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DETECTOR DOGS AND PROBABLE CAUSE

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Cry “Havoc,” and let slip the dogs of [the drug] war.⁺

INTRODUCTION

As criminals increase their sophistication at disguising drugs, explosives and other contraband, law enforcement agencies are deploying modern versions of one of man’s oldest search technologies with increasing frequency: detector dogs. These dogs go by names like Torque,¹ Bobo,² and Razor.³ Collectively, they and their handlers are defining the scope of Fourth Amendment⁴ rights in searches across the nation.

Last year, in *Illinois v. Caballes* the Supreme Court determined that police may use a detector dog to sniff an otherwise lawfully stopped vehicle, even when the police officer handling the dog lacks reasonable suspicion or probable cause to believe that contraband may be present.⁵ The *Caballes* opinion halted any potential movement toward finding that the Fourth Amendment required reasonable suspicion before detector dogs could be deployed at an automobile stop.

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⁺ William Shakespeare, *JULIUS CAESAR, Act III, Scene 1*.

¹ *United States v. Owens*, 167 F.3d 739, 748 (1st Cir. 1999).

² *United States v. Kennedy*, 131 F.3d 1371, 1373 (10th Cir. 1997).

³ *Matheson v. State*, 870 So. 2d 8, 10 (Fla. 2d Dist. Ct. App. 2003).

⁴ The Fourth Amendment states:

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

U.S. CONST. Amend. IV.

⁵ *Illinois v. Caballes*, 543 U.S. 405 (2005).

The Court reached its conclusion in part because it accepted as a legal fact a very disputable scientific fact: that an "alert"⁶ by a properly-trained narcotics detection dog—standing alone—constitutes probable cause to believe that a vehicle or bag in fact contains narcotics. By giving its tacit approval to this widely-held presumption, the Court missed an opportunity to reexamine the law regarding the value of such an alert, and has implicitly approved the practice of lower courts in a significantly underdeveloped area of the law.

This article argues that an alert, even by a well-trained dog with an excellent track record in the field, cannot by itself constitute probable cause to search. By using Bayesian analysis⁷ of the value of dog alerts, this article demonstrates that a finding of probable cause requires additional evidence.

This article then critiques the current practice of the courts through the analysis of a few sample cases. It shows why police will not make changes to their use of dogs without outside prodding, and explores who might do so. The article recognizes that systemic resistance to the Bayesian analysis will make it very difficult for courts to reevaluate this old technology, and explores those barriers. It then makes some suggestions that, if adopted, will improve the courts' approach to detector dog technologies, allowing them to better strike the balance between the competing values of effective law enforcement and personal privacy.

Finally, this article uses the problems with detector dogs as an entry point for examining the courts' problems with reevaluating the use of established investigative technologies. In a sense, familiarity breeds contempt, not for the proponents of the familiar evidence but for the opponents. The problems also arise because other institutional actors depend on the courts to leave settled practices in place.⁸ Other scholars have considered the adoption of new technology and how that interacts with the concept of reasonable expectations of privacy.⁹ This article uses detector dogs as a case study in the difficulty the courts face in reevaluating old technology, a problem that brings with it additional layers of complexity because stare decisis and settled expectations limit the courts' freedom to make adjustments through application of Fourth Amendment principles.

⁶ Detector dogs are trained to repeat a certain behavior to show their handler that they have identified the thing they were taught to find. *United States v. Johnson*, 323 F.3d 566, 567 (7th Cir. 2003) (quoting Sandy Bryson, *Police Dog Tactics* 257 (2d ed. 2000)). This can be an "active alert" characterized by scratching or digging at the point from which the scent emanates, or a passive alert, where the dog sits or lies down and looks at the point. *Id.*

⁷ Bayes' Theorem is a method to update probabilities in light of new information. *United States v. Shnoubi*, 895 F.Supp. 460, 484 (E.D.N.Y. 1995).

⁸ *Infra* Part VI.C.

⁹ *Infra* notes 159-63 and accompanying text.

The article proceeds as follows: Part I provides some background information about the abilities—and limitations—of detector dogs. Part II examines the Supreme Court's opinion in *Illinois v. Caballes*, showing how the Court collapsed the core concern of this article, the value of an alert, into a presumption, ignoring the concerns of the dissenters and some lower courts. The Court acted this way because the issue was framed as the timing of the use of the dog, and not as the value we should ascribe to an alert by that dog once it has been used. (The latter inquiry is the focus of this article.) Part III reviews the lower courts rulings after *Caballes*. Part IV uses Bayes' Theorem to demonstrate why the Court was simply wrong to say that an alert by a properly-trained dog constitutes probable cause. Part V examines how the lower courts treat dog alerts, and shows that the state of practice is even worse than the *Caballes* opinion suggests. Many courts simply assume the conclusion, refusing to even grant discovery of the records that would reveal the accuracy of particular dogs, or on the conduct of particular searches. Part VI examines the systemic limitations that make it difficult for courts to reevaluate technologies that are already in widespread use, such as detector dogs. Part VII makes suggestions for changes that the courts and police agencies could implement to improve the use of detector dogs.

I. HOW DETECTOR DOGS WORK

A well-trained, well-handled detection dog can do remarkable things. We know it because of science. Researchers at Auburn University studying dogs' capacity to identify certain smells have found that some dogs can detect odors when the particles in the air are at a concentration of 500 ppt—that's parts per *trillion*.¹⁰ While there are no reliable studies comparing humans to dogs under similar conditions, dogs react to many smells at a threshold well below that of humans. Properly used, dogs can detect thousands of scents, including narcotics, explosives, cadavers and accelerants.¹¹ News outlets continue to write stories about bomb-sniffing dogs in airports, bus stations, and even the London subway system.¹² The dog plays a special role in our popular culture—Lassie's ability to detect little Timmy in a well

¹⁰ J.M. Johnston, INSTITUTE FOR BIOLOGICAL DETECTION SYSTEMS, AUBURN UNIVERSITY, CANINE DETECTION CAPABILITIES: OPERATIONAL IMPLICATIONS OF RECENT R&D FINDINGS, 1 (1999).

¹¹ E.g., United States Police Canine Association, Inc. Certification Rules and Regulations (2006), <http://www.uspcak9.com/certification/USPCARulebook2006.pdf>. Certifications for detector dogs include narcotics, explosives, accelerants, wild game, and cadavers. *Id.*

¹² See, e.g., Sari Horwitz and Lyndsey Layton, *So Far, Dogs Are Still Best Detectors of Bombs*, WASH. POST, July 19, 2005, at A17.

and save him from other dangers is part of American popular culture.¹³ Law enforcement uses dogs, and judges believe in dogs, because they work.¹⁴

But not all dogs are well-trained and well-handled, nor are all dogs temperamentally suited to the demands of being a working dog. Some dogs are distractible or suggestible, and may alert improperly. Many factors may lead to an unreliable alert. Dogs are living, thinking and feeling creatures. Because dogs can learn new behaviors, a search that reveals a substance on which the dog was not trained can expand the dog's repertoire, increasing positive alerts on new substances because the dog sees that its handler was pleased by the result. The dog can also learn to associate certain smells with the items on which it is trained, for example air freshener or plastic baggies, and thus alert to non-contraband items.¹⁵ Such adaptability is natural, and in some contexts highly desirable, but it can lead dogs to do different things in the field than they do in the controlled environment of a training facility.¹⁶

Dogs respond by "alerting" to the presence of some chemical molecule that they have come to associate with a reward—be it food, playing with a toy, or praise from their handler.¹⁷ The molecule could be a commonly used mixing chemical, a trace agent, or the plant itself, in the case of marijuana.¹⁸ The science of "alerting" is not yet fully developed, and it will require further experimentation to determine to what the dog alerts.¹⁹

Given the level of sensitivity that many dogs possess, it is possible that if the person being searched had attended a party where other people were using drugs, the dog would alert because of the residue on clothing or

¹³ LASSIE COME HOME (Warner Home Video 1943); LASSIE THE PAINTED HILLS (Alpha Video 1951); COURAGE OF LASSIE (Warner Home Video 1946).

¹⁴ Andrew E. Taslitz, *Does the Cold Nose Know? The Unscientific Myth of the Dog Scent Lineup*, 42 HASTINGS L. J. 15, 23 (1990). At least they work most of the time. For example, in *U.S. v. Ebersole* a trainer was convicted of wire fraud and ordered to pay more than \$700,000 in restitution for using undertrained dogs and handlers. *United States v. Ebersole*, 411 F.3d 517, 521 (4th Cir. 2005).

¹⁵ See Stephen B. Phillips, *Record Keeping For Maintenance Training of a Detection Dog*, Eastern States Working Dog Association Newsletter, Vol 2 No. 2, available at http://www.eswda.org/Newsletter/eastern_states_working_dog_assoc.htm (visited July 27, 2006).

¹⁶ Well-trained handlers are taught to "proof" the dog through the use of negative training aids. For example, "the handler can then explain that his dog alerts to narcotic odor and only narcotic odor, and that he knows this because he has trained around negative training aids such as food items, animal scent, sterile packaging materials, etc. and can prove it with documentation." Ron Gunton, *Documentation and K9 Policing*, North American Police Working Dog Association Website, <http://www.napwda.com/tips/index.phtml?id=25> (last visited July 16, 2006).

¹⁷ See Robert C. Bird, *An Examination of the Training and Reliability of the Narcotics Detection Dog*, 85 Ky. L. J. 405, 411-412 (1997).

¹⁸ Interview with Lawrence Myers, Associate Professor of Anatomy, Physiology and Pharmacology, Auburn University College of Veterinary Medicine, telephonic interview (Mar. [date unrecorded], 2005) [hereinafter Myers Interview].

¹⁹ Johnston, *supra* note 10, at 4.

fabric.²⁰ It is possible that in a vehicle that had formerly been used to transport drugs, the dog would alert, despite the fact that drugs were no longer present.²¹ Or it is possible that some sort of residue normally associated with drugs was present.²² Part of the imprecision associated with alerting is that the dog cannot tell its handler what it is alerting to, and why.

A drug detection dog is not a gas chromatograph-mass spectrometer. It does not detect molecules in the air and produce a readout that states with empirical reproducibility the chemical composition of the molecules. It is part of a team that depends on a complex interaction of animal psychology and human factors.²³ The handler rewards the dog for finding drugs. Many training techniques use a Pavlovian response—the dog does not eat until it correctly alerts on the presence of drugs.²⁴ This may cause an incentive to alert in cases where there is such a low threshold of detectable molecules that there is no probability that contraband is present. Because the dog sniff includes no measure of strength—it's purely binary—it should be treated with caution.

Another potential drawback in the use of an animal that hopes to please its handler is the problem of handler cuing. Even the best of dogs, with the best-intentioned handler, can respond to subconscious cuing from the handler. If the handler believes that contraband is present, they may unwittingly cue the dog to alert regardless of the actual presence or absence of any contraband.²⁵ Finally, some handlers may consciously cue their dog to alert to ratify a search they already want to conduct.

II. *ILLINOIS V. CABALLES*

In *Illinois v. Caballes*, the Supreme Court held that when police and their canine counterparts arrive at the scene of a traffic stop and circle and sniff a car, that activity is not a search that implicates the Fourth Amendment, even in the absence of evidence warranting a narcotics search.²⁶ The Court's decision matched decisions reached by each of the federal circuit

²⁰ See Jorge G. Aristotelidis, *Trained Canines at the U.S.-Mexico Border Region: A Review of Current Fifth Circuit Law and a Call for Change*, 5 SCHOLAR 227, 242 (2003) (discussing residual odor issues). This phenomenon might be particularly problematic with rental cars.

²¹ See *id.*

²² See Andy G. Rickman, Note, *Currency Contamination and Drug-Sniffing Canines: Should Any Evidentiary Value Be Attached to a Dog's Alert on Cash?*, 85 KY. L.J. 199, 200 (1997).

²³ Myers Interview, *supra* note 18.

²⁴ *Id.*

²⁵ See Aristotelidis, *supra* note 20, at 239-40.

²⁶ *Illinois v. Caballes*, 543 U.S. 405, 409-10 (2005).

courts that had considered the issue.²⁷ In coming to its holding, the Court reaffirmed its earlier precedent in *United States v. Place*,²⁸ which “treated a canine sniff by a well-trained narcotics-detection dog as ‘*sui generis*’ because it ‘discloses only the presence or absence of narcotics, a contraband item.’”²⁹

The facts are as follows: A state trooper stopped Roy Caballes for speeding on an Illinois highway.³⁰ While he was pulled over on the side of the road, enduring the mundane procedures followed whenever someone receives a warning ticket, a second trooper arrived in a separate patrol car and decided to walk his narcotics detection dog around Mr. Caballes’s car to see if it alerted to the presence of drugs.³¹ The dog alerted, and the police searched Mr. Caballes’s trunk and found enough marijuana to warrant a 12-year prison sentence and a \$256,136 fine.³² After conviction in the lower courts, Caballes appealed, arguing that the Fourth Amendment required more than a suspicion of speeding before deployment of a narcotics detec-

²⁷ See *infra* note 93 and accompanying text.

²⁸ 462 U.S. 696 (1983). For more on *Place* and related jurisprudence, see Hope Walker Hall, Comment, *Sniffing Out the Fourth Amendment: United States v. Place—Dog Sniffs—Ten Years Later*, 46 ME. L. REV. 151 (1994).

²⁹ *Caballes*, 543 U.S. at 409. *Sui generis* is Latin for “of its own kind or class.” BLACK’S LAW DICTIONARY 1475 (8th ed. 2004). The Court’s positions on the Fourth Amendment often appear incoherent. This is at least in part because the debate is over property-based and information-based conceptions of the Fourth Amendment. It is the tension between what many scholars see as the prevailing view of the Fourth Amendment set forth in *Olmstead v. United States* (277 U.S. 438 (1928)) and that set forth in more recent cases such as *Kyllo v. United States* (533 U.S. 27 (2001)). As Professor Orin Kerr and others have demonstrated, property rights are still, at the very least, an excellent starting point for analyzing whether one has a reasonable expectation of privacy. See, e.g., Orin Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801 (2004). However, there are definite limits to the property arguments. In *Kyllo*, a case involving a heat signature that could be detected by infrared monitors, without invading any property interests the court held that there is a reasonable expectation of privacy in the home, notwithstanding significant advances in surveillance technology. *Kyllo*, 533 U.S. at 34. Early cases involving the use of microphones to record conversations had focused on where the microphone was located. See *Katz v. United States* 389 U.S. 347, 350 (1967) (discussing history). A spike microphone driven through a wall was a clear violation of property rights. *Olmstead v. United States*, 277 U.S. 438, (1928). A sensitive microphone that heard sound waves that left the defendant’s property was seen as raising issues that were different in kind. *Katz*, 389 U.S. at 350-51. As we can see from the examination of the off-the-wall/through-the-wall arguments in *Kyllo* over how to delineate the limits for emanations, the Court is still working its way through several overlapping views of how the Fourth Amendment is designed to operate. *Kyllo*, 533 U.S. at 34. What the Court has done in the context of dog sniffs is create a separate category—one it calls *sui generis*—for technologies that detect only contraband.

³⁰ *Caballes*, 543 U.S. at 406.

³¹ *Id.*

³² *Id.* at 406-07.

tor dog.³³ The Illinois Supreme Court agreed with his contention that there must be some basis for turning a speeding investigation into a narcotics investigation before deploying a drug dog.³⁴

The U.S. Supreme Court disagreed. *Caballes* was a relatively narrow decision, focusing on whether the deployment of the dog constituted a search under the Fourth Amendment. Specifically, the Court held that conducting a dog sniff would not change a traffic stop that was lawful when it began and was otherwise executed in a reasonable manner into an unlawful search, unless the manner in which the dog sniff itself was conducted infringed the citizen's constitutionally protected interest in privacy.³⁵ Specifically the court stated: "A dog sniff conducted during a concededly lawful traffic stop that reveals no information other than the location of a substance that no individual has any right to possess does not violate the Fourth Amendment."³⁶ Two propositions underlie this reasoning—first, that under these circumstances no search has occurred,³⁷ and second, that because this non-search activity only reveals contraband, there is no reasonable expectation of privacy in the presence or absence of detectable narcotics (or other contraband) molecules.³⁸

The Court dismissed the defendant's contention that error rates and false positives may call into question a core premise of the opinion—that the dogs alert only to contraband.³⁹ The Court held rather that the sniff itself does not violate the Constitution.⁴⁰ This will be true for future cases unless the rule is changed. However, the subsequent search of a trunk—or other private space—is premised on the fact that the dog has alerted to the

³³ *Id.* at 407.

³⁴ *Id.*

³⁵ *Id.* at 408.

³⁶ *Caballes*, 543 U.S. at 410.

³⁷ The Court has gone through a convoluted process of determining when Fourth Amendment rights are implicated based on the uses of specific technologies. At one time, under a property-based view of the Fourth Amendment, the most important issue was whether or not there was a physical trespass into the property of the accused. *Katz v. United States*, 389 U.S. 347, 353 (1967). In *Katz v. United States*, the Supreme Court changed its inquiry to an exploration of the defendant's reasonable expectation of privacy. *Id.*

³⁸ See Arnold H. Loewy, *The Fourth Amendment as a Device for Protecting the Innocent*, 81 MICH. L. REV. 1229 (1983). Professor Loewy argues that where the police can create a "divining rod" that reveals only the presence of contraband, there is no reasonable expectation of privacy. *Id.* at 1244-46. "[A]n accurate dog approaches the hypothetical divining rod by separating the innocent from the guilty." *Id.* at 1246. He recognizes the limitations that the theory has—a search even by a perfectly accurate dog still exposes one to the indignity and possible trauma of being sniffed when the search is of one's person. *Id.* at 1246-47.

³⁹ *Caballes*, 543 U.S. at 410.

⁴⁰ *Id.*

presence of contraband, and the government now possesses probable cause to search for it.⁴¹

The dissenters would have called the sniff a search, and would have required reasonable suspicion before allowing the sniff to take place.⁴² The fact that they lost that argument does not mean that the dissenters did not have a valid core concern about the way dogs are actually used in the field. As explained above, the *Caballes* case in fact presented an incredibly narrow question: Was it a search to bring the dog out and have it sniff?⁴³ One can be agnostic on the question presented in *Caballes*—was a sniff a search—and still believe that the end result was wrong. The dissenters in *Caballes* were duly concerned with the larger issue—that these dog alerts culminate in searches, and the dissenters' core concern was right: A dog alert alone should not constitute probable cause to search.⁴⁴

Some additional quantum of evidence, probably amounting to reasonable suspicion, should be necessary before initiating the search.⁴⁵ That additional evidence could also be developed after an alert. It is not *when* the additional evidence is developed relative to the dog sniff that is the key to the inquiry; it is the fact that the additional evidence must also be developed before a search of the vehicle or bag is initiated, and the dog alert and the additional evidence must combine to constitute probable cause.

The Court's decision changed nothing significant in the battle over introducing evidence of contraband seized after a narcotics detection dog alerts. The critical issue in the suppression hearings that will continue in trial courts will not be whether the mere act of the dog sniffing the car or bag in question is a constitutional violation.⁴⁶ Under *Caballes*, it clearly is

⁴¹ This may be the most fundamental criticism of all. The statement that an alert by a properly trained dog is *prima facie* evidence of the presence of contraband is based on flawed statistical analysis. There is clearly a problem in setting an appropriate level of background expectation that needs to be addressed. Officers clearly can support their instincts with articulable facts. They do it all the time in the *Terry* stop context, and it will not be hard for prosecutors and judges to adapt those requirements to the dog sniff context. While Justices Ginsburg and Souter would require reasonable suspicion before searching, under a different rationale, the result may be the right one. Requiring reasonable suspicion coupled with the dog sniff—whether it be before the sniff or after—is a simple and practical safeguard for ensuring the presence of probable cause before the search is conducted.

⁴² *Caballes*, 543 U.S. at 420-25 (Ginsburg, J., dissenting); *Id.* at 410 (Souter, J., dissenting).

⁴³ *Caballes*, 543 U.S. at 410.

⁴⁴ See *infra* notes 67-69 and accompanying text.

⁴⁵ Where I think the dissenters were wrong as a matter of Fourth Amendment principle is that they would require that the reasonable suspicion be developed *before* the dog was allowed to sniff.

⁴⁶ This was the focus of the dissent, and has been the focus of the scholarly criticism or support of the opinion. The analysis in those articles focuses on whether or not there was a search, not on whether or not the alert constitutes probable cause. See, e.g., Nina Paul & Will Trachman, Note, *Fidos and Fidons': Why the Supreme Court Should Have Found a Search in Illinois v. Caballes*, 9 CAL. CRIM. L.

not.⁴⁷ Instead, prosecutors and defense attorneys will ask a judge to determine two things: First, did police use the dog in a place where it had a right to be, during the course of an otherwise lawful stop or seizure?⁴⁸ The second inquiry, and the more critical one, that is left unanswered by *Caballes*, is whether this alert, by this dog, under this specific set of circumstances, was enough to establish probable cause to search.⁴⁹ Whether or not the sniff takes place and the dog alerts is usually of no great moment to defendants, or to the innocent public who are potentially subject to search.⁵⁰ It is what happens next—the search based on the alert—that implicates the Fourth Amendment. The lower courts have often conflated the two inquiries,⁵¹ and post-*Caballes* are even more likely to do so.

III. DOG SNIFF CASES AFTER *CABALLES*

A. *Lawful Stop*

When analyzing detector dog cases post-*Caballes*, it is important to take the inquiries in order: First, was the dog in a place where it had a right to be, during a lawful stop? The rule stated in *Caballes* clearly applies in the event of an otherwise lawful stop.⁵² *Caballes* also assumed that the court would have been warranted in suppressing the evidence “if the dog sniff had been conducted while [the] respondent was being unlawfully detained.”⁵³ The range of lawful stops varies from the probable cause traffic stop at issue in *Caballes*, to border stops, traffic checkpoints, or *Terry*-style “stop and frisk” scenarios based on reasonable suspicion.⁵⁴ The full range of lawful stop scenarios is beyond the scope of this article. The key issue for the courts is assuring that whatever the basis, the police did not violate the

REV. 1 (2005); Milton Hirsch & David Oscar Markus, *Drugs, Dogs and Cars: Oh My!*, 29 CHAMPION 48 (2005).

⁴⁷ *Caballes*, 543 U.S. at 409-10.

⁴⁸ *Id.* at 409.

⁴⁹ See *infra* notes 55-56 and accompanying text.

⁵⁰ At least in terms of collecting evidence. There may be additional concerns regarding the fear many people feel in the presence of search dogs, or the public messages involved in having passersby see the police using dogs to sniff around an individual, their vehicle or their possessions.

⁵¹ See *infra* notes 55-56 and accompanying text. So have the commentators. See Aristotelidis, *supra* note 20, at 227; Paul & Trachman, *supra* note 46; Hope Walker Hall, Comment, *Sniffing Out the Fourth Amendment: United States v. Place—Dog Sniffs—Ten Years Later*, 46 ME. L. REV. 151 (1994).

⁵² *Caballes*, 543 U.S. at 410.

⁵³ *Caballes*, 543 U.S. at 408.

⁵⁴ See *Terry v. Ohio*, 392 U.S. 1, 26 (1968) (police may stop a suspect briefly and frisk him for weapons when there is a reasonable and articulable suspicion that a crime may be about to occur).

suspect's rights to put the dog and the items sniffed in the same place at the same time.

B. *Probable Cause—Quantum or Conclusion?*

The second inquiry is whether a search by a particular dog under specific circumstances constitutes probable cause to search under the Fourth Amendment. Just because the sniff itself is not a violation does not mean that the searches that follow the sniff are legal. For the search to be valid, the search must satisfy the quantum of suspicion appropriate for the particular situation and environment.⁵⁵ *Caballes* does not suggest that the automobile exception to the warrant requirement⁵⁶ lowers the quantum of proof required. It remains probable cause. Instead, *Caballes* specifically relied on the trial court's determination that "the dog sniff was sufficiently reliable to establish probable cause to conduct a full-blown search of the trunk."⁵⁷

What one thinks about the validity of that conclusion turns in part on what one believes the courts should be doing when they interpret the Fourth Amendment's probable cause requirement. Consider the text of the Fourth Amendment:

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.⁵⁸

The probable cause standard actually applies to the issuance of warrants, not to warrantless searches. The people have a right otherwise to be secure against unreasonable searches and seizures. The courts have read the probable cause requirement for warrants back into the term "reasonable," holding that probable cause is necessary for warrantless searches as well,

⁵⁵ In *Illinois v. Gates*, the Court stated that probable cause deals with probabilities, not certainties. 462 U.S. 213, 231-32 (1983) (citing *United States v. Cortez*, 449 U.S. 411, 418 (1981)). "Long before the law of probabilities was articulated as such, practical people formulated certain common-sense conclusions about human behavior; jurors . . . are permitted to do the same--and so are law enforcement officers. *Id.*

⁵⁶ See *United States v. Ross*, 456 U.S. 798, 804-09 (1982) (addressing the scope of the automobile search exception to the warrant requirement); *Pennsylvania v. Labron*, 518 U.S. 938 (1996) (per curiam) (ready mobility of the vehicle and probable cause to believe that the vehicle contained contraband obviated warrant requirement).

⁵⁷ *Caballes* 543 U.S. at 409.

⁵⁸ U.S. CONST. amend. IV.

absent some exigent circumstance. Some commentators have suggested that the probable cause requirement has nothing to do with probabilities, and is instead the system's collective shorthand for a search we are willing to permit (i.e., searches that are "reasonable.")⁵⁹ Professors Ronald Allen and Ross Rosenberg have called this shorthand "local knowledge" specific to an area of Fourth Amendment law, and point out that the concept of probable cause is in a sense impossible to determine without resort to the surrounding circumstances.⁶⁰ Courts search for analogues to see how much evidence, of what kind, was found to rise to the level of permitting a search, and call it probable cause. Allen and Rosenberg recognize that there are inherent difficulties in most situations in determining the weight accorded to particular evidence *ex ante* and add:

What specific evidence equates to any burden of persuasion cannot be said in advance about any aspect of the human condition. . . . [T]he only method of reducing the analytical indefiniteness of 'probable cause' would be not to treat it as a probability measure, and instead to generate another type of local knowledge.⁶¹

Allen and Rosenberg suggest that the courts have developed a "local knowledge" of reasonable searches during various stages of the vehicle search context.⁶² The area within the defendant's reach may be searched for officer safety.⁶³ The trunk may be searched as part of an inventory search once the vehicle has been seized.⁶⁴ The decided cases no longer rely on fresh determinations of the presence of probable cause in each new case, but instead are based on what amounts to a common-law police practice code, which officers can be taught once a particular case is decided.⁶⁵ If the commentators are correct and the Fourth Amendment is all about "local knowledge," then the Court's determination that a sniff is sufficient to constitute probable cause would be determinative under the Fourth Amendment.

Nevertheless, the courts still seem to speak the language of probability when they determine whether a search should take place. While the facts repeat themselves often enough to lead to well-settled responses, the

⁵⁹ See, e.g., Ronald J. Allen & Ross M. Rosenberg, *The Fourth Amendment and the Limits of Theory: Local Versus General Theoretical Knowledge*, 72 ST. JOHN'S L. REV. 1149, 1160 (1998); Albert W. Alschuler, *Bright Line Fever and the Fourth Amendment*, 45 U. PITT. L. REV. 227 (1984).

⁶⁰ Allen & Rosenberg, *supra* note 59, at 1160.

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.* at 1154.

⁶⁴ *Id.* at 1157.

⁶⁵ This is particularly important because police in the field need rules of behavior, not abstract legal standards. We will return to this issue below. See *infra* note 136 and accompanying text.

amount of proof remains a constant. If that is so, then new information about the accuracy of particular tests will lead to a reevaluation of the legal conclusion that flows from its presence. This article now explores what that means in the context of a dog sniff.

IV. A BAYESIAN CRITIQUE OF THE PROBABLE CAUSE DETERMINATION

Caballes stands for the proposition that a drug sniff that does not prolong an otherwise lawful stop is not a search for purposes of the Fourth Amendment.⁶⁶ However, *Caballes* does not definitively answer the more fundamental question of whether an alert standing alone constitutes probable cause. This section demonstrates that under even the most generous definition of probable cause, it does not.

Justice Souter suggested that this might be a potentially fruitful area for further development.⁶⁷

The infallible dog, however, is a creature of legal fiction. Although the Supreme Court of Illinois did not get into the sniffing averages of drug dogs, their supposed infallibility is belied by judicial opinions describing well-trained animals sniffing and alerting with less than perfect accuracy, whether owing to errors by their handlers, the limitations of the dogs themselves, or even the pervasive contamination of currency by cocaine.⁶⁸

First, let us consider false positives, highlighted by Justice Souter in his dissent in *Caballes*.⁶⁹ A false positive is an alert by the dog in the absence of the substance it is trained to detect. False positives are an inherent problem with any less-than-perfect system. It is going to be wrong sometimes, even when the operator is well-trained and acting in good faith. False positives may lead to the search of an innocent person—or at least to the search of a person who is not carrying drugs right now. In some cases, a false positive leads to a search that results in contraband different than the substance the dog is trained to detect; for example, a dog trained on cocaine and marijuana may falsely alert, leading to the discovery of methamphetamine, cash, or firearms. False positive alert notwithstanding, if the court deems the alert to constitute probable cause rendering the search legal under the Fourth Amendment, any additional contraband or inculpatory mate-

⁶⁶ See *supra* note 26 and accompanying text.

⁶⁷ *Caballes*, 543 U.S. at 411-12 (Souter, J., dissenting).

⁶⁸ *Id.*

⁶⁹ “The infallible dog . . . is a creature of legal fiction. . . . In practical terms, the evidence is clear that the dog that alerts hundreds of times will be wrong dozens of times.” *Id.*

rials discovered in the course of that search will be deemed properly seized under a plain-view analysis.⁷⁰

But the dissenters in *Caballes* missed a more fundamental criticism regarding false positives. Even error rates the dissenters would consider perfectly acceptable make it plain that the mere fact of an alert cannot be probable cause, once one considers the effect of Bayes' Theorem, a formula commonly used by medical doctors and scientists for taking proper account of new information, such as that provided by laboratory tests.⁷¹ It tells us, through a little calculation, how strong our belief should be that a particular fact or condition exists, if we are given a new piece of information to add to what we knew before. Or, in the language of statisticians, the formula allows the user to update their beliefs about certain events in light of new information.⁷²

Applying Bayes' Theorem debunks the common fallacy that an alert by a dog with a ninety percent success rate means there is a ninety percent chance that this particular vehicle contains the controlled substance.⁷³ In fact, that conclusion could not be further from the truth. Yet, as the literature and the cases confirm, such a conclusion is a widely held and intuitive misconception. It should not be surprising that unless the dog is perfect, the test only increases the likelihood that there are drugs present; it does not establish it. We do not expect a ninety percent accurate test to leave us with a one hundred percent conviction that there are drugs present. But that ninety percent accurate test increases the likelihood that drugs are present

⁷⁰ Under this view, the officer had probable cause to search the place or compartment. The fact that the search revealed different contraband or evidence does not render the evidence inadmissible, because it was in plain view from a position where the searching officer had a right to be.

⁷¹ See Eliezer Yudkowsky, An Intuitive Explanation of Bayesian Reasoning: Bayes' Theorem for the Curious and Bewildered; an Excruciatingly Gentle Introduction, <http://yudkowsky.net/bayes/bayes.html> (last visited July 16, 2006).

⁷² The use of Bayesian analysis in court has been the subject of some controversy, especially where the proponent of evidence wants to use Bayes' Theorem to show that a particular piece of evidence has extraordinary probative value. See Michael O. Finkelstein & William B. Fairley, *A Bayesian Approach to Identification Evidence*, 83 HARV. L. REV. 489 (1970); Kenneth S. Broun & Douglas G. Kelly, *Playing the Percentages & the Law of Evidence*, 1970 U. ILL. L. REV. 23; Lawrence H. Tribe, *Trial By Mathematics: Precision & Ritual in the Legal Process*, 84 HARV. L. REV. 1329 (1971). For those seeking a more straightforward explanation of Bayes' Theorem and how it works, there is an excellent website explaining the application of Bayes' Theorem in various contexts which may be helpful for the uninitiated. See Eliezer Yudkowsky, *supra* note 71; Cf. Lea Brilmayer, *Second-Order Evidence and Bayesian Logic*, 66 B.U. L. REV. 673 (1986) (discussing the potential limitations on Bayesian Logic in the courtroom).

⁷³ For an earlier, abbreviated discussion of Bayes' Theorem in the dog sniff context, see Bird, *supra* note 19.

far less than most people think. If the probability was low to begin with, even a really good test will still result in a relatively low number.⁷⁴

Imagine that a deputy sheriff has made a stop, and while he is writing the driver of the car a ticket, a colleague runs this ninety percent successful dog around the car. The handler has not talked to the other deputy at all about the stop, the reasons for it, the driver's demeanor, story, or other conditions. The dog alerts at the trunk, scratching vigorously as it has been trained to do in the presence of cocaine or marijuana. Knowing nothing else about the driver and her demeanor, what are the odds that the trunk in fact contains an illegal drug? Despite what your instincts may tell you, there is not a ninety percent chance that there will be drugs in the car. To get the true number, we need to know more.

To see how the error rate of dog alerts alters the probable cause calculation, one needs to understand some statistics. Bayes' Theorem provides a framework for this analysis. As stated above, Bayes' Theorem is concerned with updating beliefs about certain events in light of new information.⁷⁵ That sounds technical, so consider the following example. Suppose the police, because of prior experiences, believe that one out of fifty stopped cars will contain drugs. In other words, the police officer's original assessment is that two percent of the cars stopped will possess drugs. (Admittedly, getting a reliable number for the background expectation is one of the problems with performing this type of analysis. Drug usage surveys may provide some help in establishing a useful figure, but there will be considerable disagreement over what figure should be used. This figure is chosen for purposes of illustration only.) Suppose, then, that the dog alerts after the car is stopped. The legal question is whether the dog alert *alone* is enough to justify a search.⁷⁶

This depends on the dog's error rate coupled with the officer's original assessment of guilt. Take first the error rate. The dog might commit two types of errors. First, the dog might fail to alert when there are drugs in the car. Second, the dog might alert when there are no drugs in the car. Assume that the dog is pretty good. He fails to alert in the presence of drugs only five percent of the time. Put another way, he has a five percent false negative rate. He alerts when drugs are not present ten percent of the time. He has a ten percent false positive rate.

⁷⁴ See Yudkowsky, *supra* note 71.

⁷⁵ See, e.g., Richard Lempert, *Some Caveats Concerning DNA As Criminal Identification Evidence: With Thanks to the Reverend Bayes*, 13 CARDOZO L. REV. 303, 316-18 (1991) (explaining Bayesian analysis in the context of DNA evidence).

⁷⁶ Remember that this depends on the stated premise—that we are talking about the value of the alert standing on its own. If we had more information, we could adjust the prior probability upward or downward.

For our purposes, the important number is the false positives. What we want to know is the probability the car contains drugs conditional on (or in light of) the dog alert. Given this information, Bayes' Theorem tells us the chance that the dog alert is correct and the person stopped has drugs. The formula and computation follow:

First, some notation for the mathematically inclined.

Let $P[\text{not alert} \mid \text{guilty}]$ equal the probability the dog commits the first type of error—5 percent. Related, of course, the dog correctly alerts in the presence of drugs 95 percent of time. So, $P[\text{alert} \mid \text{guilty}] = .95$. Let $P[\text{alert} \mid \text{innocent}]$ equal the probability the dog commits the second type of error—10 percent. Hence, $P[\text{not alert} \mid \text{innocent}] = .90$

Finally, we need the background expectations. Let $P[\text{guilty}] = .02$ represent the original assessment of guilt and $P[\text{innocent}] = .98$ represent the original assessment of innocence.

$$\begin{aligned} P[\text{guilty} \mid \text{alert}] &= \frac{P[\text{alert} \mid \text{guilty}]P[\text{guilty}]}{P[\text{alert} \mid \text{guilty}]P[\text{guilty}] + P[\text{alert} \mid \text{innocent}]P[\text{innocent}]} \\ &= \frac{(.95)(.02)}{(.95)(.02) + (.10)(.98)} \\ &= .162393 \end{aligned}$$

With a pretty good dog, but a largely innocent population, a dog alert will signal drugs only about sixteen percent of the time. The reason is this: Because the officer is stopping mostly innocent people, one has to be more concerned about the false positive error (alerting when there are no drugs). Because there are more cars without drugs in them, the gross number of searches that result from the error rate will be higher than the gross number of searches that result from correct alerts. Overall, there will be many more searches of innocent people than there will be searches of guilty people.⁷⁷

Now that we have done the math, the constitutional question that follows is: Is a sixteen percent likelihood probable cause? Maybe. Perhaps counterintuitively, this too requires some thought. We know from the

⁷⁷ Lawyers seem to do particularly poorly with evaluating the value of such a search. See Michael O. Finkelstein & Bruce Levin, *On the Probative Value of Evidence From a Screening Search*, 43 JURIMETRICS 265, 268-69 (2003) ("In biomedical applications, the strengths and weaknesses of screening tests are well understood. For example, it is recognized that even very good blood tests for rare conditions yield many false positives. Nevertheless, a similar appreciation has not been evident in the law."). See also Bird, *supra* note 17, at 427-28 (showing that a 98% accurate dog, in a population with a 0.5% drug possession rate, will yield 199 searches of innocent people versus 49 searches of guilty people, in a random search of 10,000 people).

Court's decisions that probable cause to search does not mean, as any non-lawyer would think, that it is more likely than not that there are drugs in the car.⁷⁸ But how much less still qualifies? The Supreme Court has scrupulously avoided answering that question, choosing instead a range of answers—leaving the touchstone at some unquantified “‘practical, nontechnical’ probability that incriminating evidence is involved.”⁷⁹ Is a one in eight chance a probability? If a sixteen percent chance is not good enough, then there is no probable cause for the search.⁸⁰ (While some believe the case-law suggests that a one in three chance is probably enough,⁸¹ it is likely that one in six is not.)

A search in the absence of probable cause violates the Fourth Amendment.⁸² Lower court holdings to the contrary notwithstanding, an alert alone should not permit a search. But the courts are permitting searches on an alert and nothing more.⁸³ Such, for example, was the holding of the lower

⁷⁸ See *Maryland v. Pringle*, 540 U.S. 366, 370 (2003) (“The probable-cause standard is incapable of precise definition or quantification into percentages because it deals with probabilities and depends on the totality of the circumstances.”).

⁷⁹ *Texas v. Brown*, 460 U.S. 730 742 (1983); See generally Ronald J. Bacigal, *Making the Right Gamble: The Odds on Probable Cause*, 74 Miss. L.J. 279 (2004) (discussing attempts to render probable cause in mathematical terms); William J. Stuntz, *Commentary: O.J. Simpson, Bill Clinton, and the Transubstantive Fourth Amendment*, 114 HARV. L. REV. 842 (2001) (discussing nature of probable cause).

⁸⁰ Unlike many other instances where probable cause is considered a fluid concept, “turning on the assessment of probabilities in particular factual contexts—not readily, or even usefully, reduced to a neat set of legal rules,” *Illinois v. Gates*, 462 U.S. at 232 (1983). Some lower courts have been establishing a rule for dog cases that the alert of a well-trained dog, standing alone, is enough to constitute probable cause. See *infra* note 88 (collecting lower court cases). Because the numbers demonstrate that such an alert is not enough to amount to a “fair probability,” the rule has been drawn the wrong way.

⁸¹ The Supreme Court has steadfastly resisted reducing probable cause to percentages. “The probable cause standard is incapable of precise definition or quantification into percentages because it deals with probabilities and depends on the totality of the circumstances.” See *Maryland v. Pringle*, 538 U.S. 921 (2003). In *Pringle*, three men were arrested after police stopped a car in which all three were riding and found \$763 in cash and several glassine bags of cocaine hidden behind the rear seat armrest. Under the circumstances, the Supreme Court held that there was probable cause to arrest any one or all three of the men. When the front seat passenger, Pringle, confessed to ownership of the drugs, and said that the other two men did not know the drugs were there, police released his companions. Some commentators have read *Pringle* as stating that a one in three chance will be sufficient to constitute probable cause. Given the possibility of joint dominion and control in a common criminal enterprise, the better reading of the opinion may be that in the Court’s view under the circumstances there was probable cause to find that the men were commonly engaged in selling the drugs, and therefore there was probable cause to arrest any or all of them. That belief was reduced as to the other two men when Pringle confessed.

⁸² See WAYNE R. LAFAVE, *SEARCH AND SEIZURE: A TREATISE ON THE FOURTH AMENDMENT* 438 (West Pub. Co. 1978).

⁸³ Courts may not be inclined to be sympathetic to a Bayesian analysis, if they are willing to focus on it and can be made to understand it. See DAVID W. BARNES & JOHN M. CONLEY, *STATISTICAL*

court in *Caballes*. “[I]n this case, the trial judge found that the dog sniff was sufficiently reliable to establish probable cause to conduct a full-blown search of the trunk.”⁸⁴

Simply because the alert alone should not constitute probable cause does not mean that the dog’s alert is not a critical piece of evidence that can combine with other evidence to constitute probable cause. Suppose instead that the police officer deploys the dog upon a suspicion, based on other factors, that suggests the presence of narcotics. If the officer has a pretty good nose of his own for narcotics dealers, then other studies on hit rates of police officers conducting searches based on factors that otherwise have been held to constitute probable cause suggest he may have a thirty percent chance of being right.⁸⁵ In that case, the prior probability that the car contains drugs will significantly increase the importance of the detector dog’s alert. Under those conditions, the Bayesian calculation, with a thirty percent prior probability and a ninety percent accurate dog, would result in a seventy-nine percent chance that there are drugs in the car—clearly probable cause.

Perhaps this analysis explains why a reasonable justice might believe that there should be reasonable suspicion before the dog is deployed. This was certainly the position of the *Caballes* dissenters.⁸⁶ This requirement would make sense in light of the Bayesian analysis, because the objective, articulable facts that would lead a well-trained officer to have that reasonable suspicion, coupled with an alert, would constitute probable cause. However, the reasonable suspicion need not come before deploying the dog to meet the constitutional concerns. It is also possible, and in some instances perhaps preferable, to permit the deployment of the dog, but to require some additional articulated basis amounting to reasonable suspicion before deciding that under the totality of the circumstances, there is indeed a “fair probability” that there are drugs in the car.⁸⁷

EVIDENCE IN LITIGATION 498 (Little, Brown & Co. 1986) (“The lawyer who is about to offer statistical proof should begin with two sobering assumptions. These are (1) that the trier of fact will rarely have any knowledge of statistical techniques and (2) that the trier of fact will probably be unsympathetic to the general concept of statistical proof.”).

⁸⁴ *Caballes*, 543 U.S. at 409.

⁸⁵ See Bird, *supra* note 17, at 429-31; John Knowles, Nicola Persico & Petra Todd, *Racial Bias in Motor Vehicle Searches: Theory and Evidence* 99-06 (Univ. of Penn., Caress Working Paper, 1999) at 10, available at <http://www.econ.upenn.edu/Centers/CARESS/CARESSpdf/99-06.pdf>.

⁸⁶ See 543 U.S. 405, 410-417, (Souter, J., dissenting); 543 U.S. 405, 417-425. (Ginsburg, J., dissenting).

⁸⁷ In other contexts, we might want to fall back on the special needs doctrine to deem reasonable searches conducted on less than probable cause. For example, we want to be able to deploy bomb-sniffing dogs in airports or on subways when there is a heightened terrorism threat.

None of this is to suggest that the use of a well-trained narcotics dog (or explosives dog or cadaver dog) in conjunction with other good police practices should not result in a finding of probable cause. A dog with a decent accuracy rate is a tool much like a test for cancer. It may not be enough to warrant beginning a course of treatment, but it certainly warrants further investigation, including potentially more painful and intrusive tests.

Before we can determine that the level of proof has risen to whatever quantum the courts deem sufficient to constitute probable cause, it stands to reason that the dog must be reliable. Indeed, the foregoing analysis was based on the belief that the dog in question was ninety percent accurate in the field. That is a very accurate dog. Unlike a scientific test for cancer, the reliability of detector dogs can vary widely from individual to individual. Change the presumptions about error rates, and the ultimate reliability figure will change. If the dog actually used is not very good, then the number of searches of innocent people will rise.

V. WHAT THE COURTS ARE DOING

The cavalier attitude many judges take to the value of a dog sniff compounds the systemic flaw that the Bayesian analysis reveals. In many courtrooms, an alert by a trained detector dog, standing alone, constitutes sufficient probable cause to search. Courts in each of the federal circuits have reached this conclusion.⁸⁸ According to such courts, “[a] dog’s positive indication alone is enough to establish probable cause for the presence of a controlled substance if the dog is reliable. To establish the dog’s reliability,

⁸⁸ See, e.g., *U.S. v. Sundby*, 186 F.3d 873, 876 (8th Cir. 1999) (collecting cases). The leading case for this view is *United States v. Williams*, 69 F.3d 27, 28 (5th Cir. 1995). See also, by circuit, *U.S. v. Owens*, 167 F.3d 739, 749-50, (1st Cir. 1999); *U.S. v. Meyer*, 536 F.2d 963, 966, (1st Cir., 1976); *U.S. v. Race*, 529 F.2d 12, 14 (1st Cir. 1976); *U.S. v. Waltzer*, 682 F.2d 370, 372 (2d Cir. 1982); *U.S. v. Johnson*, 660 F.2d 21, 22-23, (2d Cir. 1981); *U.S. v. Massac*, 867 F.2d 174, 176 (3d Cir. 1989); *U.S. v. Jeffus*, 22 F.3d 554, 557 (4th Cir. 1994); *U.S. v. Robinson*, 707 F.2d 811, 815 (4th Cir. 1983); *U.S. v. Outlaw*, 319 F.3d 701, 704 (5th Cir. 2003), *U.S. v. Williams*, 69 F.3d 27, 28 (5th Cir. 1995); *U.S. v. Daniel*, 982 F.2d 146, 151, n.7 (5th Cir. 1993); *U.S. v. Dovali-Avila*, 895 F.2d 206, 207-08 (5th Cir. 1990); *U.S. v. Berry*, 90 F.3d 148, 153-54 (6th Cir. 1996); *U.S. v. Klein*, 626 F.2d 22, 27 (7th Cir. 1980); *U.S. v. Sundby*, 186 F.3d 873, 876 (8th Cir. 1999); *U.S. v. Delaney*, 52 F.3d 182, 188-89, (8th Cir. 1995); *U.S. v. Maejia*, 928 F.2d 810, 815 (8th Cir. 1991); *U.S. v. Lingenfelter*, 997 F.2d 632, 639 (9th Cir. 1993); *U.S. v. Spetz*, 721 F.2d 1457, 1464 (9th Cir. 1983); *U.S. v. Shayesteh*, 166 F.3d 349 (10th Cir. 1998); *U.S. v. Kennedy* 131 F.3d 1371, 1378 (10th Cir. 1997); *U.S. v. Ludwig*, 10 F.3d 1523, 1527-28, (10th Cir. 1993); *U.S. v. Nielsen*, 9 F.3d 1487, 1491 (10th Cir. 1993); *U.S. v. Gonzalez-Acosta*, 9898 F.2d 384, 388-89 (10th Cir. 1993); *U.S. v. Venema*, 563 F.2d 1003, 1007 (10th Cir. 1977); *U.S. v. Banks*, 3 F.3d 399, 402-03 (11th Cir. 1993); *U.S. v. Sentovich*, 677 F.2d 834, 838, (11th Cir. 1982); *U.S. v. Trayer*, 898 F.2d 805, 808 (D.C. Cir. 1990); *U.S. v. Unrue*, 47 C.M.R. 556, 558; (U.S.C.M.A. 1973); *U.S. v. Thomas*, 50 C.M.R. 114, 116-17 (U.S.N. 1975).

the affidavit need only state the dog has been trained and certified to detect drugs.”⁸⁹ This approach is wrong both as a matter of science⁹⁰ and as a matter of Fourth Amendment law.⁹¹

Nevertheless, in many cases, even when the search following the alert proceeds without a warrant, judges have simply asked if the dog was certified and ended the inquiry, refusing even to permit further discovery by the defendant into the particular dog and handler’s training record or track record in the field.⁹² This court-imposed limitation on questioning is wrong-headed. The simple fact is that some dogs, like some witnesses, are unreliable.⁹³ And some handlers, like some experts, are unreliable.⁹⁴ Refusing to grant the defendant discovery of information that can be used to impeach the credibility of the dog or its handler violates the core principles of *Brady v. Maryland*,⁹⁵ as well as Rule 16 of the Federal Rules of Criminal Procedure⁹⁶ and many state analogues. The Ninth Circuit, for example, reached this position in *United States v. Cedano-Arellano*.⁹⁷ There the Ninth Circuit held that training and certification records were “crucial to [the defendant’s] ability to assess the dog’s reliability, a very important issue in his defense, and to conduct an effective cross-examination of the dog’s handler.”⁹⁸ Other courts in the Sixth,⁹⁹ Seventh,¹⁰⁰ Ninth¹⁰¹ and Tenth¹⁰² Circuits

⁸⁹ *Sundby*, 186 F.3d at 876.

⁹⁰ See *supra* notes 75-81 and accompanying text.

⁹¹ The courts have an independent duty to determine whether there was probable cause based on the particular circumstances of the case. See *Ornelas v. United States*, 517 U.S. 690, 695 (1996). It is a two-step inquiry. The court must determine what in fact happened, then determine whether from the standpoint of a reasonable police officer, the facts constituted probable cause. But it is important to note that in *Ornelas*, the Court distinguished cases there was a warrant, which led to a deferential standard on review, from cases where there is no warrant and the appellate courts review the existence of probable cause de novo. Searches following dog alerts often take place in the absence of a warrant. See *Aristotelidis*, *supra* note 20, at 227.

⁹² See *State v. Nguyen, et al.*, 811 N.E.2d 1180, 157 Ohio App.3d 482 (2004) (collecting cases).

⁹³ See *Myers Interview*, *supra* note 18; *Bird*, *supra* note 17, 410-12 (discussing selection and training of dogs and practice of disbanding unreliable teams).

⁹⁴ *Bird*, *supra* note 17, at 424 (handler cuing); See also *Taslitz*, *supra* note 14, at 41-42 (discussing allegations of fraud related to a particular handler).

⁹⁵ 373 U.S. 83, 87 (1963). *Brady* requires that the government disclose any potentially exculpatory evidence to the defendant in advance of trial.

⁹⁶ FED. R. CRIM. P. 16(a)(1)(C). Upon request of the defendant the government shall permit the defendant to inspect and copy or photograph books, papers, documents, photographs, tangible objects, buildings or places, or copies or portions thereof, which are within the possession, custody or control of the government, and which are material to the preparation of the defendant’s defense or are intended for use by the government as evidence in chief at the trial, or were obtained from or belong to the defendant. *Id.*

⁹⁷ 332 F.3d 568 (9th Cir. 2003).

⁹⁸ *Id.* at 571.

have reached similar conclusions. Courts that permit such discovery recognize that there may be differences between a team's performance in controlled conditions and in the field, and will permit the discovery of records that may document those differences.

If the dog is unreliable, what problems can we expect those records to reveal? The experts point to three: general false positives, handler cuing, and poorly performing teams.¹⁰³ We have already considered the false positives problem. Before we get to the problems of handler cuing and poorly performing teams, we need to spend a little bit of time on how scenting dogs work. Given the fact that dogs remain crucial participants in cases defining the scope of the Fourth Amendment, it is critical that the courts improve their understanding of the pluses and minuses of using them.¹⁰⁴

A. *Bad Dog, "Good" Search*

In practice, how accurate have the courts required a dog to be to establish probable cause to search? Depending on the courtroom, the threshold may be very low.¹⁰⁵ Even a cursory review of the case-law demonstrates that for defense attorneys, the cases are not promising. Consider Torque, the canine at issue in *United States v. Owens*.¹⁰⁶ Torque was hardly the best in the business. He had flunked drug dog school twice.¹⁰⁷ According to the defendant's briefs, in the two years prior to the search at issue, Torque had a less than fifty percent hit rate in automobile searches where he alerted.¹⁰⁸ That means that police actually found drugs in the vehicle in fewer than half of the cases where Torque indicated the presence of drugs. A defense expert in animal behavior and detection dog training who had previously worked for the government in various capacities testified that in his opinion the dog was unreliable in the field, based on the objective evidence pre-

⁹⁹ U.S. v. Littleton, 15 F. App'x 189, 192-93 (6th Cir. 2001); U.S. v. Hill, 195 F.3d 258, 273-74 (6th Cir. 1999); U.S. v. Diaz, 25 F.3d 392, 393-96 (6th Cir. 1994); U.S. v. \$67,220.00 in U.S. Currency, 957 F.2d 280, 285-86 (6th Cir. 1992).

¹⁰⁰ U.S. v. Limares, 269 F.3d 794, 797-98 (7th Cir. 2001).

¹⁰¹ U.S. v. Spetz, 721 F. 2d 1457, 1464 (9th Cir. 1983).

¹⁰² U.S. v. Ludwig, 10 F.3d 1523, 1527-28 (10th Cir. 1993).

¹⁰³ Myers Interview, *supra* note 18.

¹⁰⁴ Of the existing literature on this topic, the two seminal articles are Taslitz, *supra* note 14 and Bird, *supra* note 17. See also Comment, *Common Scents: Establishing a Presumption of Reliability for Detector Dog Teams Used in Airports in Light of the Current Terrorist Threat*, 28 U. DAYTON L. REV. 89 (2002).

¹⁰⁵ See *supra* note 88 (collecting cases).

¹⁰⁶ 167 F.3d 739 (1st Cir. 1999).

¹⁰⁷ *Id.* at 749.

¹⁰⁸ Brief of Appellant at 35, *United States v. Owens*, No. 97-1838 (1st Cir. May 20, 1998).

sented.¹⁰⁹ The defense relied on information that showed that in 1994, fifty percent of the searches in which Torque alerted yielded drugs or money, and that in 1995, only forty percent of such searches did.¹¹⁰

In response to this attack on Torque's reliability, the government witness suggested his own math. He used any failure to alert as a true negative, and bootstrapped that information into the prosecution's statistical analysis as evidence of Torque's success rate.¹¹¹ (Given that there is no way to tell if a negative result is correct, those numbers should be considered irrelevant in evaluating the dog's accuracy.¹¹²)

Torque's handler and his trainer testified that Torque was "an extremely reliable dog."¹¹³ They defended his failure to find narcotics on a "residual odor" theory, arguing that Torque was not wrong, but was instead reacting to the presence of trace amounts of drugs.¹¹⁴ As the head of the Sheriff's Department's detector dog unit testified, "I think you have to take into consideration when you have a nonproductive search on a drug dealer's vehicle that there's a good chance there's been some type of narcotics in that vehicle."¹¹⁵

The Court found Torque reliable, and admitted the evidence.¹¹⁶ If an alert by Torque can be the basis for probable cause, then only an extraordinarily bad dog would allow a defense expert to successfully impeach the government's "expert."

It is true that correct alerts may fail to yield drugs or explosives. The dog's nose is incredibly sensitive. Remember that testing by experts at Auburn University has shown that some trained dogs can detect concentrations of scent molecules in the air at concentrations as low as 500 parts per *trillion*.¹¹⁷ Return for a moment to the search in *Owens*. The department primarily used Torque in responding to search warrants, where the police already had information that the person being searched was involved in drug

¹⁰⁹ *Id.* at 37.

¹¹⁰ *Id.* at 36.

¹¹¹ *Id.* at 36.

¹¹² A dog may fail to alert when drugs are present, as well as when they are not. It is impossible to tell in the field which is the case, because there is no search after the failure to alert. Therefore the police have no way to measure the dog's accuracy rate in these circumstances and should not be permitted to posit that a failure to alert is always based on the absence of drugs. Permitting them to do so would distort the rate and has the potential to mislead the court.

¹¹³ *Id.* at 37.

¹¹⁴ *Id.* at 36-37.

¹¹⁵ *Id.* at 36. Note that this cuts both ways. A dog that alerts regularly to residual odors is actually less reliable at discerning whether drugs are actually present. This is the functional equivalent of staleness in the warrant application process.

¹¹⁶ *Owens*, 167 F.3d at 749-50.

¹¹⁷ See Johnston, *supra* note 10, at 1 and accompanying text.

activity.¹¹⁸ His handler expected to find drugs. When he alerted, but police found no drugs, it is indeed possible that he was responding as he had been trained to do, but he was alerting to trace amounts of the substance. The problem is that there was no objective evidence on which to base that conclusion.

Perversely, the better the dog is at detecting trace amounts of the desired substance, the higher the likelihood that the dog will alert on trace amounts that are inadvertently present in materials owned by the innocent. For example, this risk was the basis for the dissenters' in *Caballes* discussing the possibility that the money supply in the United States is generally contaminated with cocaine, and dogs detecting these trace amounts of contraband may lead to numerous constitutionally-impermissible searches as a result of alerts by sensitive canines.¹¹⁹

B. *Handler Cuing (Good Dog, Bad Handler?)*

A handler may cue his dog to alert, leading to a search based on the dog's response to the handler's emotions rather than its response to the presence of contraband. Consider *South Dakota v. Lockstedt*,¹²⁰ which demonstrates these dangers in detail. The case involved two state troopers, two narcotics detector dogs, and three passes around the vehicle. This narcotics case arose, as many do, out of a lawful traffic stop.¹²¹ While one state trooper, Trooper Swets, took his time writing a ticket for speeding, his colleague, Trooper Oxner, walked his dog, Jake, around the car, sniffing for drugs.¹²² In a full circuit of the vehicle, Jake failed to alert.¹²³

While writing the ticket, Trooper Swets noticed that the driver of the car, who was sitting in the patrol car, was becoming increasingly nervous as he watched Jake circle the car.¹²⁴ Based on this observation, he uncrated his own dog, Crockett, and had him circle the car. Crockett was trained to alert aggressively—that is, he was supposed to scratch at the vehicle if he smelled drugs.¹²⁵ On the first pass, Crockett did not alert at all. Unsatisfied with this response, Trooper Swets had him circle the car again. This time, the dog stopped and took a longer sniff at the door seams, where odors could be expected to emerge from inside the vehicle. He still failed to alert

¹¹⁸ Brief of Appellant at 36, n.17, *United States v. Owens*, No. 97-1838 (1st Cir. May 20, 1998).

¹¹⁹ *Caballes*, 543 U.S. at 412.

¹²⁰ 695 N.W.2d 718 (S.D. 2005).

¹²¹ *Id.* at 723.

¹²² *Id.* at 720.

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.* at 721.

as trained. However, his handler encouraged him, telling him “I saw that.”¹²⁶ Then the Trooper walked the dog to the trunk, where he had failed to alert previously, and ordered him up on the trunk.¹²⁷ Finally, Crockett alerted. It turned out that there were drugs in the car. According to the defense’s expert, the stops at the door seams, where the dog failed to alert, were equally consistent with some other odor catching the dog’s interest, because Crockett did not alert as he was trained to do.¹²⁸ The government’s expert, who was responsible for training in the state, also testified that he would not consider the dog’s behavior, which he reviewed on videotape from the patrol cars’ cameras, sufficient indication to warrant a search.¹²⁹ The lower court found in the government’s favor on the basis of the Trooper’s testimony, in which he equivocally suggested that the dog’s behavior had changed significantly as he aged, so this behavior was now an indication that drugs might be present.¹³⁰ The narcotics evidence came in to convict Lockstedt.¹³¹ One need not impute bad motives to the police officer to see that there is a complex interaction here. The distinction between reliable and unreliable alerts may depend on the seat in which one sits.

In contrast, in *United States v. Heir*,¹³² the court suppressed evidence found when the dog “alerted” to the presence of drugs by sniffing more intensely around certain parts of the vehicle. Robbie, the canine in question, had been trained to aggressively alert by pawing or scratching at the car. His handler acknowledged that the behavior he deemed an alert “was subtle, and might only be recognized by himself or another person who was familiar with Robbie’s tendencies.”¹³³ Defense experts saw no evidence of an alert on the videotape, and pointed out actions that might have amounted to cuing by the handler.¹³⁴ The court found that “there must be an objectively observable ‘indication’ by the dog of the presence of drugs” and suppressed the evidence, declining to address other concerns about the dog’s accuracy.¹³⁵

The foregoing cases highlight two concerns, one operational and one evidentiary: First, if dogs can alert in response to handler cuing, conscious or subconscious, it may be objectively difficult to tell in a particular case if

¹²⁶ *Lockstedt*, 695 N.W.2d at 721.

¹²⁷ *Id.*

¹²⁸ *Id.* at 728.

¹²⁹ *Id.*

¹³⁰ *Id.* at 729.

¹³¹ *Id.* at 719.

¹³² 107 F. Supp. 2d 1088 (D. Neb. 2000).

¹³³ *Id.* at 1091.

¹³⁴ *Id.*

¹³⁵ *Id.* at 1091-96. In *Heir*, there was videotape—one of the tools that may result in a better understanding of how these dogs actually perform in the field.

the dog is responding to the odor of drugs or explosives, or to his handler's belief that under these circumstances, this person probably has drugs. As a substantive matter, we want training methods that will yield accurate results. Therefore, we must initiate processes that will ensure that result.¹³⁶

Second, if the dog can function two ways, as a drug or explosives detector, or as a handler-hunch detector, both yielding the same behavior, and the dog itself cannot be cross-examined to ask it which it is manifesting, it will be difficult for courts to objectively test whether this particular dog and handler combination is yielding accurate results. The only way for a court to tell is to require law enforcement agencies to scrupulously maintain records showing how often the dog alerts, under what circumstances, and to make that information available to judges when they are determining if this event constitutes probable cause. If these records were kept, they would give us insights into whether the dogs operating in the real world have or reflect handler biases along any number of dimensions.

C. *A Few Dissenting State Voices*

The Court's decision in *Caballes* came in the face of a few scattered opinions in the state courts that would require reasonable suspicion before a dog was deployed. The Illinois Supreme Court had counterparts in North Carolina¹³⁷ and Minnesota.¹³⁸ In some instances, state courts are taking different approaches to the problem. For instance, Minnesota, in *State v. Carter*,¹³⁹ rejected the analysis of *Caballes* altogether in analogous circumstances, and held that "the sniff of a drug-detection dog outside appellant's storage unit was a search for purposes of the Minnesota Constitution."¹⁴⁰ Interestingly, the Minnesota Supreme Court accepted Justice Ginsburg's caveat, and decided to specifically limit its decision to drug-detection dogs.

¹³⁶ See Wayne R. LaFare, "Case-By-Case Adjudication" Versus "Standardized Procedures": *The Robinson Dilemma*, 1974 SUP. CT. REV. 127, 141. "Fourth Amendment doctrine, given force and effect by the exclusionary rule, is primarily intended to regulate the police in their day-to-day activities, and thus ought to be expressed in terms that are readily applicable by the police in the context of the law enforcement activities in which they are engaged." Whether regulating police dogs is better done by the courts, the legislature, or an administrative agency we will explore below.

¹³⁷ See *State v. Branch*, 591 S.E.2d 923 (N.C. App. 2004) (officers did not have reasonable suspicion to conduct dog sniff of defendant's vehicle while detaining defendant at vehicle checkpoint to conduct driver's license check), *vacated*, *North Carolina v. Branch*, 163 L.Ed.2d 314 (N.C. 2005).

¹³⁸ See *State v. Wiegand*, 645 N.W.2d 125 (Minn. 2002) (to lawfully conduct drug dog sniff around exterior of motor vehicle stopped for routine equipment violation, law enforcement officer must have reasonable, articulable suspicion of drug-related criminal activity).

¹³⁹ 697 N.W.2d 199 (Minn. 2005).

¹⁴⁰ *Id.* at 211.

“We express no opinion regarding bomb-detection dogs, as to which the special needs of law enforcement might well be significantly greater.”¹⁴¹

Defendants might find some hope in *Matheson v. State*,¹⁴² a case involving Razor, a narcotics detection dog who alerted to the presence of methamphetamine. Razor was not certified for methamphetamine, although he had received departmental training on the drug. Razor did not alert the first time he circled Matheson’s car, but after his handler took him around again, pausing at the door seams, Razor did alert. Officers searched the car and found drug paraphernalia, including syringes and spoons, as well as hydrocodone tablets, morphine tablets, and methamphetamine.¹⁴³

At the subsequent suppression hearing, the prosecution deliberately did not present evidence of Razor’s performance in the field. From the stand, Razor’s trainer suggested that data from the field was useless, because the dog could be alerting correctly on dead scents, and it would be impossible to assess the dog’s reliability under field conditions.¹⁴⁴

This line of reasoning failed to impress Florida’s Second District Court of Appeals. The court noted that the state had the burden to show that there was probable cause for the warrantless search:

Given the “language barrier” between humans and canines—thus, for example, preventing the officer from questioning the dog further for corroborative details, as he might a human informant—the most telling indicator of what the dog’s behavior means is the dog’s past performance in the field. Here, the State did not present any evidence of Razor’s track record. Accordingly, we conclude that the State did not meet its burden to establish that the deputies had probable cause to search Matheson’s car.¹⁴⁵

The Florida Supreme Court heard oral arguments in the case, and questioning focused on the recordkeeping issue.¹⁴⁶ Ultimately, the Florida Supreme Court dismissed the case without an opinion, leaving the appellate ruling intact.¹⁴⁷ Florida attorneys, it appears, may be able to argue successfully for suppression in the absence of such records.

¹⁴¹ *Id.* at 211 n.8.

¹⁴² 870 So. 2d 8 (Fla. Dist. Ct. App. 2003).

¹⁴³ *Id.* at 9.

¹⁴⁴ *Id.* at 11.

¹⁴⁵ *Id.* at 16.

¹⁴⁶ *State v. Matheson*, 880 So. 2d 1212 (Fla. 2004). A video recording of the oral argument was reviewed for this article. See <http://www.wfsu.org/rafiles/archives/04-490.ram> (visited July 26, 2006).

¹⁴⁷ *State v. Matheson*, 896 So. 2d 748 (Fla. 2005).

VI. REEVALUATING OLD TECHNOLOGY

A. *Divergence of Interests*

Different institutional actors will have different responses to the problems these cases present. There are perverse investment incentives and a collective action problem when it comes to training and evaluating detector dogs, just as there are in many other areas of Fourth Amendment law.¹⁴⁸ The government has a diffuse interest in protecting privacy—and in some cases no interest whatsoever—and the innocent parties being searched are disorganized and only minimally invested in preventing future searches.¹⁴⁹ The guaranteed repeat players, law enforcement officials, have a pressing interest in searching as many vehicles or other private spaces as they think may yield some incriminating information,¹⁵⁰ and it is the law enforcement officials who identify and compensate the vendors who train and certify police dogs.¹⁵¹ Under the most cynical view of the issue, the incentive for law enforcement is to get the most hypersensitive dog that passes constitutional muster. A dog that reliably responds to the presence of drugs, and is

¹⁴⁸ The seminal article in this area is Anthony G. Amsterdam, *Perspectives on the Fourth Amendment*, 58 MINN. L. REV. 349, 378-79 (1974). See also Michael C. Dorf and Michael Isaacharff, *Can Process Theory Constrain Courts*, 72 U. COLO. L. REV. 923, 928 (2001); Michael J. Klarman, *The Puzzling Resistance to Political Process Theory*, 77 VA. L. REV. 747 (1991). An intriguing view of the relationship in the last decade can be found in Craig S. Lerner, *Legislators as the "American Criminal Class": Why Congress (Sometimes) Protects the Rights of Defendants*, 2004 ILL. L. REV. 599. Lerner lays out the recent changes to the historic relationship between legislative default in the Fourth Amendment arena, and the Court's Fourth Amendment jurisprudence. *Id.* at 605-09. "Academics have developed at least two theories (political process and public choice) to explain and predict 'legislative default' in the criminal procedure field. Both theories are premised on the claim that legislators, responding to public pressure, are unlikely to identify with criminal defendants or seek to extend to them any protections." *Id.* at 604.

¹⁴⁹ See Lerner, *supra* note 148, at 608-10.

¹⁵⁰ The rewards are often financial as well as intangible. Officers are rewarded for making good busts, departments report amounts of drugs seized to the city councils or legislatures that fund them, cash or property seized along with the drugs is often rolled back into law enforcement, many departments keep seized drug vehicles for use by undercover officers, or assign them to officers as department vehicles.

¹⁵¹ Public choice theory suggests that small well-organized groups can capture the legislative process through rent-seeking. See MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS*, 53-65 (1965); Daniel A. Farber, *Public Choice and Just Compensation*, 9 CONST. COMMENT 279, 289 (1992); See also Adam Feibelman, *Federal Bankruptcy Law and State Sovereign Immunity*, 81 TEX. L. REV. 1381, 1436 (2003) ("If public law is a product of technical expertise and bureaucratic professionalism, it is also shaped by the conflict of competing interests. This conflict is resolved partly according to the ideological preferences of lawmakers themselves, and partly according to the political power of the various interests.").

sensitive to handler cuing as well, will endorse the most searches possible. Under this view, the cost of incorrect alerts in time and effort is low in the context of street-encounter law enforcement searches, where the officer has other suspicions that led her to call for the dog in the first instance. This misalignment of interests may lead the police to choose the certifying agency with the loosest standards, because dogs trained to the loosest standards will permit the most searches. Such an approach will create significant competition between the certifying agencies to provide the training methods and certifications that most closely comport with the interests of the people writing the checks.¹⁵²

But there is not always a mismatch between the incentives for law enforcement and the public's privacy interests. When Transportation Safety Authority officials use dogs to screen bags for explosives at the airport, or USDA officials use them to screen containers for contraband fruit, their incentives are to use the most accurate dogs consistent with the mission because there are limited resources and a high volume of materials to be searched. The airlines and shippers also provide the organized and interested deep pockets that will stand in as proxies for the public, solving the collective action problem. Customers want their packages delivered on time, and airline passengers are willing to put up with reasonable delays, but will balk quickly if they perceive that the delays are unnecessarily intrusive. We can expect them to make their desires very plain to service providers. These service providers have a persistent legislative lobby which we would expect to step in, should their customers complain too loudly.

Not surprisingly, given the divergence of interests in these different contexts, in practice there are many competing standards. Some are set by the individual states, some by private groups such as the United States Police Canine Association, some by federal agencies, such as Immigration and Customs Enforcement or the Border Patrol, and there is a separate set of standards for the military.¹⁵³ There is very little oversight of what it means to be certified. Given the diffuse nature of law enforcement in the United States and the realities of mixed standards in a federal system, enforcing some minimum through the Fourth Amendment will prove incredibly diffi-

¹⁵² There can be significant competition for the training contract. Some examples of the competing certifying or training groups include the National Narcotic Detector Dog Association, Eastern States Working Dog Association, International Police Working Dog Association, Virginia Police Work Dog Association, Tarheel Training, Inc.

¹⁵³ See generally Bird, *supra* note 17, at 410-12 (discussing procedures in use in Rhode Island and by the U.S. Customs Service); MILITARY DOG WORKING PROGRAM, DEPARTMENT OF THE ARMY PAMPHLET 190-12 (1993), available at http://www.army.mil/usapa/epubs/pdf/p190_12.pdf. United States Police Canine Association Certifications are available for narcotics, explosives, accelerants, and cadavers. See United States Police Canine Association, USPCA, K9, <http://www.uspcak9.com/html/home.shtml> (last visited July 16).

cult. Nevertheless, one method of evaluating standards worth considering is comparing the accuracy standards and training methods used where the interests of the public and law enforcement are more closely aligned with those used in contexts where one expects a broader divergence.

B. *Practical Limitations*

In addition to the limitations discussed above, there may be some practical limitations as well. Even if the public really wants accurate dogs, there may not be enough of them to go around. Given the increase in demand for detection dogs post-9/11, there are also significant financial incentives for trainers and certifying agencies to deploy dogs of marginal talent.¹⁵⁴

There are additional problems in the Fourth Amendment context regarding the reevaluation of an established technology such as detection dogs. The courts set standards for law enforcement conduct through case-law, and the police adopt procedures and train their officers to meet those standards.¹⁵⁵ We are a long way from fundamental reform of the warrant process, and courts and police continue to confront the need to search vehicles. In the wake of terror attacks that have intensified existing concerns and have led to an increased demand for tools that will help us find certain forms of contraband, it does not strain credulity to predict new case-law that will loosen, not tighten, standards for admitting evidence. But all of us, the police, the public, and those who work in the administration of justice, have a Fourth Amendment-mandated interest in making sure that the dogs are accurate, and that searches based on their alerts are justified.¹⁵⁶

¹⁵⁴ This shortage has led to overreaching in some cases. *See, e.g.*, U.S. v. Ebersole, 411 F.3d 517 (4th Cir. 1998) (trainer convicted of wire fraud and ordered to pay more than \$700,000 in restitution for using under-trained dogs and handlers); *Trainer Gets Prison Over Dogs that Couldn't Detect Bombs*, THE MILWAUKEE J. SENTINEL, Sept. 9, 2003, available at http://www.findarticles.com/p/articles/mi_qn4196/is_200309/ai_n10906739.

¹⁵⁵ *See generally* LaFave, *supra* note 136.

¹⁵⁶ *See* Anthony G. Amsterdam, *Perspectives on the Fourth Amendment*, 58 MINN. L. REV. 349, 353 (1974) (“[W]hen we seek to understand the Supreme Court’s difficulties in grappling with the fourth amendment, we observe the Court in the throes of one of its noblest labors. That labor is to be the instrument by which a free society imposes on itself the seldom welcome, sometimes dangerous, always indispensable restraints that keep it free.”).

C. *The Conservatism of the Courts*

Will the foregoing arguments lead the courts to reevaluate the use of detector dogs? It is unlikely. This is due at least in part to the court's inherent conservatism when reevaluating any established technology. This conservatism stems from a combination of factors.

A reexamination of the canine sniff technology implicates concerns extensively covered by an earlier generation of scholars such as Wayne LaFave¹⁵⁷ and Anthony Amsterdam¹⁵⁸—the interrelationship between the Supreme Court's Fourth Amendment precedent, police practices based on these settled expectations, and reasonable expectations of privacy. Now that the Fourth Amendment applies to the states, police nationwide depend on the courts' interpretations to determine how to train their officers on acceptable search and seizure practices. The courts' opinions also inform the public's expectations of privacy. A new generation of scholars, including William Stuntz,¹⁵⁹ Orin Kerr,¹⁶⁰ Daniel Solove,¹⁶¹ and Christopher Slobogin,¹⁶² is at work on developing theories that will help us understand the institutional limitations on courts, legislatures and administrative agencies, and the structures in place to determine how best to incorporate new technology into police practice, while still respecting reasonable expectations of privacy.¹⁶³

Courts are inherently conservative in the Fourth Amendment arena. The courts set standards for law enforcement conduct through case-law, and the police adopt procedures and train their officers to meet those standards.¹⁶⁴ The sorts of limitations on privacy that society willingly accepts are part of a feedback loop between the courts, the public, and the police.

¹⁵⁷ See generally LaFave, *supra* note 136 (discussing drug possession convictions in searches incident to traffic violation arrests).

¹⁵⁸ See generally Amsterdam, *supra* note 159.

¹⁵⁹ See Stuntz, *supra* note 79.

¹⁶⁰ Orin Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801 (2004), Orin Kerr, *Technology, Privacy, and the Courts: A Reply to Colb and Swire*, 102 MICH. L. REV. 933 (2004).

¹⁶¹ See Daniel J. Solove, *Fourth Amendment Codification and Professor Kerr's Misguided Call For Judicial Deference*, 74 FORDHAM L. REV. 747 (2005).

¹⁶² See Christopher Slobogin, *Peeping Techno-Toms and the Fourth Amendment: Seeing Through Kyllo's Rules Governing Technological Surveillance*, 86 MINN. L. REV. 1393 (2002).

¹⁶³ See Kerr, *Fourth Amendment*, *supra* note 160, at 861 ("It is generally agreed that the general pragmatic goal of both constitutional and statutory law governing search and seizure is to create a workable and sensible balance between law enforcement needs and privacy interests. . . . A secondary goal is rule clarity."). See also Andrew E. Taslitz, *The Fourth Amendment in the Twenty-First Century: Technology, Privacy, and Human Emotions*, 65 LAW & CONTEMP. PROBS. 125, 131 (2002).

¹⁶⁴ See LaFave, *supra* note 136, at 141.

Once decided as a matter of Fourth Amendment law, it is not surprising that the system needs and encourages stability, given the need to fulfill various educative functions. The systemic desire for stability in settled expectations makes it particularly difficult for courts to employ new research into the efficacy of old technologies.

On the frontiers, we expect new technologies to change settled expectations of privacy. Techniques such as thermal imaging, portable gas chromatography/mass spectroscopy analyzers, and devices for detecting explosives molecules can all bring to light things formerly unknown.¹⁶⁵ Professors Kerr and Solove are in the midst of a fresh debate in the literature over the efficacy and strengths of legislative or judicial attention to new technology.¹⁶⁶ We would expect the process to be interested in updating the rules as new information is gathered. New technologies also have the benefit of legislative and judicial attention. Courts are thinking about them afresh. There are incentives to gather data on both sides of the issue, with groups interested in protecting privacy interests as engaged as the government.

But old technologies suffer from both a legal stickiness problem and a legislative inattention problem. The legal stickiness problem is a result both of the need for stability addressed earlier and of the courts' desire to avoid thinking about complex scientific issues if it can trot out the rubric "The use of [insert technology here] is well-settled in the law of this [state/circuit] and we need not revisit it here." Judges have been trained to construe the law, not to act as scientists, so this should come as no surprise. Legislatures are likewise unlikely to pay attention to old technologies, unless an egregious misuse brings it to the attention of a sponsor, who will take the time and energy to draft legislation. Because of the diffusion of interest in privacy, and the widely-held public belief that the courts unnecessarily coddle criminals already, there is often little benefit to offset the legislator's cost in time and energy.¹⁶⁷

At trial, new scientific advances in our understanding of old technology can bring into question the reliability of techniques previously thought well-settled, implicating the courts' gatekeeper role under the doctrine the Supreme Court formulated in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*¹⁶⁸ In *Daubert*, the Supreme Court required federal trial courts to police

¹⁶⁵ Jeffrey Rosen, *THE UNWANTED GAZE: THE DESTRUCTION OF PRIVACY IN AMERICA*, 60-61 (2000); Kerr, *Fourth Amendment*, *supra* note 164, at 808-815; Ric Simmons, *From Katz to Kyllo: A Blueprint for Adapting the Fourth Amendment to Twenty-First Century Technologies*, 53 *HASTINGS L.J.* 1303, 1352 (2002).

¹⁶⁶ See Kerr, *Fourth Amendment*, *supra* note 160; see also Solove, *supra* note 161.

¹⁶⁷ See generally Louis D. Bilionis, *Conservative Reformation, Popularization and the Lessons of Reading Criminal Justice as Constitutional Law*, 52 *UCLA L. REV.* 979, 1001-02; William J. Stuntz, *The Political Constitution of Criminal Justice*, 119 *HARV. L. REV.* 780 (2006).

¹⁶⁸ 509 U.S. 579 (1993).

the introduction of scientific evidenced to ensure that it was sufficiently reliable to be helpful to the jury. The Court abandoned an earlier formulation based on general acceptance in the scientific community in favor of one based on the trial court's evaluation of the use of the scientific method in the proffered testimony. Application of the new standard led to rethinking various established technologies.¹⁶⁹ The court has an independent duty to evaluate the reliability of scientific evidence in the first instance. The court should consider the views of the experts in the field, arrive at some independent evaluation of new advances in scientific understanding, and apply its critical faculties to the issue of admissibility. This is a role that many courts find difficult and unpleasant. Perhaps we should not be surprised that many judges fall back on their own specialized training, and use precedent as an evaluative tool, accepting the conclusions of their predecessors rather than engaging in a fresh reevaluation of particular technologies.¹⁷⁰ In suppression hearings, courts do not have the *Daubert* admissibility issues to contend with, because the judge rather than the jury is the factfinder, obviating the risk of jurors being misled by experts. However, the court as factfinder has an independent duty to evaluate the strength of the evidence, and deciding as a matter of law that particular kinds of evidence are deemed reliable seems a dereliction of that duty.

These limitations on the courts' desire and ability to adapt to changed understandings of old technologies, especially in the suppression hearing context, intersect with the courts' role as drafters and enforcers of a police code of conduct, further limiting their willingness and ability to change. Even courts that might be skeptical about a particular technology would face the prospect of massively upsetting the system if they were to find a widely deployed and previously accepted technology unreliable. The police are invested in the courts' stated positions, leading to a deep conservatism with regard to old technology. The courts are not that inclined to update their thinking, in large part because of these institutional limitations.¹⁷¹

¹⁶⁹ See, e.g., Robert Epstein, *Fingerprints Meet Daubert: The Myth of Fingerprint "Science" Is Revealed*, 75 S. CAL. L. REV. 605, 624-25 (2002) (calling for rethinking fingerprinting in light of the method's untested assumptions); D. Michael Risinger & Michael J. Saks, *Science and Nonscience in the Courts: Daubert Meets Handwriting Identification Expertise*, 82 IOWA L. REV. 21, 35, 39, 64-65 (1996) (rethinking handwriting analysis).

¹⁷⁰ There are significant costs involved in constantly reevaluating established technologies. If each court had to consider the scientific bases for the admissibility of fingerprint evidence or DNA evidence, trials would be significantly longer and more costly than they already are.

¹⁷¹ See Peter Donnelly & Richard D. Friedman, *DNA Database Searches and the Legal Consumption of Scientific Evidence*, 97 MICH L. REV. 931, 976 (1999) (criticizing the courts for being slow to update their understanding of forensic evidence: "The law should not be a passive consumer of scientifically based information, taking what scientists have to offer 'off the rack.' Rather, it should be an aggressive consumer, asking its suppliers to supply what it needs.").

An additional hurdle to unleashing the courts on the inquiry into the dog's accuracy is the nature of the remedy.¹⁷² In almost all of the cases that result in an opinion, the search revealed some evidence of crime that the defendant is trying to suppress. Many judges will feel a strong and understandable urge to find the dog reliable, if excluding unmistakable evidence of the crime is the alternative. As one trial judge put it while pointing to the evidence the defendant sought to suppress, "I'm a practical man. The dog is accurate—the proof is right there."¹⁷³

Focusing the effort to manage the use of detector dogs at the trial court level will lead to undesirable results under the exclusionary rule—guilty people will go free—and also leaves the innocent with no remedy for potential violations of their rights. By the time the exclusionary rule is applied, the rights are long-since violated. As Caballes's attorneys noted in their Supreme Court petition, the exclusionary rule is only helpful in those cases where the alert did in fact result in a successful search¹⁷⁴—and qualified immunity, which protects law enforcement officers from most civil judgments, leaves the innocent who were unsuccessfully searched without a remedy. Because those innocent voices are largely excluded from the process, we do not know if the officers in the foregoing cases were really exercising solid instincts, which they well might have been, or if there is more to the story.

D. *Updating the Courts' Thinking About Dog Sniffs*

Dog sniff technology is clearly an old technology—it dates back to prehistory, when ancient man took advantage of the domesticated dog's ability to seek out prey for their mutual benefit.¹⁷⁵ But the modern uses of dogs in police cases call for some updated thinking about the value of a dog's alert when privacy interests are being subordinated as a result. Fourth Amendment rules should be clear and readily applied. The best reason for permitting searches based on an alert by a trained and certified dog is ease of administration. The only things the police officer in the field has to know before commencing her search are that the dog is trained and certified, and the dog alerted. This means the end of the internal inquiry for the officer and moving on with the search. But is ease of administration enough to

¹⁷² An explication of the extensive literature on the exclusionary rule and its effects on police conduct is beyond the scope of this article. See generally LAFAVE, *supra* note 82.

¹⁷³ This was observed by the author when he was a trial lawyer.

¹⁷⁴ The lawyers appearing as amicus curiae in *Caballes* made precisely this argument in their briefs. See Brief for American Civil Liberties Union & ACLU of Illinois as Amici Curiae in Support of Respondent at 22-22, *Illinois v. Caballes*, 543 U.S. 405 (2004) (No. 03-923).

¹⁷⁵ See Taslitz, *supra* note 14, at 25.

overcome any constitutional concerns? The very existence of the Fourth Amendment, and the oft-cumbersome warrant process, mandates otherwise.

Desires for simplicity notwithstanding, adding a requirement that the officer show reasonable suspicion in addition to the dog alert, as the *Caballes* dissenters suggested, would not pose a significant new burden. Every officer is trained to deal with the reasonable suspicion standard when it comes to traditional *Terry* stops, so training them to meet that requirement in dog search cases is not an insurmountable obstacle.¹⁷⁶

VII. SOME SUGGESTIONS FOR THE FUTURE

A. *Collect Data*

It is hard to get people to reassess things they believe they already understand. Given that difficulty, I propose some measures that would give the courts something concrete to work with: mandatory data collection on dog deployments, including the use of videotape where feasible, and standardized training with requirements set where the state's interest in accuracy is highest. Additionally, I propose addressing these issues not only in the courts, where the exclusionary rule may warp views of the stakes, but also in the legislature and administrative agencies, such as police commissions or other groups responsible for setting police training standards. Let us consider these proposals in turn.

At the very least, the courts should mandate the collection of data on the use of the dogs and their accuracy rates in the field. If the dog is wildly inaccurate in the field, it cannot be the basis for probable cause. Because the government is the one relying on the dog to override the protections of the Fourth Amendment, and because it is in the position to easily collect the data, it should have the responsibility to do so. It has the burden of proof, and the courts are perfectly within their power to require it to demonstrate accuracy in the field. The United States Army already mandates the collection of such data, with good results.¹⁷⁷ The information collected would include the time, date and place of the search, weather conditions, the characteristics of the driver, and the physical characteristics of the place or vehicle searched. It would also include whether the search yielded anything.

¹⁷⁶ Of course the safest solution for much of this is simply to allow the officer to detain the vehicle for a reasonable time, go before a magistrate in person or telephonically, explain the circumstances, and get a warrant. Granted, that can be cumbersome and costly, but the innocent individual can choose to waive his rights, grant permission to search, and be on her way.

¹⁷⁷ See DEPARTMENT OF THE ARMY, PAMPHLET 190-12: MILITARY WORKING DOG PROGRAM (1993).

Remember, the issue is whether under the totality of the circumstances, when considered in conjunction with this particular dog's behavior under these conditions, there was sufficient objectively verifiable evidence that probable cause existed to search this particular vehicle.¹⁷⁸

The oversight agencies should mandate improved training, and refuse to recognize certifications by agencies that fail to meet the highest standards. Critical issues include handler cuing, where even subconscious preconceptions on the part of the handler may bleed over to the dog. Under current practices, training programs often incorporate blind search patterns, with the instructors opting not to tell the student handlers where the samples have been hidden. Otherwise, experience has proven that the dog is likely to pick up on that expectation on the part of the handler, and alert.¹⁷⁹ One possible fix for this problem is to deliberately train the dogs by providing handlers with correct information in some searches and misinformation in others, so that the dog learns that the handler's cues are unreliable, and ignores them. Every dog should also go through controlled negative testing, in which all objects or locations have no search items present. That way, they learn that they do not always find something when they go to work.

If we are really interested in protecting the public's Fourth Amendment interests, we need to set state and federal standards for training dogs, rather than leaving them to the private sector. The process of drafting standards will move that debate out of the courts, where they are enforced by the exclusionary rule, and into police standards commissions and legislatures. If the standards in use in the private sector are good,¹⁸⁰ the agencies should adopt them formally as part of department policy, so the courts can make consistent—and uncontroversial—use of them. But when dogs fail to meet those standards, the police should thank them for their service and send them off to a happy retirement.

¹⁷⁸ See Richard E. Myers II., *In the Wake of Caballes Should We Let Sniffing Dogs Lie?*, CRIM. JUST., Winter 2006. Dr. Lawrence Myers of Auburn University, a nationally recognized expert on dog searches, suggests that searches be videotaped when possible to ensure that the result is reliable because it is very easy to cue the dog to alert, and this is very easy to do subconsciously. Even an officer with the best intentions may be telling his dog to alert without knowing it. Having an unbiased witness in the form of the camera will help courts determine whether probable cause in fact existed. And, for the prosecutor, in most cases it will also make a nice tool to demonstrate that the evidence was there, exactly where the dog said it would be. Some handler cuing is so subtle that it may be difficult to detect, even on tape. But the objective videotape will allow other experts an opportunity to critique the way the handler used the dog.

¹⁷⁹ See *supra* notes 120-31 and accompanying text for information on handler cuing.

¹⁸⁰ See *supra* note 153 and accompanying text.

B. *Enforce the Probable Cause Requirement, in Light of the Bayesian Analysis*

While Justices Ginsburg and Souter failed to convince the majority as a matter of Fourth Amendment principles to require reasonable suspicion *before* bringing the dogs into play, they ultimately came closer than the majority to the right result, albeit for other reasons.¹⁸¹ Requiring reasonable suspicion coupled with the dog sniff—whether it is found before the sniff or after—is a simple and practical safeguard for ensuring the presence of probable cause before conducting the search. Officers clearly can support their instincts with articulable facts. They do it all the time in the *Terry*-stop context, and it will not be hard for prosecutors and judges to adapt those requirements to the dog sniff context.

C. *Move Standard-Setting Out of the Courts*

The final suggestion, moving the inquiry to the legislature or to a police commission, is more controversial. It is possible that the public choice limitations on legislative action will lead to worse standards, and that the floor set by the Fourth Amendment is the best we can do. But assuming that the legislature or a police commission is interested in representing the more diffuse public interest, it might be able to set training standards based on those circumstances that align the interests of the public and law enforcement. Rather than getting the most search-endorsing dogs that pass constitutional muster, we could seek some optimal degree of accuracy that accommodates privacy and law enforcement interests.

CONCLUSION

Detector dogs are extremely useful tools, but to use them in a manner that respects the privacy concerns of all citizens, courts and counsel need to learn how they work, where they may have problems, and how those problems can be addressed. While they are not flawless, a little diligence on the part of all parties will guarantee that the dogs that remain in service are, indeed, good dogs. Using them in a manner that comports with the probable cause requirement of the Fourth Amendment requires an understanding of the limitations of even a very accurate scientific test in determining whether a relatively rare condition actually exists in an individual case in light of a positive test result. A judicious application of Bayes' Theorem will help the

¹⁸¹ See *supra* notes 41-44 and accompanying text.

courts move away from widely held and intuitive misunderstandings and toward a better application of the real import of an alert by a well-trained dog.

Whether or not one believes deploying a detector dog in a public space is a search, the standard the Constitution requires before a search can begin is a warrant, issued on probable cause, or a good reason why the police do not have one.¹⁸² The standard the courts have consistently adopted for the warrantless search of automobiles and other private containers is probable cause. This article has demonstrated that an alert alone, even by a very accurate dog, does not constitute probable cause. Whether the courts would choose to once again water down the meaning of the probable cause standard in light of proper consideration of this information, or choose to adopt a “dog sniff plus additional indicia” requirement, is impossible to predict. The split on the Court in *Caballes*, even when the justices believed an alert to constitute probable cause, suggests that at least two justices will be open to beginning a new debate. The systemic problems that arise in this context — “legal stickiness,” conflation of probable cause standards, collective action problems, and agency capture of standards—apply in other circumstances as well. The lessons that the dogs teach us can be applied to the movement to reevaluate the accuracy of fingerprints, eyewitness identifications, law enforcement profiles, and many other as yet unexplored examples of old technology. Just because the Fourth Amendment is an imprecise tool for updating the way we use old technology does not mean that we should concede the problem is insolvable. The courts may yet have something to say, if judges are willing to look past precedent with fresh eyes to incorporate new information and update their understanding of old technology.

¹⁸² See *supra* notes 55-57 and accompanying text.