

THE DOG ATE MY CONSTITUTION

James E. Doyle Inn of Court
Thomas E. Fairchild Inn of Court
Nashotah, Wisconsin

April 14, 2010

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I. Dogs 101

A. Uses of Police Dogs

1. Contraband detection

a. Controlled substances

b. United States currency

(1) *United States v. Funds in the Amount of Thirty Thousand Six Hundred Seventy Dollars*, 403 F.3d 448 (7th Cir. 2005)

c. Explosives

d. Accelerants

e. Cellphones

(1) Ian Frazier, *Man's Best Friend: Scratch and Sniff*, NEW YORKER (October 19, 2009)

2. Tracking

a. Scent line up

(1) Andrew Taslitz, *Does the Cold Nose Know? The Unscientific Myth of the Dog Scent Lineup*, 42 HASTINGS L. J. 15 (1990)

(2) Innocence Project of Texas, DOG SCENT LINEUPS, A JUNK SCIENCE INJUSTICE (September 21, 2009) (available at <http://ipoftexas.org/wordpress/wp-conte>)

nt/uploads/2009/09/Dog-Scent-Lineups-Texas.pdf)

- b. Following scent
- c. Rescue
- 3. Human remains detection/cadaver
 - a. Andrew Rebman et al., *CADAVER DOG HANDBOOK*
- 4. Dog's alert in lieu of substantive evidence
 - a. *Jacobson v. \$55,900 in United States Currency*, 728 N.W.2d 510 (Minn. 2007)
- B. How Dogs Detect Scent
 - 1. Olfactory abilities
 - a. Dogs react to smells at a threshold well below that of humans
 - (1) *See generally, Taslitz, supra* at 43
 - (2) Some studies place a dog's capacity to detect odor particles at a concentration of 500 parts per trillion.
 - a) J.M. Johnson, *INSTITUTE FOR BIOLOGICAL DETECTION SYSTEMS, AUBURN UNIVERSITY, CANINE DETECTION CAPABILITIES: OPERATIONAL IMPLICATIONS OF RECENT R&D FINDINGS*, 1 (1999)

C. What Dogs Detect

1. Molecules of scent

a. Single *v.* multiple molecules

- (1) Allison Curran *et al.*, *The Differentiation of the Volatile Organic Signatures of Individuals Through SPME-GC/MS of Characteristic Human Scent Compounds*, 55 J. FORENSIC SCIENCE 50 (January 2010)

b. Actual *v.* pseudo scent used for training

- (1) Examples include cadaverine & putrescine
- (a) Related compounds that are both produced by the breakdown of amino acids in living and dead organisms; the two compounds are largely responsible for the foul odor of putrefying flesh
- (b) All carbon based life forms release this scent upon decomposition; not unique to humans
- (2) Dogs can't train/alert on pure cocaine; it's an anesthetic
- (a) Sigma Pseudo™ Cocaine scent
- (3) Dogs do alert to chemicals used to cut cocaine, such as Methyl Benzoate

(4) What molecules drug dogs actually alert to is not fully understood

- (a) Kenneth G. Furton et al., *Odor Signature of Cocaine Analyzed by GC/MS and Threshold Levels of Detection for Drug Detection Canines*, 14 CURRENT TOPICS IN FORENSIC SCI. 329, 329 (1997)
- (b) Kenneth G. Furton et al., *Field and Laboratory Comparison of the Sensitivity and Reliability of Cocaine Detection on Currency Using Chemical Sensors, Humans, K-9s and SPME/GC/MS/MS Analysis*, INVESTIGATION AND FORENSIC SCIENCE TECHNOLOGIES 41, 42 (Kathleen Higgins ed., 1999)
- (c) Kenneth G. Furton et al., *Novel Sample Preparation Methods and Field Testing Procedures Used to Determine the Chemical Basis of Cocaine Detection by Canines*, FORENSIC EVIDENCE ANALYSIS AND CRIME SCENE INVESTIGATION 56, 58 (John Hicks et al. eds., 1997)
- (d) *United States v. Funds in the Amount of Thirty Thousand Six Hundred Seventy Dollars*, 403 F.3d 448, 457-458 (7th Cir. 2005)

c. Two views on contamination of currency by controlled substances

- (1) All United States currency is contaminated with controlled substances; as a result a dog's alert on currency is unreliable and does not manifest probable cause that the currency or the owner was involved in drug trafficking
 - (a) "It has been estimated that one out of every three circulating bills has been involved in a cocaine transaction. Cocaine and other drugs attach to the oily surface of currency in a verity of ways. Each contaminated bill contaminates others as they pass through cash registers, cash drawers, wallets, and counting machines. If, in fact, a substantial part of the currency in this country will cause a trained dog to alert, then the alert obviously has no evidentiary value." Smith, 1 PROSECUTION & DEFENSE OF FORFEITURE CASES § 4.03, P.4-82.3 (footnotes omitted). The author cites experts finding that 70-97% of all currency is contaminated with cocaine. *Id.* at § 4.03, P4-82.1-4-88.2. Cited in Congressional Record H2049 April 11, 2000

- (2) Contaminated money theory lacks scientific validity (from Furton et al., *Novel Sample Preparation Methods, supra*); five specific deficiencies in theory
 - (a) Studies attempting to determine the extent and quantitative level of

cocaine contamination in a particular geographic area must obtain a sufficient number of different denomination bills ensuring that a representative sample of currency in circulation is obtained

- (b) Studies should be carried out on a regular basis to account for constant turnover of paper bills and the resulting variability of contamination as a function of time
- (c) Studies need to confirm the threshold, range and specificity of canine to detect volatile chemicals associated with cocaine
- (d) Quantitative levels of volatile chemicals such as methyl benzoate, have never been reported on paper currency
- (e) Drug detector dogs have been shown repeatedly not to alert to circulated currency; this is an issue with respect to proper training and documentation of the drug detector dog

d. Human scent

- (1) Dog identification of human scent rests on assumption that humans have unique odor profiles that remain constant over time

(2) Human scent is as a combination of volatile to semi-volatile compounds which differ in ratio from person to person, along with additional compounds which vary between individuals

(a) Allison Curran, et al., *Analysis of the Uniqueness and Persistence of Human Scent*, FORENSIC SCIENCE COMMUNICATIONS 7(2) (April 2005)

(b) Rex Stockham et al., *Survivability of Human Scent*, FORENSIC SCIENCE COMMUNICATIONS 6(4) (October 2004)

e. Extinction of scent

(1) Every scent molecule has a half-life and persistence time

(a) Methyl benzoate diffuses so that only 10% remains after 2 hours

1) Furton et al., *Odor Signature of Cocaine* at 332

(b) Cadaverine and putrescine have a half-life of approximately 2 hours and “persistence times” of about 574 hours

(1) Environmental Protection Agency EPI Suite

D. How Dogs Alert

1. Alerts are a *trained* response
 - a. Dogs are trained to provide a response to certain target odors
 - b. Dogs are rewarded when they act in a specific manner in response to stimulus
 - c. Dogs learn that specific response to target odors will lead to a reward
2. Kinds of alerts (specific response) observed by handler
 - a. Active
 - b. Passive
3. How alerts are classified
 - a. True Positive
 - (1) Dog alerts; item of evidentiary value is found
 - b. False Positive
 - (1) Dog alerts; *nothing* of evidentiary value is found
 - c. True Negative
 - (1) Dog fails to alert; *nothing* of evidentiary value is found

- d. False Negative
 - (1) Dog fails to alert; item of evidentiary value is found

II. The Problem with Dogs

A. Dog as Witness

- 1. Dog can't testify
 - a. A dog is not competent to testify: FED R. EVID. 601 ("Every *person* is competent to be a witness ...") [emphasis supplied]
 - b. Every dog is unique; every handler is unique; the relationship between dog and handler is unique
- 2. Dog is only as good as her handler
 - a. Accuracy (reliability) is only as good as handler's interpretation of dog's alerts
 - (1) Cueing by handler is a possibility
 - (2) Interpretation can be subjective
 - b. Accuracy (reliability) is only as good as handler's documentation of alerts in training
- 3. Dog's alert does not reveal whether the handler is planting evidence to corroborate alert
 - a. *United States v. Anderson* (Case No. 2003 CR 80602 E.D. Mich.)(handler planted and pretended to

discover bones during a search for a missing person)

- b. *United States 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)

- 4. Can't tell if handler's records are accurate
- 5. False positives are a reality
 - a. *See Illinois v. Caballes*, 543 U.S. 405 (2005)(Souter, J. dissenting)(the infallible dog is a creature of legal fiction: studies show false positives occur anywhere from 12.5% to 60% of the time)
- 6. Alerts without corroboration are unreliable/irrelevant
- 7. It is not possible to distinguish source of scent that causes alert
 - a. alerts are binary, not empirical
- 8. No standard manufacturing process; not self-validating
- 9. Jurors have superstitious faith in dog's accuracy

B. The Limits of Dogs

- 1. Dogs are a forensic tool conceptually similar to a Wood's Lamp
 - a. An alert tells an investigator whether additional examination is necessary

- (1) *People v. Centolella*, 305 N.Y.S.2d 279 (1969)
(Bloodhound tracking evidence “falls into the category of opinion evidence rather than hearsay. The animals are not witnesses against a defendant any more than microscope or a spectrograph”)
 - (2) A Wood’s Lamp, a Breathalyzer, a gas chromatography-mass spectrometer are uniformly manufactured to specification; neither a dog, nor a handler, nor the relationship of the two is subject to duplication
- b. An alert does not take the place of further testing, examination or investigation
- (1) Nat’l Fire Protection Assoc., Standard 921 GUIDE FOR FIRE & EXPLOSION INVESTIGATION (2004 Ed.)(Proper objective of the use of dog team is to assist with the selection of samples that have higher probability of laboratory confirmation; dog should be used in conjunction with, and not in place of fire investigation methods)
2. Dogs can be misleading
- a. 1 A. J. Wigmore, EVIDENCE § 177, at 1852 (1983)
 (“In actual usage, evidence of the conduct of an animal is apt to be highly misleading, to the danger of the innocent men ... the very limited nature of the inference possible is apt to be overestimated – a consequence dangerous when the jurors are moved by local prejudice”)

- b. 1968 American Bar Association statement on use of dogs, cited in Andrew Taslitz, *Does the Cold Nose Know? The Unscientific Myth of the Dog Scent Lineup*, 42 HASTINGS L. J. 15 (1990)
- 3. Handlers can be misleading, too
 - a. Innocence Project of Texas, *Dog Scent Lineups A Junk Science Injustice*, *supra*
 - b. *United States v. Anderson*, *supra*

III. Legal Issues Related to Use of Dogs

A. Reasonableness of Search (by Dog)

- 1. Probable cause
 - a. A sniff is not a search when drug dog is used to establish probable cause
 - (1) *Illinois v. Caballes*, 543 U.S. 405 (2005) (use of a dog sniff during a legitimate traffic stop does not constitute a constitutionally cognizable intrusion upon legitimate privacy interests)
 - (2) *United States v. Place*, 462 U.S. 696 (1983) (brief detention of luggage located in a public place for purposes of exposing to a dog sniff did not constitute a search within the meaning of the Fourth Amendment)
 - (3) Jeffrey S. Weiner & Kimberly Homan, *Those Doggone Sniffs Are Often Wrong: The Fourth Amendment Has Gone To The Dogs*, THE CHAMPION (April 2006)

- b. Challenges to probable cause
- (1) Bayes Theorem offers a mathematical basis to challenge probable cause by showing that a 90% success rate does not mean that there is a 90% chance that the subject vehicle will contain a controlled substance; Bayes Theorem accounts for false positives
- (a) *Richard E. Myers II., Detector Dogs and Probable Cause*, 14 GEO. MASON L. REV. 1 (2006). Myers notes that “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.”
- (b) 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).
- (c) An explanation of Bayes’ Theorem and how it works is explained by 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>

2. Seizure of individual while waiting for dog to arrive may be unreasonable
 - a. *See Illinois v. Caballes*, 543 U.S. 405, 407 (2005)(a lawful seizure “can become unlawful if it is prolonged beyond the time reasonably required to complete that mission”)

B. Reliability and Relevance: the Basis for Admission of Testimony Regarding Dog's Alert

1. In cases of alerts by trained police dogs (and involving bloodhounds and human remains detection dogs in particular) the issue is generally the reliability and relevance of the alerts
 - a. *Brooks v. People*, 975 P.2d 1105 (Co. 1999)
 - b. *Trejos v. State*, 143 S.W.2d 30 (Texas 2007)
 - c. *Clark v. State*, 781 A.2d 913 (Md. 2002)
 - d. *State v. White*, 676 S.E.2d 684 (S.C. 2009)
2. Reliability
 - a. No standard threshold
 - (1) *United States v. Outlaw*, 134 F.Supp. 2d 807, 813 (W.D. Texas 2001)(“The possibility of

error exists and in limited circumstances, the error may be of such magnitude that a dog alert is not sufficient to establish probable cause. For instance, it stretches the bound of jurisprudential imagination to believe that a positive alert by a untrained dog or by a dog with an extensive history of false positive alerts could be relied upon to establish probable cause without raising Fourth Amendment concerns”)

(2) Certification of dogs to eliminate challenges

(a) South Dakota requires certification (and annual re-certification) of dogs used in drug detection; police may not use a dog to assist in drug detection unless dog is certified

1) S. D. Codified Laws § 23-3-35.4(1)

(b) But certification does not necessarily mean that dogs are reliable

1) *See generally State v. Wright*, 2009 WL 2411298 (Ariz. Ct. App. 2009) (unreported) (certification of dog alone does not substantiate that the dog is able to discriminate between vehicles that contained illegal drugs and those that did not; certification process did not eliminate inadvertent or unconscious cuing by handler;

reliability is still an issue for
admissibility)

- (3) Three differing approaches to reliability recognized in *State v. Nguyen*, 2007 SD 4, ¶¶ 15-16, 726 N.W.2d 871
 - (a) Courts deem dog reliable solely because the evidence shows that the dog was trained and certified to detect controlled substances
 - (b) Courts consider a dog's training and certification to be prima facie evidence that the dog is reliable. Burden then shifts to the defense to produce evidence to challenge dog's reliability
 - (c) Courts examine dog's records, along with evidence that the dog is trained and certified to be considered as factors in determining reliability
- (4) Handler reliability *v.* dog reliability
 - (a) Handler's reliability is aptly analogized to admissibility of polygraph evidence due to subjectivity involved
 - 1) *Jacobson v. \$55,900 in United States Currency*, 728 N.W.2d 510 (Minn. 2007)

- (b) *United States v. Trayer*, 898 F.2d 805, 809 (C.A.D.C. 1990) (“[W]e are mindful that less than scrupulously neutral procedures, which create at least the possibility of unconscious ‘cuing,’ may well jeopardize the reliability of dog sniffs”)
- (c) The dog acts as the sensor and the handler is the interpreter. The handler’s performance in training and interpreting is part of dog’s reliability rate; the results are, therefore, subjective
- (d) Robert C. Bird, *An Examination of the Training and Reliability of the Narcotics Detection Dog*, 85 KY. L. J. 405 (1997)(noting some of the empirical evidence showing instances of low accuracy by dog inspections and examining the factors that cause such errors)

b. Generally

1. Reliability is based on corroborated alerts

- (a) *Trejos v. State*, 243 S.W.2d 30 (Texas 2007)
- (b) *United States v. Brock*, 417 F.3d 692, 696 (7th Cir. 2005)
- (c) *United States v. Ludwig*, 10 F.3d 1523 (10th Cir. 1993)(dog alert might not

provide probable cause if the particular dog had a poor accuracy record)

- (d) *United States v. Fernandez*, 772 F.2d 495, 497 (9th Cir. 1985) (“The mere fact that a dog hit on a piece of baggage or cardboard does not, in the absence of any factors supporting its reliability, establish probable cause”)
- (e) *Commonwealth v. Ramos*, 894 N.E.2d 611 (Mass. 2009)(search warrant affidavit which specifically relied on apparent positive alert to the presence of drugs by trained dog was not sufficiently trustworthy to support search warrant; statement that dog had 150 documented finds was gross misstatement)

2. Three factors for determining reliability of expert testimony relating to dog’s alert to scent of humans as discussed in *Trejos v. State, supra*

- (a) Objectivity of the particular cadaver search
- (b) Qualifications of the particular trainer/handler
- (c) Qualifications of the particular dog

- 1) Breed characterized by acuteness of scent and power of discrimination
- 2) Trained to discriminate between humans and their scent
- 3) Experience shows dog to be reliable
- 4) Given scent known to be that of alleged individual
- 5) Given scent within period of efficacy

c. Corroboration

- (1) Without corroboration tracking dog's alert is not admissible
 - (a) *United States v. Gates*, 680 F.2d 1117 (6th Cir. 1982)(tracking dog corroborates eyewitness identification of bank robber)
 - (b) *Brooks v. People*, 975 P.2d 1105 (Co. 1999)(dog's discovery and identification corroborated evidence found on defendant)
 - (c) *State v. Roscoe*, 145 Ariz. 212, 700 P.2d 1312 (1985)(Blind testing corroborates identification)

3. Relevance
4. Competence or qualification of handler
 - a. With proper foundation, dog's handler may testify about
 - (1) Her qualifications
 - (2) That she has trained dogs
 - (3) That the dog was trained to alert
 - (4) That she has taken the dog to certain locations
 - (5) There, she observed the dog's behavior
 - b. Handler should *not* be permitted to testify
 - (1) What the alert means
 - (2) In a manner that channels the dog's thoughts
 - (3) Explain what primary and residual odor are
 - (4) Reasons why dogs alert (chemical, biologic and neurologic processes)
 - c. To the extent that the handler is not competent or qualified to offer expert testimony on the cause of the alert, her testimony is not relevant

C. Substantive Use of Dog's Uncorroborated Alert

1. An alert in the absence of corroborating evidence should not be admitted at trial as substantive evidence
 - a. *Jacobson v. \$55,900 in United States Currency*, 728 N.W.2d 510 (Minn. 2007)
 - (1) trial court committed clear error by relying on dog sniff as substantive evidence that cash found in a safe was connected to drug trafficking (cash was deposited into bank before testing could occur)
 - b. Substantive use of alert is based on concept of residual odor; a concept that remains controversial among scientists
 - (1) The standard of the industry (*i.e.*, what is "generally accepted") is that an uncorroborated alert is a false positive
2. Product rule
 - a. Repeated alerts without corroboration do not implicate the Doctrine of Chances. Nor do the repeated uncorroborated alerts make more likely that contraband was associated with the location of the alert. Just the opposite is true.
 - b. A coin flip offers an easy example. The chance of getting tails in one flip is 50%, but in 3 flips the chance of getting tails on all three decreases to 12.5%. This is commonly known as the "product rule." "[T]he product rule means that the probability of two events occurring together is

equal to the probability that event one will occur multiplied by the probability that event two will occur.” R. Freund & W. Wilson, *STATISTICAL METHODS* 62 (1993). The classic illustration is coin tossing; the probability of finding “heads” on two successive coin tosses is equal to the probability of heads on the first toss, 50%, times the probability of heads on the second toss, 50%, equaling 25%. R. Johnson, *ELEMENTARY STATISTICS* 143 (4th ed. 1984).” *Armstead v. State*, 342 Md. 38, 69-70, 673 A.2d 221 (Md.,1996.)

IV. How to Bite Back (Or How to Challenge the Admissibility of Dogs)

A. What You Need

1. Records

(a) About the dog

(1) Training records

a) This should include a record of *every* field and *every* training exercise and whether there was corroboration for an alert or for a lack of an alert

1) Douglas P. Heller, et al.,
*Observations and
Recommendations regarding
Training, Record Keeping, and
Deployment of Explosive
Detection Canine Teams*
(available at
<http://www.fiu.edu/~ifri/Ob>

servations%20and%20Recommendations.pdf)

- 2) Ron Gunton, *Documentation and K9 Policing*, North American Police Working Dog Association Website, <http://www.napwda.com/tips/index.phtml?id=25>

(2) Videos of relevant searches

a) Necessary for review by defense expert; looking for

1) Cuing by handler

2) Subtle signals by dog

(3) Work records

(4) Veterinary records

(5) Double blind testing

(6) Records of cases worked on

(7) Certifications

(8) Qualifications of those certifying dog

(b) About the handler

(1) How trained and by whom

(2) Continuing education; how and by whom

- (3) Certifications
- (4) All information one wants and expects:
 - a) All past cases worked on
 - b) All past testimonies given
- (5) All facts and data underlying the opinion that the dog alerted

2. Experts to consider

- (a) Andrew Rebman (expert in cadaver/HRD dogs)
- (b) Warren James Woodford (expert in aroma chemistry; holds the U.S. patent on the synthesis for the odor of cocaine)
- (c) Lawrence Myers (expert in olfactory thresholds in the dog; at Auburn University)

B. Evidentiary Challenge

1. Generally

- (a) Key to excluding testimony on dog searches is attacking the reliability of the evidence (*i.e.*, the lack of reliability of handler and dog)
 - (1) In order to attack reliability, you need to obtain all records of the dog, its training and its handler

- (2) Where, as in *Wisconsin*, reliability is not part of the admissibility equation, then frame your reliability argument in terms of relevance and competence

2. Framework

- (a) Three prongs to challenge
 - (1) Relevance
 - (2) Reliability
 - (3) Competence
- (b) *Daubert v. Merrel Dow Pharmaceutical*, 509 U.S. 579 (1993) (relevance and reliability)
- (c) *Frye v. United States*, 293 F. 1013 (D.C. 1923) (general acceptance)
- (d) *Walstad v. State*, 119 Wis. 2d 483, 351 N.W.2d 469 (1984) (unique to Wisconsin, reliability is not an issue to admissibility)