—the exterior of the luggage in *Place* and the car in *Edmond*.⁹⁹ The only relevant spatial determination by the Court involved whether or not the dog was *legally present* outside the sniffed object.¹⁰⁰

This Part reviewed the relevant Supreme Court decisions that apply to dog sniffs. Although the Court did not explicitly analyze the status of dogs from a nature versus culture perspective, this dichotomy underscores its K-9 decisions. The next Part will focus on lower court decisions on dog sniffs, which more boldly and explicitly discuss the nature versus culture status of this creature.

98. *Id.* at 40; *id.* at 52-53 (Rehnquist, J., dissenting) (citing *United States v. Place*, 462 U.S. 696, 706-07 (1983)).

99. This idea has also been referred to as the “binary search doctrine.” See *Constitutional Law*, 119 HARV. L. REV. 169, 179, 185-86 (2005). The term “binary” was first used in *United States v. Colyer*, 878 F.2d 469, 474 (D.C. Cir. 1989), where the court stated: “[a]s in *Place*, the driving force behind Jacobsen was the recognition that because of the binary nature of the information disclosed by the sniff, no legitimately private information is revealed”; see also Chris Blair, *Illinois v. Caballes: Love Affair With a Drug-Sniffing Dog*, 41 TULSA L. REV. 179, 179-80, 187-90 (2005) (describing the case of *Illinois v. Caballes* and arguing that the Court’s analysis of dog sniffs in that case has led to a far-reaching conclusion about reasonable expectations of privacy); Ric Simmons, *The Two Unanswered Questions of Illinois v. Caballes: How to Make the World Safe for Binary Searches*, 80 TUL. L. REV. 411, 413-14 (2005) (explaining the Fourth Amendment’s binary search doctrine, including the decision in *Illinois v. Caballes*, and identifying two questions that the Court “forgot” to answer: what types of surveillance qualify as binary searches and what limits should be placed on such searches).

100. *Edmond*, 531 U.S. at 40-41. More generally, the dissent notes that the past decisions of *Michigan Dept. of State Police v. Sitz*, 496 U.S. 444 (1990) and *United States v. Martinez-Fuerte*, 428 U.S. 543 (1976) stand for the notion that suspicionless roadblock seizures are only constitutional if done according to a plan that limits officer discretion when conducting the stops. *Edmond*, 531 U.S. at 56 (Thomas, J., dissenting). Furthermore, the dissent notes that the past two cases may have been incorrectly decided because the framers would not have considered indiscriminate stops of random people to be reasonable. *Id.*

II. THE DOG: A MAN'S BEST FRIEND—OR A TECHNOLOGY?

A. *Back to Jardines and Harris*

The two recent Florida Supreme Court cases, *Jardines v. Florida*¹⁰¹ and *Harris v. Florida*,¹⁰² raise two different, yet interrelated, questions regarding canine police practices: first, whether the Supreme Court's prior decision that a sniff is a nonsearch applies in all circumstances, including sniffs from the curtilage of a home;¹⁰³ second, whether the canine's positive indication of narcotics suffices to establish probable cause for a search if the dog is reliable, and what type of proof is required to establish such reliability.¹⁰⁴

101. 73 So. 3d 34, 36 (Fla. 2011), *cert. granted*, 132 S. Ct. 995 (2012).

102. 71 So. 3d 756, 758 (Fla. 2011), *cert. granted*, 132 S. Ct. 1796 (2012).

103. *Jardines*, 73 So. 3d at 36-37.

104. *Harris*, 71 So. 3d at 758. In *Harris*, the Florida Supreme Court held that “[t]he State’s presentation of evidence that the dog is properly trained and certified is the beginning of the analysis.” *Id.* at 771. In addition to demonstrating proper training and certification, the court required that the state keep and present records of the dog’s performance in the field, including the dog’s successes (alerts where contraband that the dog was trained to detect was found) and failures (“unverified” alerts where no contraband that the dog was trained to detect was found). *Id.* at 771, 775. Finally, the court required that the state present evidence as to the experience and training of the officer handling the dog. *Id.* at 775. Under a “totality of the circumstances” analysis, the court then considered the evidence and evaluated the dog’s reliability. *Id.* at 766-67. The brief Florida submitted sought certiorari from the Supreme Court to resolve the dog sniff issue and to provide a bright line rule on this matter. See Brief for Petitioner at 8-10 Florida v. Harris, 132 S. Ct. 1796 (2012) (No. 11-817). The state’s criticism of the Florida Supreme Court is based on the high evidentiary burden that it places on the state to show evidence of dog statistics, its argued misconception of the requirement for probable cause, the conflict with Supreme Court precedents on this matter, and the lack of independent and adequate state grounds. *Id.* at 9-10. The brief quotes from the Supreme Court to say that: “[t]he courts are not strangers to the use of trained dogs to detect the presence of controlled substances.” *Id.* at 20 (quoting Florida v. Royer, 460 U.S. 491, 505-06 (1983)). The state also notes that bloodhound evidence has been looked upon favorably for centuries. See *id.* at 16-18, 22 (discussing United States v. Ludwig, 10 F.3d 1523, 1528 (10th Cir. 1993)). The brief also argues that courts have agreed that a trained narcotics detection dog’s positive indication alone is enough to establish probable cause if the dog is reliable. *Id.* at 19-20; see also United States v. Sundby, 186 F.3d 873, 876 (8th Cir. 1999) (citing United States v. Owens, 167 F.3d 739, 749 (1st Cir. 1999); United States v. Kennedy, 131 F.3d 1371, 1376-77 (10th Cir. 1997); United States v. Berry, 90 F.3d 148, 153 (6th Cir. 1996); and United States v. Lingenfelter, 997 F.2d 632, 638 (9th

Underlying these two questions, however, is a third question that has not yet been addressed, at least not explicitly so, by the Supreme Court: is the police dog a

Cir. 1993)). Arguing in support of Florida, the amicus curiae briefs state that the Florida Supreme Court's decision in *Harris* has caused a "deep split" of authority among the various courts. Brief for the Commonwealth of Virginia et al. as Amici Curiae Supporting Petitioner at 1 Florida v. Harris, 132 S. Ct. 1796 (2012) (No. 11-817). On the one hand, federal courts have granted much power to canine sniffs. See, e.g., Florida v. Royer, 460 U.S. 491, 505-06 (1983) (stating that a positive alert from a dog sniff would have resulted in the defendant's justifiable arrest on probable cause); United States v. Pierce, 622 F.3d 209, 213 (3d Cir. 2010) (holding that the canine's alert when sniffing the exterior of the vehicle gave the officer probable cause to search the vehicle); United States v. Garcia-Garcia, 319 F.3d 726, 730 (5th Cir. 2003) (ruling that the dog's alert in the bus provided reasonable suspicion that defendant possessed the drugs that the dog sensed). On the other hand, in *Oregon v. Foster*, 252 P.3d 292 (Or. 2011), the Oregon Supreme Court qualified that an alert by "a properly trained and reliable drug-detection dog can be [the] basis for probable cause to search," and, if at issue, is to be reviewed by individualized inquiry based on the totality of the circumstances. *Id.* at 294; see also *Oregon v. Helzer*, 252 P.3d 288, 289 (Or. 2011) (holding that state did not meet its burden in demonstrating that dog's sniff was reliable). Some circuit courts have ruled, accordingly, that "[c]ourts have not definitively addressed the issue of the quality or quantity of evidence necessary to establish a drug detection dog's training and reliability." United States v. Diaz, 25 F.3d 392, 394 (6th Cir. 1994); cf. *South Dakota v. Nguyen*, 2007 SD 4, ¶ 16, 726 N.W.2d 871, 876 (noting three divergent views on the reliability of dog sniffs). Nonetheless, most jurisdictions have concluded that "[a] drug detection dog is considered reliable when it has been trained and certified to detect drugs." See, e.g., United States v. Winters, 600 F.3d 963, 967 (8th Cir. 2010). The Seventh Circuit held, for example, that statements that a "dog 'graduated from a training class in drug detection' and 'has proven reliable in detecting drugs and narcotics'" on prior occasions were sufficient to establish probable cause. United States v. Klein, 626 F.2d 22, 27 (7th Cir. 1980). The factors considered by trial courts include the dog's training and certification, its successes and failures in the field, the experience and training of the officer handling the dog, and the canine's training and track record, with emphasis on the amount of false negatives and false positives the dog has furnished. See United States v. Delaney, 52 F.3d 182, 188 (8th Cir. 1995) ("[T]here is no legal requirement that [an] affidavit specify the number of times the dog previously has sniffed out drugs . . .") (emphasis added) (citations omitted); *Nguyen*, 2007 SD 4, at ¶¶ 17-19, 726 N.W.2d at 876-77; *Tennessee v. England*, 19 S.W.3d 762, 768-69 (Tenn. 2000). The amicus curiae brief in *Harris* warns that "[t]he potential for varied and inconsistent applications raises serious questions regarding whether the 'deterrent effect' of canine detection outweighs the proportional 'harm to the justice system.'" Brief for the Commonwealth of Virginia et al. as Amici Curiae Supporting Petitioner at 14 Florida v. Harris, 132 S. Ct. 1796 (2012) (No. 11-817) (citing *Herring v. United States*, 555 U.S. 135, 147-48 (2008)).

technology? Although this question may seem at best marginally connected to the two questions soon to be decided by the Supreme Court, the way that various courts have approached it in the past—either implicitly or explicitly—has been instrumental in forming their decisions and will likely also be instrumental in forming the Supreme Court's holding in the two Florida cases.

On the one hand, if the dog, who has aided man for centuries and who, “unlike humans, [does] not prevaricate,”¹⁰⁵ is considered a natural extension of the human senses—namely, a biological and not a mechanical entity—the Court is more likely to decide that the dog sniff is not a search, and thus that it does not require Fourth Amendment protections. On the other hand, defining police dog sniffs as a technology will likely trigger more stringent Fourth Amendment protections, eliciting a different line of precedent (mainly *Kyllo*) and resulting in a more detailed, statistical, and even scientific inquiry into the particular device in question and, in this case, the specific canine, sniff, and handler.

B. *Human Senses—and Their Extension*

It has long been established that the police are not expected to “shield their eyes when passing by a home on public thoroughfares.”¹⁰⁶ They are similarly not expected to

105. Brief for the Commonwealth of Virginia et al. as Amici Curiae Supporting Petitioner at 10 *Florida v. Harris*, 132 S. Ct. 1796 (2012) (No. 11-817).

106. *California v. Ciraolo*, 476 U.S. 207, 213 (1986). In this case, the police received an anonymous tip that defendant was growing marijuana in his backyard. *Id.* at 209. Since it could not be observed easily from the ground because of a tall fence, the police secured a plane and flew over defendant's house to observe the yard. *Id.* The flyover confirmed the presence of marijuana. Police then obtained a search warrant and seized the marijuana. *Id.* The defendant argued that the search by flyover was a violation of the Fourth Amendment. *See id.* at 211. The Supreme Court found that the naked-eye observation from the plane did not violate the Constitution. *Id.* at 215. The Court held:

The observations by Officers Shutz and Rodriguez in this case took place within public navigable airspace . . . in a physically nonintrusive manner; from this point they were able to observe plants readily discernible to the naked eye as marijuana. That the observation from aircraft was directed at identifying the plants and the officers were trained to recognize marijuana is irrelevant. Such observation is

shield their hands from touching, or their noses from smelling, what the public can touch and smell.¹⁰⁷ Indeed, “[s]ensory perception has traditionally been an inextricable part of Fourth Amendment jurisprudence.”¹⁰⁸ For example, a policeman’s sense of smell—performed from a legal standpoint—can establish probable cause for a lawful search or seizure.¹⁰⁹ A dog’s sense of smell operates very much like that of a human’s, except it is much stronger. In fact, “[i]f laid out, the surface area of a dog’s olfactory cells would cover a space equivalent to the skin area of the dog’s

precisely what a judicial officer needs to provide a basis for a warrant. Any member of the public flying in this airspace who glanced down could have seen everything that these officers observed. On this record, we readily conclude that respondent’s expectation that his garden was protected from such observation is unreasonable and is not an expectation that society is prepared to honor.

Id. at 213-14. The Court also held that “[t]he Fourth Amendment simply does not require the police traveling in the public airways at this altitude to obtain a warrant in order to observe what is visible to the naked eye.” *Id.* at 215.

107. *But see* *Bond v. United States*, 529 U.S. 334, 337, 339 (2000) (distinguishing that “*Ciraolo* [is] . . . different from this case because [it] involved only visual, as opposed to tactile, observation. Physically invasive inspection is simply more intrusive than purely visual inspection”). The *Bond* court considered two questions. First, whether the defendant had a reasonable expectation of privacy. *Id.* at 337. The Court found that by using an opaque bag and placing the bag directly above his seat, the defendant indeed established an expectation of privacy. *Id.* at 336-38. Second, the Court considered whether the individual’s expectation of privacy was one that society would recognize as reasonable. *Id.* at 338. Here, the Court found that although the defendant had an expectation that his bag would be handled, he did not reasonably expect that his bag would be felt in an exploratory manner. *Id.* at 338-39. Thus, the physical manipulation of the defendant’s bag violated the Fourth Amendment. *Id.* at 339. See David S. Rudstein, “*Touchy*” “*Feely*”—*Is There a Constitutional Difference? The Constitutionality of “Prepping” a Passenger’s Luggage for a Human or Canine Sniff After Bond v. United States*, 70 U. CIN. L. REV. 191, 199-200 (2001).

108. Stone, *supra* note 62, at 1123.

109. See *Kentucky v. King*, 131 S. Ct. 1849, 1853-55, 1858 (2011) (holding that the smell of marijuana, coupled with the noise emanating from an apartment, established the grounds for a constitutional warrantless entry based on the exigency rationale of evidence destruction); *Johnson v. United States*, 333 U.S. 10, 13 (1948) (recognizing that the presence of odors from burning opium may justify issuance of a search warrant); *Taylor v. United States*, 286 U.S. 1, 6 (1932) (“Prohibition officers may rely on a distinctive odor as a physical fact indicative of a possible crime.”).

body. In comparison, the surface area of human olfactory cells would cover no more than a postage stamp.”¹¹⁰

In the past, the government’s intrusion into one’s privacy usually entailed some sort of physical trespass into a protected Fourth Amendment space.¹¹¹ Today, however,

110. Shannon R. Hurley-Deal, Note, *State v. Fisher: Canine Sniffs—Who Let The Dogs Out?*, 26 N.C. CENT. L.J. 47, 51 (2003). Robert Bird also discusses the source of the strength of dogs’ sense of smell:

The effect of the dog’s olfactory cells is not entirely clear. Some experts claim the result is an enhanced ability to detect minute levels of odorous material. Others assert that a canine’s strength lies in its ability to discriminate among odors. Scientists supporting the discrimination theory believe that each olfactory receptor responds to a different odor; the more receptors, the greater the power to distinguish between scents. The answer most likely lies somewhere between the two opposing theories.

Bird, supra note 66, at 408-09. Additionally, on the topic of animal alternatives to dogs, Bird notes the following:

Canines are not the only animal suitable for drug detection tasks. Some law enforcement agencies have begun to use Vietnamese Potbellied Pigs to detect narcotics. Sniffer pigs have been widely used by German Police and Customs, and are beginning to gain acceptance in America. . . . Further, their olfactory system is more sensitive than a dog’s, and pigs are far more intelligent than their canine counterparts. . . . If the trend continues, sniffer pigs may supplement or even replace dogs in the narcotics detection task.

Id. at 411 n.41 (citations omitted). In “TED Talks,” a scientist discusses how he has successfully implemented two programs in Africa with rats that have been trained to sniff out land mines and tuberculosis. Bart Weetjens: How I Taught Rats to Sniff Out Land Mines, TED (Dec. 2010), http://www.ted.com/talks/bart_weetjens_how_i_taught_rats_to_sniff_out_land_mines.html. Similar to dogs, domesticated rats have also been selectively bred throughout the centuries for appearance, intelligence, and friendliness towards humans. *Id.*

111. See *Olmstead v. United States*, 277 U.S. 438, 466 (1928) (“Neither the cases we have cited nor any of the many federal decisions brought to our attention hold the Fourth Amendment to have been violated as against a defendant, unless there has been an official search and seizure of his person or such a seizure of his papers or his tangible material effects or an actual physical invasion of his house ‘or curtilage’ for the purpose of making a seizure.”). *But see Katz v. United States*, 389 U.S. 347, 352-53 (1967) (“It is true that the absence of such penetration was at one time thought to foreclose further Fourth Amendment inquiry, for that Amendment was thought to limit only searches and seizures of tangible property. But ‘[t]he premise that property interests control the right of the Government to search and seize has been discredited.’ Thus, although a closely divided Court supposed in *Olmstead* that surveillance

technological advancements enhancing human sensory capabilities make it possible to acquire information without conducting such physical invasions. The first line of cases in which the courts dealt with the issue of surveillance technologies concerned low-level sense enhancing technologies, such as searchlights¹¹² and binoculars.¹¹³ The courts have traditionally construed these simple technologies as straightforward extensions of the human senses and, therefore, as nonsearches that do not require a warrant so long as the officer was lawfully present in the place from which the evidence was seen, smelled, heard, or touched—also defined as the “plain view” doctrine.¹¹⁴ The idea was that because the police officer could perform the task without physically invading a private space, the investigation does not amount to a search.¹¹⁵ The question

without any trespass and without the seizure of any material object fell outside the ambit of the Constitution, we have since departed from the narrow view on which that decision rested. Indeed, we have expressly held that the Fourth Amendment governs not only the seizure of tangible items, but extends as well to the recording of oral statements overheard without any ‘technical trespass under local property law.’”) (citations omitted).

112. See *United States v. Lee*, 274 U.S. 559, 563 (1927) (finding “the use of a searchlight [] comparable to the use of a marine glass or a field glass”).

113. See *United States v. Grimes*, 426 F.2d 706, 708 (5th Cir. 1970); *United States v. Christensen*, 524 F. Supp. 344, 346-48 (N.D. Ill. 1981) (“[Binoculars] merely magnify what would in any event be apparent to the naked eye.”).

114. See *Illinois v. Caballes*, 548 U.S. 405, 416 n.6 (2005) (Souter, J., dissenting); see also *supra* notes 110-11 and accompanying text.

115. This rationale was adopted in the case of beepers and was also used to distinguish Global Positioning Devices (GPS) from beepers. See *United States v. Jones*, 132 S. Ct. 945, 951-52 (2012) (distinguishing various Supreme Court rulings related to beepers and GPS tracking). In *United States v. Knotts*, 460 U.S. 276, 281 (1983), the Court concluded that the Fourth Amendment did not apply to the police use of beepers because a “person traveling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements.” But later, in *United States v. Karo*, 468 U.S. 705, 716-17 (1984), the Court explained that although the installation of a beeper was permissible, monitoring it in a private residence violated the Fourth Amendment. More recently, courts have struggled with the application of beeper jurisprudence to GPS. For instance, the New York Court of Appeals stated:

GPS is not a mere enhancement of human sensory capacity, it facilitates a new technological perception of the world in which the situation of any object may be followed and exhaustively recorded over, in most cases, a practically unlimited period. The potential for a similar capture of information or “seeing” by law enforcement would require, at

has become more complex, however, with the advent of powerful new surveillance technologies.¹¹⁶

In its first consideration of such new surveillance technologies, the Supreme Court in *Kyllo* held that when police obtain by sense-enhancing technology any information regarding the interior of the home that could not otherwise have been obtained without physical intrusion into a constitutionally protected area, this constitutes a search, at least where the technology in question is not in general public use.¹¹⁷

The question in the dog sniff cases is, then, whether a sniff is a simple extension of the officer's senses (similar to eyeglasses), or whether it is an "advancing technology" (similar to infrared sensors).¹¹⁸ When the dog is perceived as

a minimum, millions of additional police officers and cameras on every street lamp.

People v. Weaver, 909 N.E.2d 1195, 1199 (N.Y. 2009).

116. See DAVID LYON, *THE ELECTRONIC EYE: THE RISE OF SURVEILLANCE SOCIETY* 53 (Univ. of Minneapolis Press 1994) (The "ten characteristics of the new surveillance that set it apart from traditional forms of social control" are that "[i]t transcends distance, darkness and physical barriers. It transcends time, and this can be seen especially in the storage and retrieval capacity of computers; personal information can be 'freeze-dried.' . . . It is of low visibility or invisible; data subjects are decreasingly aware of it. . . . It is frequently involuntary. . . . Prevention is a major concern; think of bar-coded library books or shopping mall video cameras, which are there to prevent loss, not to teach the immorality, of theft. It is capital- rather than labour-intensive, which makes it more and more economically attractive. It involves decentralized self-policing. . . . It triggers a shift from identifying specific suspects to categorical suspicion. It is both more intensive and more extensive. In Stanley Cohen's metaphor, the net is finer, more pliable, and wider.") (footnotes omitted).

117. See *Kyllo v. United States*, 533 U.S. 27 (2001); see also Froh, *supra* note 59, at 342-43 (highlighting the four factors used by the Court to determine whether police conduct amounts to a search: whether the "technique [is] sense-enhancing," whether "the intrusion [is] into an area traditionally associated with personal privacy," whether "the kind of device or technique in question is generally available to the public," and whether "the information obtained [is] of a kind that could only have been acquired with physical trespassory invasion into the area if not for the assistance of the device") (citing *Kyllo*, 533 U.S. at 34).

118. *Kyllo*, 533 U.S. at 33 ("We have previously reserved judgment as to how much technological enhancement of ordinary perception from such a vantage point, if any, is too much."). For the definition of advancing technologies, see *supra* note 10.

an “old” rather than an “advancing” technology, the courts tend to hold that the sniff is merely part of routine investigation by the police and thus a nonsearch.¹¹⁹ Indeed, the courts have often taken different and, at times, contradictory approaches when considering the status of dogs as technologies. Moreover, some courts have avoided this debate about whether dog sniffs are a traditional or advancing technology by ruling that a dog is a dog, not technology.¹²⁰ The following two cases illustrate this complex and contradictory identity of the police dog.

C. *Is the Dog a Technology—and Where?*

1. *United States v. Thomas*. In *United States v. Thomas*,¹²¹ a magistrate issued a warrant based on an affidavit submitted by a Drug Enforcement Administration agent that argued for the existence of probable cause in part based on a K-9 sniff outside of the defendant’s apartment.¹²² The defendant claimed that the canine sniff constituted an illegal search, that without the illegal sniff there was no probable cause to obtain a warrant in the first place, and that, as a result, the evidence seized at his apartment should have been suppressed.¹²³ The Second Circuit court agreed, holding that:

It is one thing to say that a sniff in an airport is not a search, but quite another to say that a sniff can *never* be a search. The question always to be asked is whether the use of a trained dog intrudes on a legitimate expectation of privacy. While one generally has an expectation of privacy in the contents of personal

119. *See infra* Part II.C; *cf. Kyllo*, 533 U.S. at 39 n.6. The Court discusses *Ciraolo* and responds to the dissent’s argument that protections dissipate when technology enters general public use. *Id.* The majority declines to address the problem of general public use technology, stating only that “we can quite confidently say that thermal imaging is not routine.” *Id.* (internal quotation marks omitted).

120. *See, e.g., Fitzgerald v. Maryland*, 864 A.2d 1006, 1015-16 (2004); *see also supra* notes 11, 78-80 and accompanying text.

121. 757 F.2d 1359 (2d Cir. 1985).

122. *Id.* at 1366.

123. *Id.*

luggage, this expectation is much diminished when the luggage is in the custody of an air carrier at a public airport.¹²⁴

The court's reasoning is instructive; it contended that defining an investigation as a use of technology is not the end of the exploration; one must also examine *what* was investigated and *where*.¹²⁵ Consequently, a practice that is not intrusive in an airport may be intrusive when employed at a person's home.¹²⁶ The court also looked into the *degree* of sense enhancement when determining whether an advanced technology was used. In the language of the court:

With a trained dog police may obtain information about what is inside a dwelling that they could not derive from the use of their own senses. *Consequently, the officers' use of a dog is not a mere improvement of their sense of smell, as ordinary eyeglasses improve vision, but is a significant enhancement accomplished by a different, and far superior, sensory instrument.*¹²⁷

The fact that an ordinary policeman could not have picked up such scents from outside the door of a private residency thus led the court to conclude that the canine sniff invaded the defendant's expectation of privacy; because of the defendant's heightened expectation of privacy inside his dwelling, the court concluded that the canine sniff constituted a search.¹²⁸ Since the agent had procured no warrant, the search violated the Fourth Amendment.¹²⁹

124. *Id.* at 1366 (citations omitted).

125. *See id.*

126. *See id.*

127. *Id.* at 1367 (emphasis added).

128. *See id.*; Hope Walker Hall, Comment, *Sniffing Out the Fourth Amendment: United States v. Place—Dog Sniffs—Ten Years Later*, 46 ME. L. REV. 151, 173-75 (1994); Barbara Tarlow, Note, *Dog Sniff Searches and United States v. Thomas: The Second Circuit Takes a Needed Bite Out of Place*, 19 LOY. L.A. L. REV. 1097, 1102 (1986). In *United States v. Waltzer*, one judge praised the dog's reliability in detecting narcotics, calling the dog, "the able, canny canine Kane, with the perfect record—all hits and no misses." 682 F.2d 370, 374 (2d Cir. 1982) (Oakes, J., concurring). However, Kane later broke that perfect record by erroneously alerting officers to narcotics in an apartment. *See United States v. Young*, 745 F.2d 733, 756 (2d Cir. 1984).

129. *See id.* The New York Court of Appeals used a similar rationale in considering a dog sniff an "investigative technique," which constituted a search. *See New York v. Dunn*, 564 N.E.2d 1054, 1055, 1058 (N.Y. 1990). However, it nevertheless found that there was reasonable suspicion of the presence of illegal

2. *Fitzgerald v. Maryland*. The case of *Fitzgerald v. Maryland*¹³⁰ presents a strong contrast to *Thomas* on several levels, especially regarding whether a dog should be defined as a technology. In *Fitzgerald*, the Maryland Court of Appeals held that “[a]s the canine sniff doctrine does not depend upon the sniff’s location, we shall hold that a sniff of an apartment door from a common area is a permissible nonsearch under the Fourth Amendment.”¹³¹ The facts of *Fitzgerald* are as follows: in February 2002, an anonymous source informed the police that Fitzgerald and his girlfriend sold marijuana.¹³² A subsequent investigation confirmed that the couple lived in the building mentioned by the informant.¹³³ Furthermore:

[Officer] Brian then visited [Fitzgerald’s] apartment building accompanied by Alex, [a] certified drug detection dog. Brian and Alex entered the building through unlocked glass doors leading to a vestibule with a stairwell and mailboxes. Brian led Alex to scan apartment doors A, B, C, and D. Alex only “alerted” at apartment A, indicating the presence of narcotics. . . . Alex repeated the sniffs with identical outcomes. [Based on an affidavit that relied on the result of Alex’s sniffs,] the next day the District Court judge issued a search and seizure warrant for [Fitzgerald’s] apartment . . .¹³⁴

drugs in the residence to establish the constitutionality of the search. *See id.* at 1059. The court defined the canine sniff as a “supersensitive detection device,” explaining that it exposed evidence that traveled beyond the perimeters of a private space yet were not detectable to the police off-hand. *Id.* at 1058.

130. *Fitzgerald v. Maryland*, 864 A.2d 1006 (Md. 2004).

131. *Id.* at 1007.

132. *Id.* at 1008.

133. *Id.*

134. *Id.*

Soon after, the warrant was executed.¹³⁵ The police seized “substantial amounts of marijuana and other evidence of marijuana use and distribution.”¹³⁶ Fitzgerald was arrested and charged with possession of marijuana with intent to distribute.¹³⁷

The court distinguished between a dog sniff outside an apartment and the use of a thermal imaging device, defined as a search in *Kyllo*:

[I]t is clear that *Kyllo* has no bearing on dog sniffs. First, a dog is not technology—he or she is a dog. A dog is known commonly as ‘man’s best friend.’ Across America, people consider dogs as members of their family. The same cannot be said of cars, blenders, or thermal imagers.¹³⁸

In a footnote, the court cited American Bar Association standards that “proposed to prohibit the use of a ‘contraband-specific detection device’ on residences or individuals.”¹³⁹ A comment to section 2-9.2 of the standards states that “a device which could mimic the behavior of some specially trained dogs by alerting only to the presence of drugs would be ‘contraband-specific.’”¹⁴⁰ Based on this text, the court reached the conclusion that “even pre-*Kyllo*, the ABA recognized the difference between a drug detecting dog and a ‘device’ or technology.”¹⁴¹ Further, the court noted that although Justice Stevens’s dissent in *Kyllo*, joined by Rehnquist, O’Connor, and Kennedy, criticized the term “sense-enhancing technology” as overly broad, these Justices also argued that this term should nonetheless “embrace potential *mechanical substitutes* for dogs trained to react when they sniff narcotics,”¹⁴² thereby implicitly

135. *Id.*

136. *Id.*

137. *Id.*

138. *Id.* at 1015.

139. *Id.* at 1015 n.8 (citing ABA STANDARDS FOR CRIMINAL JUSTICE: ELECTRONIC SURVEILLANCE § 2-9.2 at 57 (3d ed. 1999)).

140. ABA STANDARDS FOR CRIMINAL JUSTICE: ELEC. SURVEILLANCE § 2-9.2 cmt. b (3d ed. 1999).

141. *See Fitzgerald*, 864 A.2d at 1015 n.8.

142. *Id.* at 1015 (citing *Kyllo v. United States*, 533 U.S. 27, 47 (2001) (Stevens, J., dissenting) (emphasis added)).

excluding dog sniffs. In another footnote, the court addresses Fitzgerald’s argument that since an “inanimate device performing the same function as Alex” is considered a technology, so should Alex. In the words of the court:

We do not need to determine here whether employing a device performing identical functions *and* with identical limitations to live dogs would constitute a search. Faced with a device similar in narrow scope to a dog, the *Jacobsen* Court held that its use did not constitute a search. Faced with a thermal imager with a broader scope, the *Kyllo* Court held that its use was a search. Either way, Fitzgerald ignores that *Kyllo’s* holding and rationale centered on “advancing technology.” A dog-mimicking device would be technology that could advance to become far more invasive than a dog’s sniff.¹⁴³

The court reasoned that unlike the dog, a technology that imitates its powers would have the potential to develop into something more invasive than any dog could ever be. In other words, even when they perform the same function, the two detection strategies—dog and machine—are fundamentally different in light of the latter’s “creeping potential.”¹⁴⁴ The court held, accordingly, that dogs are not an advanced technology. “Even taking into account potential gains from evolution, breeding, and improved nutrition, the limits to dogs’ future ability to smell are not far from the current limits,” the court explained,¹⁴⁵ quoting from the lower court’s decision¹⁴⁶ that stated:

We know that a canine “non-alert” may be as probative as an “alert,” as, in *Silver Blaze*, Sherlock Holmes explained the significance of “the dog that did not bark in the night.” In *The Odyssey*, Homer recounts how Ulysses’s incognito return to Ithaca, after an absence of twenty years, was almost compromised

143. *Id.* at 1015 n.9.

144. *See supra* notes 11, 26, 41. In *Kyllo*, Justice Scalia raised concern over the creeping of advancing technologies, stating that a mechanical application of the Fourth Amendment would “leave the homeowner at the mercy of advancing technology—including imaging technology that could discern all human activity in the home.” 533 U.S. at 35-36; *see also* *United States v. Jones*, 132 S. Ct. 945, 962 (2012) (Alito, J., concurring) (stating that advancements in technology can change people’s reasonable expectations and new technology may also provide “increased convenience or security at the expense of privacy”).

145. *Fitzgerald*, 864 A.2d at 1016.

146. *See id.*

when his faithful dog, Argos, alerted to the smell of his long missing master. The point is that, solidly based in both fact and fiction, the canine sense of smell is not a new or unfamiliar “technology.”¹⁴⁷

The Maryland Court of Appeals held: “Not so with technology. Technology is constantly advancing; few who have witnessed the computer revolution doubt that technology can advance in the future beyond our wildest dreams today.”¹⁴⁸

The court explained, further, that other Supreme Court precedent imply that the *Kyllo* decision is inapplicable to dog sniffs.¹⁴⁹ The court explained that *Kyllo* was decided with almost no mention of *Place*, which would not be the case if it applied.¹⁵⁰ “Were the *Kyllo* standard to apply to dog sniffs, surely the Court would have discussed its well-established *Place* precedent.”¹⁵¹ The court also noted: “Finally, *Kyllo*’s concern with the scope of thermal imagers and potential revelation of intimate private details fits neatly with *Place*’s rationale that dog sniffs are unique in their narrow ‘yes/no’ [scope].”¹⁵² The court held, accordingly, that “[a] person does not have a legitimate expectation of privacy in contraband, but does in bath water. A dog that

147. *Id.* at 1037-38.

148. *Id.* at 1016.

149. *See id.*

150. The Maryland court bolstered its argument by noting that less than seven months before *Kyllo*, both the majority opinion and Chief Justice Rehnquist’s dissent in *Edmond* neatly and without much discussion stated the application of *Place* to searches of automobiles and luggage. *See id.* at 1016. (discussing *City of Indianapolis v. Edmond*, 531 U.S. 32, 40 (2000) (citing *United States v. Place*, 462 U.S. 696, 707 (1983))); *Edmond*, 531 U.S. at 52-53 (Rehnquist, J., dissenting) (citing *Place*, 492 U.S. at 706-07).

151. *Fitzgerald*, 837 A.2d at 1016. The court stated along these lines: “it is clear that *Kyllo* has no bearing on dog sniffs.” *Id.* at 1015. This argument was also advanced by Timothy Stone in his critique of Florida’s decision in *State v. Rabb*, 920 So. 2d 1175 (Fla. Dist. Ct. App. 2006), which applied the logic of *Kyllo* to determine that the dog sniff of the defendant’s home was a warrantless search. *See Stone, supra* note 62, at 1134-35.

152. *Fitzgerald*, 864 A.2d at 1016.

can determine contraband's existence and nothing else is not a search, even when sniffing the exterior of a home."¹⁵³

D. *The "Sui Generis" Nature of Dogs*

The Maryland Court of Appeals is not alone in emphasizing what it perceived to be important distinctions between dogs and machines. Carolyn Snurkowski, Florida Associate Deputy Attorney General, stated in her petition for certiorari:

The Florida Supreme Court also overlooked the nature of the dog. A dog is a dog, not the rapidly "advancing technology" that concerned the *Kyllo* Court. . . . Chocolate Labrador Retrievers are not "sophisticated systems." Rather, they are common household pets that possess a naturally strong sense of smell. Nor are dogs a recent development. Rather, they have been part of human communities for several millennia and were used at the time of the adoption of the Fourth Amendment in 1791. The *Kyllo* Court characterized the thermal imagining device at issue as "a device that is not in general public use." Dogs, in stark contrast, are not

153. *Id.* Similarly, in *United States v. Brock*, the Seventh Circuit stated that the Second Circuit's holding in *Thomas* "has been rightly criticized" as inconsistent with the Supreme Court's precedent holding that a defendant's expectation of privacy must be one "that society is prepared to consider reasonable." 417 F.3d 692, 697 (7th Cir. 2005) (citing *United States v. Jacobsen*, 466 U.S. 109, 113 (1984)). In *Brock*, police were legally present inside an apartment when a canine sniff alerted to the presence of narcotics behind a locked bedroom door. *Id.* at 693-94. The police then obtained a search warrant for the residence, listing the canine sniff as one of the elements leading to probable cause. *Id.* The court held "that the dog sniff inside Brock's residence was not a Fourth Amendment search because it detected only the presence of contraband and did not provide any information about lawful activity over which Brock had a legitimate expectation of privacy." *Id.* at 696. Along these lines, in a case involving a dog sniff of a vehicle's exterior without any suspicion, the Eighth Circuit held that "when a police officer makes a traffic stop and has at his immediate disposal the canine resources to employ this uniquely limited investigative procedure, it does not violate the Fourth Amendment to require that the offending motorist's detention be momentarily extended for a canine sniff of the vehicle's exterior." *United States v. Alexander*, 448 F.3d 1014, 1016-17 (8th Cir. 2006) (internal quotation marks omitted) (quoting *United States v. \$404,905.00 in U.S. Currency*, 182 F.3d 643, 649 (8th Cir.1999)); see also *United States v. Rodriguez-Morales*, 929 F.2d 780, 788 (1st Cir. 1991) ("[S]ubjecting the exterior of such a motor vehicle to the olfactory genius of a drug detection dog does not infringe upon the vehicle owner's fourth amendment rights.").

a device and are quite common. Nor was there a “vigorous search effort” at the front door; all Franky really did was breath[e].¹⁵⁴

Dogs, according to the Florida petition, are biological entities, not technologies; they are also not sophisticated, nor are they “new.” Based on this logic, dogs cannot be defined as advancing technologies. All they really do is breathe, something that only living organisms—not machines—can do.

The argument about the distinct nature of dogs and their sniffs was also implied in the founding Supreme Court decision concerning dog sniffs, *United States v. Place*:

[T]he canine sniff is *sui generis*. We are aware of no other investigative procedure that is so limited both in the manner in which the information is obtained and in the content of the information revealed by the procedure. Therefore, we conclude that the particular course of investigation that the agents intended to pursue here—exposure of respondent’s luggage, which was located in a public place, to a trained canine—did not constitute a “search” within the meaning of the Fourth Amendment.¹⁵⁵

The Court’s *sui generis* label, I argue here, is applied to the drug detection dog not only because of the limited nature of its sniff, as the Court’s rationale overtly states, but also because of the nature of the dog itself, as implied by the Court. The Court, in other words, took a more lenient approach toward a sniff performed by a biological organism rather than by a mechanical device.

The *Place* logic was, however, lost on the Justices in *Jacobsen*, as demonstrated by the catastrophic predictions sketched out in this case by dissenting Justices Marshall and Brennan:

[U]nder the Court’s analysis in these cases, law enforcement officers could release a trained cocaine-sensitive dog— . . . a “canine cocaine connoisseur”—to roam the streets at random, alerting the officers to people carrying cocaine. Or, if a device were developed that, when aimed at a person, would detect instantaneously whether the person is carrying cocaine, there would be no Fourth Amendment bar, under the Court’s approach,

154. Petition for Writ of Certiorari at 23, *Florida v. Jardines*, 132 S. Ct. 995 (2012) (No. 11-564).

155. *Place*, 462 U.S. at 707 (1983).

to the police setting up such a device on a street corner and scanning all passersby. In fact, the Court's analysis is so unbounded that if a device were developed that could detect, from the outside of a building, the presence of cocaine inside, there would be no constitutional obstacle to the police cruising through a residential neighborhood and using the device to identify all homes in which the drug is present. In short, under the interpretation of the Fourth Amendment first suggested in *Place* and first applied in this case, these surveillance techniques would not constitute searches and therefore could be freely pursued whenever and wherever law enforcement officers desire. Hence, at some point in the future, if the Court stands by the theory it has adopted today, search warrants, probable cause, and even "reasonable suspicion" may very well become notions of the past.¹⁵⁶

Whereas all but one of these predictions involved the use of machines, the first prediction—of dogs sniffing persons on streets (and perhaps in their homes, too)—is quite feasible. In fact, this prediction has already been fulfilled, at least on the streets of New York City.¹⁵⁷ The reason for this reality, I claim here, is precisely that dogs have been treated by the courts as *sui generis* and thus as subject to less judicial scrutiny.¹⁵⁸ Under my hypothesis, what has been underlying the courts' *sui generis* approach is the perceived unconstructed, "first nature" of dogs,¹⁵⁹ which exists in stark contrast to manmade, nonorganic machines. By this logic, the Supreme Court has mistakenly distinguished dogs from technology, whereas it should have granted similar protections from both.

156. *United States v. Jacobsen*, 466 U.S. 109, 138 (1984) (Brennan, J., dissenting).

157. *See supra* note 1 and accompanying text.

158. *See, e.g.*, *United States v. Brock*, 417 F.3d 692, 696 (7th Cir. 2005) ("[T]he majority of our sister circuits . . . have held that canine sniffs used only to detect the presence of contraband are not Fourth Amendment searches.").

159. "First nature" is defined as a primary, pristine, and abundant external nature that remains untouched by human activity; in contrast, "second nature" can be defined as forms of nature that have been transformed by human activity. *See* NEIL SMITH, *UNEVEN DEVELOPMENT: NATURE, CAPITAL, AND THE PRODUCTION OF SPACE* 19 (1984); *see also* Noel Castree, *Socializing Theory: Theory, Practice and Politics*, in *SOCIAL NATURE: THEORY, PRACTICE AND POLITICS* 6-7 (Noel Castree & Bruce Braun eds., 2001); DAVID PEPPER, *ECO-SOCIALISM: FROM DEEP ECOLOGY TO SOCIAL JUSTICE* 108 (1993).

E. *Guys, Binoculars, and “Smell-O-Matic” Machines*

On October 31, 2012, the Supreme Court heard oral arguments in the case of *Florida v. Jardines*.¹⁶⁰ Although it would be premature to predict how the Justices will decide in this case, their questions and remarks during the arguments—alongside those argued by the attorneys—reveal the contested identity of the police dog. Specifically, at least some of the Justices seem to subscribe to the modernist dichotomy between nature and technology, which I believe will subsequently inform their practical decision about whether or not to define Franky’s sniff as a search.

Although at first glance the oral arguments seem to be tackling numerous questions and going in myriad directions, they can arguably be distilled into three distinct approaches that revolve around the police dog’s status. On one end of the spectrum is the approach that the dog is not a technology; that for sniffing purposes, it is no different than a “guy.”¹⁶¹ On the other end of the spectrum is the approach that a dog is an advancing technology—a “smell-o-matic” machine, similar to the infrared device used in *Kyllo*.¹⁶² Somewhere between these two extremes is the approach that configures the dog as a low-level technology, akin to binoculars or telescopes.¹⁶³ All three approaches rely, to some degree or another, on the assumption challenged by this Article: that nature and technology are clearly distinct and independent categories. I will now proceed to explore these three approaches in some detail.

The first approach was argued repeatedly in the oral arguments by the petitioner and seemingly supported by some of the Justices:

MR. GARRE: . . . Franky’s nose is not technology. It’s—he’s using—he’s availing himself of God-given senses in the way that dogs have helped mankind for centuries.

JUSTICE KAGAN: So does that mean that if we invented some kind of little machine called a, you know, smell-o-matic and the police officer had this smell-o-matic machine, and it alerted to

160. Transcript of Oral Argument, *Jardines*, *supra* note 67, at 1.

161. *Id.* at 17, 19.

162. *Id.* at 16-17

163. *Id.* at 6.

the exact same things that a dog alerts to . . . , the police officer could not come to the front door and use that machine?

MR. GARRE: It would be different in that you don't have technology in this case. And I think that's an important distinction because, as we read *Kyllo*, the Court was very concerned about advances in technology, and that's just not true for a dog's nose.

JUSTICE KAGAN: So your basic distinction is the difference between like a machine and Franky.

. . . .

That we should not understand Franky as kind of a sense-enhancing law enforcement technology, but we should think of him as just like a guy.

MR. GARRE: Your Honor, I think that's true for two reasons. One is Franky is using the same sense of smell that dogs have used for centuries. So this isn't a case where if you allow a dog to sniff today, he might use x-ray vision in the future.

And the other thing is that Franky—that the use of dogs for their sense of smell, which everyone agrees is extraordinary, mankind has been using them for centuries.¹⁶⁴

Under the first approach, then, the use of dogs by the police is no different from their use by a friendly neighbor.¹⁶⁵ And just as the police should not be expected to shield their eyes from what is in plain view, they should also not be expected to shield their nose from sniffing what is in plain smell.¹⁶⁶ The dog is portrayed here as a natural extension of the human police officer—as a “guy,” in Justices Kagan's and Sotomayor's succinct phrase.¹⁶⁷ The petitioner highlights this interchangeability between dog and officer when arguing that, “there is no invasion in their . . . expectation of privacy when *either a man or a dog*, when lawfully present on the property, uses their God-given

164. *Id.* at 16-18.

165. *Id.* at 41.

166. *Id.* at 45; see Susan F. Mandiberg, *Marijuana Prohibition and the Shrinking of the Fourth Amendment*, 43 MCGEORGE L. REV. 23, 39-43 (2012) (noting cases about plain smell).

167. Transcript of Oral Argument, *Jardines*, *supra* note 67, at 17, 19.

senses to detect [drugs].”¹⁶⁸ This argument assumes that the dog’s nose as a God-given sense—as natural and ahistorical, as opposed to artificial or manmade—cannot logically coexist with the dog’s definition as a technology. Justice Alito seemed to be in agreement with this construction of the dog when he questioned the respondent:

I thought the relevance of technology was that the technology that we have now . . . much of it was not available at the time when the Fourth Amendment was adopted, so we can’t tell what . . . people in 1791 would have thought about it.

But that’s not true of dogs. Dogs were around. They have been around for 10,000 years . . . and they’ve been used to detect scents for 10,000—for thousands of years. Certainly, they were available for that purpose in 1791, weren’t they?¹⁶⁹

On the opposite end of the spectrum is the approach articulated by the respondent. According to this approach, K-9s are advancing technologies and, as such, their sniffs of protected spaces should be defined as searches that require probable cause, even when performed from the sidewalk. This approach is evident from the following excerpt from the oral arguments:

JUSTICE KAGAN: . . . [Y]ou do concede if the police officer walks up to the door, smells it himself, no problem there; is that right?

. . . .

168. *Id.* at 20 (emphasis added). In *Florida v. Harris*, Florida argued similarly, albeit in a different context, that: “Dogs, like humans, become old and impaired over time.” Transcript of Oral Argument at 14, *Florida v. Harris*, 132 S. Ct. 1796 (2012) (No. 11-817) [hereinafter “Transcript of Oral Argument, *Harris*”].

169. Transcript of Oral Argument, *Jardines*, *supra* note 67, at 47. The Court elicited that there is an apparent paucity of cases on point:

JUSTICE ALITO: If a dog on a leash is brought up to the front door of a person’s house, was that a trespass at the time when the Fourth Amendment was adopted?

MR. BLUMBERG: If it was without the consent of the homeowner, yes, it was a trespass.

JUSTICE ALITO: What is the case that says that?

MR. BLUMBERG: I do not have a case.

Id. at 38.

So the difference is the dog. So what difference does the dog make?

....

And, you know, to make it even more, the dog is not a scary-looking dog, the dog is a Cockapoo.

So just like, you know, your neighbor with his Cockapoo walks up to your door all the time, that's what this police officer has done. Why do you win that?

MR. BLUMBERG: Well, whether it's a Cockapoo or Franky, who, from all the pictures, appears to be a very cute dog, it's not what the dog looks like, it's what the dog is doing on the front porch, which is—

JUSTICE KAGAN: The dog does what your neighbor's dog does.

MR. BLUMBERG: Well, no, this dog—the neighbor's dog does not search for evidence on your front porch. That's the key distinction.¹⁷⁰

Justice Ginsburg summarized the second approach later in the arguments when she reflected back at the respondent: “I thought you were talking about a dog trained to detect contraband . . . not just any old dog.”¹⁷¹

Finally, the third, middle ground, approach—articulated most explicitly by Justice Scalia—seems to be the least contingent on the status of the dog, and the most contingent upon the particular location of the sniff. This approach treats the sniff as analogous to simple sense-enhancing devices such as binoculars. Accordingly, if the dog sniff is used from a legitimate standpoint—a public

170. Transcript of Oral Argument, *Jardines*, *supra* note 67, at 40-41. The oral arguments mentioned the use of dogs as advanced technology:

CHIEF JUSTICE ROBERTS: If the police go by with their dog intending to sniff, and the dog alerts, on the sidewalk but two feet away is the front door, that's okay, right?

....

MR. BLUMBERG: No, it's not okay, respectfully, because the dog would still be revealing details inside the home that the officer could not reveal using his or her ordinary senses.

Id. at 45; see *Kyllo v. United States*, 533 U.S. 27, 35-36 (2001).

171. Transcript of Oral Argument, *Jardines*, *supra* note 67, at 55.

street, for example—the sniff does not invade reasonable expectations of privacy. However, when performed at the curtilage of the home, the dog sniff transforms into a search. In Justice Scalia’s words:

And there’s such a thing as what is called the curtilage of a house. As I understand the law, the police are entitled to use binoculars to look into the house if—if the residents leave the blinds open, right?

....

But if they can’t see clearly enough from a distance, they’re not entitled to go onto the curtilage of the house, inside the gate, and use the binoculars from that vantage point, are they?

....

[So] why isn’t it the same thing with the dog? This dog was brought right up—right up to the—to the door of the house.¹⁷²

In another hypothetical, Justice Scalia replaced the binoculars with a different low-level technology: the telescope. He suggested:

Suppose you—you have someone who, who has been guilty of a crime. He has—he has the body. He has committed a murder and he has the body in the home. He certainly wants to keep that private, right? And he foolishly and mistakenly leaves the blinds open in the room where—where the corpse is lying, and the policeman at a great distance has a telescope and he looks through the blinds and he sees the corpse. Can the police go into the home?¹⁷³

Finally, Justice Scalia clarified: “It isn’t just the sniffing in the abstract. It’s the sniffing at this point, the sniffing at a person’s front door.”¹⁷⁴ Justice Scalia explained that he

172. *Id.* at 6.

173. *Id.* at 33.

174. *Id.* at 15. Justice Breyer approaches the problem similarly:

I’ve been trying to figure out just what you say, but in a slightly different form. Do people come up to the door with dogs? Yes. Do the dogs breathe? Yes.

Do in fact policemen, like other people, come up and breathe? Yes. Do we expect it? Yes, we expect people to come up and breathe. But do we

treats the police dog's sniff no differently than he would treat any other sniff—even by a human police officer—when performed on the curtilage of a home for the purpose of conducting a search.¹⁷⁵

Although Scalia's approach ostensibly moves away from the status of the dog to the status of place and property, it is nonetheless contingent on the assumption that the dog is akin to binoculars, not to infrared machines. All of this is for a reason: in *Kyllo*, Scalia wrote the majority opinion that found the use of advancing technology as constituting a search, even when conducted from "open fields."¹⁷⁶ Here, however, Scalia clearly posited that a K-9 sniff may be performed from the sidewalk, similar to the use of binoculars. It is the dog sniff's status as a simple sense-enhancing technology—somewhere between a "guy" and a "smell-o-matic" machine—that then translates, in Scalia's statements, into a legal geography of sniffs.¹⁷⁷

F. *Reliability*

As a result of the growing concerns with the accuracy of dog alerts, when ruling on the constitutionality of sniffs, lower courts (but not the Supreme Court¹⁷⁸) are increasingly

expect them to do what happened here? And at that point, I get into the question: What happened here?

Id. at 56-57.

175. *Id.* at 44.

176. *Kyllo v. United States*, 533 U.S. 27, 34-35 (2001). "Open fields" fall outside of Fourth Amendment protection because they cannot be construed as persons, houses, papers, or effects within the constitutional meaning. See *Hester v. United States*, 265 U.S. 57, 59 (1924) (holding that "the special protection accorded by the Fourth Amendment to the people in their 'persons, houses, papers, and effects,' is not extended to the open fields," and establishing the doctrine used today for searches and seizures). Later, the Court reapplied the "open fields" doctrine to reiterate its continued authority in a case involving "no trespassing" signs. See *Oliver v. United States*, 466 U.S. 170, 179 (1984) ("[O]pen fields do not provide the setting for those intimate activities that the Amendment is intended to shelter from government interference or surveillance.").

177. Transcript of Oral Argument, *Jardines*, *supra* note 67, at 6-7.

178. Robert Bird emphasizes that the Supreme Court has never questioned an accuracy record of a particular canine, nor has it addressed the specific qualifications for a particular canine; he suggests, as a result, that "lower courts have attempted to fill the gap and determine when a canine alert may be

considering the circumstances of dog sniffs in establishing their reliability. Although these decisions are usually not framed through the bifurcated conception of dogs and machines revealed in this Article, they nonetheless point to the growing recognition that detection dogs are similar to advancing technologies, especially in demonstrating their reliability.

Specifically, in *Oregon v. Foster*¹⁷⁹ and *Oregon v. Helzer*,¹⁸⁰ Oregon's Supreme Court recently held that only an alert by "a properly trained and reliable drug-detection dog [could] be a basis for probable cause to search."¹⁸¹ The court explained that this inquiry should be based on the totality of the circumstances, including the dog's training, certification, and performance—on the one hand, and the handler's training, certification, and performance when teaming with the dog—on the other hand.¹⁸²

accepted as reliable." See Bird, *supra* note 66, at 417. But see *United States v. Dillon*, 810 F. Supp. 57, 61 (W.D.N.Y. 1992) ("[T]he canine sniffing technique 'is now sufficiently well-established to make a formal recitation of a police dog's curriculum vitae unnecessary in the context of ordinary warrant applications . . .'" (quoting *United States v. Watson*, 551 F. Supp. 1123, 1127 (D.D.C. 1982))).

179. 252 P.3d 292 (Or. 2011). In *Foster*, the defendant was pulled over for a traffic violation. *Id.* at 294. The officer called for a canine unit based on his previous observation of the defendant and the belief that he had just conducted criminal activity. *Id.* The detection dog sniffed the exterior of the vehicle and alerted at the driver's side door. *Id.* The defendant refused to consent to a search of the vehicle, but the officers proceeded and found methamphetamine residue on a pipe inside a fanny pack on the seat of the car. *Id.*

180. 252 P.3d 288 (Or. 2011).

181. See *Foster*, 252 P.3d at 294. In *Helzer*, the Oregon Supreme Court applied the totality of the circumstances test set forth in *Foster*, and concluded that the government failed to provide evidence of what factors went into the handler/canine training and failed to provide details of the canines' previous training. 252 P.3d at 289. Consequently, the court held that the government did not meet its burden and that the evidence should therefore be suppressed. *Id.* at 291-92.

182. *Foster*, 252 P.3d at 298. Furthermore, Foster argued that dogs trained to detect odors were unreliable since they may lead to an alert based on residual odors versus actual drugs. *Id.* at 298. He also contended that the "play-reward" method used to train detection dogs is unreliable because it is not widely accepted among the scientific community. *Id.* at 302. The court rejected both arguments on the premise that "[p]robable cause does not require the use of the most reliable source of information, rather than a sufficiently reliable source; neither do standards for the admissibility of evidence at trial apply to the assessment of probable cause." *Id.* The "play-reward" method is used by police to

The Supreme Court is currently considering *Florida v. Harris*, which focuses on the question of canine reliability.¹⁸³ This case concerns an exterior canine sniff of a vehicle.¹⁸⁴ Although the Florida court could have easily decided the case in light of the Supreme Court's decisions in *Place* and *Caballes*, it held instead that sufficient probable cause only exists when there is a reasonable basis for believing that the specific canine is reliable based on the totality of the circumstances.¹⁸⁵ Furthermore, the court found "that evidence that the dog had been trained and certified to detect narcotics, standing alone, is not sufficient to establish the dog's reliability for purposes of determining probable cause."¹⁸⁶ The burden of establishing the dog's reliability rests upon the prosecution, which must present evidence relating to: "the dog's training and certification records, an explanation of the meaning of the particular training and certification,"¹⁸⁷ field performance and records of the canine's alerts, the field officer's training and handling of the dog, and "any other evidence known to the officer about the dog's reliability."¹⁸⁸

In the oral arguments in *Florida v. Harris*, Florida argued that the Supreme Court should prescribe a narrow test for determining a K-9's reliability:

train detection dogs throughout the United States. *See id.* at 295. It involves pairing and training canine-handler teams in the following manner: the handler takes a play toy, such as a tennis ball, and submerges it in a drug (heroin, cocaine, meth, or marijuana); the dog is familiarized with the odor by playing with the tennis ball; the trainer then hides the tennis ball and the dog must find it through sniffing its odor; after this, the handler hides a drug rather than the submerged ball and the dog sniffs out the drug; as a reward, the dog is permitted to play with his or her favorite toy. *Id.*

183. 132 S. Ct. 1796 (2012) (No. 11-817). The oral arguments in *Harris* followed immediately after those in *Jardines*, on October 31, 2012. As I argue in this Part, in many ways these two cases are quite interrelated.

184. *See Harris v. Florida*, 71 So. 3d 756, 760, 762 (Fla. 2011), *cert. granted*, 132 S. Ct. 1796 (2012).

185. In the language of the court: "Because a dog cannot be cross-examined like a police officer," it is the state's burden to show "that the officer had a reasonable basis for believing the dog to be reliable" before conducting the search. *Id.* at 758, 759.

186. *Id.* at 759.

187. *Id.* at 775.

188. *Id.*

MR. GARRE: Well, Your Honor, in our view, we don't think it's – it's an appropriate role for the Court to delve into the contours of the training, what specific methods were used to train or distract or—you know, all the contours that [the respondents] bring up in their brief.

JUSTICE SOTOMAYOR: So what does a judge do, just say, the police department says this is adequate, so I have to accept it's adequate.

MR. GARRE: [Y]ou would have to accept it, Your Honor, on its face.¹⁸⁹

This approach seems to have won strong support from some of the Justices. Here, for example, is an excerpt from the exchange between Justice Scalia and the respondent:

JUSTICE SCALIA: What—what—what are the—what are the incentives here? Why would a police department want to use an incompetent dog? Is that any more likely than that a medical school would want to certify an incompetent doctor? What—what incentive is there for a police department?

MR. GIFFORD: The incentive is to acquire probable cause to search when it wouldn't otherwise—otherwise be available. . . .

JUSTICE SCALIA: Willy-nilly. . . . So let's get dogs that, you know, smell drugs when there are no drugs. You really think that that's what's going on here?

189. Transcript of Oral Argument, *Harris*, *supra* note 168, at 8. Palmore, supporting the petitioner, explains:

I think it's critical, as Mr. Garre pointed out, that the courts not constitutionalize dog training methodologies or hold mini trials with expert witnesses on what makes for a successful dog training program. Because, as Mr. Garre said, the Government has critical interests, life and death interests, that it stakes on the reliability of these dogs.

So the U.S. Marshals use dogs to protect Federal judges. The Federal Protective Services use dogs to keep bombs out of Federal buildings. The TSA uses dogs to keep bombs off of airplanes. FEMA uses dogs to find survivors after hurricanes.

There are 32 K-9 teams in the field right now in New York and New Jersey looking for survivors of Hurricane Sandy.

So, in situation after situation, the government has in a sense put its money where its mouth is, and it believes at an institutional level that these dogs are quite reliable.

Id. at 26.

MR. GIFFORD: Officers like to search so that they can get probable cause so that they can advance their career. Forfeiture is also an issue.

JUSTICE SCALIA: They like to search where they're likely to find something, and that only exists when the dog is well trained. It seems to me they have every incentive to train the dog well.¹⁹⁰

The first half of this Article provided an extensive review of the Supreme Court's still implicit and the lower courts' explicit assumptions about the nature-culture schism and its centrality in the context of drug detection dogs. In the remainder of this Article, I will draw on the sociology of science literature to offer an alternative conceptual framework for evaluating the K-9 in the context of Fourth Amendment searches and seizures.

III. BIOTECHNOLOGY

A. *Technology and Biology*

Courts' distinction between dogs and technologies is grounded in common assumptions that juxtapose nature and humanly constructed artifacts—or nature and culture.¹⁹¹ Such assumptions, I claim in this Article, are incorrect, unsustainable, and can have devastating effects when applied in the legal arena—namely the removal of constitutional protections from an invasive investigation merely because the dog is deemed “nature” rather than “machine.” Two interrelated assumptions underlie the nature/technology binary construed by the courts. First is the assumption that only humanly constructed things can be classified as technology; because humans do not manufacture dogs, the latter cannot be defined as a technology. The second assumption is that the distinction between dogs and machines rests on the deeper and more fundamental distinction between organic and dead matter.

190. *Id.* at 34-35.

191. Many scholars have written critically about the nature-culture divide. See, e.g., BRUNO LATOUR, *POLITICS OF NATURE: HOW TO BRING THE SCIENCES INTO DEMOCRACY* 49 (2004); KATE SOPER, *WHAT IS NATURE: CULTURE, POLITICS AND THE NON-HUMAN* 8-9 (1995); RAYMOND WILLIAMS, *THE COUNTRY AND THE CITY* 79 (1975). For a summary of such critiques, see IRUS BRAVERMAN, *ZOOLAND: THE INSTITUTION OF CAPTIVITY* 29-50 (2012).

The following Parts address both assumptions and present my argument that K-9 sniffs should be understood by courts as an advancing technology and scrutinized as such. In a significant departure from the dominant “*either/or*” approach articulated earlier, I will draw on science and technology studies (STS) scholarship to demonstrate that human relationships with seemingly natural animals are actually much more complex and reflective of human agency than one might think from reading judicial opinions. In line with this approach is my argument that police dogs are “biotechnologies.”

The remainder of this Article can be distilled into two arguments. First is my argument that today’s drug-sniffing dogs are very much “manufactured”: dogs are selectively bred for war and law enforcement, they are used for medical research, and, finally, they increasingly operate alongside nonorganic technologies (video cameras, for example) to perform highly specialized functions. Given this specialization, the law enforcement dog sniff is unlikely to be in “general public use.” Second is my argument that despite the dog’s actual function as a technology, it is also very much alive and organic. These properties of the dog may serve to explain why courts have treated it (or her/him) very much as a living, almost human, entity—and as the opposite of “dead” technology. Accordingly, I will show how police treat K-9s as family members, how special rights are given to police dogs akin to rights for human officers, and how these dogs are deemed mystically infallible in their detection skills. The term “biotechnology” holds together these two coexisting dimensions of the police dog.

B. *Biotechnology in STS Scholarship*

Biotechnology is commonly defined as an industry of applied biology that involves the use of living organisms and bioprocesses in engineering, medicine, and other fields.¹⁹² Here, however, I would like to adopt the somewhat different and more specific STS definition of biotechnology as “biological artifacts shaped by humans to serve human

205. *Biotechnology Definition*, OXFORD ENGLISH DICTIONARY ONLINE, <http://www.oed.com./view/Entry/19255> (last visited Nov. 15, 2012).

ends”¹⁹³ and as a “coproduction of natures and cultures and the interpenetration of bodies and technologies.”¹⁹⁴ The term “coproduction” is key here.¹⁹⁵ This term’s use by STS scholars indicates a move from technological determinism and social constructivism to a more systemic understanding of how technology and society coproduce each other—namely, how two or more variables in a system affect, and essentially create, each other.¹⁹⁶ Another key component in the above definition of biotechnology is the interplay between natures and cultures, what Donna Haraway refers to as “naturecultures.”¹⁹⁷

Edmund Russell explores the ways in which humans have shaped evolution through changing both themselves and other species.¹⁹⁸ In his book *The Garden in the Machine: Toward an Evolutionary History of Technology*, Russell inverts Leo Marx’s argument in his book, *The Machine in the Garden*, which exemplifies how technology has been perceived as an intrusion, especially in nineteenth century American literature.¹⁹⁹ Russell frames the history of modern

193. Edmund Russell, *Introduction: The Garden in the Machine: Toward an Evolutionary History of Technology*, in *INDUSTRIALIZING ORGANISMS: INTRODUCING EVOLUTIONARY HISTORY 1* (Susan R. Schrepfer & Philip Scranton eds., 2004).

194. DONNA HARAWAY, *WHEN SPECIES MEET* 56 (2008) [hereinafter HARAWAY 2008].

195. *See id.*

196. Jasanoff, *supra* note 14, at 2-3; *see also* Harbers, *supra* note 14, at 11.

197. According to Donna Haraway, “naturecultures” refers to the failure of the boundaries between nature and culture and the way culture is always already implicated in any conception of nature, rendering the nature/culture binary irrelevant and incorrect. *See* HARAWAY 2008, *supra* note 194, at 6, 11. “Naturecultures” does not necessarily mean that “nature” does not exist, but that it has never existed *apart from culture*. *See id.* By referring to this term in the plural, Haraway indicates that “naturecultures” are the spaces where these boundaries are transgressed, while at the same time calling attention to the demand for specificity. *See id.* Hence, “natureculture” is not a monolithic structure, but rather one instance of a plurality of “naturecultures.” *See id.*; *id.* at 56; DONNA J. HARAWAY, *SIMIANS, CYBORGS, AND WOMEN* 8 (1991).

198. *See* Russell, *supra* note 193, at 1.

199. *See id.*; LEO MARX, *THE MACHINE IN THE GARDEN: TECHNOLOGY AND THE PASTORAL IDEAL IN AMERICA* 343 (35th Anniversary ed., 2000). Marx’s analysis focuses on the contrasting images of industry and nature in nineteenth century American literature. *Id.* at 3-4. He argues that cultural concerns over the decline of wilderness have led to the proliferation of the idea of what he calls

understandings of technology as growing from the assumptions that technology is entirely separate from nature:

[T]echnology replaced or modified nature, but nature was not technology. But since machines are always made from metal, wood, rubber, and other products of nature, the assumption boils down to—put bluntly—nature having to be dead to be technology.²⁰⁰

This view of the separation of nature and technology is incorrect, he argues, because “cattle, sheep, and horses did not simply witness the intrusion of technology into nature. . . . [T]hey were biological artifacts shaped by humans to serve human ends. They were technology and, in the root meaning of the word, biotechnology.”²⁰¹

Haraway applies Russell’s understanding of biotechnology to dogs, suggesting that “dogs deliberately selected and enhanced for their working capacities, for example, as herders, are biotechnologies in a system of market farming that became contemporary capital-intensive agribusiness through a welter of nonlinear processes and assemblages.”²⁰² Although Haraway admits that Russell’s analysis attributes near-absolute agency to humans, she nonetheless finds this framework “rich for thinking about valuing dogs as biotechnologies, workers, and agents of technoscientific knowledge production in the regime of lively capital.”²⁰³ Haraway then applies this framework to experimental dogs, dogs as patients, and dogs trained by prisoners in rehabilitation projects.²⁰⁴

Still in the realm of dogs, another STS scholar describes “how dogs with inherited bleeding disorders were brought into laboratory settings in the United States . . . [and] the value of understanding what historians of biology and

“the machine in the garden,” or technology as intrusion into a pristine yet vanishing nature (the “pastoral ideal”). *Id.*; *see id.* at 265. This intrusion by the machine not only threatened to disturb American wilderness itself, but also disrupted important cultural views of life and pastoral ideals. *Id.* at 6-7.

200. Russell, *supra* note 193, at 1.

201. *Id.*

202. HARAWAY 2008, *supra* note 194, at 56.

203. *Id.*

204. *Id.* at 56-57.

biomedical science mean when they claim that laboratory organisms are products of scientific and social practice.”²⁰⁵ Through these laboratory experiments, “a new kind of organism came into being.”²⁰⁶ The experiments performed on these dogs had direct effects on developments in medical research, suggesting that laboratory dogs were a cultivated technology, organisms that “are both born and made” and, as such, demanded a moral response of care from human scientists.²⁰⁷

Dogs are not the only animals that exist in the uneasy space between living creatures and mechanized technology; it is equally important to note how other working animals entered the popular perception of biotechnologies. Ann Greene applies the notion of biotechnology to war horses as she tracks the history of the Union’s procurement and use of horses during the American Civil War.²⁰⁸ Greene argues that the current distinction between technology and horses is entirely contrary to nineteenth century conceptions of the horse’s place within industrialization.²⁰⁹ The American Civil War, Greene argues, was as much “the first industrialized war” as it was “a war of extensive animal power.”²¹⁰ The transportation of soldiers and supplies over land required significant animal work.²¹¹ Aside from wagon horses used for transportation, artillery horses to pull field guns, and horses used for cavalry mounts, horses were also crucial to the functioning of armies in the Civil War.²¹² In fact, “the Union army alone employed between 650,000 and 1,000,000 horses.”²¹³ Horses were not only “components of war technology,” they were also seen as such by their Civil War

205. Stephen Pemberton, *Canine Technologies, Model Patients: The Historical Production of Hemophiliac Dogs in American Biomedicine*, in *INDUSTRIALIZING ORGANISMS*, *supra* note 193, at 191, 191-92.

206. *Id.* at 194.

207. *Id.* at 203-05.

208. See Ann N. Greene, *War Horses: Equine Technology in the American Civil War*, in *INDUSTRIALIZING ORGANISMS*, *supra* note 193, at 143, 143-65.

209. See *id.* at 159-61.

210. *Id.* at 143 (quotation marks omitted).

211. See *id.* at 146.

212. *Id.* at 147.

213. *Id.* at 143.

contemporaries, who “frequently employed mechanical metaphors to describe and understand horses as prime movers.”²¹⁴ “Army horses were the central component in a network of relationships,” Greene writes.²¹⁵ For a very long time, horses have been considered “military instruments” and “[i]n the Civil War, as in the present, horses proved to be integral components of the most modern technological systems.”²¹⁶

Another historical study about work animals shows that people living in cities viewed horses along the same lines as mechanical trolleys.²¹⁷ Beginning with the development of the concept of “horsepower” in 1775, horses were increasingly viewed as property and their work was mechanized as such.²¹⁸ With the invention of the steam engine, consumers could “know how many horses an engine would replace in order to judge its economic value.”²¹⁹ Developments in thermodynamics and the invention of the dynamometer also increased the prevalence of animal-machine comparisons.²²⁰ The nineteenth century saw important changes in the styles of transportation—public, private, and freight—within cities, from one-horse carts to teams, and the horse-drawn omnibus and horse car.²²¹ The omnibus was pulled by four horses and operated on “fixed schedules and predetermined routes.”²²² Finally, “[w]hen owners perceived horses as obsolescent and unable to compete first with electric street cars and then with the new motor trucks and motor cars, they disappeared with astonishing rapidity except for some specialized niche

214. *Id.* at 159-60.

215. *Id.* at 160.

216. *Id.* at 161; see also Barbara Orland, *Turbo-Cows: Producing a Competitive Animal in the Nineteenth and Early Twentieth Centuries*, in *INDUSTRIALIZING ORGANISMS*, *supra* note 193, at 167, 167 (examining the development of high-yield dairy cows in nineteenth century Europe as a fruitful context for studying human-animal coproduction in a nonwar context).

217. Joel A. Tarr & Clay McShane, *The Horse as an Urban Technology*, 15 *J. URB. TECH.*, 1, 5, 14-15 (2008).

218. *Id.* at 7.

219. *Id.* at 8.

220. *Id.*

221. *Id.* at 10, 14-15.

222. *Id.* at 10.

areas.”²²³ The study points to this disappearance as the final proof of the interchangeability between horses and machines in the urban environment.²²⁴

In what follows, I will demonstrate that similar to war and urban horses and hemophilic dogs, the history of police detection dogs is rife with rich applications of the biotechnology framework. The following Parts will explore how detection dogs and humans have altered each other in the course of their shared history and, more recently, in canine breeding and human-dog training for law enforcement duties. I propose that a legal test that disregards the imbricated nature of dog-human naturecultures is not only flawed conceptually and experientially, but is also bound to crash into the cyborg realities of contemporary and future surveillance schemes.

IV. WAR AND DETECTION DOGS: A CO-EVOLUTION

This Part provides a brief historical and cultural account of the use of dogs for human ends, thereby demonstrating a few interrelated points: 1) that work dogs are historical and cultural entities infused with human meaning; 2) that although work dogs have been around for many centuries, the use of dogs as detection or surveillance devices has only surged in the past several decades; 3) that the military dog is the forefather of contemporary police dogs; 4) that the multiple detection functions of dogs have resulted in their genotypic and phenotypic differentiation into numerous subspecies; and 5) that professional studbooks and pedigrees are increasingly used to make breeding decisions that produce the “best” surveillance dog. Through their recruitment as soldiers in human wars and as family members in our homes, dogs have multiplied in unprecedented numbers.²²⁵

A. *Dogs in the Service of Human Wars*

The United States Department of Agriculture’s (USDA) National Detector Dog Manual describes the history of dog

223. *Id.* at 15.

224. *Id.* at 14-15.

225. *See* discussion *infra* Part IV.A.

work in human service in great detail.²²⁶ According to the manual, this history goes back thousands of years and is centrally bound up in warfare.²²⁷ Similar to horses, dogs were used in a multitude of roles ranging from guards to messengers, and were also used as mascots and draft animals:

[War dogs serviced] the Egyptians, Greeks, Assyrians, Persians, and the Roman Empire. Roman legions deployed entire formations of armored attack dogs against enemy armies. Attila the Hun used mastiff-type dogs and Talbot hounds . . . as warriors in his campaigns and as sentries when his troops were encamped.²²⁸

Although humans have used dogs in the service of war for centuries, it was only in the last several decades that the potential usefulness of dogs' scenting ability was recognized in the service of war and law enforcement.²²⁹ The USDA National Detector Dog Manual suggests that "[p]erhaps the most famous early scenting dog was Barry, a Saint Bernard," who lived in Switzerland in the early nineteenth century, but that dogs had been used for their ability to find people by smell in the United States Army for at least half a century before that.²³⁰ The manual explains that "Benjamin Franklin recommended the use of dogs by the U.S. Army as a means of searching for marauders who were killing colonists and burning settlements near Boston. . . . In 1835, the U.S. Army imported bloodhounds from Cuba . . . to use as mantrackers."²³¹

These efforts, however, do not necessarily qualify as organized. The first organized effort took place in Nazi Germany, where the army "used tracker dogs to silently follow [the] tracks of the British Special Air Services (SAS) officers who parachuted into Germany to collect intelligence

226. U.S. DEP'T AGRIC., NATIONAL DETECTOR DOG MANUAL, app. C at C-1-1 (2004), *available* *at* http://www.aphis.usda.gov/import_export/plants/manuals/ports/downloads/detector_dog.pdf [hereinafter USDA Manual].

227. *See id.*

228. *Id.*

229. *See id.* at C-1-1 to C-1-2.

230. *Id.*

231. *Id.* at C-1-2.

prior to WWII.”²³² These dogs were both trackers and attack dogs and were so effective that the British Army quickly adopted this method, developing the “Recce Patrols” that used “human scouts and tracker dogs to locate the Japanese who were hiding on islands in the Pacific theatre.”²³³

B. *Dogs in the Service of the War on Drugs*

In the United Kingdom, law enforcement began training dogs to detect illegal substances as early as the 1950s.²³⁴ But it was not until 1968 that the United States Department of Defense launched an official Military Working Dog Program in San Antonio, Texas, at Lackland Air Force Base.²³⁵ Concurrently, the United States Customs Service initiated “an experimental narcotic detector dog training program,” after carefully studying the capabilities of dogs to detect illegal substances.²³⁶ This program focused on “training dogs to detect and respond to marijuana and hashish,” but quickly “expanded the targeted drugs to include cocaine and heroin.”²³⁷ Also of note is the fact “the Customs dogs gave the first example of versatility of dogs in learning to discriminate several target odors.”²³⁸ Prior to the training of these dogs, it was thought unlikely that a dog could learn to distinguish between four distinct odors.²³⁹ Around the same time, in response to the growing troubles in Northern Ireland, the British Royal Army Veterinary Corps began training its dogs in explosives detection work.²⁴⁰ In 1973, the United States added explosives detection to their dog training programs.²⁴¹

By this point, most governments had incorporated detector dogs into their armies and law enforcement

232. *Id.*

233. *Id.*

234. USDA Manual, *supra* note 226, at C-1-2.

235. *Id.*

236. *See id.* at C-1-3.

237. *See id.*

238. *Id.*

239. *Id.*

240. *Id.*

241. *Id.*

agencies.²⁴² The current use of these dogs in law enforcement and elsewhere covers a range of diverse functions and interests that reflect the dog's flexibility. As stated in the USDA National Detector Dog Manual:

[T]hey assist local, state and federal agencies in locating evidence, intercepting contraband and smuggled items, help police officers find criminals, lost children and the bodies of victims, are members of search-and-rescue teams, seek out land mines, search for live victims of earthquakes and other disasters, find evidence in arson investigations, detect explosive devices, poached abalone, and can even detect malignant skin growths.²⁴³

Some criminal procedure scholars believe that “[d]uring the past twenty years, the United States has been fighting one of the most difficult wars in its history: the war on drugs. The narcotics detection dog has been a stalwart ally in that conflict, detecting illegal narcotics on countless occasions.”²⁴⁴ In the context of the war on drugs:

[S]tate and federal officials use drug detection dogs during [routine] investigations. For example, in Texas, the Department of Public Safety deploys more than twenty dog-handler teams, [which] routinely perform more than 1000 sniff tests annually. Arizona's Department of Public Safety likewise deploys more than 25 canine teams. And in 2010, the Virginia State Police Department's 18 narcotic teams led to 118 arrests and 127 drug seizures.²⁴⁵

The emergence of detection dogs in American policing is reflected in the elevated legal status of these dogs within the police force. “In many jurisdictions, the intentional injuring or killing of a police dog is defined as a felony, subjecting the perpetrator to harsher penalties than animal cruelty laws.”²⁴⁶ Additionally, “[s]ome law-enforcement

242. *See, e.g., id.* (discussing Mexico's use of dogs in agricultural detection).

243. *Id.* at C-1-6.

244. *See Bird, supra* note 66, at 405.

245. Brief for Texas et al. as Amici Curiae supporting Petitioner, *supra* note 25, at 2-3 (citations omitted).

246. *Police Dog*, WIKIPEDIA, http://en.wikipedia.org/wiki/Police_dog (last visited Nov. 27, 2012). For a comprehensive list of state statutes from California, Indiana, Iowa, Massachusetts, New Jersey, Ohio, Oregon, Texas (pending legislation), and Utah, see *Statutes Protecting Police Dogs*, EDEN CONSULTING GROUP, <http://www.policek9.com/html/statutes.html> (last visited

organizations outfit dogs with ballistic vests and some make the dogs sworn officers, [supplying] them with . . . police badges and IDs.”²⁴⁷ In certain cases, “the police chief administers the human oath of office to the dog, and the handler affirms on the dog’s behalf.”²⁴⁸ In other cases, “the dog is trained to bark in affirmation of the oath.”²⁴⁹ Finally, “[w]hen the ceremony is complete, the dog is presented with a badge to wear on its collar.”²⁵⁰ Furthermore, anyone who kills a federal law enforcement animal faces fines and up to ten years in prison.²⁵¹ Similar laws protect K-9s from malicious injury in every state except South Dakota,²⁵² and various statutes apply to “every canine cop.”²⁵³ Finally, “a police dog killed in the line of duty [may be] given a full police funeral.”²⁵⁴

This historical review of the use of detection dogs for human ends makes abundantly clear that “[h]uman life ways changed significantly in association with dogs. Flexibility and opportunism are the name of the game for both species, who shape each other throughout the still

May 31, 2012); *see also* *Animal Cruelty Laws State by State*, STRAY PET ADVOCACY (2003), <http://www.straypetadvocacy.org/PDF/AnimalCrueltyLaws.pdf>.

247. *Police Dog*, *supra* note 246; *see, e.g.*, VEST ‘N P.D.P., <http://vestnmdp.com/index.html> (last visited Jan. 10, 2013) (explaining that it is a non-profit organization dedicated to providing bulletproof and stabproof vests to police dogs). Such organizations recognize that “[t]hese courageous animals risk their lives every day helping to keep our communities safe,” and invite the public to learn how to participate in “providing the protection K-9 law enforcement officers need and deserve.” *Id.*

248. *See* Brian Palmer, *So Help You, Dog: How Does a Canine Cop Become a “Sworn Officer?”*, SLATE (Jul. 18, 2008, 1:53 PM), http://www.slate.com/articles/news_and_politics/explainer/2008/07/so_help_you_dog.html. One version of an oath is: “I am forever your friend. I will serve and protect you with all my might, and be loyal to the very end.” Officer card, Valparaiso Police Dept., Ind. (on file with author).

249. Palmer, *supra* note 248.

250. *Id.*

257. *Id.*

252. *See id.* at 257; *Animal Cruelty Laws*, *supra* note 246.

253. Palmer, *supra* note 248.

254. *Police Dog*, *supra* note 246; *see, e.g.*, Tonia Moxley, *Police Dog Given an Officer’s Funeral*, ROANOKE TIMES (Dec. 16, 2008), *available at* <http://www.roanoke.com/news/nrv/wb/187837>.

ongoing story of co-evolution.”²⁵⁵ More concisely even, this review demonstrates how, “Man took the (free) wolf and made the (servant) dog and made civilization possible.”²⁵⁶

V. MANUFACTURING A SUPER DOG

Dogs are closer to humans than any other animal in that they “share common interior sentiment [that is] evident in the differences they each manifest within their own species.”²⁵⁷ Indeed, “no animal other than dogs, with the possible exception of apes, comes as close to people in affective terms, nor does any make a stronger claim to be treated as human. . . . [Dogs] occupy a singular space between human culture and the rest of the animal world.”²⁵⁸ Domesticated dogs are nominally the same species as their wilder cousins, wolves.²⁵⁹ However, the relationship between humans and their dogs is far different than that between humans and wolves. As this Part will show, unlike wolves, dogs are often seen as integral components of the human household or as fellow workers.

Importantly, this Part will also demonstrate that although the public’s (and courts’) comfort and familiarity with dogs have clouded the perception of the animals as advancing technology, in fact, “genetics-based breeding programs with the intended goal of enhancing drug-detection dog capabilities are in place.”²⁶⁰ For example, continued breeding of dogs with jackals to create “super sniffer dogs” shows substantial technological advancement in the realm of dog production for the use of detection.²⁶¹ Cloning, scientific breeding, and innovative training tactics

255. HARAWAY 2008, *supra* note 194, at 29.

256. *Id.* at 28.

257. Martin Wallen, *Foxhounds, Curs, and the Dawn of Breeding: The Discourse of Modern Human-Canine Relations*, 79 CULTURAL CRITIQUE 125, 133 (2011).

258. Aaron Skabelund, *Breeding Racism: The Imperial Battlefields of the “German” Shepherd Dog*, 16 SOC’Y & ANIMALS 354, 357 (2008).

259. *Bringing Wolves Home*, NOVA (Nov. 11, 1997), <http://www.pbs.org/wgbh/nova/nature/wolves-yellowstone.html>.

260. Lunney, *supra* note 37, at 829.

261. *Id.* at 895 n.312.

demonstrate that dogs are not a static area of technology.²⁶² The material history of dog breeding highlights a focus on improvement and advancement that belies the popular perception of dogs as simply “Man’s best friend.” The following two subparts frame these arguments through the history of dog breeding and its relevance to police dogs in the United States.

A. *The History of Scientific Breeding*

Although dogs have been working with humans in various capacities for much of human history, it was not until the introduction of studbooks for the English foxhound and then the greyhound in the early nineteenth century that dogs were intentionally bred following a scientific method.²⁶³ Most other breeds had to wait until the publication of the *Kennel Club Stud Book* in 1874 for their pedigrees to be fully instituted.²⁶⁴ Consequently, most dog breeds did not exist as they appear now until after the Napoleonic wars.²⁶⁵ Canine typologies were developed decades prior to that, however, as part of the larger movement towards a discourse of “improvement” that was typical of the Agricultural Revolution.²⁶⁶ “As the privileged traits were isolated and distilled . . . they incurred demands that their purity be preserved,” scholar Martin Wallen writes.²⁶⁷ This perceived purity was based on a set of established criteria that determined coloring, shape, size, and ideal behavior.²⁶⁸ Dogs that followed these criteria “were imagined as possessing purity of blood. The ability to mold the bodies of animals through strict control over

262. *See id.* at 897.

263. *See* Wallen, *supra* note 257, at 127. It is not entirely clear what Wallen means by this. Competing accounts suggest that the English foxhound was originally bred in the 16th century, as a hunting dog for the court of Henry VIII. *See, e.g., English Foxhound*, K9WIRE.COM, <http://www.k9wire.com/Dog-Breeds/english-foxhound.aspx> (last visited Nov. 26, 2012).

264. HARRIET RITVO, *THE ANIMAL ESTATE: THE ENGLISH AND OTHER CREATURES IN THE VICTORIAN AGE* 96 (1987).

265. Wallen, *supra* note 257, at 128.

266. *Id.* at 129.

267. *Id.*

268. *Id.* at 132.

reproduction, the elimination of certain offspring, and the recording of bloodlines in pedigrees bolstered these illusions.²⁶⁹ The dog's traits were recorded in breed taxonomies, which provided the knowledge that any individual dog will most likely "act within a limited range of possibilities," determined by information provided by the dog's pedigree history.²⁷⁰

More so than for any other individual species, selective breeding of the domestic dog has resulted in astounding morphological diversity.²⁷¹ Such selective breeding initially followed function, but the institution of dog shows and their ensuing popularity made the aesthetic perspective paramount.²⁷² Along with the focus on aesthetics came myriad problems for both dogs and their breeders. For instance, there are now over 350 known diseases and conditions that plague pedigree dogs.²⁷³

B. *Breeding Police Dogs*

Writing about the German Shepherd dog and its breed history, one scholar depicted how the breed moved from a "valuable assistant of humans as a herder of sheep and other livestock" to "an agent of social control."²⁷⁴ The same scholar also argued:

[T]he Shepherd Dog probably has been the most widely represented [dog breed] in national and colonial armies. . . . [T]he breed so dominated canine law enforcement ranks in the United States that it came to be referred to as simply the "Police Dog" . . . [and] they are also often imagined as the stereotypical guard dog.²⁷⁵

Indeed, the German Shepherd is the most commonly used breed in law enforcement and in militaries around the

269. Skabelund, *supra* note 258, at 355.

270. Wallen, *supra* note 257, at 132.

271. Cf. JULIET CLUTTON-BROCK, A NATURAL HISTORY OF DOMESTICATED MAMMALS 49 (1999).

272. See E. Anne McBride et al., *The Pedigree Dog—Aesthetics Versus Ethics and Law*, 5 J. VETERINARY BEHAV. 51 (2010).

273. *Id.*

274. See Skabelund, *supra* note 258, at 357-58.

275. *Id.* at 358.

world, with the Belgian Malinois as a close second.²⁷⁶ A short time after the German Shepherd breed was recognized by the American Kennel Club in the 1920s, it also became one of the most popular dogs in Britain, where it was renamed “Alsatian” due to the anti-German anxiety following WWI.²⁷⁷ This breed, which was initially developed in 1899, spread quickly both in terms of popularity and use.²⁷⁸ In the United States, several types of dogs, other than the German shepherd, have been used for drug detection, including Golden Retrievers, Belgian Malinois, Labrador Retrievers, and English Springer Spaniels.²⁷⁹ Some agencies prefer Labrador Retrievers because of their amiability.²⁸⁰

Early on, detection dogs were obtained from animal shelters,²⁸¹ but this was found problematic due to the very low success rates associated with training such dogs.²⁸² In fact, “approximately 1 shelter dog of 1000 passes the basic tests that serve to admit a dog to a formal training program; of those that pass, only a small fraction (perhaps 1 in 40-50) eventually pass a full training program and become certified search dogs.”²⁸³

276. See Lunney, *supra* note 37, at 835 (citing TRACY L. ENGLISH, OFFICE OF HISTORY, LACKLAND AIR FORCE BASE, *THE QUIET AMERICANS: A HISTORY OF MILITARY WORKING DOGS* 23 (2000)); Simmons, *supra* note 99, at 428 n.105.

277. See Skabelund, *supra* note 257, at 355.

278. *Id.* at 354-55.

279. See Simmons, *supra* note 99, at 428 n.105.

280. See Lunney, *supra* note 37, at 835 n.22; see also Gardiner Harris, *To Serve and Protect, and Sniff Out Trouble, an International Dog of Mystery*, N.Y. TIMES, May 5, 2011, at A16 (noting the popularity of Labrador Retrievers among United States soldiers serving overseas).

281. See Bird, *supra* note 66, at 411.

282. For a similar account in the South African context involving controlled study groups of puppies, see J.M. Slabbert & J.S.J. Odendaal, *Early Prediction of Adult Police Dog Efficiency—A Longitudinal Study*, 64 APPLIED ANIMAL BEHAV. SCI. 269, 269 (1999) (“Up to 70% of dogs that were bred at the South African Police Service Dog Breeding Centre . . . were not suitable for use.”).

283. NAT’L INSTITUTE OF JUSTICE, GUIDE FOR THE SELECTION OF DRUG DETECTORS FOR LAW ENFORCEMENT APPLICATIONS 21 (2000), available at <https://www.ncjrs.gov/pdffiles1/nij/183260.pdf>; see DAVID G. MYERS, PSYCHOLOGY 249 (2d ed. 1989) (“Animals can most easily learn and retain behaviors that draw on their biological predispositions . . .”).

Although dog breeding for police forces is constantly on the rise, most American police dogs are still imported from Europe.²⁸⁴ Dogs imported from Hungary, Slovakia, and the Czech Republic are descendants of the border patrol dogs bred during the Cold War, and other dogs are purchased by United States agencies through brokers in Holland and Germany.²⁸⁵ Breeding information that traces selected dogs' ancestry at least six generations back is readily available,²⁸⁶ and specific training sites list the breeds used by police, including German Shepherds, Belgian Malinois, bloodhounds, Dutch Shepherds, and mixed breeds.²⁸⁷ According to one American training center, breeders look for dog breeds that walk on slick floors, socialize around people, and possess good nerves, civility, strong bites, and a strong hold; they also look for dogs with good pack instincts and that are capable of working in small, dark areas.²⁸⁸

284. *History of the Belgian Malinois*, NORTH AMERICA K-9 SERVICES, LLC, <http://www.police-dog.net/pages/belgianmalinois.php> (last visited Oct. 8, 2012); see also Deborah Palman, *Obtaining and Selecting Dogs for Police Work*, U.S. POLICE CANINE ASS'N, <http://www.uspcak9.com/training/canineselection.html> (last visited Oct. 8, 2012).

285. NORTH AMERICA K-9 SERVICES, LLC, *supra* note 284; see also JAMES R. ENGEL, *THE POLICE DOG: HISTORY, BREEDS AND SERVICE*, available at <http://www.angelplace.net/Book/Ch8.pdf>.

286. A pedigree database documents breeders and kennels from around the world. See *Search Breeders*, PEDIGREE DATABASE, http://www.pedigreedatabase.com/german_shepherd_dog/breeders.html (last visited Oct. 8, 2012).

287. See USK9 UNLIMITED, <http://usk9.com/> (last visited Oct. 8, 2012); *Breeding*, USK9 UNLIMITED, <http://www.usk9.com/breeding.php> (last visited Oct. 8, 2012); see also ULTIMATE WORKING DOGS, <http://www.ultimateworkingdogs.com/> (last visited Jan. 10, 2013).

288. *Patrol Dogs*, USK9 UNLIMITED, <http://www.usk9.com/patrol dogs.php> (last visited Oct. 8, 2012). The following excerpt provides interesting guidelines to police officers about how to choose their work dogs:

In choosing a puppy, the handler should first watch the pups as a pack and observe each one. The ideal choice is an aggressive, self-confident pup who shows leadership over the others, and who will readily approach you as a stranger without hesitation or fear. Ideally the search is for the Alpha male of the litter, or the next closest prospect depending on temperament. Those who have an opportunity to see the pups suckling the mother will note that the leaders of the litter almost always will be the ones using the teats nearest the mother's front legs.

Specific dog clubs set even higher standards for their dogs. For example, the German Shepherd Dog Club of America requires that their dogs be “strong, agile, well muscled animal[s], alert and full of life,” and details specific standards that apply to the dogs’ every aspect, including their general appearance, temperament, size, substance, head, topline, fore- and hind-quarters, and gait.²⁸⁹ This, for example, is how the website describes a good gait:

The gait is outreaching, elastic, seemingly without effort, smooth and rhythmic, covering the maximum amount of ground with the minimum number of steps. At a walk it covers a great deal of ground, with long stride of both hind legs and forelegs. At a trot the dog covers still more ground with even longer stride, and moves powerfully but easily, with coordination and balance so that the gait appears to be the steady motion of a well-lubricated machine.²⁹⁰

German Shepherd breeders are often required to show a signed pedigree, current health record, registration papers, sales contract, and a feeding schedule including amount and type, if available.²⁹¹ Similarly, the American Belgian Malinois Club provides detailed breeding instructions that

These teats yield more milk and therefore the dominant pups force the others to less lucrative positions.

Beware of pups that whine, howl or bark constantly when excited as these habits may be hard to break and can be extremely annoying. These pups are very often anxious and although in other tests may rate high, they may have a tendency to be high strung and are often hard to settle down. . . .

. . . .

Older pups, in the six- to eight-month age range can also be given the gun test. Put the pup on a leash and have a suspect with a revolver containing blank loads suddenly appear and fire a few rounds into the air. The pup may balk a bit, but as long as he doesn’t break and try to run or show a lot of fear or anxiety, he should prove satisfactory.

R.S. EDEN, *DOG TRAINING FOR LAW ENFORCEMENT* 24-25 (1985).

289. *German Shepherd Dog Breed Standard*, THE GERMAN SHEPHERD DOG CLUB OF AMERICA, <http://gsdca.org/german-shepherd-dogs/education> (last visited Oct. 8, 2012).

290. *Id.* (note the analogy to the machine toward the end of the quote).

291. *Will a Breeder Ask Me Questions?*, THE GERMAN SHEPHERD DOG CLUB OF AMERICA, <http://gsdca.org/german-shepherd-dogs/choosing-a-puppy/good-buyer-good-breeder> (last visited Oct. 8, 2012).

highlight the dogs' herding, tracking, agility, and obedience capacities that render it particularly fit for police work.²⁹² The club also has its own breeding code of ethics.²⁹³ Although German Shepherds and American Belgian Malinois make up the majority of dogs used by law enforcement for detection tasks, since 1976 the United States Air Force has been training smaller breeds for similar work.²⁹⁴ Examples of these breeds include beagles and cocker spaniels, which have the "advantage of easily searching closed spaces that were inaccessible to German shepherd[s]."²⁹⁵

In summary, the nature of detection dogs—in fact, their very genotype and phenotype—are the result of a long and detailed process of co-evolution.²⁹⁶ As STS scholars have noted in other contexts, "[p]edigrees documented a direct

292. See AMERICAN BELGIAN MALINOIS CLUB, <http://www.malinoisclub.com/abmc/> (last visited Oct. 8, 2012); *Breeder Code of Ethics*, AMERICAN BELGIAN MALINOIS CLUB (ABMC), <http://www.malinoisclub.com/abmc/abmc-breeder-information/abmc-breeder-code-of-ethics> (last visited Oct. 8, 2012).

293. *Breeder Code of Ethics*, *supra* note 292. The club's website lists a few ways to identify a reputable breeder: mother and father over two years old, copies of all health clearances, pictures, and references of a three-generation pedigree, buyer screening, production of a written contract, and experience or knowledge of the breed. See *Identify a Reputable Breeder*, AMERICAN BELGIAN MALINOIS CLUB, <http://www.malinoisclub.com/abmc/abmc-breeder-information/identify-a-reputable-breeder> (last visited Oct. 8, 2012).

294. See USDA Manual, *supra* note 226, at C-1-3.

295. *Id.* at C-1-3, C-1-7. Beyond the use of detection dogs for policing purposes, the USDA has also used dogs to detect screwworm infestations in cattle and the presence of brown tree snakes in aircraft. Australian shepherds have been used to indicate when cows are fertile so that farmers can breed them at the right time during their short estrus. Beagles are increasingly used to precisely locate termites in buildings to avoid the necessity of treating the entire structure. . . . Dogs have been used to perform ecological studies of wildlife by indicating on the scats of specific animals, demonstrating that certain species are present in an area under study.

Id. at C-1-6.

296. DONNA HARAWAY, *THE COMPANION SPECIES MANIFESTO: DOGS, PEOPLE, AND SIGNIFICANT OTHERNESS* 29 (2003).

lineal connection to the landscape in its primordially and the *telos* that made a dog anything but accidental.”²⁹⁷

VI. COTRAINING K-9S AND HANDLERS

Dogs and humans are not only coproduced through breeding; they are also actively *trained* to affect each other’s behaviors. This Part discusses such coproduction through training. According to the Oxford Dictionary, training is “the action of teaching a person or animal a particular skill or type of behaviour.”²⁹⁸ Dogs are increasingly taught to detect a variety of substances. In this sense, they are substantially different from machines, which are “programmed” rather than “trained.” At the same time, the scientific involvement in producing the dog sniff event and the extraction of particular knowledge from this event also make the dog into a technology. Detection dogs work closely with their human partners in law enforcement—the latter referred to as “handlers”—and are often rigorously trained and managed to properly fulfill their duties.

Philosopher Jacques Derrida writes that during the last two centuries, human-animal relations have been dominated by “forms of knowledge, which remain inseparable from techniques of intervention into their object, [and] from the transformation of the actual object . . . namely, the living animal.”²⁹⁹ The production of such forms of knowledge about canine behavior in this context enables the training of both humans and dogs. Through examining this training in the context of the dog-handler-trainer-breeder assemblage, this Part highlights the tensions that exist between the dog’s identity as a natural entity that shares an intimate relationship with humans and the dog’s identity as a technology—scientifically bred, trained, and interpreted by humans for surveillance ends.

In my interview with a canine police officer, the officer commented that dogs are less fallible than machines. “At the end of the day,” he said, “the dog is a dog. It’s not a

297. Wallen, *supra* note 257, at 141.

298. *Definition of Training*, OXFORD ENGLISH DICTIONARY ONLINE, <http://www.oxforddictionaries.com/definition/english/training> (last visited Oct. 22, 2012).

299. See Wallen, *supra* note 257, at 126 (discussing Jacques Derrida’s account of two centuries of human-animal relations) (emphasis omitted).

machine. It's not subject to fail like the belt system on the machine. This is an amazing animal."³⁰⁰ As I have shown, some courts have treated dog sniffs similarly as removed from human error and as belonging to their own, *sui generis*, natural category. The following subparts will demonstrate that in reality, the dogs' detection skills are intimately linked with those of their human handlers, in the same way that any complex technology is dependent on the skills of its operators. Whether highly or poorly trained, detection dogs are actively produced. In this sense, too, dogs are a biotechnology.

A. *K-9 Training Institutions in the United States*

The police dog is trained to assist the police with their work.³⁰¹ Federal, state, and municipal police have each developed their own organizations, centers, and methods for training detection dogs. There are currently at least thirty-one state police K-9 associations and twenty-three regional and national level police K-9 associations.³⁰² A number of government agencies train dogs specifically to detect drugs, including the United States Department of Defense, the United States Department of Agriculture—Animal and Plant Health Inspection Service (USDA-APHIS), and the United States Customs Service.³⁰³ Outside of the federal government, “[the Auburn University program] is the largest K-9 research program in the United States.”³⁰⁴ Auburn has “twenty-five trainers, who supply about one hundred dogs a year to Amtrak, Federal Protective Services, and police departments around the country.”³⁰⁵

300. Interview with anonymous canine officer (June 19, 2012).

301. See *Obtaining and Selecting Dogs for Police Work*, U.S. POLICE CANINE ASS'N, <http://www.uspcak9.com/training/canineselection.html> (last visited June 1, 2012).

302. See *Associations*, EDEN CONSULTING GROUP, <http://www.policek9.com/html/associations.html> (last visited May 31, 2012).

303. See USDA Manual, *supra* note 226, at 1-1-5, C-1-2 to C-1-3.

304. *Canine Detection Research Institute—CDRI*, AUBURN U. C. VETERINARY MED., <http://www.vetmed.auburn.edu/cdri> (last visited May 31, 2012).

305. Bilger, *supra* note 1, at 54.

The average cost of basic K-9 training is \$21,000, which includes ten weeks of lessons for the handler.³⁰⁶ There is even a police K-9 magazine and Web site, replete with K-9 apparel that includes bite sleeves for \$95 each,³⁰⁷ “temperature monitoring/alert system” for K-9 vehicles for \$849,³⁰⁸ and a K-9 BSD 2, which is a “remote-controlled device designed to eject a variety of motivational toys to a short distance, creating prey for [training dogs],” for \$627.³⁰⁹ The following few paragraphs will focus on New York State as an example of the use of police dogs at the state level.

The New York State Police created the Division of Canine Unit in 1975.³¹⁰ Initially, three troopers received the specialized training for canine handlers and were assigned to canines purchased from the United States Army for \$10,000.³¹¹ These first few canines were initially used as explosives detection dogs in preparation for the 1980 Winter Olympic Games in Lake Placid, New York.³¹² New York police chose the Baltimore Police Department as its training agency.³¹³ At the time, Baltimore had one of the largest canine units in the United States and was experimenting with what was later referred to as the “Baltimore Method” of training.³¹⁴ Still quite popular, the Baltimore Method “dictate[s] that the canines be sociable, that they be allowed

306. *Id.*

307. *Bite Suit Arm Sleeve*, POLICE K-9 MAG., <http://onlinestore.policek9magazine.net/products/BITE-SUIT-ARM-SLEEVE.html> (last visited May 31, 2012).

308. *Premier Canine System™ by Criminalistics, Inc.*, POLICE K-9 MAG., <http://onlinestore.policek9magazine.net/products/Premier-Canine-System™-by-criminalistics%2C-Inc.html> (last visited May 31, 2012).

309. *K9 Behavior Shaping Device BSD2*, POLICE K-9 MAG., <http://onlinestore.policek9magazine.net/products/K9-Behavior-Shaping-Device-BSD-2.html> (last visited May 31, 2012).

310. *Canine Unit*, N.Y. ST., DIV. OF ST. POLICE, CANINE UNIT, *available at* http://www.troopers.ny.gov/Specialized_Services/Canine_Unit/ (last visited May 31, 2012).

311. *Id.* That the police purchased these dogs from the military further demonstrates the strong interconnections between army dogs and police dogs

312. *Id.*

313. *Id.*

314. *Id.*

around the general public, and that they reside in the handlers[] residence[s].”³¹⁵

In 1978, the Division of State Police started training its own canines, and in 2000 the Canine Unit settled into a state-of-the-art training facility in Cooperstown, New York.³¹⁶ According to its website, New York’s canine unit currently has sixty-six teams, including “thirty-one explosives detection canine teams, thirty-two narcotics detection canine teams, and three bloodhound teams,” utilized exclusively for tracking.³¹⁷ All canines are donated to the unit at no cost “through Humane Societies, private citizens, and breeders from across the northeast.”³¹⁸ These canines are then subject to a rigorous screening process that identifies the most suitable dogs for the twenty-week “Basic Handler School.”³¹⁹ During this period, “a new handler and a[n] untrained canine are teamed together and undergo a strenuous program during which the teams are instructed in: basic obedience, agility, handler protection, either narcotics or explosives detection, tracking, building searches, veterinary first aid, and land navigation—map and compass course.”³²⁰ After completing this training, the dog-human teams are sent out on patrol and must receive biannual recertification.³²¹ The following paragraphs explore the nature of this coproduced human-dog team by drawing on an example of dog detection cotraining by the USDA.

315. *Id.*

316. *Id.*

317. *Id.*

318. *Id.*

319. *Id.*

320. *Id.*

321. *Id.* The Canine Unit website contains fantastic images of all its K-9 officers. *New York State Canine Unit Photo Gallery*, DIV. ST. POLICE, http://www.troopers.ny.gov/Specialized_Services/Canine_Unit/Canine_Gallery/ (last visited Oct. 22, 2012).

B. *The Human-Dog Team*

Canine teams consist of a dog and handler, or canine enforcement officer, working as partners.³²² As of 2012, approximately 630 canine teams were employed by the United States Customs Service at airports, seaports, and border checkpoints. These teams have all been certified following a rigorous training course.³²³ As Robert Bird explains, the training course of custom service dogs allows no room for error, accounting for the low number of teams that pass:

Custom Service dogs are trained to disregard potential distractions such as food, harmless drugs, and residual scents. Agents present distractions such as loud gunshots during training, rewarding the dogs when those diversions are ignored. The teams must complete a certification exam in which the dog and handler must detect marijuana, hashish, heroin, and cocaine in a variety of environments. This exam and the following annual re-certifications must be completed perfectly, with no false alerts and no missed drugs. If a dog and handler team alerts erroneously, the team must undergo remedial training. If the team fails again, the team is disbanded and the dog is permanently relieved from duty.³²⁴

In what follows, I mainly draw on the USDA training guidelines to explore in detail the process of human-dog training.³²⁵ Although police training differs in certain respects from training by the USDA, they share similar assumptions and common detection goals.

322. JOHN E. PARMETER ET AL., U.S. DEP'T OF JUSTICE, GUIDE FOR THE SELECTION OF DRUG DETECTORS FOR LAW ENFORCEMENT APPLICATIONS 21 (2000) [hereinafter NIJ GUIDE].

323. *Id.* at 21, 23.

324. Bird, *supra* note 66, at 414-15.

325. I chose to focus on the USDA training manual because it was publicly available; I was unable to obtain detailed police training manuals, probably because such manuals are considered a trade secret by the United States government. See, e.g., *About US K-9 Unlimited*, USK9 UNLIMITED, <http://www.usk9.com/about.php> (last visited Oct. 22, 2012) (claiming to use proprietary techniques that have been deemed a trade secret by the United States government); see also Bird, *supra* note 66, at 421 ("Formal training manuals may detail training procedures. However, producing portions of the manual in court may not be possible since it would compromise investigative techniques.").

USDA-APHIS, working with United States Customs, began a detector dog program in 1984 in Los Angeles.³²⁶ This program consisted of a single canine team, a beagle and a handler, situated at the Los Angeles International Airport.³²⁷ Two years later, APHIS coordinated with the military's existing detector dog training program at Lackland Air Force Base to expand and train canine teams for service with the USDA.³²⁸ This early training course was mostly modeled after the Air Force's methods, but APHIS began training its own teams at regional centers in 1988.³²⁹ By 1997, program growth and changing training methods led to the creation of the National Detector Dog Training Center, which currently provides trained detector dogs not only to major ports across the United States, but also "to mail facilities, land border crossings, and ports that handle cargo."³³⁰

The use of detection dogs by law enforcement agencies is expanding rapidly. For example, the USDA's vision statement states that it seeks to "deploy detector dogs in all areas where they can be most effectively utilized and integrated into the operations of APHIS and the PPQ" (Plant Protection Quarantine) and to "[successfully integrate the detector dog activity into the agricultural quarantine inspection operation," including: "baggage clearance at airports, maritime ports, ships, and military facilities; international mail and small parcel clearance; bulk and containerized cargo clearance at airports and maritime ports; vehicle, cargo, and baggage clearance at land border crossings; and smuggling interdiction in all venues."³³¹

The USDA provides concrete examples of how dogs are coproduced and codisciplined into desired behaviors.³³² Its Basic Canine Officer Training Course is mandatory for all

326. USDA Manual, *supra* note 226, at 1-1-4 to 1-1-5.

327. *Id.* at 1-1-4.

328. *Id.* at 1-1-5.

329. *Id.*

330. *Id.*

331. *Id.* at 1-1-6; *see also id.* at 1-1-2.

332. *See id.* at 4-1-1 to 4-1-11.

canine officers.³³³ The course lasts ten weeks and is structured “to accommodate various pathways . . . including passenger clearance, cargo control, and border control.”³³⁴ The manual describes the goals of each week’s training program.³³⁵ During the first week, the “[s]tudents learn the basic terminology necessary for discussing canine structures relevant to scent detection work (i.e., olfactory apparatus) and health (e.g., hips, spine, other skeletal landmarks, placement of internal organs).”³³⁶ This is important because “[m]astering this terminology is necessary for precise communication about canine health, maintenance, and handling directions.”³³⁷ Also during the first week students learn

[T]he basics of canine behavior, which is the foundation for all training. This training component covers fundamental concepts relating to canine behavior (e.g., behavioral tendencies, instincts, requirements, treatment, types of conditioning and learning, reward schedules, and motivation) as they apply to handling a scent detection canine and troubleshooting performance-related difficulties. Time is devoted to sharpening students’ abilities to observe and analyze canine behavior, emphasizing skills that will help them keep their detector dogs safe, healthy, and working proficiently.³³⁸

At the end of the first week of training, handlers are paired with their actual dogs. “Students begin their new relationships with their detector dogs by learning how to establish a rapport. Activities include hands-on experience such as grooming their dogs (e.g., bathing, cleaning ears, and trimming nails).”³³⁹

Next, from week two through five, a human-canine relationship is fostered and established:³⁴⁰

333. *Id.* at 4-1-1.

334. *Id.*

335. *See id.* at 4-1-1 to 4-1-11.

336. *Id.* at 4-1-3.

337. *Id.*

338. *Id.*

339. USDA Manual, *supra* note 226, at 4-1-3.

340. *See id.* at 4-1-4.

Students learn to observe their dogs to determine what rewards are most likely to elicit or enhance their strong desire, persistence, and enthusiasm to work. . . . Although the standard reward is food, some dogs perform most effectively when food is combined with other types of rewards or reinforcers (e.g., towel, ball, etc.). Students . . . use this information to create a meaningful reward system for their detector dogs.³⁴¹

Clearly, information is not helpful in the abstract; it must be situated—and here, based on the peculiarities of each dog. Although not mentioned explicitly in the USDA manual, such situated knowledge should also be based on the concrete strengths and weaknesses of the dog's *human* handler.

The importance of a bidirectional (or human-dog) learning system is articulated explicitly by Auburn University's Canine Detection Research Institute. The institute's training and education Web page states, in particular, that:

As part of a university, we provide state-of-the-art teaching methodologies to ensure that our clients receive not only the most educated dogs, but the best educated handlers possible. These teaching methods not only focus on our human counter parts, but also on our canine partners. We recognize that it is vital to both humans and canines to present advanced information in a manner that it can quickly and easily be learned. By focusing on the education of the dog and the handler, we can eliminate weak links and maximize the strengths of our canine handler teams.³⁴²

Indeed, “[p]erforming a canine narcotics search requires much more than a person to keep the dog on the leash while it sniffs for drugs.”³⁴³ Instead, “dog and trainer work closely together as a team.”³⁴⁴ The United States Air Force Court of Military Review summarized dog and handler teamwork as follows:

341. *Id.*; see also *Oregon v. Foster*, 252 P.3d 292, 295, 296 (Or. 2011) (discussing how officers trained their dogs to detect drugs through playing games with tennis balls).

342. *Training and Education*, AUBURN UNIV. CANINE VETERINARY MED., <http://www.vetmed.auburn.edu/cdri/cdri-services/training-and-education> (last visited May 30, 2012).

343. Bird, *supra* note 66, at 422.

344. *Id.*

Clearly, the dog and handler function as an integral team. The dog is the sensor, and the handler is the trainer and interpreter. The handler's performance in both roles is inseparably intertwined with the dog's overall reliability rate. And since the net result is the product of the interaction between two living beings, both roles of the handler are highly subjective.³⁴⁵

From weeks two to five of USDA's training program, the human students learn how to use their voice.³⁴⁶ In the language of the manual: "Quality, pitch, and tone of voice convey meaningful information to dogs. Students learn the importance of consistency in their use of words, and to identify the effects of different voice qualities."³⁴⁷ The manual also details that:

Once they master the basic presentation skills, [the students] are introduced to [practical search] techniques that are meant to enhance work efficiency with their detector dogs. These techniques include the following:

1. Search Patterns—How to move a dog and move with a dog around typical obstacles and luggage to maximize coverage of the search.
2. Breathing Bags—How to assist a dog in detecting odors within luggage by pushing air out of the bags at the appropriate time.
3. Tap Backs—How to provide a dog a second chance to examine a piece of luggage without interrupting the flow of the search.

345. *Id.* (quoting *United States v. Paulson*, 2 M.J. 326, 330 n.5 (A.F.C.M.R. 1976), *remanded by* 7 M.J. 43 (C.M.A. 1979)). The importance of the particular handler-dog bond was emphasized by the respondent in *Florida v. Harris*, who suggested that this should be the major ground for finding Aldo's sniff in that case unreliable:

And we have to remember that this certificate, not only was it 16 months out of date, it wasn't a certificate for Aldo. It was a certificate for Aldo and a Seminole County deputy together as a team.

This dog was never certified as part of a team with Officer Wheatley in this case. And the certifications in this area are team certifications, not individual certifications.

Transcript of Oral Argument, *Harris*, *supra* note 168, at 32.

346. See USDA Manual, *supra* note 226, at 4-1-4, 4-1-6.

347. *Id.* at 4-1-6.

4. Pinpointing—How to induce a dog to be specific when indicating on an odor source either by touching with its nose or with its paw.³⁴⁸

As this passage makes clear, detection dogs do not work alone. Their human handlers move through spaces alongside them, blowing air out of luggage at appropriate moments (also called “burping”³⁴⁹) and providing second sniffing opportunities when deemed necessary.³⁵⁰ At its best, the dog detection work is not a technical or mechanical process that occurs without human interference. In fact, good detection work requires an intimate relationship between the dog and its handler, including cross-species interpretive skills: “Handlers interpret their dogs’ signals, and the handler alone makes the final decision whether a dog has detected narcotics.”³⁵¹ A canine officer explained to me along these lines that “the dog doesn’t know that people usually keep their drugs in glove compartments or places like that—and this is where my experience steps in. I have to always think: why did she behave a little differently here?”³⁵² Human handlers affect the work of dogs as much as the dogs’ capacities and incapacities affect human work.

Finally, in weeks six through nine of the USDA’s training course, dogs and humans move to work in “real” environments.³⁵³ According to the manual, “[t]he training occurs at an international airport, an international border, or an international cargo receiving area that closely simulates the environment in which the detector dog teams will eventually work.”³⁵⁴ Not only are the human handlers trained to modify their behavior according to their dogs; dogs, too, are trained rigorously during the course to respond to their handlers’ instincts rather than their own. For example, one trainer told the *New Yorker*: “We have to have an animal that’s willing to consummate its aggression on a living, breathing human, then contain it enough to

348. *Id.* at 4-1-7.

349. *See* interview with anonymous canine officer, *supra* note 300.

350. *See* USDA Manual, *supra* note 226, at 4-1-7.

351. *See* Bird, *supra* note 66, at 425.

352. *See* interview with anonymous canine officer, *supra* note 300.

353. *See* USDA Manual, *supra* note 226, at 4-1-7.

354. *Id.*

come back to you. . . . That's a lot to ask of any being, much less a dog."³⁵⁵ At the same time, dog and handler must modify their behaviors to fit the relevant spatial setting in which they both operate.³⁵⁶ Donna Haraway's words in the general context of working dogs are thus highly relevant also here:

Dogs' roles have been multifaceted, and they have not been passive raw material to the action of others. Further, dogs have not been unchangeable animals confined to supposedly ahistorical order of nature. Nor have people emerged unaltered from the interactions. Relations are constitutive; dogs and people are emergent as historical beings, as subjects and objects to each other precisely through the verbs of their relating.³⁵⁷

People and dogs, Haraway contends, are "mutually adapted partners in . . . naturecultures."³⁵⁸ Scent detection dogs are, by definition, products of their breeding and training by humans.

C. *Are Dogs Infallible? Additional Human Influences on Dog Alerts*

Alongside the formal dog-handler training, there is another way in which humans—and handlers in particular—affect the operation of their dogs. As acknowledged by Justice Souter in his important dissent in *Caballes*,³⁵⁹ the Florida Supreme Court in *Jardines*³⁶⁰ and *Harris*,³⁶¹ and the Oregon Supreme Court in *Foster*³⁶² and *Helzer*³⁶³—dogs are not infallible. They may produce "false alerts,"³⁶⁴ not only in response to their handlers'

355. Bilger, *supra* note 1, at 52.

362. See USDA Manual, *supra* note 226, at 4-1-7.

357. HARAWAY 2008, *supra* note 194, at 62.

358. *Id.*

359. *Illinois v. Caballes*, 543 U.S. 405, 410-16 (2005) (Souter, J., dissenting).

360. *Florida v. Jardines*, 73 So. 3d 34, 40 (Fla. 2011).

361. *Harris v. Florida*, 71 So. 3d 756, 771-72 (Fla. 2011).

362. *Oregon v. Foster*, 252 P.3d 292, 297-300 (Or. 2011).

363. *Oregon v. Helzer*, 252 P.3d 288, 289-91 (Or. 2011).

364. Or, in other words, a "false positive." See Jeff Weiner, *Police K-9's and the Constitution: What Every Lawyer and Judge Should Know*, THE NAT'L ASS'N OF CRIM. DEF. LAW., Apr. 2012, at 23. Every dog alert has four possible outcomes: a

unintentional cues,³⁶⁵ but also because of residual or trace odors that linger on an object, even though it has never actually touched an illegal drug.³⁶⁶ In the oral arguments in *Florida v. Harris*, the respondent argued along these lines:

And we know from the studies that have been cited in the briefs that there are other reasons that dogs alert when that alert

dog positively alerts and drugs are found; a dog does not alert and no drugs are present (these two first outcomes are “correct”); failing to alert when drugs are present (a “false negative”); and alerting when drugs are not present (a “false positive”). See Bird, *supra* note 66, at 427.

365. Based on interviews with investigators from narcotic divisions, Robert Bird concludes that “[i]n fact, almost all erroneous alerts originate not from the dog, but from the handler’s misinterpretation of the dog’s signals.” Bird, *supra* note 66, at 422, 422 n.124. Bird adds:

Canines often have their own particular pattern for communicating an alert. If a handler is not aware of a dog’s particular behavior, she may mistake an indication of narcotics for a reaction to food, another animal, or other distraction. Skilled handlers also receive training for a specific type of substance or environment, and should pass annual recertification tests.

Id. at 423.

Finally, Bird notes that,

[t]rained handlers often train and remain with one canine in practice, developing a close bond with the dog and a keen eye for interpreting that particular canine’s habits.

Handlers must also know how to avoid “handler cues.” Handler cues are conscious or unconscious signals given from the handler that can lead a detection dog to where the handler thinks drugs are located. These voice or physical signals can compromise a dog’s objectivity and impermissibly lead the dog to alert at the suspected item or person. Handler cues can be corrected in training by conducting practice sniffs where both the dog and handler do not know where the drugs are located.

Id. at 423-24.

366. Weiner, *supra* note 364, at 22-23. A recent study found that approximately 90% of all paper money circulating in the United States contains traces of cocaine; this situation presents additional challenges to police detection work. See David Biello, *Cocaine Contaminates Majority of U.S. Currency*, SCI. AM. (Aug. 16, 2009), <http://www.scientificamerican.com/article.cfm?id=cocaine-contaminates-majority-of-american-currency>. According to the canine officer I interviewed, however, there is no such thing as a false alert. See interview with anonymous canine officer, *supra* note 300. He explained that the dog is trained to detect odor, not actual drugs, and that it is thus practically impossible to prove that there was no odor present. *Id.*

cannot be verified. Handler cueing is identified as the chief one. And simply dogs make mistakes. Dogs err. Dogs get excited and will alert to things like tennis balls in trunks or animals, that sort of thing.³⁶⁷

According to the *Chicago Tribune*, “analysis of three years of data for suburban departments found that only 44 percent of those alerts by the dogs led to the discovery of drugs or paraphernalia. For Hispanic drivers, the success rate was just 27 percent.”³⁶⁸ The *Tribune* continues:

Even advocates for the use of drug-sniffing dogs agree with experts who say many dog-and-officer teams are poorly trained and prone to false alerts that lead to unjustified searches. Leading a dog around a car too many times or spending too long examining a vehicle, for example, can cause a dog to give a signal for drugs where there are none.³⁶⁹

Clearly, human conduct affects K-9s far beyond what is prescribed by their formal cotraining, and in spite of the ideal that they should operate in a way that is unaffected by human cues. Nevertheless, in most states “dog teams are not held to any statutory standard of performance” or certification.³⁷⁰

367. Transcript of Oral Argument, *Harris*, *supra* note 168, at 41.

368. Dan Hinkel & Joe Mahr, *Drug Dogs Often Wrong*, CHI. TRIB., Jan. 6, 2011, at 1.

369. *Id.*

370. *Id.* But see *Police Dog Training Standards*, EDEN CONSULTING GROUP, <http://www.policek9.com/html/standards.html> (last visited Oct. 23, 2012) (discussing varying standards in Arizona, New Jersey, New York, North Carolina, and Utah). Additionally, the United States Police Canine Association recently published its Certification Rules and Regulations. *Certification Rules and Regulations*, U.S. POLICE CANINE ASS'N INC. (2012), available at <http://www.uspcak9.com/certification/USPCARulebook2012.pdf>. The Association places several requirements on both dogs and handlers. For example, handlers are required to maintain total control over their dogs at all times; they must use the briefest commands possible; and their use of a dog's name before instruction is defined as a “double command” and penalized as such. *See id.* at 3. Agility tests required for certification include hurdles, catwalk, broad jump, A-frame, and crawl. *Id.* at 4. These tests are completed based on the tester's choice of picket fence, chain link fence, simulated brick wall, windows, boards, or shrubs. *Id.* at 5. Tests also include evidence searches from a selection of shotgun shells, matches, credit cards, key ring with a tab, and a metal gun, screwdriver, or piece of leather. *Id.* at 6. A key evaluation component is the dog's “alert,” which is rated based on how it can confidently, obviously, and consistently

In light of this troubling data, Robert Bird recommends four important issues for courts to consider when assessing the reliability of a narcotics training dog: 1) the amount of training “required to produce a reliable drug dog”; 2) the skills that “an effective dog handler should know”; 3) how to scrutinize a canine’s accuracy rate; and 4) the conditions under which dogs sniffs are most reliable.³⁷¹

Court assessments vary. There are instances when the courts have reviewed canine alerts that have proven “highly effective, with many dogs maintaining a near perfect record of narcotics detection.” In contrast, some judges have omitted training and reliability from their evaluations, resulting in the approval of dogs that produce erroneous alerts and thereby unnecessary invasions of privacy.³⁷² Bird also notes that settled judicial standards concerning dogs’ reliability are absent and that court analysis rarely focuses on handlers, although it should.³⁷³ Although not framed in these terms, Bird’s study is in line with the broader argument of this Article that the dog does not function irrespective of the long history of its material and behavioral coproduction and that each and every detail of the dog’s operations is formed and circumscribed by humans.

VII. K-9S FROM THE PERSPECTIVE OF LAW ENFORCERS

A. *K-9s as Members of the Police Family—And as Machines*

I have shown that police detection dogs are not simply natural entities that sniff around suspect cars in the same way that pet dogs sniff their tuna sandwich at home. That is, they do not operate absent human influence but are,

distinguish an indication from a nonindication. *See id.* at 14. However, the various industry standards are neither uniform nor mandatory across the board. *See, e.g.,* United States v. Prokupek, 2009 WL 2634446, at *22 (D. Neb. Aug. 24, 2009) (considering the defendant’s claim that Nebraska’s training standards and methods are inferior to the common standards by respected K-9 associations, the court held: “There is more than one way to train a dog”).

371. Bird, *supra* note 66, at 407-08.

372. *See id.* at 407; *see, e.g.,* United States v. Williams, 726 F.2d 661, 663-64 (10th Cir. 1984) (disregarding anomalous behavior by narcotics detection dog in alert process).

373. *See* Bird, *supra* note 66, at 415-20.

ideally, rigorously and continuously trained. At the same time, the prevalent police training model encourages handlers to raise their K-9s at home, like other members of the family.³⁷⁴ This highlights the natural, or the biological, properties of dogs.

The notion of K-9s as family members—and as equal members in the police family in particular—is most prominent during times of tragedy. Here, for example, is an excerpt from a eulogy by an officer who lost his canine in line of service: “Last Friday morning, tragedy struck my family. . . . It’s a love and a bond only canine handlers can understand.”³⁷⁵ Another officer commented about his canine: “Bach was an officer. He worked just as hard, and he needs to be remembered just as much.”³⁷⁶ A third officer described the death of K-9 Rocky because the dog’s handler, Craig, was too upset to speak: “He was Craig’s partner, he was Craig’s defender, but far more important, he was Craig’s friend.”³⁷⁷ Finally, news headlines described: “Nitro the police dog receives a hero’s sendoff.” The item read, further:

“Nitro we will miss you. The city is yours pal,” said an emotional Sgt. Norm Webster. Nitro lost his life in the line of duty on Jan. 23 [2006] while pursuing a suspected car thief who attempted to escape onto a stationary train. Nitro followed, and at the very moment the dog attempted to leap onto the train, it began to move. Nitro then slipped from the car and was run over by the train. Those gathered at the funeral gave him a hero’s sendoff. “I regret we lost Nitro in the manner that we did,” said Inspector Dean Robinson of the Vancouver Police Department. “We lost one of our own. He wasn’t just a dog, He was a loyal and dedicated

374. Or, more precisely, like *near* members. See *id.* at 412 n.55 (“A handler living with their detection dog at home should not treat them as ordinary pets. If pampered, the dogs will be less desirous to please their handler for rewards on the job. This desire is important, because their reward system is primarily based on praise and affection.”) (citing Interview with Dennis L. Trombley, Member of the Rhode Island State Police K-9 Unit, in North Kingstown, R.I. (July 12, 1995)). Typically, after eight or nine years of service, the dog retires to a full pet status with his or her handler. *Id.* at 414.

375. See Moxley, *supra* note 254.

376. *Beloved Florissant Police K9 Dies*, CBS ST. LOUIS (Apr. 16, 2012), <http://stlouis.cbslocal.com/2012/04/16/beloved-florissant-police-k9-dies/>.

377. Rich Newberg, *Law Enforcement Mourns Loss of K9 Rocky*, WIVB.COM (Dec. 5, 2011, 5:42 PM), <http://www.wivb.com/dpp/news/crime/law-enforcement-mourns-loss-of-k9-rocky>.

member of the department and he had a police identification number to prove it.³⁷⁸

These accounts illustrate the dog's capacity to develop intimate relationships with humans.³⁷⁹

Alongside the officers' references to their K-9s as family and friends, K-9s are often referred to by their human coworkers as machines or technologies:

Canine police tend to talk about their dogs as if they were mechanical devices. They describe them as tools or technology and say that they're "building dogs" through proper training. They say that their animals need 'maintenance' to be "fully operational," and that a "dual-purpose dog"—one that has been taught to both chase down criminals and detect drugs or explosives—has "superior functionality."³⁸⁰

Along these lines, a canine officer tells me that "the dog is accurate; always."³⁸¹ He explains: "I don't believe that the dog has his off days. It is a living tool for tracing people and articles. It's a locating tool, an extension of what we can do as police officers, like a crowbar or pepper spray."³⁸²

Despite their ostensible juxtaposition, the two notions—that of dogs as part of the police family and man's best friend, and that of dogs as a manmade instruments serving human detection ends—are deeply intertwined and codependent. These concepts are part and parcel of an

378. *Nitro the Police Dog Receives a Hero's Sendoff*, AR15.COM, <http://beta.ar15.com/archive/topic.html?b=1&f=5&t=434869> (last visited Nov. 26, 2012).

379. Another, older example is that of Nemo, the first sentry dog to be sent home to the United States from Vietnam. See ENGLISH, *supra* note 276, at 24; WAR STORIES, available at <http://www.war-stories.com/aspprotect/pdf/377th-tsn-a2c-robert-a-throneburg-k9-nemo-a534-1966.pdf> (last visited Oct. 23, 2012); In December 1966, Nemo and his handler were patrolling in Vietnam. ENGLISH, *supra* note 276, at 24. Nemo attacked after detecting a group of Viet Cong infiltrators. *Id.* Subsequently, both Nemo and his handler were wounded. Although Nemo lost his eye, he continued to serve out his term in Vietnam, and is best known for saving his handler's life. *Id.* On November 15, 2005, a monument was dedicated to Nemo at Lackland Air Force Base in Texas. See WAR STORIES, *supra* note 379.

380. Bilger, *supra* note 1, at 50.

381. See interview with anonymous canine officer, *supra* note 300.

382. See *id.*

increasingly complex human-animal fusion. Although the surveillance context is a rather recent development in this relationship, it nonetheless fits within the wider historical context of breeding practices, the emergence of nationalism, and scientific progress—to name just a few of the themes that have influenced the current status of human-dog relations.

B. *K-9s and Electronic Drug Detectors*

Alongside drug detection by dogs, the *Guide for the Selection of Drug Detectors for Law Enforcement Applications*³⁸³ lists several central drug detectors: trace detection technologies³⁸⁴ (e.g., ion mobility spectrometry, or IMS³⁸⁵), bulk detection,³⁸⁶ and manual search techniques.³⁸⁷ The guide compares trace and canine detection, concluding that “[t]hese two screening methods tend to have complementary strengths, so it is often advantageous to have both capabilities on hand and to use either or both

383. The United States Department of Justice’s Office of Law Enforcement Standards functions to “conduct research that will assist law enforcement and criminal justice agencies in the selection and procurement of quality equipment.” NIJ GUIDE, *supra* note 322, at iii.

384. *Id.* at 5. “Trace detection of an illicit drug refers to detecting the drug by collection and analysis of microscopic amounts of the drug. These microscopic quantities can be in the form of vapor, particulate, or both.” *Id.* “In principle, dogs can be trained to detect any type of drug. This versatility, combined with a dog’s superior mobility and its ability to follow a scent directly to the source, makes canine detection the method of choice for a variety of applications that have a significant search component.” *Id.* at 21.

385. *Id.* at 48. IMS “is a technique for the trace detection of drugs and other chemical compounds. In this technique, compounds are first ionized and then identified based on the time that it takes them to travel through a region with an applied electric field.” *Id.* Mass spectrometry is “a chemical analysis technique in which the molecules to be studied are first ionized and then separated and identified based on their charge-to-mass ratio. Mass spectrometry is performed under conditions of high vacuum in contrast to IMS which is performed at atmospheric pressure.” *Id.*

386. *Id.* at 25. “In bulk detection, a contraband substance is detected not from residual contamination but by the actual, macroscopic mass of the substance.” *Id.*

387. *Id.* at 37. “Manual search, also referred to as physical search, is a valuable contraband detection technique that can be used either alone or as a supplement to other detection methods.” *Id.*

depending upon the circumstances.”³⁸⁸ This demonstrates that machine and dog are regarded by the police as interdependent and inseparable. Moreover, new technologies have been developed modeled on law enforcement dogs so as to perform the same highly specialized tasks.³⁸⁹ This strong dog-machine correlation lends support to my argument that courts should treat police dogs, similarly, as a technology.

In contrast, Mary Constantino treats dogs and machines as two separate technologies, claiming that “[r]ecently, technology has offered a replacement for man’s best friend.”³⁹⁰ She continues: “By examining trace evidence, technology can detect any number of illegal substances” that even a dog would be unable to detect.³⁹¹ She demonstrates that “[e]lectronic sniffers are becoming increasingly popular in the law enforcement field. One of the main reasons for this is the benefits they offer over the traditional canine search.”³⁹² Machines are preferable to dogs for a variety of reasons; one reason is cost efficiency:

The cost of electronic sniffers, usually ranging between \$20,000 and \$100,000, is more expensive than a canine, which typically costs between \$3,000 and \$10,000. However, the maintenance cost of a canine is generally higher than that of an electronic sniffer. With canines, it is necessary to train both the handler and the dog. The cost of care for a canine generally adds another \$1,600 to the bill per year. This is not even including the salary for the handler.³⁹³

With regard to cost, “[t]he Federal Aviation Administration has estimated that the cost of maintaining one properly trained officer-canine team at a major U.S. airport is approximately \$165K per year.”³⁹⁴

388. *Id.* at 22.

389. *See* Lunney, *supra* note 37, at 896 (discussing the application of *Kyllo* and the development of mechanical sniffers).

390. Mary Constantino, *Electronic Sniffers’ Place: The Use of Electronic Sniffers under the Search and Seizure Clause of the Fourth Amendment*, 2 CHARLOTTE L. REV. 333, 335 (2010).

391. *See id.* at 335.

392. *Id.* at 345.

393. *Id.*; *see also* NIJ GUIDE, *supra* note 322, at 23 (discussing training costs).

394. NIJ GUIDE, *supra* note 322, at 23.

Additionally, Constantino maintains that machines are superior to dogs in that “a police dog can typically only work one hour before requiring a break. Electronic sniffers do not require breaks and ‘in principle, can operate 24 [hours] a day.’”³⁹⁵ Also, “no matter how well trained the dog is, there is a limit to how many types of drugs or explosives it can detect. Most law enforcement agencies only train dogs to detect the nine most common narcotics or explosives.”³⁹⁶ By contrast, “electronic sniffers can detect a large selection of narcotics, but also explosive and chemical agents. Another benefit of electronic sniffers is that they typically do not cause the same fear in individuals who are tested [as opposed to canines].”³⁹⁷

At the same time, Constantino lists some of the advantages in using traditional canines for police work.³⁹⁸ For example, “[t]he main advantage a dog has over electronic sniffers is its ability to trace a scent to its source. A dog cannot only indicate whether molecular amounts of drugs are present in the air but it also indicates the source of the drugs,” which electronic sniffers cannot do.³⁹⁹ In effect, canines are “the tool[s] of choice for law enforcement in areas containing significant search components [which cause an increase in the complexity of a search], meaning that are they are unlikely” to be replaced by electronic sniffers in the near future.⁴⁰⁰

The effectiveness of canine detection in real-world settings is evident in the statistics generated by United States Customs. According to these statistics, between October 1996 and September 1997 canine detection led to more than 9200 seizures of narcotics and other dangerous drugs by the police.⁴⁰¹ The seized materials were valued at \$3.1 billion, including 417,672 pounds of marijuana, 48,238

395. Constantino, *supra* note 390, at 345 (citations omitted).

396. *Id.*

397. *Id.* at 345-46.

398. *Id.* at 346.

399. *Id.*

400. *Id.* at 346.

401. *Questions and Answers About the U.S. Customs Dogs*, DOGPROBLEMS.COM, <http://www.dogproblems.com/uncategorized/questions-and-answers-about-the-us-customs-dogs/> (last visited Nov. 26, 2012).

pounds of cocaine, 335 pounds of hash oil, 326 pounds of heroin, and 213 pounds of opium.⁴⁰²

C. *K-9s—and Other Machines*

Alongside my focus throughout this Article on the dog itself as a fusion of technology and nature, the increasing use of advanced technologies that are installed onto the dogs' bodies in the course of their routine police work also renders the nature/machine split quite impractical for assessing contemporary surveillance operations. Dogs are increasingly becoming hybrid animal-machines—or, in Donna Haraway's terminology, cyborgs.⁴⁰³ For example, some have speculated that a dog from the Navy Seal's elite dog team—armored with high-level machinery—parachuted with eighty human members into Afghanistan and was partly responsible for tracing Osama Bin Laden.⁴⁰⁴ Closer to home, a video from the Autonomous Canine Navigation project shows a yellow Labrador moving through a bomb site wearing a headset and harness, with a

402. *Id.*

403. "A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction. . . . By the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs." HARAWAY, *supra* note 197, at 149-50.

404. One reporter commented on the dog involved in the Bin Laden raid:

Little is known about what may be the nation's most courageous dog. Even its breed is the subject of great interest, although it was most likely a German shepherd or a Belgian Malinois, military sources say. But its use in the raid reflects the military's growing dependence on dogs in war, in which improvised explosive devices have caused two-thirds of all casualties. Dogs have proved far better than people or machines at quickly finding bombs.

Gardinier Harris, *A Bin Laden Hunter on Four Legs*, N.Y. TIMES, May 5, 2011, at A16; see also *A War Dog That Assisted in Assault on Bin Laden Might Have Been Trained at Auburn*, WAR EAGLE READER, (May 5, 2011), available at <http://www.thewareaglereader.com/2011/05/war-dog-that-assisted-in-assault-on-bin-laden-might-have-been-trained-at-auburn/>. The news item further reads: "Suzanne Belger, president of the American Belgian Malinois Club, said she was hoping the dog was one of her breed 'and that it did its job and came home safe.' But Laura Gilbert, corresponding secretary for the German Shepherd Dog Club of America, said she was sure the dog was her breed 'because we're the best!'" Harris, *supra* note 404.

computer, a video camera, a GPS and an accelerator, all operated remotely.⁴⁰⁵ And in New York City, police are experimenting with a remotely monitored infrared video camera mounted on a dog's back. "The real technology here is the dog," one of the implementing officers said.⁴⁰⁶

CONCLUSION

Florida v. Jardines sits at an interesting junction between two lines of precedents by the Court: *Place*, *Caballes*, and *Edmond*—which establish that a dog sniff is not a search—and *Kyllo*, *Knotts*, and *Karo*, which draw a "firm but also bright" line at the entrance to the house.⁴⁰⁷ Soon, the Supreme Court Justices will need to decide which line of cases more strongly applies in this case: will the sanctity of the home trump centuries of dog-human camaraderie?

On the one hand, the Court will want to avoid granting K-9 police an absolute power to sniff around homes with no need for warrants or reasonable suspicion and will also want to be careful when using the products of such sniffs as sufficient grounds for a valid search warrant. On the other hand, the Court will want to use caution when interfering with routine police detection work, especially in what is perceived as a security-sensitive time. Although it has received much less attention, another case from the Sunshine State will soon be decided by the Supreme Court. This case, which concerns the reliability of dog sniffs, contests the Supreme Court's previous assumption that the dog is infallible.

405. Bilger, *supra* note 1, at 55; see *Action Videos*, K9 STORM INC., <http://www.k9storm.com/video.html> (last visited Aug. 13, 2012). For an idea about the technological advancements used in the military, see Jennifer Viegas, *A U.S. Navy Seals' Secret Weapon: Elite Dog Team*, DISCOVERY NEWS (May 2, 2011, 6:47 PM), <http://news.discovery.com/animals/a-us-navy-seals-secret-weapon-elite-dog-team-110503.html>; see also Winard Britt, *A Software and Hardware System for the Autonomous Control and Navigation of a Trained Canine* 27-28 (Aug. 10, 2009) (unpublished Ph.D. dissertation, Auburn University), available at <http://etd.auburn.edu/etd/bitstream/handle/10415/1800/Dissertation.pdf?sequence=1>.

406. Bilger, *supra* note 1, at 56.

407. *United States v. Kyllo*, 533 U.S. 27, 40 (2000).

This Article has presented an alternative framework for deciding the two Florida cases. First, I have shown the instability of the distinction between nature and technology drawn by courts in their Fourth Amendment cases. As part of this argument, I have also criticized the courts' *sui generis* approach toward dogs, first established in *Place*. Unlike the machine, which is always suspected of being a "creeping" surveillance technology, courts have often treated the dog as innocuous and familiar and, hence, as incapable of substantially intruding into human privacy.

The opposition between nature and technology, often criticized by social theorists, is now before the Supreme Court. The canine search cases invite the Court to develop a more nuanced view of nature by acknowledging that a police dog, although biological in many senses, is also manmade by virtue of its breeding, training, deployment, and interpretation by humans.

By contrast to the prevailing judicial classification of the police dog as *either* a natural entity *or* a technology—each triggering an opposite chain of legal events—I have suggested treating the police dog as a "biotechnology," a technique of producing and using a biological entity that requires considerable expertise and expense. Although it seems that the dog has a limited development capacity in comparison to the nonorganic machine, the police dog's improved breeding, training, application, and machine augmentation render it *both* a biological entity *and* an advancing technology.

Moreover, although the American public commonly uses dogs as pets,⁴⁰⁸ a work dog—and a police detection dog in particular—is clearly not "in public use." Specifically, the high cost of K-9 breeding and professional training, the unique handler-canine relationship that develops in the highly volatile police setting, and the status of K-9s as full members of the police force—all demonstrate that the police dog is not, and will probably never be, in such general public use.

408. Indeed, according to a 2012 survey, 62% of United States households owned a pet: 39% of households owned at least one dog and 33% of households owned at least one cat. See Industry Statistics and Trends, AM. PET PRODUCTS ASS'N, http://www.americanpetproducts.org/press_industrytrends.asp (last visited June 2, 2012).

Finally, this Article has argued that the hybrid category of “biotechnology” should trigger at least as much constitutional protection as an infrared device.⁴⁰⁹ Under no circumstances should any technology go *a-priori* unprotected by the Fourth Amendment, even when such technology is an eight-year-old chocolate Labrador Retriever named Franky.

409. In *Place*, Justice Brennan seemed to imply that due to the majority’s rulings, we may need to be more concerned about dogs than technology. See *United States v. Place*, 462 U.S. 696, 719-20 (1983) (Brennan, J., concurring) (“The use of dogs. . . implicates concerns that are at least as sensitive as those implicated by the use of certain [advanced technologies.]”); *United States v. Jacobsen*, 466 U.S. 109, 137-38 (1984) (Brennan, J., dissenting) (“[T]he Court . . . may very well have paved the way for technology to override the limits of the law . . .”).