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Canine Crackdown: Unreliable Drug Sniffs Threaten Civil Liberties and Equal Law Enforcement

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Title: Canine Crackdown: Unreliable Drug Sniffs Threaten Civil Liberties and Equal Law Enforcement

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What drew you to the resources you used?

For History 96W: U.S. on Drugs, we were tasked with writing an independent research report about anything related to psychoactive drugs. As a biological sciences major, I have always been interested in animals and saw this assignment as an excellent opportunity to explore the efficacy of drug detecting dogs. More specifically, because police dogs have become an intrinsic part of narcotics regulation, I wanted to know exactly how successful trained canines are at detecting illicit substance. Given the quantitative nature of my topic, I first turned to the UCLA Library's articles database in search of relevant experimental research articles. Though my initial research question seemed relatively straightforward, I continuously stumbled upon new information, sparking additional questions and research that expanded from only scientific journals to historical texts, legal reviews, and news articles, all of which were made available through the UCLA Library's collections. Thanks to these expansive resources, I was able to access a variety of references that developed my report into its final and unquestionably stronger form.

How did you find the material?

While I had perused the Library collections for previous classes, I was never formally trained how to utilize them. However, during an instructional period for History 96W, librarian Miki Goral showed the class how to fully access and search the Library's online databases. Because the available resources are expansive, it is nearly impossible to sift through them without guidance. As such, learning how to properly navigate these resources was essential for conducting efficient and effective research.

Following Miki's helpful instructions, I made extensive use of the UCLA Library's article databases to find many academic articles throughout my journey. During the earlier stages of my research, I primarily used ArticlePlus to search for scientific articles that tested the efficacy of drug detection dogs. From two articles in particular (Jeziarski et al., 2014 & Lit et al., 2011) it was made apparent that even though drug detecting dogs are widely used by law enforcement officers, their ability to accurately detect drugs is subject to various factors including dog breed,

drug type, and handler bias. Online access to key journals was instrumental in not only answering my initial research question, but also remodeling report to explore the extensive history and legal implications of drug detecting dogs in conjunction with their accuracy.

Did faculty, librarians, classmates, or others help you on your journey, and if so, who and how?

In addition to Miki Goral's help in showing me how to navigate the Library's online databases, my instructor, Robert Schraff, was also of great help throughout my journey by constantly providing mentorship and suggestions. Rob made significant contributions to my paper by inciting me to research the legal ramifications of drug dog incrimination, such as warrantless searches, asset forfeiture. Inspired by our discussions, I once again searched the UCLA Library's article databases including JSTOR and ProQuest for legal reviews on drug sniffs in court. From these searches, I found that dog sniffs have been used as criminal evidence for decades, and are often regarded as infallible – despite the fact that experimental studies have shown that this is not the case. This discrepancy between the perception and reality of drug detection accuracy was something that I wanted to explore further, eventually causing me to research the history of drug detecting dogs and why their noses are so highly regarded.

While I was able to locate a healthy batch of legal, historical, and experimental references, one roadblock to my research, which I address in the report itself, was the astounding lack of field data testing drug dog efficacy in the real world. Seeking assistance, I visited the Reference desk of the UCLA Law Library and met Lynn McClelland, who suggested that I search for dissertations and theses for data that I may have overlooked. With her help, as well as the Library's expansive online journal subscriptions, I eventually found a dissertation on canine search and seizure practices in Texan police departments. Though limited, this reference provided a critical example of how drug detection is a priority amongst K-9 handlers in the US, solidifying the issue of unreliable dog sniffs as a serious and widespread concern.

In creating your project, how did you determine what materials were most suitable?

A quick Google search of drug detecting dogs will result in numerous online news articles detailing the incredible success of individual canines. One notable example is Dandy, a drug dog involved in the detection of narcotics and cash worth more than \$1 billion in just six years. Individual accounts like these were important in framing the public perception of drug detecting dogs and grounding my findings into reality. However, these successful anecdotal reports clashed with quantitative studies that found that dogs are often prone to errors. Given this disparity, I was very careful when selecting which references to use, generally favoring peer-reviewed academic journals over periodicals for any sort of general statement about canines. While most news articles are available to the public, academic literature was mostly made available by the UCLA Library's subscriptions.

What strategies did you employ as you searched collections or gathered data?

Because of the multidisciplinary nature of my report, I needed to access a wide variety of academic resources. As a result, I carefully selected which databases I searched to best answer the specific question I was asking at the time. Initially, I was most interested in scientific studies that reported the accuracy of drug detecting dogs from reputable and peer-reviewed journals. After learning that drug detecting dogs were not as accurate as many believed, I then wondered

how drug sniffs related to judicial rulings. Being unfamiliar with legal documents, I first turned to law review articles from my database searches that helped orient me within this unfamiliar territory. From my research, it became evident that courts do not consider drug sniffs to be 'searches' and often use drug alerts as probable cause for criminal activity, even though numerous reports have shown that dogs can be no more accurate than a coin flip.

However, It was admittedly quite difficult to find sources that directly related to my topic (drug detecting dogs in US law enforcement). Instead, my search results for “drug detection dog” were often cluttered with entries including but not limited to drugs used to cure canine illnesses and drug detecting honeybees. As a result, it was exceedingly difficult to sift through all of these unhelpful hits. However, while I was visiting the Law Library, Lynn also showed me how to narrow my searches using special search operations and commands that drastically reduced my unrelated search results. “(K-9 OR canine OR dog*) N/8 (arrests OR police)” was the most efficient online search that I have ever conducted, and this search and others like it led me to numerous sources that analyzed how K-9 units are being used in drug law enforcement. Most strikingly, I found how drug sniffs could potentially be implicated in the unequal enforcement of narcotics regulations against ethnic minorities. Since my initial findings indicated that handler bias could potentiate drug dog alerts, the threat of discriminatory police practices using K-9’s motivated me to keep digging through the Library’s resources.

How did you winnow and refine the resources you found into a meaningful bibliography to support your work?

The most challenging aspect of this project was assembling the information from hundreds of diverse sources into a single piece. After collecting all of my references together, I had to reflect on what items of information best worked in concert to form a multi-faceted, yet coherent paper. Given the abundance of the information I had accumulated, significant cuts were made to focus my analysis. For instance, initially, I planned to discuss how drug detecting dogs are used not only in law enforcement, but also in screenings for transportation, workplaces, and schools. Though many similar points can be made about the concern of drug dog accuracy and the rights to privacy in these other settings, the most interesting issues involved the criminal implications of dog sniffs. Consequently, I narrowed my analysis to the usage of drug detecting canines in law enforcement. By focusing my report in this manner, I was able to more naturally invoke the rampant issues of breeches of Constitutional rights to privacy, discriminatory police practices, and civil asset forfeiture without having to juggle the distinctions between public and private dog use.

Overall, I have worked tirelessly to produce this report on drug detecting dogs in US police forces. Nevertheless, I owe a great deal to not only my mentors, but also the extensive collections of the UCLA Library. Without the support from others and the access to critical academic resources, this project would not have been possible. Throughout my journey researching drug sniffing dogs, I have found that one question is never enough; each and every resource sparks a new question, igniting a never-ending pursuit of learning and discovery. And because this issue is ongoing, I hope that by raising awareness and sharing my knowledge with others, we can work together to ameliorate the consequences of unreliable dog sniffs in the US.

CANINE CRACKDOWN:
UNRELIABLE DRUG SNIFFS THREATEN CIVIL LIBERTIES AND EQUAL LAW
ENFORCEMENT

Bradley Uyemura
History 96W: U.S. on Drugs
Submitted: June 13, 2017

Abstract

This paper explores the history of drug detection dogs in law enforcement, critically examines their ability to successfully detect illicit substances, and investigates the legal repercussions of dog alerts in the field. While drug dog programs have experienced substantial success in the U.S. with annual drug seizures valued between \$2 and \$3 billion, experiments on police-trained dogs have shown that though canines have incredible sensitivity in controlled settings, other factors including the breed of the dog, handler bias, and even the race of the suspect have been shown to significantly reduce a dog's detection accuracy. These reports raise serious questions about the efficacy of drug detecting dogs, and if a dog alert should generate probable cause for a search or seizure of property that is otherwise protected under the Fourth Amendment. In particular, the threat of racial discriminatory practices raises the concern that dogs can be used to inappropriately extend law enforcement authority against ethnic minorities. Though these canines must complete a rigorous training course in order to search for narcotics, police are not required to keep careful records of their dogs' performances on drug detection. As exemplified by a successful investigation and the subsequent removal of the ineffective drug detection dog program in New South Wales, this article calls the U.S. to similarly investigate the accuracy of its drug sniffs in order to protect its citizens from seemingly unreliable dog alerts and the warrantless searches and seizures that follow.

Working Dogs in History

The title of 'man's best friend' is not undeserved; it was earned through an extensive history of domestication and companionship. Versatile and loyal, domesticated dogs have served humans for millennia, with the earliest undisputed human and dog co-burial being approximately

14,000 years ago.¹ While they can be invaluable as companions, canines also possess incredible speed, agility, and olfactory acuity as remnants of their wolverine heritage. Consequently, dogs have been historically utilized as hunting technology as far back as 10,000 years ago,² and continue to be used for hunting and tracking to this day.

As human societies transitioned from hunting and gathering, the roles and responsibilities of canines shifted in concert. The lengthy co-evolution of man and dog has been marked by rampant artificial selection to produce dogs specifically designed for a certain task. In Britain during the 1500s, special dogs were used in large kitchens as primitive motors. The turnspit dog, a small and now extinct breed, was produced specifically to run in a wheel that was connected to a roasting spit.³ Also called *Canis vertigus*, which is Latin for “dizzy dog,” these canines were incredibly strong and were capable of turning a spit roast for hours on end.⁴ Other talented breeds have become closely associated with the tasks that they were designed for, such as pulling sleds (Huskies), hunting (Labrador Retrievers), herding (Australian Cattle Dogs), tracking (Bloodhounds), or fighting (Boxers). All around the world, canines have done well to adapt to the various roles humans have assigned them.

While widespread canine labor has declined due to technological alternatives and growing support for animal rights, dogs – and specifically their noses – have remained at the forefront of scent detection. Armed with more than 220 million olfactory receptors, compared to

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- 1 Martin Street, Hannes Napierala, and Luc Janssens, “The Late Paleolithic Dog from Bonn-Oberkassel in Context.” in *The Late Glacial Burial from Oberkassel Revisited*. Darmstadt: Verlag Phillip von Zabern (2015), 10.
 - 2 Angela Perri, “Hunting Dogs as Environmental Adaptations in Jōmon Japan.” in *Antiquity* (Cambridge University Press, 2016).
 - 3 Bryan Cummins, in *Our Debt to the Dog: How the Domestic Dog Helped Shape Human Societies*. (Durham, NC: Carolina Academic Press, 2013), 119
 - 4 Ibid.

a human's 5 million, a dog is capable of detecting chemical scents at incredibly low concentrations.⁵ Their acute tracking capabilities have most famously been linked to detective sleuthing, rationalizing the presence of many canines in law enforcement. Likewise, the almost mythical ability of a dog's nose has been popularized in fictional works as well, with Sir Arthur Conan Doyle's character, Sherlock Holmes, saying, "I know a dog that would follow that scent to the world's end."⁶ Other fictional pups such as *Scooby-Doo* have also fortified the image of dogs as not only man's best friend, but also crime's worst nightmare. To this day, dog sniffs are highly revered and are used for a wide array of detection targets including narcotics, microbial growth, wood rot, gas leaks, invasive species, estrus dairy cows, cancer, cellular phones, pirated DVDs, agricultural contraband, disaster survivors, missing persons, and explosives.⁷

K-9's as Scent Detectors

Especially in police forces, dogs perform indispensable roles as scent detectors and have done so for centuries. In 1888, Scotland Yard made use of bloodhounds while investigating the infamous 'Jack the Ripper' case.⁸ While canines were used in law enforcement without formal training, the first school designed to specifically train dogs for police work was established in Ghent, Belgium in 1895.⁹ Successful police dog or "K-9" programs spread across Europe, leading to landmark experiments in Germany in 1896 that promoted the German Shepherd to be best suited for police duties.¹⁰ Inspired by the Belgian dog program, the New York City Police

5 Julio Correa, "The Dog's Sense of Smell." in *Alabama Cooperative Extension System, Alabama A&M* (Alabama Cooperative Extension System, 2016), 2.

6 Arthur Conan Doyle, in *The Sign of Four* (1890; repr., Broadview Press, 2010).

7 William Helton, "Overview of Scent Detection Work: Issues and Opportunities" in *Canine Ergonomics: The Science of Working Dogs*, (Taylor and Francis Group, LLC, 2005), 83.

8 Neil Pemberton, "'Bloodhounds as Detectives' Dogs, Slum Stench and Late-Victorian Murder Investigation" in *Cultural and Social History*, 10:1 (Taylor & Francis, 2013), 69.

9 William Handy, Marilyn Harrington, & David J. Pittman, "The K-9 Corps: The Use of Dogs in Police Work" in *J. Crim. L. Criminology & Police Sci*, 52. (HeinOnline,1961), 328.

10 Ibid.

Department established the first police dog program in the U.S. in 1907.¹¹ By 1911, the New York Police Department had 16 dogs that were used to patrol Long Island.¹² Similar K-9 programs sprouted across the country to assist officers on patrols as was done in Ghent. While not specifically trained to detect narcotics, early police dogs were involved in tracking and apprehending suspects, as well as performing search and rescue missions.¹³ Today, K-9 units have become a staple of law enforcement operations with an estimated 600,000 canines performing various duties for police in the U.S.¹⁴

Despite the extended involvement of canines in police departments, they were not widely used to detect narcotics in the U.S. until Nixon's War on Drugs. Though the idea was not necessarily novel, with dogs being used to sniff out moonshiners during prohibition,¹⁵ the U.S. government began enlisting drug-detecting dogs in the 1970s.¹⁶ One of the earliest judicial references to a narcotics dogs was from a California case in 1973, which found that though dogs had never been used as marijuana detectors, their general ability to detect fugitives deemed the sniff as admissible evidence of a criminal act.¹⁷ Since then, the use of dogs to detect illicit substances has made significant contributions to narcotics control and convictions. For instance, twelve dogs at the U.S. Border Patrol Station at El Paso, Texas helped seize \$100 million in narcotics within a nine month period in 1988 and 1989.¹⁸ Another successful case was Dandy, a drug-sniffing German shepherd that led authorities to narcotics and cash valued more than \$1

11 Durland Kellogg, "New York Police Dogs." in *J. Crim. L. Criminology and Police Sci.*, (1961), 329.

12 Handy, Harrington, and Pittman, "The K-9 Corps: The Use of Dogs in Police Work," 333.

13 *Ibid.*, 328.

14 Kevin Johnson, "Police K-9s Increasingly Dying in Hot Cars." in *USA Today*, (2016).

15 Andrew Taslitz, "Does the Cold Nose Know? The Unscientific Myth of the Dog Scent Lineup." *Hastings LJ* 42 (1990), 26.

16 Mark Derr, *A Dog's History of America: How Our Best Friend Explored, Conquered, and Settled a Continent* (New York: North Point Press, 2004), 345.

17 John Ensminger, *Police and Military Dogs: Criminal Detection, Forensic Evidence, and Judicial Admissibility*. (Boca Raton, FL: CRC Press, 2012), 117.

18 *Ibid.*

billion over his 6-year career in Southern California, ending in 1989.¹⁹ All throughout the country, drug detecting dogs have proven to be a formidable obstacle for narcotics possession and trafficking. It is currently estimated that each year, drug-detecting dogs are involved in drug seizures of \$2 to \$3 billion in street value in the U.S.²⁰

Success stories like these have celebrated dogs for their acute sense of smell. Other instances apart from narcotics regulation have similarly fortified the effectiveness of canine scent detection in law enforcement. When the convicted killer of Martin Luther King Jr., James Earl Ray, escaped from his penitentiary in Petros, Tennessee in 1977, he was swiftly discovered and captured by a team of bloodhounds and their handlers.²¹ Likewise, canine explosives detection units are attributed to thwarting terrorist attacks and saving many lives each year.²² In a society that has long depended on dogs for their keen sense of smell, these accounts and others like them have helped to promote dogs as unerring detectors of crime in the American psyche.

Debunking Dog Sniffs

However, despite the various reports highlighting their scent-sensing prowess, the myth of the infallible dog's nose is readily debunked. Unsurprisingly, the majority of the evidence in support of drug detection dogs is anecdotal, with exceptionally limited support from quantitative studies. Clashing with the popular belief that dogs are the "gold standard" of detection technology,²³ recent reports have indicated that canine drug detection is riddled with inherent variability. In an experimental study by Jezierski et al. (2014), some 164 fully-trained Polish

19 Jesse Katz, "Dog With Dandy Nose for Drugs: Crime: German Shepherd Is a Legend among Narcotics Officers. He's Sniffed out a Billion Dollars Worth of Stuff." in *Los Angeles Times* (1989).

20 Derr, *A Dog's History of America* (2004), 345.

21 Johnson, "Police K-9s Increasingly Dying in Hot Cars."

22 Andrea Sachs, "Don't Mind the Wet Nose: TSA Enlists More Dogs to Screen Passengers." *The Washington Post*, (2016).

23 William Helton, "Overview of Scent Detection Work: Issues and Opportunities." in *Canine Ergonomics: The Science of Working Dogs*, (2009), 85.

police dogs of various breeds were assessed for their ability to detect illicit drugs in different conditions.²⁴ It was found that certain breeds were superior to others in detecting drugs, with German shepherds outclassing Labrador retrievers, Terriers, and English Cocker Spaniels by correctly identifying hidden drugs with 86.8% accuracy, up to 19% better than the others.²⁵ In addition, detection accuracy also depended on the type of drug itself, with Marijuana being correctly alerted in 91.8% of all indications, while cocaine and heroin were identified in 74.0% and 70.3% of all indications respectively.²⁶ The environment that the search took place in also influenced canine accuracy. When changing the searching site of the dogs, the authors reported that compared to an 83.2% success rate in a controlled room, dog indications that took place outside of a car were correct only 63.5% of the time.²⁷ While these findings establish that police-trained dogs are capable of finding narcotics to some degree, the dog breed, drug type, and search setting can greatly influence their efficacy and must be taken into consideration when an alert is produced.

Despite the myth of the infallible dog, this study and others like it have shown that even after completing official police training, drug detection dogs are still susceptible to errors, especially under certain conditions. Perhaps even the lowest success rate of 63.5% – at least better than a coin flip – is acceptable to some. However, because a drug was always present in each trial in this experiment, and the handler was made aware of this fact, the results from this experiment measure the dogs' *sensitivity* to a drug in a certain environment, as opposed to the

24 Jezierski, Tadeusz, Ewa Adamkiewicz, Marta Walczak, Magdalena Sobczyńska, Aleksandra Górecka-Bruzda, John Ensminger, and Eugene Papet, "Efficacy of Drug Detection by Fully-Trained Police Dogs Varies by Breed, Training Level, Type of Drug and Search Environment." in *Forensic Science International* 237 (2014), 112.

25 *Ibid.*, 114.

26 *Ibid.*

27 *Ibid.*, 115.

true accuracy of their alerts in the field. This information can only be determined by recording a dog's individual performance on duty as opposed to controlled experimental studies.

Other inherent issues also muddle the efficacy of drug sniffs. Because dog/handler pairs rely on nonverbal cues to communicate the presence or absence of a drug, there are many instances where miscommunication can occur. First and foremost, canines detect odors, as opposed to the odor-producing substance itself. As a result, canine alerts in which no narcotics were found could still be 'correct' in the sense that the dog correctly indicated the presence of the odor, even though the noxious substance was no longer present, or simply too well-hidden to be found. In the same study investigating the role of dog breed, drug type, and setting on search accuracy, it was also found that trained dogs could detect lingering scents of certain drugs at comparable rates to the drugs themselves, even 48 hours after sample's removal.²⁸ When searching for drugs in the field, dogs may be accurately identifying scents, even when no illicit substances were discovered. But without the certain knowledge that a drug was only previously present, or that it was simply well-hidden, the dog's correct behavior may go unrewarded. Because these dogs are trained through classical conditioning methods, failing to reinforce a target behavior can be detrimental to the long-term success of the animal, leading to inaccurate and unreliable alerts.²⁹

And even though a dog may perceive a drug's scent, it must accurately relay that information to its handler through non-verbal cues. When a drug is detected, canines can alert actively by pawing at a drug's location or passively by resting in front of the site based on how they were trained.³⁰ Even after identifying a drug and indicating its presence, the handler must

28 Jeziarski, et al., "Efficacy of Drug Detection," (2014), 115.

29 Dan Hinkel and Joe Mahr, "Tribune Analysis: Drug-Sniffing Dogs in Traffic Stops Often Wrong," in *Chicago Tribune*, (2011).

30 Jeziarski, et al., "Efficacy of Drug Detection," (2014), 113.

perceive this behavior and correctly interpret its meaning. While certain dogs have specific alerting behaviors, any deviation from ‘normal’ actions could be incorrectly interpreted as an alert, despite the fact that the dog was not communicating a hit. In addition to the possibility of the handler simply not noticing an alert, the subjective nature of determining what is and is not considered a drug indication introduces another entry point for error and corruptibility. Given that drug searches are likely to be conducted when police sense an impression of illegal activity, the idea that handlers control how they interpret their canine’s behavior is concerning.

The issue of handler knowledge is particularly troubling because the communication of unintentional cues in general between dogs and their handlers is well documented and is known to influence training and task performance.^{31,32,33} As a result, handler bias could have potentiated their dogs to alert on command, resulting in an inflated success rate of correct drug indications in the aforementioned study. In fact, this phenomenon was documented in another study conducted by Lit et al. (2011), in which dog/handler pairs were falsely told to search for hidden drugs, despite the fact that no drugs were ever present.³⁴ The researchers found that only 15% of searches correctly produced no alert, whereas the remaining 85% contained at least one false alert.³⁵ These results confirm that dogs are readily influenced by handler beliefs to an alarming degree. This finding is particularly disturbing given that there is usually a preexisting suspicion of possession before a drug search is actually conducted. In this context, drug dog’s alert could

31 Christine Schwab and Ludwig Huber, “Obey or Not Obey? Dogs (*Canis Familiaris*) Behave Differently in Response to Attentional States of Their Owners.” in *Journal of Comparative Psychology* 120 (2006), 169.

32 Zsófia Virányi, József Topál, Márta Gácsi, Adám Miklósi, and Vilmos Csányi “Dogs Respond Appropriately to Cues of Humans’ Attentional Focus.” in *Behavioural Processes* 66 (2004), 161.

33 M. Fukuzawa, D. S. Mills, and J. J. Cooper, “More than Just a Word: Non-Semantic Command Variables Affect Obedience in the Domestic Dog (*Canis Familiaris*).” in *Applied Animal Behaviour Science* 91 (2005), 129.

34 Lisa Lit, Julie B. Schweitzer, and Anita M. Oberbauer, “Handler Beliefs Affect Scent Detection Dog Outcomes.” in *Animal Cognition* 14 (2011): 387.

35 Ibid.

simply be reflecting an officer's unwarranted suspicions as opposed to the actual presence of a controlled substance

While the results of controlled experimental trials should be cautiously applied to the actual performance of drug detecting canines in the field, it is apparent that many factors can reduce the efficacy of a search. Objective conditions such as the dog breed, drug type, and search setting can have moderate effects on detection accuracy. Similarly, subjective influences of handler beliefs and alert interpretation can also influence correct indications. Though a handful of stories detail the success of individual canines, the aforementioned experiments and considerations raise serious concerns about the usage of drug detection dogs.

The Ombudsman Study

In the scope of K-9 history, only recently have on-duty drug detecting dogs been put to the test. In 2006, the New South Wales Ombudsman, an independent governmental oversight agency investigated police dogs' performances in detecting controlled substances in the field for a two-year period.³⁶ This study is the most comprehensive investigation to date, tracking the outcomes of 10,211 dog alerts.³⁷ But despite all of the dogs having been certified to detect drugs for law enforcement, police only found drugs in about 26% of searches.³⁸ Strikingly, the group also found that there were significant differences between the success rate of individual dogs, despite the fact that all of the subjects involved in the study were of the same breed and held to the same training standards, with success rates ranging between 56% and 7%.³⁹ While these

36 Taylor Phipps, "Probable Cause on a Leash." *Boston University Public Interest Law Journal* 23 (2014), 70.

37 *Ibid.*, 71.

38 Ombudsman, New South Wales, "Review of the Police Powers (Drug Detection Dogs) Act 2001." Sydney: Office of the New South Wales Ombudsman (2006), available at <https://www.ombo.nsw.gov.au/news-and-publications/publications/reports/legislative-reviews/review-of-the-police-powers-drug-detection-dogs-act-2001>

39 *Ibid.*, 57.

extreme values may reflect statistical variability as opposed to actual olfactory capacity, this evidence supports the previous assertions that drug detection is susceptible to significant variability.

In contrast to the aforementioned success rates of 86.8% in German shepherds in a controlled setting,⁴⁰ the reality of conditional probabilities can explain how the much lower rates of 56% and 7% were observed in the field even though a dog was shown to have exceptional accuracy during certification training.⁴¹ In an article from the *Boston University Public Law Journal*, writer Taylor Phipps explains this phenomenon using the following example:

Imagine the following hypothetical: Training, certification and field performance records indicate that a particular drug detection dog (Fido) has a true positive rate of 95 percent, meaning that Fido alerts 95 percent of the time when drugs are present. Fido also has a false positive rate of 6 percent, meaning that Fido alerts 6 percent of the time when drugs are not present. Now assume that 2 percent of a sample population has illegal substances in their possession. If random dog sniffs occur on 100,000 vehicles, the probability that substances the dog is trained to detect are discovered upon an alert in 24 percent.

The reason for this is more comprehensible when looking at raw numbers. 2 percent of 100,000 people have illegal substances, or 2000 people. Out of these 2000 people who were exposed to sniffs, the dog correctly alerted 95 percent of the time, or 1900 times. So, in 1900 searches the dog alerted and drugs were found. On the other hand, 98 percent of the 100,000 people do not have illegal substances, or 98,000 people. Out of these 98,000 people who were exposed to sniffs, the dog erroneously alerted 6 percent of the time, or 5880 times. So in 5880 searches the dog alerted and no drugs were found. Thus, 7780 searches took place and illegal substances were discovered in 1900 of them for a probability of 24 percent.⁴²

This excerpt highlights the dangers of using drug detection dogs, even if they have stellar sensitivity in a controlled environment. The fact that a small fraction of the population possesses

40 Jeziarski, et al., "Efficacy of Drug Detection," (2014), 114.

41 Ombudsman, "Review of the Police Powers Act 2001" (2006), 57.

42 Phipps, "Probable Cause on a Leash," (2014), 67-68.

illegal substances means that the vast majority of individuals who are searched are likely to be innocent. This lopsided distribution of criminals to innocents provides dogs with abundant opportunities for false alerts, meaning that even with a low false positive rate, the total number of innocent people falsely accused of possessing drugs will outnumber the guilty that are correctly discovered. As such, even after passing a rigorous certification process, trained drug detecting dogs will likely produce extremely low true positive rates out in the field.

Based on the results of the Ombudsman study, the local government concluded that an alert on its own should not constitute probable cause to conduct a search of the person or their belongings.⁴³ Altogether, these findings indicate that in addition to the varying reliability of individual dogs for detecting narcotics, accurate bookkeeping of a dog's competency in the field is essential to evaluate the reliability of its detections. Likewise, if drug detecting canines are to be used, regular retraining should be required in order to ensure standard levels of drug detection proficiency across all practicing dogs.

Searches and Probable Cause

The Fourth Amendment grants citizens the right “to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures... and no Warrants shall issue, but upon probable cause...” Because the U.S. Supreme Court has upheld that an alert from a police-trained dogs with proper certification constitutes probable cause,⁴⁴ drug-detection dogs have become powerful tools of drug regulation by allowing law enforcement officers to conduct warrantless searches. Given the striking limitations and fluctuations of an individual dog's accuracy, it is particularly disturbing that canine alerts are so readily permissible in court.

⁴³ Ibid., 72.

⁴⁴ Ibid., 62.

One of the first Supreme Court references to drug dogs was in *United States v. Chadwick*, in which a detection dog alerted to a locked footlocker containing marijuana, which was searched without a warrant.⁴⁵ Though the officers were found to have conducted an unreasonable search without a warrant, it was mentioned that if they had asked, a warrant would have been issued solely based on the dog's alert.⁴⁶ This decision helped to extend the myth of the infallible dog's nose to court rulings. Similarly, in the landmark case *Florida v. Harris* in 2013, the Supreme Court proclaimed that so long as a dog has completed training from a *bona fide* drug detection organization, its alerts can provide probable cause despite other contradictory evidence.⁴⁷ While the Fourth Amendment was designed to protect citizens from searches based on tenuous suspicions and hunches, the upholding of drug sniffs in a court of law, despite their dramatic variability in accuracy, constitutes a grave disconnect from reality.

Moreover, police are capable of deploying dog searches at will, so long as it does not prolong an encounter. In 1983, the Supreme Court concluded in *United States v. Place*, that a non-trespassory drug sniff of closed luggage does not constitute a search and is therefore not applicable to the Fourth Amendment.⁴⁸ This decision was extended to automobiles at routine traffic stops in *Illinois v. Caballes* in 2005,⁴⁹ though it was found that warrantless drug sniffs were not acceptable on residential entryways.⁵⁰ Regardless, backed by the judicial reverence of drug detection dogs, police hold the power to conduct not only environmental drug searches on luggage and cars indiscriminately, but also follow up with personal searches and seizures based

45 433 U.S. 1 (1997)

46 Taslitz, "Does the Cold Nose Know?," (1990), 31.

47 *Harris v. State of Florida*, 71 So.3d 756 (Fla. 2011).

48 *U.S. v. Place*, 462 U.S. at 707.

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

50 *Florida v. Jardines*, 569 U.S. 11-564, 2013.

on the initial alerts of the dog. In both cases, law enforcement officers do not require a proper search warrant, so long as the canine was properly certified.

While these rulings do not implicate police in inappropriately using canines to generate probable cause, a 2015 case, *U.S. v. Bentley*, from the U.S. Court of Appeals for the Seventh Circuit, exemplifies how handlers can purposefully misuse their dogs to alert on command, while still being able to use these alerts in a court of law.⁵¹ In this case, Lex the drug dog alerted at a car during a routine traffic stop, leading to the discovery of large sums of cocaine.⁵² However, Lex had a troubling success rate, alerting for drugs in 93% of all searches, despite the fact that drugs were only recovered in 59% of them.⁵³ Though dogs are capable of detecting trace scents, which could possibly explain the high proportion of false positives, the handler eventually admitted to rewarding Lex whenever he alerted, regardless of whether drugs were actually found.⁵⁴ Shockingly, the search was upheld by the court, which cited the approval of a dog with a mere 43% success rate by the Fourth Circuit even though it was clear that Lex's alerts were motivated by his handler and were thus highly questionable.⁵⁵

Dog Discrimination

Especially in the U.S., dogs have had a tumultuous reputation for oppressing racial minorities through fugitive slave hunting and controlling protests for the African American Civil Rights Movement.⁵⁶ More recently, following the death of Michael Brown, a Federal inquiry of Ferguson's police operations revealed disturbing patterns of excessive force, including many

51 *U.S. v. Bentley*, (No. 13-2995) (2014), *In the United States Court of Appeals for the Seventh Circuit*

52 Balko, Radley. 2015. "Federal Appeals Court: Drug Dog That's Barely More Accurate than a Coin Flip Is Good Enough." *The Washington Post*, August 4.

53 *Ibid.*

54 *Ibid.*

55 *Ibid.*

56 Spruill, Larry H. 2016. "Slave Patrols, 'Packs of Negro Dogs' and and Policing Black Communities." *Phylon* 53 (1). JSTOR: 42.

instances related to K-9 units. For instance, in 2011, a police canine was deployed to attack an unarmed 14-year-old African American boy waiting in an abandoned house with the only plausible offense being trespassing.⁵⁷ It was further reported that Ferguson officers beat the boy while he was on the ground.⁵⁸ While these accounts concern the use of all K-9 units as opposed to their specific role as drug detectors, a survey of 302 responding Texan police departments reported that there is a prioritization of drug law enforcement for police dogs, with some 44.4% of all handlers working with drug detecting canines.⁵⁹

The idea that drug laws are being unequally enforced is by no means a novel revelation. It has been argued that the modern War on Drugs was largely motivated by the close association of ethnic minorities with illicit substance abuse.^{60,61} In the U.S., drug-related arrests are disproportionately non-white, with African Americans making up about 81% of crack cocaine offenses in 2003 despite the fact that the majority of recorded users of cocaine are white.⁶² While it goes without saying that anecdotes about police brutality may not be representative of all police departments, just as anecdotes about police dog success do not represent all K-9 units, drug detecting dogs could plausibly be used to perpetuate an unequal enforcement of the law. Whether it is through the exhaustive searching of a particular ethnic group or the handler's racial bias that potentiates dog alerts, drug detection dogs appear to be potential tools to extend the powers of law enforcement in a racialized manner.

57 Ibid.

58 Ibid.

59 Bruce Steward, in "Texas Police Canines Search and Seizure Standards and Compliance," PhD diss., University of Southern Mississippi, (2006), 69.

60 David Courtwright, in *Forces of Habit: Drugs and the Making of the Modern World*, (Cambridge, Massachusetts: First Harvard University Press, 2001), .

61 Doris Marie Provine, in *Unequal Under the Law: Race in the War on Drugs*, (Chicago: The University of Chicago Press, 2006), 3.

62 Ibid., 4.

In response to the influences of handler biases on drug detection dogs, one striking concern is if dogs are being utilized to racially enforce drug regulations. Addressing this possibility, the Chicago Tribune investigated three years of traffic stop data from the Illinois Department of Transportation to evaluate the effectiveness of drug-sniffing dogs in 2011. The investigation showed that a positive alert from a dog at a traffic stop only produced drugs or paraphernalia 44% of the time.⁶³ Alarming, when the results were analyzed by race, only 27% of Hispanic drivers were correctly indicated to possess controlled substances.⁶⁴ While police insisted that no racial profiling took place, chalking up the differences in success rates to the detection of only an odor while the drug itself was absent,⁶⁵ these reports raise serious concerns about how dogs could be used to target specific demographics under the guise of drug detection and regulation. In the midst of a War on Drugs that has already been shown to be ripe with discriminatory tactics, K-9 units in drug detection act as both a banner and a weapon against ethnic minorities.

Civil Asset Forfeiture

It is clear that police dogs, more often than not, make faulty alerts against the innocent. While it can be argued that so long as people have nothing to hide, there should be no fear of being searched by law enforcement officials or canines. However, law-abiding citizens can still have their property seized by civil asset forfeiture, in which property can be detained under the suspicion of being related to criminal activity even though the owner of said property was not found guilty of any wrongdoing.⁶⁶ While commonly seized items include drug paraphernalia due

63 Hinkel and Mahr, "Tribune Analysis: Drug-Sniffing Dogs in Traffic Stops" (2011).

64 Ibid.

65 Ibid.

66 Hakki Tuncer. "Civil Asset Forfeiture in the Fight Against Drugs," M.S. thesis, (University of North Texas, 2002), 2.

to their obvious connection with narcotics use, large sums of cash can also be seized under the loose assumption that the money could be related to drug profiteering.⁶⁷ Drug dogs can exacerbate this issue by alerting to drug-tainted cash, even though it has been shown that in 1991 on average 96% of all circulating U.S. bills tested positive for cocaine.⁶⁸ Again, any link to illicit activity, including a dog alert, can result in the seizure of property.

To make matters worse, once the assets are seized, the burden of proving the innocence of the property is placed upon the citizen.⁶⁹ This means that in order to recover the property, one must often spend thousands to hire a lawyer with no guarantee that they will be successful, turning the fundamental premise of the American legal justice system on its head; citizens are guilty until proven innocent. And most egregiously of all, the money that is seized is shared between the police departments and federal governments through Equitable Sharing, incentivizing officers to seize property whenever applicable for their own personal gain.⁷⁰ Recovering seized property is also a very lengthy process, with legal battles potentially lasting more than a year just to return assets that were wrongfully seized in the first place.⁷¹

In 2000, Rudy Ramirez from Edinburg Texas was road tripping across the country with \$7300 in cash, intending to purchase a car in Missouri.⁷² However, when he was pulled over in Kansas City, a drug dog alerted to his car.⁷³ Though no drugs were found, police confiscated \$6000 of Ramirez's money, despite the fact that no charges were filed and he was free to go after

67 Ibid., 31.

68 Ibid., 39.

69 Ibid., 31.

70 Michael Sallah, Robert O'Harrow Jr., Steven Rich, "Police used private intelligence network in quest for cash on nation's highways; Aggressive policing to target money from motorists in civil seizures is underwritten by federal funding," in *Washington Post Blogs*, (published October 12, 2014).

71 Ibid.

72 Dunn, Kyla. "Reining in Forfeiture: Common Sense Reform in the War on Drugs." *Frontline*. (last reviewed 2014).

73 Ibid.

the encounter.⁷⁴ Because it was estimated that the legal fees alone would cost around \$10,000, Ramirez has not recovered his property to this day.⁷⁵ In cases like these, victims of asset forfeiture are entrapped by the extensive legal costs of fighting to only potentially return their property, and are often powerless to pursue any other legal discourse after a seizure. In an investigation conducted by the Washington Post, it was found that 61,998 cash seizures had been made on roadside stops between 2001 and 2014, totaling some \$2.5 billion.⁷⁶ Of these seizures, only one sixth were challenged, with only 41% of the challenges leading to a successful return of the money.⁷⁷ The appeals process took longer than a full year in 40% of successful cases, while property owners were forced to sign agreements refraining from further legal action.⁷⁸ Similar to police practices that target minorities for drug abuse, civil asset forfeitures have also been shown to disproportionately affect minorities, with a report from 1993 indicating that the Volusia County Sheriff's Office had seized \$8 million with nine out of ten targets being minorities.⁷⁹ These reports illustrate a concerning trend of police discrimination that threatens the sanctity of not only drug detecting dogs, but also law enforcement in its entirety.

Conclusions

From the dawn of civilization, dogs have loyally served mankind as both companions and workers. Championed for their speed, strength, and olfactory acuity, working dogs have proved to be capable of performing a myriad of different tasks. Especially useful for tracking and hunting, dogs were swiftly employed into police forces throughout the U.S. and have become

74 Ibid.

75 Ibid.

76 Sallah, O'Harrow, and Rich, "Police used private intelligence network in quest for cash on nation's highways," (2014).

77 Ibid.

78 Ibid.

79 Ibid.

indispensable assets in the War on Drugs. Numerous stories across the country have recounted the incredible success of individual drug detecting dogs, further promoting the longstanding myth of the infallible dog nose. While recent investigations have indicated that drug detection dogs are susceptible to a variety of influences that may reduce the efficacy of a search, U.S. courts have maintained that the alert from a fully trained drug detection dog is accurate enough to procure probable cause. Despite court rulings in favor of drug sniffs, the fact that these canines can be potentiated by handler biases raises the concern that drug dogs are being used to unfairly punish innocent citizens and unequally target racial minorities. This last issue is particularly pressing given the unequal enforcement of drug laws and regulations on blacks and Hispanics.⁸⁰ In this sense, drug dogs may be deployed to perpetuate discriminatory police practices in the U.S.

While it is unclear to what extent drug detecting dogs falsely incriminate innocent citizens, the astounding lack of reliable data on an individual dog's accuracy makes it impossible to determine. Considering the surmounting evidence suggesting that drug dog alerts can be no more accurate than the flip of a coin – if not worse – it is exceedingly difficult to justify a search or seizure on the premise of the alert alone. Coupled with the legalization of marijuana in several states, many dogs that were previously trained to alert to marijuana are now overqualified and there has been no mandate to officially phase out or retrain current K-9 units.⁸¹ And even if no drugs are discovered, false alerts can still result in civil asset forfeiture, which can unjustly confiscate personal property while leaving citizens with little to no recourse. These considerations question whether it is worthwhile to encroach upon the Constitutional rights of an

80 Provine, *Unequal Under the Law* (2006), 76-87.

81 Neal Simpson, "With marijuana legal, many police dogs are now overqualified," WCVB5 (ABC, December 15, 2016).

innocent majority to apprehend a guilty minority. As a first step, future studies and record keeping should be conducted to evaluate the legitimacy of these drug sniffing canines in both the field and the courtroom.

While it is unlikely that Americans are generally unconcerned with privacy, the decades of blind reverence for drug detecting dogs beg to differ. As such, this leniency towards the Fourth Amendment is perhaps reflective of a chronic dismissal of privacy. In a post-9/11 era of federal mass surveillance programs, Americans have been shockingly unenthusiastic about daily breaches of digital for the sake of national security in the war against terrorism. Thus, it is no surprise that in this smaller war on drugs, citizens are unfazed by canine surveillance that only violates the air around them as opposed to one's entire digital identity. Whether it is to combat narcotics or terrorism, Americans generally seem more than willing to sacrifice their own civil liberties to protect their country. But if national security comes at the cost of the freedoms that it claims to defend, is it worth it?

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