IDENTIFYING THE ENEMY IN THE WAR ON DRUGS: A CRITIQUE OF THE DEVELOPING RULE PERMITTING VISUAL INDENTIFICATION OF INDESCRIPT WHITE POWDER IN NARCOTICS PROSECUTIONS

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> Precisely because the need for action against the drug scourge is manifest, the need for vigilance against unconstitutional excess is great. History teaches that grave threats to liberty often come in times of urgency, when constitutional rights seem too extravagant to endure. . . . [W]hen we allow fundamental freedoms to be sacrificed in the name of real or perceived exigency, we invariably come to regret it.[1]

INTRODUCTION

Imagine the following scenario: The arresting officer in a prosecution for sale of a controlled substance testifies that he observed the defendant behaving in a manner consistent with narco-trafficking. The officer is qualified to render such an observation as an expert based on his training and years of experience investigating narcotics crimes. The only element of the crime not yet established is that the white powder seized from the defendant was in fact a controlled substance regulated by law. When the prosecutor asks the officer: "In your opinion, what is that white powder?," the defense objects: "Your honor, not even a trained chemist can identify the chemical compo-

1. Skinner v. Railway Labor Executives' Ass'n, 489 U.S. 602, 635 (1989) (Marshall, J., dissenting).

sition of a white power simply by looking at it." According to a recent line of appellate cases from around the country, the objection will be overruled. The officer will be qualified by the court as an expert in visually identifying white powdered narcotic substances because he had testified to participating in hundreds of arrests and because of his ability to "pick out cocaine from a line-up of various powdery substances."[2] The officer's opinion may be admitted as the only evidence that the substance is indeed a controlled substance, and on that basis the defendant can be convicted.

This developing rule has been fostered by systemic pressures on the criminal justice system resulting from heightened drug enforcement activity, and the state of confusion surrounding the admissibility of opinion testimony. National drug enforcement policy,[3] accurately called a "drug war,"[4] has treated narcotics enforcement as a matter of national security requiring emergency measures. The crisis mentality with which the drug war has been waged is changing the face of criminal justice in the United States by both straining resources and serving as a justification for the dilution of traditional procedures of law enforcement and criminal prosecution.

The rules of evidence have likewise undergone a significant transformation, particularly with respect to the admissibility of opinion testimony. The common law opinion rule regarding lay and expert witnesses has been replaced by the more flexible, lenient approach of the Federal Rules of Evidence in most states as well as the federal courts. With this transformation has come some uncertainty about when opinion testimony is admissible. The confusion has given some courts the opportunity to discard the traditional requirements of reliability of expert opinion testimony, notably in the area of narcotics identification.

It should be of little surprise that evidentiary standards have eroded in the context of criminal narcotics prosecutions. Under the systemic pressures of the drug war,[5] courts may be tempted to diminish traditional evidentiary standards and principles. There is little

2. *See* State v. Nelson, 480 N.W.2d 900, 904 (Iowa Ct. App. 1991) (allowing investigating police officer to testify as expert on nature of allegedly controlled substances).

3. On March 21, 1972, Congress declared that it is the policy of the United States to focus comprehensive resources of the Federal Government to combat drug abuse. *See* 21 U.S.C. § 1102 (1994) (setting forth federal government's intention to use effectively financial resources to aid states and local communities in their fight against drugs).

4. *See id.* §§ 1101-1102 (explaining drug abuse in United States that now afflicts urban, suburban, and rural areas of the nation requires intervention through law enforcement efforts); *see also* National Treasury Employees Union v. Van Raab, 489 U.S. 656, 674 (1989) ("[D]rug abuse is one of the most serious problems confronting society today.").

5. *See infra* Part IV.

doubt that the perceived exigencies of the drug war impact evidentiary decisions in narcotics prosecutions. Consequently, the flexible standards of admissibility incident to the modern rules of evidence on opinion testimony have been most egregiously stretched in narcotics cases.

This Article contends that admitting police officer/expert witness testimony concerning the identity of a controlled substance based solely on the officer's visual inspection of the substance violates not only the rules of evidence and the defendant's constitutional right to due process, but common sense reasoning as well. Part I explores the recent line of cases allowing police officers to offer expert opinion testimony based on visual identification of suspected narcotics, and concludes that such testimony is without foundation and is inadmissible even under the modern, flexible approach reflected in the Federal Rules of Evidence.

Part II explains why these cases are erroneous. First, as a scientific matter, it is impossible to identify the chemical composition of white powders by sight. Second, both Congress and virtually all state legislatures have recognized this fact by criminalizing the sale of imitation controlled substances.[6] In so doing, they implicitly acknowledge that the sale of phony drugs is sufficiently common to warrant judicial intervention, and that even users who have an extremely high incentive to make sure they are buying genuine narcotics cannot identify drugs by sight.

Part III provides an overview of the common law and Federal Rules of Evidence regarding opinion testimony, and examines how controlled substances have traditionally been identified in criminal narcotics prosecutions through opinion testimony. While various methods have been employed, courts have rejected those which are unreliable. Thus, because police visual identification of white powder narcotics is inherently unreliable opinion testimony, it is inadmissible under the rules of evidence. Part IV offers a hypothesis to explain why the traditional rule is disintegrating in this context, namely, the impact of the War on Drugs on the judicial system. Part IV provides an overview of the drug war and its systemic impact on the criminal justice system. Part IV concludes by arguing that courts should resist the temptation to compromise the rules of evidence in this context.

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6. Imitation substances are also sometimes called "look-alike" drugs or "beat" drugs. *See* People v. Jones, 675 N.E.2d 99, 101 (Ill. 1996) (defining pseudo-narcotics as "look-alike" substances); People v. Job, 630 N.Y.S.2d 285, 287 (App. Div. 1995) (noting that upon defendant's arrest, police recovered one vial of "beat" drugs).

I. VISUAL IDENTIFICATION OF SUSPECTED CONTROLLED SUBSTANCES

Until recently, most courts agreed that proof of the identity of a suspected controlled substance could not rest on an opinion based solely on visual inspection. Courts reasoned that it was impossible to ascertain the chemical composition of a substance just by looking at it. In the past decade or so, however, a growing number of appellate courts have held or suggested that an opinion based on visual inspection is admissible and sufficient to prove the identity of the substance.

A. The Traditional Rule

Traditionally, courts have held that neither a police officer nor any other expert may offer an opinion at trial that a particular substance is a narcotic based solely on visual inspection.[7] Justices William Brennan and Thurgood Marshall wrote in *United States v. Jacobson*[8] that "[u]pon visual inspection of the powder [at issue] in isolation, one could not identify it as cocaine,"[9] recognizing the difficulty of analyzing a substance just by looking at it. The Court of Criminal Appeals of Texas offered a similar explanation for adopting a rule prohibiting visual identification:

> [W]e are unwilling to say that an experienced officer can look at a white or brown powdered substance and testify that it is heroin since morphine, codeine, paregoric, other opiates, other controlled substances, and non-controlled substances also appear in white or brown powdered form. A green leafy plant substance which is marijuana has different characteristics from other green leafy plant substances; an expert can determine the difference. The evidence here does not show that even the experienced expert can distinguish one white or brownish powdered substance from another and determine which one is heroin.[10]

Similarly, the Ninth Circuit reversed a conspiracy conviction for failure to prove that the substance at issue was a narcotic, taking judicial notice that "whether or not a powder or substance is a narcotic cannot be determined by a mere inspection of its outward appearance."[11] Given the difficulty of distinguishing one indescript powdered substance from another, virtually all courts seemed to agree that neither police officers nor other experts may offer such identifi-

7. *See infra* notes 10-11 and accompanying text.
8. 466 U.S. 109 (1984).
9. *Id.* at 142 (Brennan, J., dissenting).
10. Curtis v. State, 548 S.W.2d 57, 59 (Tex. Crim. App. 1977).
11. Cook v. United States, 362 F.2d 548, 549 (9th Cir. 1966).

cation testimony.[12]

B. The Developing Rule

The general prohibition on visual identification of controlled substances began to disintegrate during the late 1980s, at the height of the drug war. One leading case is *Commonwealth v. Dawson*,[13] where the Supreme Judicial Court of Massachusetts considered whether a substance can be identified as a controlled drug "through the testimony of experienced police officers or the users of the drug rather than through laboratory analysis or testimony by a qualified chemist."[14] The court concluded that a chemical test was not absolutely necessary for most courts hold that circumstantial evidence can, in some cases, be enough.[15] However, the court went on to state that "[w]e suspect it would be a rare case in which a witness's statement that a particular substance looked like a controlled substance would alone be sufficient to support a conviction."[16] The court's opinion therefore suggested that testimony that a substance appeared to be a

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12. *See, e.g.*, Byers v. State, 594 S.W.2d 252, 254 (Ark. Ct. App. 1980) (noting that officer's initial identification of substance as cocaine was later disproved by chemical analysis identifying substance as heroin); People v. Williams, 185 N.E.2d 686, 687 (Ill. 1962) ("[I]t is obvious that only an experienced expert could identify the white powder taken from the defendant as a narcotic drug, and there is no suggestion that the officer had the requisite qualifications.") (citations omitted); People v. Symonds, 310 N.E.2d 208, 215 (Ill. App. 1974) ("[I]t appears that even an expert cannot positively identify heroin or distinguish it from other white powdery substances solely by visual inspection."); Copeland v. State, 430 N.E.2d 393, 396 (Ind. App. 1982) (reversing conviction where witness "merely identified the substance by sight and did not inject, inhale, or ingest the substance.... Our examination of the relevant case law has failed to reveal a conviction which was sustained by merely visual identification alone."); Kelly v. State, No. 05-94-00887-CR, 1995 WL 110349, at *1 (Tex. App. Mar. 9, 1995) (noting prohibition on visual identification testimony).

The prohibition on police officers visually identifying indescript controlled substances does not extend to officers making such identifications for the purposes of establishing probable cause for arrest. *See* Gonzalez v. State, 392 S.E.2d 893, 895 (Ga. Ct. App. 1990) (finding that trooper's belief that white powdery substance found on seat of car and steering column was cocaine was sufficient for probable cause to arrest defendant). *But see* Gonzales v. Texas, 666 S.W.2d 496, 499 (Tex. Ct. App. 1983) (holding that plain view doctrine was not applicable to officer searching based on his belief that orange liquid in bottle was methadone). Likewise, a police officer's testimony that a substance was cocaine has been held to be sufficient at a preliminary hearing. *See* People v. Wesley, 274 Cal. Rptr. 326, 334-35 (Cal. Ct. App. 1990).

13. 504 N.E.2d 1056 (Mass. 1987). At the time *Dawson* was decided, Massachusetts still had not adopted the Federal Rules of Evidence on expert or lay testimony. *See id.* at 1057 (holding that, based on common law, a substance can be identified as a controlled drug through the testimony of experienced police officers); *see also* 21 CHARLES A. WRIGHT & KENNETH W. GRAHAM, FEDERAL PRACTICES & PROCEDURE: FEDERAL RULES OF EVIDENCE § 5009 (Supp. 1997) (noting that Massachussetts has not currently adopted rules of evidence based on the Federal Rules of Evidence). As noted by Chief Justice Liacos of the Massachusetts Supreme Judicial Court, the federal rules are substantially more flexible than the Massachusetts common law rules. *See* PAUL J. LIACOS, HANDBOOK OF MASSACHUSETTS EVIDENCE 358 (6th ed. 1994).

14. *Dawson*, 504 N.E.2d at 1057.

15. *See id.*

16. *See id.* at 1057-58.

controlled substance is admissible, and could even be sufficient to prove the identity of the substance beyond a reasonable doubt if a court finds that the witness is qualified.[17] In an earlier case, the Second Circuit allowed a police witness to offer an opinion that a substance was cocaine,[18] rejecting the appellants' claim that a chemist's testimony that cocaine cannot be identified by observation made the officer's evidence inadmissible.[19]

During the 1990s, these once-isolated cases have become much more common. In *State v. Nelson*,[20] the Iowa Court of Appeals rejected a defendant's claim that the evidence was insufficient to prove that the substance at issue was cocaine, specifically upholding the admissibility of visual identification testimony.[21] The defendant argued that a police officer was not an expert qualified to testify on the nature of a powdery white substance.[22] The court concluded that if the trial court was satisfied with the witness's qualifications, the witness may testify as an expert.[23] The officer's qualifications included participating in hundreds of drug-related arrests and his testimony that "he could pick out cocaine from a line-up of various powdery substances."[24] Relying on an Iowa Supreme Court case where an officer was permitted to identify marijuana as an expert, the court held admissible the investigating officer's opinion that a white powder was cocaine.[25]

Similarly, in *Johnson v. State*,[26] a forfeiture case, an Alabama appellate court upheld the admissibility of narcotics identification based solely on visual appearance.[27] The officer was qualified as an expert by the trial court based on her "experience in identifying cocaine and . . . her familiarity with the substance."[28] The appeals court held that while the testimony was "minimal, the determination regarding whether a witness is qualified to testify as an expert lies within the

17. *See id.*
18. *See* United States v. Bermudez, 526 F.2d 89, 97 (2d Cir. 1975) (determining that special agent of Drug Enforcement Administration was qualified to make such a judgment).
19. *See id.* at 98 n.8.
20. 480 N.W.2d 900 (Iowa Ct. App. 1991).
21. *See id.* at 901.
22. *See id.*
23. *See id.* at 904.
24. *Id.*
25. *See id.* at 903-04 (citing State v. Sykes, 412 N.W.2d 578 (Iowa 1987)).
26. 667 So. 2d 105 (Ala. Civ. App. 1995). Alabama adopted the Federal Rules of Evidence in 1996. *See* WRIGHT & GRAHAM, *supra* note 13, § 5009. The change effected by the adoption of the federal rules from preexisting Alabama law was to broaden the scope of permissible expert and lay opinion testimony. *See* ALA. R. EVID. 701, 702 advisory committee's notes.
27. *See Johnson*, 667 So. 2d at 108 (concluding experienced police officer in field of narcotics is qualified to give his or her opinion as to whether substance seized is cocaine).
28. *Id.*

sound discretion of the trial court, and an experienced police officer in the field of narcotics is qualified to give his or her opinion as one 'who has seen or studied' cocaine."[29] The court then articulated a low threshold for qualifying a witness as an expert, stating that "[i]f a witness's knowledge extends beyond or supersedes that of an ordinary witness, as determined by the trial court, the witness may become an expert."[30]

Similarly, in the Arkansas case of *Rodgers v. State*,[31] a police officer inspecting an 18-wheeler at a weigh station conducted a consensual search of the defendant's truck and found a pinkish-white powder that he suspected was methamphetamine.[32] The defendant fled from the scene with the substance and disposed of it in nearby weeds; the officer was unable to find it.[33] The Arkansas Court of Appeals found that the officer's "training and experience" in identifying drugs and making arrests for possession established his qualifications to render an opinion that the substance was methamphetamine.[34]

Other courts have made similar rulings. In *United States v. Harrell*,[35] for example, the Eleventh Circuit concluded that "[i]dentification based on past use coupled with present observation of the substance at hand will suffice to establish the illicit nature of a suspected substance."[36] Although the evidence in *Harrell* itself was more definitive,[37] that language suggests broad permissibility of visual identification testimony. Similarly in *State v. Evans*,[38] the Louisiana Court of Appeals suggested that an appropriately qualified expert police officer could make a visual identification of a suspected controlled sub-

29. *Id.*

30. *Id.*; *see also* Wills v. State, 867 S.W.2d 852, 857 (Tex. Ct. App. 1993) (positing that it is not objectionable for an officer to testify that a substance found in a matchbook was cocaine where the officer explained that he had lengthy experience with illegal narcotics, and was able to identify cocaine).

31. No. CA CR 95-266, 1996 WL 89180 (Ark. Ct. App. Feb. 28, 1996). Arkansas adopted the federal rules on expert and lay opinion testimony via the Supreme Court of Arkansas as part of its ruling in *Ricarte v. State*, 717 S.W.2d 488, 489 (Ark. 1986).

32. *See Rodgers*, 1996 WL 89180 at *1-2.

33. *See id.* at *1.

34. *See id.* at *2. The court added that the defendant's flight corroborated evidence of guilt. *See id.* Yet consciousness of guilt evidence does not help identify a particular substance. Thus, it seems clear that the visual identification was an indispensable predicate to the conviction and appellate affirmance. *See id.* (articulating that lay testimony and circumstantial evidence can be sufficient to establish the identity of a questionable substance).

35. 737 F.2d 971 (11th Cir. 1984).

36. *Id.* at 978-79.

37. In *Harrell*, the prosecution's witness testified that he was a user and pusher of an assortment of drugs. *See id.* at 979. Such experience, coupled with observations of appellant's characteristic behavior (selling speed), qualified the witness to identify the substance that he observed appellant snorting. *See id.*

38. 593 So. 2d 900 (La. Ct. App. 1992). Louisiana has adopted Federal Rule of Evidence 702 essentially unchanged. *See id.* at 902.

stance.[39] Presumably, these appellate decisions have been followed by subordinate courts in their respective jurisdictions.

II. FACTUAL PROBLEMS WITH VISUAL IDENTIFICATION TESTIMONY

The growing tolerance for admitting opinion testimony based solely on visual inspection is troubling, initially, because it simply cannot be done; no one can reliably identify an unknown substance simply by looking at it. The trend is also problematic because of the increasing problem of imitation drugs, which are designed to appear to be controlled substances but are actually fraudulent substitutes. Given these circumstances, visual opinion testimony is likely to be highly unreliable.

A. Visual Analysis of Powders: It Cannot Be Done

There are literally millions of chemical substances that can be made into a white powder; only a comparative handful of these are controlled substances.[40] Perhaps Superman with his x-ray vision could tell them apart, but there seems to be a scientific consensus that narcotics do not display external physical characteristics discernible to mere mortals that can be reliably used to distinguish them.[41]

Dr. James Tong, a Professor and Director of the Forensic Chemistry Program at Ohio State University who earned his Ph.D. from the University of California at Berkeley, has worked for both the prosecution and defense in various criminal cases. As he explains:

> there are countless white powders. Even under microscopic examination, you can't tell which is which. Why do we buy instruments that may cost hundreds of thousands of dollars (such as a GCMS, a gas chromatograph mass spectrometer) to identify substances, if we can tell what they are just by looking at them? Why have analytical chemistry at all if we can tell what something is based on appearance?[42]

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39. *See id.* The police officer's testimony was limited, however, "only to what his experience as a police officer would give him." *Id.* Because the record did not reveal the amount of time that the officer had been with the police force, he did not qualify as an expert. *See id.* The court concluded, however, that the error in admitting the testimony was harmless because the defense had stipulated to a laboratory report indicating that the substance was cocaine. *See id.*

40. *See* 21 U.S.C. § 812 (1994) (establishing and listing five schedules of controlled substances).

41. *See* Marc G. Kurzman & Dwight Fullerton, *Drug Identification, in* SCIENTIFIC & EXPERT EVIDENCE 523-54 (Edward J. Imwinkelried ed., 2d ed. 1981) (stating that no reputable scientist would accept a chemical "identification" absent "scientific proof" of a substance's identity because "presumed identification" by police officers, health professionals, or street users is often incorrect).

42. Telephone interview with Dr. James Y. Tong, Professor and Director, Forensic Chemis-

Dr. Henry Lee, Director of the Connecticut State Police Forensic Laboratory, likewise rejects the idea that visual inspection is a reliable means of identifying controlled substances.[43]

The problem is that the color and granularity of controlled substances can be altered at will by the manufacturer; thus, pure heroin can be fine-grained or coarse, nearly yellow or snow-white.[44] The same is true of cocaine, methamphetamine, or nearly any of the controlled substances that can be sold in the form of a white powder.[45] Even if narcotics did have unique physical attributes, most narcotics sold on the street are "cut"—diluted with cheap and legal substances so a small amount of pure narcotic can be sold to many users.[46] Thus, much of what an officer sees is not cocaine or heroin, but inositol, powdered sugar, or another adulterant.[47]

Indeed, the probability that a substance sold in the illicit drug market contains some adulterant or has been modified chemically renders the job of even experienced forensic toxicologists to be difficult. Texts from the discipline of forensic toxicology bear this out.[48] Even well recognized tablets and capsules are suspect: visual recognition "can only be regarded as a useful clue; even tablets with well-known brand names may be faked."[49] Thus, forensic chemists have developed a range of sophisticated analytical methods for determining the chemical composition of a substance, including color tests, immunoassays, thin-layer chromatography, gas chromatography, high pressure liquid chromatography, ultraviolet, visible, and fluorescence pectrophotometry, mass spectrometry, infra-red spectrophotometry, nuclear magnetic resonance spectroscopy, and countless subtechniques of these tests.[50]

If a substance could be identified simply by looking at it, the rituals

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try Program, Ohio State University (June 8, 1997).

43. Telephone interview with Dr. Henry Lee, Director of Connecticut State Police Forensic Laboratory (June 11, 1997).

44. *See, e.g.*, People v. Espino, 616 N.Y.S.2d 782 (App. Div. 1994) (testimony introduced that under certain conditions cocaine can change color); Brown v. State, No. 07-96-0178-CR, 1997 WL 40787 (Tex. App. 1997) (noting that rocks of cocaine often become powder).

45. *See supra* note 44 and accompanying text.

46. *See* RICHARD SAFERSTEIN, CRIMINALISTICS: AN INTRODUCTION TO FORENSIC SCIENCE 267-68 (5th ed. 1995) (noting that illicit dealers add sugar, starch, and quinine to dilute potency of controlled substances and stretch their market value).

47. *See id.*

48. *See id.* (stating that outward appearance of drug specimens and complexity of drug preparations are evidence of difficult analytical chore facing forensic chemist).

49. J.V. Jackson, *Forensic Toxicology, in* CLARKE'S ISOLATION AND IDENTIFICATION OF DRUGS 51 (1986).

50. *See generally id.* (reviewing chemical, analytical and physical identification procedures for drugs); Bruce Stein et al., *An Evaluation of Drug Testing Procedures Used by Forensic Laboratories and the Qualifications of Their Analysis, in* SCIENTIFIC & EXPERT EVIDENCE, *supra* note 41, at 453-98.

of qualifying forensic chemists would have to be regarded as strange indeed. Such witnesses are typically qualified as experts based on formal education (usually a minimum of a four-year college degree), in addition to special training and years of experience in performing chemical analyses on controlled substances.[51] Forensic specialists are qualified to identify powdery controlled substances because chemical analyses reveal distinctive characteristics of the substance consistent with a particular illicit controlled substance.[52] There are numerous specific[53] and non-specific[54] laboratory tests used to identify substances.[55] The forensic specialist is thus properly qualified as an expert based on his or her ability to discern the chemical composition of illicit controlled substances through chemical analysis.

The training and expertise of forensic chemists is important because identifying controlled substances is difficult. In part, the difficulty arises because the forensic analyst is "faced with the prospect that his or her unknown [substance] may be any one of a thousand or more commonly encountered drugs."[56] In addition, various drugs are produced in a wide variety of forms and may contain any number of dilutants.[57] Thus, "[w]hen a forensic chemist picks up a drug specimen for analysis, anything can be expected to be found, and all contingencies must be prepared for."[58]

Moreover, police procedural custom[59] illustrates that officers do not conclusively rely on visual identifications of controlled substances. Criminal investigation texts bear this out.

> Many such drugs are common and are easily recognized by en-

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51. *See, e.g.*, Commonwealth v. Echevarria, 575 A.2d 620, 623 (Pa. Super. Ct. 1990) (admitting testimony of criminologist who had a college degree in biology with a minor in chemistry, who received further training in the identification of illegal substances at both Pennsylvania State Police laboratory and at a seminar conducted by the Federal Drug Enforcement agency, and who had testified as an expert in numerous courts on many occasions).

52. *See* DAVID BERNHEIM, 2 DEFENSE OF NARCOTICS CASES § 4.01 (1996) (observing that in most narcotic prosecutions, identification of drug seized depends on analytical procedures of government laboratory); SAFERSTEIN, *supra* note 46, at 267-75 (detailing chemical and instrumental tests scientists employ to pinpoint identity of drug specimen).

53. A test result is specific for a particular drug if the result occurs only when that drug is present. *See* PAUL C. GIANNELLI & EDWARD J. IMWINKELRIED, 2 SCIENTIFIC EVIDENCE § 23-2 (1986).

54. Non-specific tests may lead to false-positive results, where a result indicates that a particular drug is present when in fact another drug is present. *See id.*

55. For a summary of tests identifying suspected illicit drugs, see *id.* § 23-2-3(D).

56. SAFERSTEIN, *supra* note 46, at 268.

57. *See id.* at 249 (noting that currently, average purity of a heroin bag obtained in the illicit U.S. market is 35%; the other 65% consists of additives such as sugar, starch, and quinine).

58. *Id.* at 268.

59. "Where the police and most police-related litigation are concerned, custom and practice is the best professional thinking about the manner in which field problems should be resolved." James J. Fyfe, *Police Expert Witnesses, in* EXPERT WITNESSES 107 (Patrick R. Anderson & L. Thomas Winfree, Jr., eds., 1987).

> forcement agents, but if *complete* coverage is to be achieved, the police officer must have at his disposal an efficient laboratory staffed with knowledgeable personnel. The task of the police officer is to . . . make preliminary identification of the drug. The identification should always be subjected to laboratory testing, however, to ensure the degree of certainty necessary for court purposes and to exclude all legally permissible drugs.[60]

Another text instructs that "[t]he trained forensic chemist or criminalist should be an integral part of any such investigation" because "[t]raining and experience in dealing with chemicals is extremely important . . . from the standpoint of identifying drugs as finished products or intermediate products."[61] Thus, the criminal investigation texts clearly indicate that, for internal procedures, law enforcement agencies rely on laboratory analyses rather than visual identification of substances.

Experience bears out the untrustworthy nature of such evidence. Indeed, observers have noted a potential error rate in visual identification to be as high as sixty percent.[62] For instance, in *Illinois v. Lafayette*,[63] the Supreme Court held that pills containing "amphetamines" were properly seized pursuant to a police station-house inventory search.[64] It turned out, however, that in March, 1981, two years before the Supreme Court decided the appeal, the government testing lab concluded that there was, in fact, no controlled substance in the pills.[65] In 1996, police in Louisville, Kentucky, arrested two men on cocaine trafficking charges.[66] Despite the protestations of the two men, the police believed the "fist-sized white chunks packaged in plastic" found in the car to be cocaine, and held the men in jail for two days while awaiting a laboratory report.[67] The officers' belief was bolstered by the fact that their canine assistant, trained to sniff out cocaine, "hit" on the alleged cocaine several times.[68] The laboratory report confirmed that the white chunks were not cocaine, but dried yogurt![69] An Idaho case saw another

60. PAUL L. KIRK, CRIME INVESTIGATION 357-58 (John J. Thornton ed., 2d ed. 1974); *see also* WAYNE W. BENNETT & KAREN M. HESS, CRIMINAL INVESTIGATION 470 (1987) ("Field tests can be conducted to serve as the basis for a search warrant, but such tests must always be verified by laboratory examination.").

61. BARRY A.J. FISHER, TECHNIQUES OF CRIME SCENE INVESTIGATION 340 (1992).

62. *See* Kurzman & Fullerton, *supra* note 41, at 524.

63. 462 U.S. 640 (1983).

64. *Id.* at 648.

65. Petition for Writ of Error Coram Nobis at 3, Illinois v. Lafayette, 462 U.S. 640 (1983) (No. 81-1859).

66. *See White Powder Yogurt?*, ATLANTA J. & CONST., Nov. 4, 1996, at A6.

67. *See id.*

68. *See id.*

69. *See id.*

food/controlled substance mix-up, when a prosecution witness identified hot apple cider as liquified methamphetamine.[70] Prosecutors and defense lawyers often have numerous such stories; Cliff Fishman, for example, a former member of the New York City Special Narcotics Prosecutor's Office, reported that one investigation he knew of resulted in the payment of $20,000 for a large quantity of white powdery substance that turned out to be Aunt Jemima's Pancake Mix.[71] Similarly, Professor John Flym of Northeastern recounted a case in which he represented a Tufts undergraduate accused of possessing seventy-five pounds of cocaine. After the court ordered the substance tested, it turned out to contain no trace of cocaine or other narcotic substances.[72]

B. The Problem of Imitation Drugs

The rise of criminal prohibitions on sale of imitation narcotics is also evidence of the tremendous practical problem that would arise from wider adoption of the visual identification rule. Trafficking in "look-alike" imitation controlled substances is so pervasive that legislatures have enacted criminal statutes proscribing their sale.[73] By 1991, all but two states had adopted provisions addressing "imitation controlled substances."[74] An imitation controlled substance is an uncontrolled substance fraudulently sold as an illicit controlled substance.[75] Generally, penalties are less severe for violations involving these "look-alike" imitation controlled substances.[76] Legislatures have acted against the sale of such substances because of the danger posed where one who ingests a false, innocuous substance may later suffer harm from ingesting a larger dose of the real thing, and because of

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70. *See* State v. Mitchell, 937 P.2d 960, 963 (Idaho Ct. App. 1997). In fact, the prosecution witness mistakenly thought that hot apple cider was the actual controlled substance delivered by respondent. *See id.*

71. *See* Letter (electronic mail) from Cliff Fishman to Gabriel J. Chin, Assistant Professor of Law, Western New England College School of Law (May 23, 1997) (on file with *The American University Law Review*).

72. *See* Letter (electronic mail) from John Flym, Professor of Law, Northeastern University School of Law, to Gabriel J. Chin, Assistant Professor of Law, Western New England College School of Law (May 21, 1997) (on file with *The American University Law Review*).

73. *See, e.g.*, People v. Jones, 675 N.E.2d 99, 101 (Ill. 1996) (sale of look-alike substances occurs with such regularity that legislature has proscribed sale); *see also* FLA. STAT. ANN. § 817.564 (West Supp. 1996) (making it third degree felony to manufacture, sell, distribute, or possess with intent to manufacture, sell, or distribute any imitation controlled substance);N.Y. PUB. HEALTH LAW § 3383 (McKinney 1991) (creating felony crime of possession, manufacture, sale, or distribution of imitation controlled substances).

74. U.S. DEP'T OF JUSTICE, A GUIDE TO STATE CONTROLLED SUBSTANCES ACTS 21 (1991).

75. *See id.*

76. *See id.*; *see also* People v. Watkins, 526 N.E.2d 448, 449 (Ill. App. Ct. 1988) (stating that penalty for possession of cocaine with intent to deliver was three to seven years incarceration, while the penalty for look-alike substances was two to five years).

the potential dangers of ingesting the variety of substances passed off as controlled substances.[77]

The prevalence of imitation controlled substances, and the concomitant potential for error in identifying genuine controlled substances, creates the risk of inaccuracies in the determination of guilt or innocence.[78] Particularly in light of the fact that penalties for offenses involving genuine and imitation controlled substances may differ widely, courts should take care to prevent misidentification.[79]

Many of the statutes criminalizing possession or sale of imitation controlled substances require that they appear to be real drugs.[80] As a result, the reporters are filled with cases describing testimony by police and other skilled witnesses that they thought a substance was controlled when in fact it was not. In *Anderson v. State*,[81] for example, the Texas Court of Appeals upheld a conviction for selling a simulated controlled substance because the item looked like a rock of crack cocaine to an experienced narcotics officer, even though it was not.[82] In *State v. Carey*,[83] the Tennessee Court of Criminal Appeals similarly held that an imitation substance that turned out to be cornmeal sufficiently appeared to be cocaine to the law enforcement officer.[84]

These statutes and cases make two things very clear. First, there will be cases in which substances appear to be heroin, cocaine, meth-

77. *See, e.g.*, State v. Duncan, 414 N.W.2d 91, 95 (Iowa 1987) (addressing possibility that strong controlled substances can be confused with a weaker "look-alike," as well as the danger of interfering with a physician treating an overdose because of confusion between fake and real controlled substances). An array of dangerous powders can be readily passed off as controlled substances. *See id.* In *Commonwealth v. Perez*, 664 A.2d 582 (Pa. Super. Ct. 1995), the defendant exclusively sold imitation substances, as no dealer would trust him with genuine narcotics for fear that he would consume rather than sell the drugs. In *Perez*, the actual identity of the substance involved was laundry detergent. *See id.* at 583-84.

78. *See* Murdock v. State, 426 S.E.2d 740 (S.C. 1992) (concluding that defendant's constitutional right to effective assistance of counsel was violated due to counsel's failure to correctly identify substance as an imitation substance).

79. *Compare* MO. REV. STAT. § 195.242 (1994) (delivery of imitation of controlled substance is Class D felony, with a maximum sentence not to exceed five years), *with id.* § 195.211 (delivery of controlled substance is Class B felony, with a sentence of five to fifteen years).

80. *Compare* ARIZ. REV. STAT. § 13-3456 (1994) (stating possession of imitation controlled substances with intent to use is a class 2 felony), *with id.* § 13-3407 (stating possession of dangerous drug is class 4 felony).

81. 895 S.W.2d 756 (Tex. Ct. App. 1994).

82. *See id.* at 758.

83. 914 S.W.2d 93 (Tenn. Crim. App. 1995).

84. *See id.* at 95-96. The law enforcement officer testified that the substance "appeared similar to other substances that he had seen which tested positive for cocaine." *Id.* at 95. A chemist had testified that the white powder "could be consistent with cocaine or methamphetamine or any number of other controlled substances. Just by looking at it I could not tell whether it was or was not a controlled substance." *Id.*; *see also* Billups v. State, 424 S.E.2d 355, 357 (Ga. Ct. App. 1992) (affirming conviction for selling an imitation controlled substance, noting that "the appearance of the non-controlled substance was . . . 'substantially identical' to that of rock cocaine").

amphetamine or other controlled substances, but are not. Second, the fact that there is a market for imitation drugs suggests that simple observation is not an effective way to identify powders, even by people with strong incentives to guess correctly.[85] Drug buyers are likely to know what drugs look like; indeed, user testimony about the effects of narcotic substances are one of the most common methods of expert identification.[86] If addicts can be fooled, anyone can be fooled.

C. Rules of Random Sampling: Is This Powder That Powder?

Another line of cases also suggests that conclusions drawn from visual identification of suspected narcotic substances are not likely to be reliable. Courts have recognized that when more than one container of suspected narcotics is seized by police, they do not necessarily contain the same substance.[87] Courts generally refuse to hold that the test of one sample automatically applies to another sample.[88] The weight of authority supports, as a general rule, that no inference of identity of a powdered substance may be made based on a chemical analysis of a substance in a separate container that was also recovered from the defendant.[89] The reasoning behind the rule is that:

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85. Note that the defendant in *Perez* exclusively sold imitation substances. *See* Commonwealth v. Perez, 664 A.2d 582 (Pa. 1995).

86. *See* Commonwealth v. Dawson, 504 N.E.2d 1056, 1057 (Mass. 1984) (holding that users of controlled substances are qualified to identify such substances through testimony).

87. *See* Ross v. State, 528 So. 2d 1237, 1241 (Fla. Dist. App. 1988) (concluding that testing only two of ninety bags of alleged cocaine but weighing all did not establish prima facie case for cocaine trafficking); People v. Jones, 675 N.E.2d 99, 101 (Ill. 1996) ("Whether the untested packets in the instant case may have contained cocaine or mere look-alike substances is pure conjecture."); People v. Ayala, 422 N.E.2d 127, 129 (Ill. App. Ct. 1981) (holding that testing only one of two bags of alleged heroin is insufficient to prove beyond reasonable doubt that both bags contained heroin).

88. *See Ross*, 528 So. 2d at 1241; *Ayala*, 422 N.E.2d at 129.

89. *See, e.g.*, Campbell v. State, 563 So. 2d 202, 202 (Fla. Dist. Ct. App. 1990) (holding that the requisite amount to show delivery offense was not established "where chemist only tested one or two heroin capsules found in a change purse"); *Ross*, 528 So. 2d at 1241 (concluding that where two of ninety-two plastic packets, all found in single paper bag, tested conclusively for powder cocaine, evidence was held insufficient to establish requisite amount, even though contents of all ninety-two packets looked alike); People v. Young, 581 N.E.2d 241, 247 (Ill. App. Ct. 1991) (concluding that even though three baggies and numerous paper packets were all found in one paper bag, the evidence was insufficient to show the requisite amount where only one baggie and one packet were tested and shown to be powdered cocaine); People v. Maiden, 569 N.E.2d 120, 127 (Ill. App. Ct. 1991) (explaining that evidence was insufficient to prove requisite amount for sentence where all three bottles of suspected PCP field tested positive, but only one subjected to test was identified as PCP); People v. Hill, 524 N.E.2d 604, 611 (Ill. App. Ct. 1988) ("Where separate bags or containers of suspected drugs are seized, a sample from each bag or container must be conclusively tested to prove that it contains a controlled substance."); *Ayala*, 422 N.E.2d at 129 (holding that conclusive test of sample of substance taken from only one of two bags, both of which had field tested positive for heroin, presents inference sufficient for preponderance but insufficient for reasonable doubt standard that both bags contained heroin); People v. Games, 418 N.E.2d 520, 521 (Ill. App. Ct. 1981) (positing

> [A] sample taken from only one of multiple receptacles will not support the inference that all of the receptacles contain that same substance, even if the substance in all the receptacles appear to be the same, if other substances resemble the sampled substance. Because any of a number of substances look like powdered cocaine or heroin, the inference that the whole, or a requisite amount, is the same as a sample taken from fewer than all of the receptacles, or at least enough receptacles to show the requisite amount, is not compelling enough to justify a jury finding to a level of confidence beyond a reasonable doubt.[90]

An inference may be drawn from a sample, however, where the substance is in a homogeneous, outwardly recognizable form such as pills.[91] Courts have reached similar conclusions in regard to rock "crack" cocaine.[92] These decisions also rest on the idea that rocks of cocaine may be sufficiently homogenous and distinct in appearance to permit such identification.[93] Some courts disagree, however, pri-

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that chemist's testimony that one of two bags proved to be cannabis, and that both bags together weighed requisite amount, was not sufficient to establish requisite amount was cannabis); Gabriel v. State, 900 S.W.2d 721, 725 (Tex. Crim. App. 1995) (en banc) (Clinton, J. concurring) (citing People v. Yosell, 368 N.E.2d 735, 737 (Ill. App. Ct. 1977)).

> Where suspected contraband is found in separate receptacles, however, courts have generally required that at least a sample from each receptacle be tested before a jury can say with a level of confidence beyond a reasonable doubt that all of the substance, or at least enough of it to establish the jurisdictional amount, contains that alleged contraband.

Id. *But see* State v. Riley, 587 So. 2d 130, 133 (La. Ct. App. 1991) (holding that testing of only six of thirty-three baggies of white powder substance, all found in a single trash can, was enough to show all thirty-three were cocaine).

90. *Gabriel*, 900 S.W.2d at 726 (Clinton, J., concurring) (distinguishing instance of rock cocaine sampling from that of heroin or cocaine).

91. "It has been held that random sampling of an apparently homogeneous substance wholly contained within a single receptacle is sufficient to prove that the whole is contraband." *Id.* at 725 (citing People v. Kaludis, 497 N.E.2d 360, 365 (Ill. App. 1986) (holding that a conclusive test of a random sample of pills found in a single bag was sufficient to prove requisite amount of methaqualone, where pills were all same size, shape, color and density, and each was marked "Lemmon 714"); People v. Yosell, 368 N.E.2d 735, 738 (Ill. App. Ct. 1977) (finding that test was sufficient where one tablet from each of ten baggies found in a single bag tested conclusive for barbituric acid); People v. Ohley, 303 N.E.2d 761, 766-67 (Ill. App. Ct. 1973) (holding that field test of twelve tablets, and then conclusive test of six more to be LSD was sufficient to conclude that all eighty-nine delivered were LSD)).

92. *See* State v. Meeks, 552 So. 2d 328, 328 (Fl. Dist. Ct. App. 1989) (concluding that state was not required to test all cocaine rocks to sufficiently prove that all seized were crack cocaine); Bond v. State, 538 So. 2d 499, 500 (Fla. Dist. Ct. App. 1989) (holding that because appearance of "rock" cocaine is homogeneous like many pills, testing one of 139 small baggies was sufficient to show that all were "rock" crack cocaine); State v. Bellom, 562 So. 2d 1073, 1075 (La. Ct. App. 1990) (concluding that testing of only four of 1095 baggies of rock cocaine seized was sufficient to prove that all baggies contained rock cocaine).

93. In *State v. Gibson*, 856 S.W.2d 78, 80 (Mo. Ct. App. 1993), the court recounted a criminalist's testimony regarding the process of making crack cocaine noting that "[c]ocaine base is made by mixing cocaine powder with baking soda and water and cooking it. The resulting crystalline will fall to the bottom and is cut up into smaller chunks. This evidence is probative that the rocks were all cut from one 'batch' of rock cocaine, rather than from separate sources." *Id.*

marily because of the prevalence of imitation controlled substances.[94] In *People v. Jones*, the Illinois Supreme Court affirmed a sentence reduction because only two of the five packets of alleged rock cocaine for which the defendant was convicted and sentenced were tested.[95] The court reasoned:

> What inference can be drawn concerning the composition of the three packets not tested? Without more, the answer is none at all. And in this case, the five packets containing loose substances cannot be equated with identically marked and stamped tablets, pills, or capsules. While it is not difficult to speculate, as did the trial judge, that the remaining three packets may have contained cocaine, such a finding must be based upon evidence and not upon guess, speculation, or conjecture.[96]

The court's primary concern was the possibility that the untested substances may have been imitation controlled substances.[97] The court asserted that the state was in the best position to determine the identity of the substance as it could have easily tested a sample from each.[98]

This case implicitly recognizes that visual identifications of powdered substances are unreliable. If trained forensic chemists may not establish beyond a reasonable doubt the identity of a substance by inference from a sample of a substance identical in appearance that was also recovered from the suspect, it is hardly plausible that a police officer, untrained in forensic chemistry, having conducted no tests whatsoever, may determine the chemical composition of a substance by merely looking at it. The potential for error is beyond any conception of reliability, let alone the requisite evidentiary reliability required to sustain a finding of guilt beyond a reasonable doubt.

III. IDENTIFYING CONTROLLED SUBSTANCES IN CRIMINAL TRIALS

While most jurisdictions have liberalized the standards for admission of opinion testimony, minimum standards of reliability, helpfulness and rationality are required by the modern approach typified by the Federal Rules of Evidence. The following section demonstrates

94. *See* People v. Jones, 675 N.E.2d 99, 101 (Ill. 1996) (holding that because look-alike substances are sold with such regularity, all packets of alleged cocaine must be tested).

95. *See id.*; *see also* State v. Robinson, 517 N.W.2d 336 (Minn. 1994) (reversing conviction for sale of ten grams of crack cocaine where total weight of sampled packages was less than ten grams because packaging was not homogenous and there was possibility that unsampled packages contained placebo).

96. *Jones*, 675 N.E.2d at 101.

97. *See id.* (noting that "[w]hether the untested packets in the instant case may have contained cocaine or mere look-alike substances is pure conjecture").

98. *See id.*

that the visual identification rule has exceeded even the liberal bounds of the federal rules, and risks violating constitutional protections of due process of law.

A prosecution for possession or sale of a controlled substance requires the government to prove beyond a reasonable doubt that the suspected drug is, indeed, a drug.[99] Proving the specific identity of the substance is also indispensable; the penalty for possession or sale of controlled substances can vary widely depending on which of the scores of substances regulated by state and federal criminal codes a defendant possesses or sells.[100] Moreover, a substance suspected of being controlled may in fact be something else, such as an innocently-possessed non-controlled substance. Alternatively, a substance consistent with narcotics could in fact be a "look-alike" substance, an imitation drug, the possession of which may be unlawful, but subject to a lesser penalty than can be imposed for possession of real drugs.[101] This section describes the rules regarding admission of the opinion testimony which is necessary to prove the identification of a controlled substance in general. It also describes the particular methods which have been used to prove that a substance is controlled, including chemical testing, testimony by an experienced drug user, and circumstantial evidence.

A. Expert and Lay Opinion Testimony

Identification of a questioned substance as a controlled substance requires opinion testimony. Powders and pills are, after all, mute; identification of a substance as a drug requires drawing inferences and conclusions beyond observing or recounting more-or-less "objective" physical phenomena.[102]

Most states follow the approach of the Federal Rules of Evidence

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99. *See* State v. Cole, 906 P.2d 925, 938-39 n.18 (Wash. 1995) (possession with intent to deliver requires proof of nature of substance). Of course, defendants may be prosecuted for the sale of counterfeit drugs as well. *See* U.S. SENTENCING GUIDELINES MANUAL § 2D1.1 (1995) [hereinafter SENTENCING MANUAL]. *See generally In re* Winship, 397 U.S. 358, 364 (1970) (noting that due process clause of Fourteenth Amendment prohibits conviction without proof of guilt beyond reasonable doubt).

100. *See* SENTENCING MANUAL § 2D1.1 (distinguishing base offense levels by identity of the substance). For instance, for sentencing purposes, one kilogram of heroin is the equivalent of five kilograms of cocaine. *See id.* at 83.

101. *See Jones*, 675 N.E.2d at 101 ("Look-alike substances (pseudo narcotics) are sold with such regularity that the legislature has drafted a criminal statute proscribing their sale."); *see also* Richard L. Braun, *Uniform Controlled Substances Act of 1990*, 13 CAMPBELL L. REV. 365, 369 (1991) (listing penalties for imitation controlled substances, not included in 1970 Uniform Controlled Substances Act which were added in the 1990 Act).

102. *See* JAMES B. THAYER, A PRELIMINARY TREATISE ON EVIDENCE AT THE COMMON LAW 524 (1898) ("In a sense all testimony to matter of fact is opinion evidence, i.e. it is a conclusion formed from phenomena and mental impressions.").

when dealing with opinion testimony.[103] Rule 701,[104] regulating lay opinion testimony, and Rule 702,[105] regulating expert opinion testimony, both emerged from the common-law "opinion rule,"[106] but they substantially liberalized it. The general rule at common law in the United States regarding testimony by lay witnesses was that a witness may not offer a "mere opinion."[107] A "mere opinion," it was argued, constituted testimony that was "a guess, a belief without good grounds."[108] However, the distinction between fact and opinion itself proved to be elusive, if not impossible to draw,[109] and disruptive to trial proceedings.[110] Federal Rule of Evidence 701[111] obviated the common law requirement for rigid compartmentalization of lay witness testimony into fact or opinion.[112] Instead, Rule 701 permits wit-

103. As of 1993, thirty-five states had adopted or adapted the Federal Rules of Evidence. *See* Edward J. Imwinkelried, *A Brief Defense of the Supreme Court's Approach to the Interpretation of the Federal Rules of Evidence*, 27 IND. L. REV. 267, 267 n.5 (1993). The states applying the federal rules are: Alaska, Arizona, Arkansas, Colorado, Delaware, Florida, Hawaii, Idaho, Indiana, Iowa, Louisiana, Maine, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin and Wyoming. Since then Alabama, Maryland, and New Jersey have substantially adopted the federal rules, raising the current total number to thirty-eight. *See* 21 WRIGHT & GRAHAM, *supra* note 13, § 5009 (listing states that have adopted Federal Rules of Evidence with regard to opinion testimony).

104. FED. R. EVID. 701.

105. FED. R. EVID. 702.

106. *See* 7 JOHN HENRY WIGMORE, EVIDENCE IN TRIALS AT COMMON LAW §§ 1917-1929 (James H. Chadbourn rev., 1978) [hereinafter WIGMORE ON EVIDENCE].

107. *See id.* § 1917; *see also* Hon. Charles R. Richey, *Proposals To Eliminate the Prejudicial Effect of the Use of the Word "Expert" Under the Federal Rules [of] Evidence in Civil and Criminal Jury Trials*, 154 F.R.D. 537, 542 (1994) ("Mere opinions were considered unreliable bases for testimony.").

108. 7 WIGMORE ON EVIDENCE, *supra* note 106, § 1917. Courts excluded such opinion testimony on the grounds of lack of testimonial qualifications. *See id.*

109. *See* Honorable Alvin B. Rubin, *Federal Rules of Evidence Opinion and Expert Testimony (Rules 701-706), in* TRIAL EVIDENCE, CIVIL PRACTICE, AND EFFECTIVE LITIGATION TECHNIQUES IN FEDERAL AND STATE COURTS C607 ALI-ABA 69, 71 (1991) ("Courts and lawyers continue to have difficulty distinguishing between what is 'fact' and what is 'opinion.' . . . There is no conceivable statement, however specific, detailed, and 'factual,' that is not in some measure the product of inference and reflection as well as observation and memory.").

110. Judge Learned Hand summarized the problem:

> Every judge of experience in the trial of causes has again and again seen the whole story garbled, because of insistence upon a form with which the witness cannot comply, since, like most men, he is unaware of the extent to which inference enters into his perceptions. He is telling the "facts" in the only way that he knows how, and the result of nagging and checking him is often to choke him altogether, which is, indeed, usually its purpose.

Central R.R. Co. v. Monohan, 11 F.2d 212, 214 (2d Cir. 1926), *quoted in* Asplundh Mfg. Div. v. Benton Harbor Eng'g, 57 F.3d 1190, 1195 (3d Cir. 1995).

111. FED. R. EVID. 701. The Rule states:

> If the witness is not testifying as an expert, the witness' testimony in the form of opinions or inferences is limited to those opinions or inferences which are (a) rationally based on the perceptions of the witness and (b) helpful to a clear understanding of the witness' testimony or the determination of a fact in issue.

112. The Advisory Committee to the Federal Rules of Evidence recognized "the practical impossibility of determining by rule what is a 'fact.'" FED. R. EVID. 701 advisory committee's

nesses to state their opinions or draw inferences when rationally based on the witness' perception and the opinion would be helpful to the trier of fact.[113]

The opinion or inference must be one that a rational person would draw based on the observed facts.[114] This requirement reflects the common law objection to opinion testimony based on the superfluousness of the testimony.[115] While the scope of admissibility of lay opinion testimony under Rule 701 is, under current practice, expansive, it is not unlimited; thus, the rationality and reliability of lay opinion regarding technical matters that border on expert opinion should be "rigorously examined" as a preliminary matter by the trial judge.[116] Examples of permissible lay opinions include the age, height or weight of a person observed by a witness, whether a person observed by a witness was intoxicated, and the speed of an automobile observed by the witness.

Federal Rule of Evidence 702[117] expanded the common law "skilled witness" exception to the opinion rule by declaring expert testimony admissible when it will assist the trier of fact.[118] Rule 702 also broadened the common law approach by making clear that an expert may testify even about matters that commonly are understood by lay jurors.[119] Further, in contrast to the traditional approach, under Fed-

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note; *see also Asplundh*, 57 F.3d at 1195 ("Rule 701 represents a moment away from the courts' historically skeptical view of lay opinion evidence.").

113. FED. R. EVID. 701. The difference in admissibility of lay opinion testimony under the common law and federal rules approach is illustrated by *United States v. Yazzie*, 976 F.2d 1252 (9th Cir. 1992). In *Yazzie*, the defendant was charged with statutory rape. The defendant asserted reasonable mistake as a defense, and called several witnesses to testify that they perceived the minor on the date of the incident to be older than sixteen. *See id.* at 1254. The trial court excluded the testimony as lay "opinion." *See id.* at 1253. The Court of Appeals, however, reversed, holding that such testimony was admissible under Rule 701. *See id.* at 1255.

114. *See* GLEN WEISSENBERGER, WEISSENBERGER'S FEDERAL EVIDENCE § 701.3, at 339 (1995) (observing that lay opinion requires first hand knowledge of subject of testimony and that opinion advanced must be one that a rational person would make from observed facts).

115. *See id.* § 701.4, at 340-41.

116. *Id.*

117. FED. R. EVID. 702. The Rule states: "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." *Id.*

118. *See* FED. R. EVID. 702 advisory committee's note ("Whether the situation is a proper one for the use of expert testimony is to be determined on the basis of assisting the trier."). The Federal Rules of Evidence adopt the Wigmore position that testimony should be excluded if superfluous. "When opinions are excluded, it is because they are unhelpful and therefore superfluous and a waste of time." *Id.* (citing 7 WIGMORE ON EVIDENCE, *supra* note 106, § 1918).

119. *See* Michael H. Graham, *Expert Witness Testimony and the Federal Rules of Evidence: Insuring Adequate Assurance of Trustworthiness*, 1986 U. ILL. L. REV. 43, 49 ("Even as to matters within the common knowledge and experience of jurors, courts permit expert testimony if the testimony helps the jury."). The Advisory Committee Note to Federal Rule of Evidence 702 explains the expanded scope of subject matter:

> The fields of knowledge which may be drawn upon are not limited merely to the

eral Rule of Evidence 704 an expert may testify to the ultimate issue in a case.[120] Finally, the Federal Rules abandoned the common law requirement that experts disclose the basis for their opinion before rendering it.[121]

Under the Federal Rules approach, the trial judge must determine whether a witness is qualified to testify as an expert.[122] This determination is in part an inquiry into the reliability of the evidence.[123] The question is determined on a case-by-case basis, depending on the particular subject matter and witness.[124] The qualifications of the purported expert must fairly match the subject matter of the proposed

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"scientific" and "technical" but extend to all "specialized" knowledge. Similarly, the expert is viewed, not in a narrow sense, but as a person qualified by "knowledge, skill, experience, training or education." Thus within the scope of the rule are not only experts in the strictest sense of the word, e.g., physicians, physicists and architects, but also the large group sometimes called "skilled" witnesses, such as bankers or landowners testifying to land values.

FED. R. EVID. 702 advisory committee's note.

120. *See* FED. R. EVID. 704. Rule 704 states:

(a) Except as provided in subdivision (b), testimony in the form of an opinion or inference otherwise admissible is not objectionable because it embraces an ultimate issue to be decided by the trier of fact.

(b) No expert witness testifying with respect to the mental state or condition of a defendant in a criminal case may state an opinion or inference as to whether the defendant did or did not have the mental state or condition constituting an element of the crime charged or of a defense thereto. Such ultimate issues are matters for the trier of fact alone.

While expert testimony on the ultimate issue in a case is admissible under the federal rules, there is significant authority holding that such testimony by law enforcement officers in criminal cases should be given little or no weight by a court that is evaluating the sufficiency of the evidence to support a conviction. *See* United States v. Boissoneault, 926 F.2d 230, 234-35 (2d Cir. 1991) (concluding that agent's "expert" conclusions are entitled to little weight in court's sufficiency analysis); United States v. Brown, 776 F.2d 397, 400-01 (2d Cir. 1985) (stating that caution should be exercised in admitting expert testimony of government agents participating in a drug buy); United States v. Young, 745 F.2d 733, 765-66 (2d Cir. 1984) (Newman, J., concurring) (questioning "whether an expert's opinion that events he observed constitute drug transaction provides very much, if any, assistance to jury, beyond whatever inference is available to be drawn by the jury from all evidence"). For an argument that such limitations on expert ultimate issue testimony should be extended, see Deon J. Nossel, *The Admissibility of Ultimate Issue Expert Testimony By Law Enforcement Officers In Criminal Trials*, 93 COLUM. L. REV. 231 (1993).

121. *See* FED. R. EVID. 705 ("The expert may testify in terms of opinion or inference and give reasons therefor without first testifying to the underlying facts or data, unless the court requires otherwise. The expert may in any event be required to disclose the underlying facts or data on cross-examination.").

122. *See* FED. R. EVID. 104(a) (stating that questions of admissibility concerning qualification of a person to be a witness shall be determined by the court); *see also* Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 592 (1993) (stating that pursuant to Rule 104(a), trial judge must determine at the outset the grounds on which the expert is proposing to testify); United States v. Bartley, 855 F.2d 547, 552 (8th Cir. 1988) ("The trial judge has broad discretion in the matter of the admission or exclusion of expert testimony and evidence . . . .").

123. *See* WEISSENBERGER, *supra* note 114, § 702.3, at 345-46 ("[T]he expert testimony must be based upon reliable theories or principles.").

124. *See* 7 WIGMORE ON EVIDENCE, *supra* note 106, § 1923 ("On *this subject* can a jury receive from *this person* appreciable help? In other words, the test is a relative one, depending on the particular subject and the particular witness with reference to that subject.").

testimony.[125]

In addition, the judge must determine whether the evidence will be helpful to the trier of fact in the particular case.[126] This is largely a question of relevance.[127] Although the number of situations in which jurors could benefit from expert opinion evidence is large,[128] there are limits. Expert testimony is inadmissible where the topic is too plain or obvious for jurors to benefit from it, or where the testimony might impair the jury's independent judgment.[129] Likewise, expert opinion testimony is inadmissible where it is speculative,[130] based on false premises, or grounded on a mere hunch.[131] Thus, though the Federal Rules approach expanded the permissible range of opinion testimony, there remains a concern for reliability.

The requirement that proposed expert testimony be reliable is underscored by the line of cases dealing with scientific evidence. The Supreme Court in *Daubert v. Merrell Dow Pharmaceutical, Inc.*,[132] held that under the Federal Rules of Evidence, admissibility turns on whether the testimony is reliable and relevant.[133] To show that the

125. *See* 3 CHRISTOPHER B. MUELLER & LAIRD C. KIRKPATRICK, FEDERAL EVIDENCE § 349, at 609 (2d ed. 1994) ("Regardless how impressive the background of a witness, his area of expertise should match fairly closely the subject matter of his testimony.").

126. *See supra* note 118 and accompanying text.

127. *See Daubert*, 509 U.S. at 591 (finding that the helpfulness issue goes primarily to relevance); *see also* WEISSENBERGER, *supra* note 114, § 702.3, at 345-46 ("Clearly, expert testimony must be relevant to the subject matter of the trial in order to assist the trier of fact.").

128. *See* 3 MUELLER & KIRKPATRICK, *supra* note 125, § 350, at 625 ("Indeed, it is hard to imagine a serious question arising in a suit that some kind of expert could not illuminate in ways that might be useful to lay factfinders.").

129. *See id.* at 625-26 (observing that many appellate courts exclude expert testimony where the subject is too commonplace to benefit from expert insights); *see also* United States v. Carr, 965 F.2d 408, 412 (7th Cir. 1992) (excluding linguist's testimony interpreting taped conversations that were in English); Andrews v. Metro N. Commuter R.R. Co., 882 F.2d 705, 708 (2d Cir. 1989) (concluding that forensic engineer's testimony that plaintiff, who walked 3,000 feet along tracks after falling, could not tell what track oncoming train was on should have been excluded).

130. *See* 3 MUELLER & KIRKPATRICK, *supra* note 125, § 350, at 628 (explaining that expert testimony is unhelpful where expert is speculating); *see also* United States v. West, 670 F.2d 675, 682-83 (7th Cir. 1982) (holding that there was no error in excluding testimony of warden concerning likelihood that inmate could have sex with wife or take drugs without other inmates knowing); Scheib v. Williams-McWilliams Co., 628 F.2d 509, 511 (5th Cir. 1980) (excluding expert testimony offered to prove that future wages would have led to increased inflation).

131. *See* 3 MUELLER & KIRKPATRICK, *supra* note 125, § 350, at 628-29; *see also* Shatkin v. McDonnel Douglas Corp., 727 F.2d 202, 207-08 (2d Cir. 1984) (finding no error in excluding testimony regarding Mrs. Shatkin's financial condition, standard of living and her son's possible future income for lack of foundation); United States v. Sorrentino, 726 F.2d 876, 885 (1st Cir. 1984) (affirming that there was no error in exclusion of appraiser's testimony where appraisal lacked foundation).

132. 509 U.S. 579 (1993).

133. *See id.* at 589. The Court explained that Rule 702 requires that expert scientific evidence meet the standards of "evidentiary reliability"—trustworthiness. *See id.* at 590-91 n.9. The Court also observed that the Rule 702 requirement that proffered evidence "assist the trier of fact" was essentially a test of relevance. *See id.* at 591.

opinion is reliable, the proponent must rule out the intrusion of "subjective belief or unsupported speculation."[134] The Court articulated specific "gatekeeping" factors to be considered by the trial court when determining the reliability of scientific expert testimony.[135] While the *Daubert* standard has not been uniformly adopted by the state courts,[136] the earlier *Frye* standard employed by most jurisdictions requiring "general acceptance" of the methods employed by the expert[137] has been incorporated into the *Daubert* framework.[138] Thus, whether a jurisdiction follows *Frye* or *Daubert*, scientific opinion testimony will be inadmissible without a showing of general acceptance, thereby demonstrating reliability.[139]

It is not clear whether *Daubert* also supplies the standard for nonscientific expert testimony.[140] In dicta, the Court in *Daubert* noted

134. *See id.* at 590.

135. *See id.* at 593-95. The Court stated that the trial court must preliminarily assess scientific validity of the principles underlying the expert scientific testimony, including testability, peer review, potential error rates, and the general acceptance of the theory. *See id.* Although Rule 702, and not 701, was at issue in *Daubert*, some have argued that the *Daubert* principles are relevant to discerning the admissibility of lay opinion testimony as well. *See* Asplundh Mfg. Div. v. Benton Harbor Eng'g, 57 F.3d 1190, 1202 (3d Cir. 1995) (concluding that *Daubert* counsels judges to screen lay opinion testimony where it closely resembles expert testimony). *But see* G. Michael Fenner, *The* Daubert *Handbook: The Case, Its Essential Dilemma, and Its Progeny*, 29 CREIGHTON L. REV. 939, 969-70 (1996) ("[I]f the lay witness requires special knowledge or experience, is not that witness really an expert witness? . . . *Daubert* does not apply to the decision whether a lay witness is competent to testify.").

136. *See* James R. McCall, *Misconceptions and Reevaluation—Polygraph Admissibility After* Rock *and* Daubert, 1996 U. ILL. L. REV. 363, 402 n.287 (noting that some states have adopted the *Daubert* standard while others have retained the *Frye* standard of general acceptance).

137. *See* Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923). Under *Frye*, the court must determine if the method relied upon is generally accepted in the scientific community. *See id.*

138. *See Daubert*, 509 U.S. at 594 ("Widespread acceptance can be an important factor in ruling particular evidence admissible.").

139. *See* Maiorana v. National Gypsum Co., 827 F. Supp. 1014, 1033 (S.D.N.Y. 1993) ("[R]ight after abolishing [*Frye*'s 'general acceptance' test], *Daubert* reaffirms its validity." (citing Hao-Nhien Q. Vu & Richard A. Tamor, *Of* Daubert, *Elvis and Precedential Relevance: Live Sightings of a Dead Legal Doctrine*, 41 UCLA L. REV. 487, 500 (1993))); *see also* Hon. Martin L.C. Feldman, *May I Have the Next Dance, Mrs. Frye?*, 69 TUL. L. REV. 793, 805 (1995).

140. *See* 3 MUELLER & KIRKPATRICK, *supra* note 125, § 353, at 668 ("*Daubert* brings scope problems by leaving open the possibility that not all expertise represents 'science,' and that other kinds of expertise are subject to other standards, and this possibility connects with decisions that exempt analyses resting on expertise but not expressly on scientific theory from any validity standard."). The United States Court of Appeals for the Sixth Circuit has explicitly held that the reliability and relevance requirements of *Daubert* apply to all expert opinion evidence. *See* Berry v. City of Detroit, 25 F.3d 1342, 1350 (6th Cir. 1994) (finding that, as discussed in *Daubert*, the federal judges' "gatekeeper" function is applicable to all expert testimony). Several other circuits have disagreed. *See* United States v. Sinclair, 74 F.3d 753, 757 (7th Cir. 1996) (explaining that *Daubert* only provides a method for evaluating reliability of witnesses who claim *scientific* expertise); *In re* Joint E. & S. Dist. Asbestos Litig. v. United States Mineral Prods. Co., 52 F.3d 1124, 1132 (2d Cir. 1995) (concluding that *Daubert* addressed admissibility and left unchanged traditional sufficiency standard); Thomas v. Newton Int'l Enters., 42 F.3d 1266, 1270 n.3 (9th Cir. 1994) (limiting *Daubert* to evaluation of scientific expert testimony).

Commentators disagree as to whether and to what extent the standards articulated in *Daubert* are applicable to cases involving nonscientific expert testimony. Some commentators

that Rule 702 was not limited to novel scientific evidence.[141] However, as noted by Chief Justice Rehnquist in his dissent in part, the Court failed to state whether the *Daubert* opinion encompassed expert testimony on the basis of "technical or other specialized knowledge" under Rule 702.[142] Nevertheless, relevance and reliability are desirable qualities for any kind of evidence, and there can be little doubt that those requirements apply to all cases of expert testimony.[143] Thus, under both the common law and the Federal Rules of Evidence, nonscientific expert testimony is admissible only if reliable, a principle reaffirmed by the Court in *Daubert*.[144]

Even where opinion testimony is admissible under Rules 701 and 702, such testimony remains subject to the general considerations of Rule 403.[145] Rule 403 permits a court to exclude relevant evidence when its "probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence."[146] Thus, expert opinion evidence that is

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argue that the *Daubert* analysis requiring the court to look to several factors to assess the credibility of the evidence, *see Daubert*, 509 U.S. at 592-95, is inappropriate when applied to nonscientific evidence. *See* Lisa M. Agrimonti, Note, *The Limitations of* Daubert *and its Misapplication to Quasi-Scientific Experts, a Two-Year Case Review of* Daubert v. Merrell Dow Pharmaceutical, Inc., *113 S. Ct. 2786*, 35 WASHBURN L.J. 134, 140-44 (1995). Other commentators have noted that the dicta in *Daubert* affirmatively requires that all expert testimony satisfy both of the more general "knowledge" and "helpfulness/fit" requirements. *See* Jay P. Kesan, Note, *An Autopsy of Scientific Evidence in a Post-*Daubert *World*, 84 GEO. L.J. 1985, 2027 (1996). Others contend that the rules of evidence relied upon by the Court in *Daubert*, *see* FED. R. EVID. 403, 702, 703 and 706, apply to all experts, and the fact that *Daubert* discusses them in the context of scientific expert testimony does not affect the applicability of the opinion to nonscientific contexts. *See* Fenner, *supra* note 135, at 968-69.

Professor Imwinkelried has concluded that the Court in *Daubert* explicitly confined its holding to scientific evidence, but "it is imperative that the courts develop standards for validating nonscientific expert testimony" to ensure the reliability of such testimony. *See* Edward J. Imwinkelried, *The Next Step After* Daubert*: Developing a Similarly Epistemological Approach to Ensuring the Reliability of Nonscientific Expert Testimony*, 15 CARDOZO L. REV. 2271, 2273-74 (1994).

141. *See Daubert*, 509 U.S. at 592 n.11 ("[W]e do not read the requirements of rule 702 to apply specifically or exclusively to unconventional evidence.").

142. *See id.* at 600 (Rehnquist, J., concurring in part and dissenting in part) ("Does all this dicta apply to an expert seeking to testify on the basis of 'technical or other specialized knowledge'—the other types of expert knowledge to which rule 702 applies—or are the general observations limited only to 'scientific knowledge'?").

143. *See id.* at 589 (asserting that trial judge ensures that any scientific testimony or evidence admitted is both relevant and reliable). "Expert testimony which does not relate to any issue in the case is irrelevant and therefore, is non-helpful." *Id.* at 591 (quoting 4 JACK B. WEINSTEIN & MARGARET A. BERGER, WEINSTEIN'S FEDERAL EVIDENCE § 702.03[4] (2d ed. 1997)). Indeed, under Rule 402, "[e]vidence which is not relevant is not admissible." FED. R. EVID. 402.

144. "'[T]he rule requiring that a witness who testifies to a fact which can be perceived by the senses must have had an opportunity to observe, and must have actually observed the fact' is a 'most pervasive manifestation' of the common law insistence upon 'the most reliable sources of information.'" *Daubert*, 509 U.S. at 590-91 n.9 (citations omitted).

145. *See* FED. R. EVID. 403.

146. *Id.* The Advisory Committee's Note to Rule 403 defines "unfair prejudice" as "an undue tendency to suggest decision on an improper basis, commonly, though not necessarily, an

otherwise admissible may still be excluded under Rule 403. The concern of unfair prejudice is particularly acute in the case of expert testimony because of the aura of reliability incident to the testimony of experts.[147] Expert scientific testimony which is of dubious validity, and thus limited probative value, may be excluded under Rule 403 because expert testimony maintains the appearance of reliability to the jury.[148]

B. Traditional Methods of Identification of Controlled Substances

Traditionally, the identity of a controlled substance has been proven by several methods, including chemical analysis, field tests, testimony of drug users and circumstantial evidence, as well as visual identification of marijuana.[149] The cases reflect an insistence that the method the expert proposes to use be reliable.

1. Chemical analysis

The most reliable method is through a laboratory chemical analysis of the substance in question.[150] A laboratory report or expert testimony concerning chemical testing of a controlled substance is direct evidence as to the nature of the substance. As such, absent any other evidence, courts may place significant weight on whether a laboratory report was admitted into evidence.[151] Indeed, many states

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emotional one." FED. R. EVID. 403 advisory committee's note.

147. *See* 4 WEINSTEIN & BERGER, *supra* note 143, § 702.03[4] ("Expert testimony that is more prejudicial than probative is inadmissible under Rule 403."); *see also* United States v. Baller, 519 F.2d 463, 466 (4th Cir. 1975) ("Because of its apparent objectivity, an opinion that claims scientific basis is apt to carry undue weight with the trier of fact.").

148. *See Daubert*, 509 U.S. at 595 ("'Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it. Because of this risk, the judge in weighing possible prejudice against probative force under Rule 403 of the present rules exercises more control over experts than over lay witnesses.'" (quoting Jack B. Weinstein, *Rule 702 of the Federal Rules of Evidence Is Sound; It Should Not Be Amended*, 138 F.R.D. 631, 632 (1991))); *see also* Nossel, *supra* note 120, at 238 (finding courts likely to exclude expert scientific testimony because of unfair prejudice stemming from its "aura of reliability" when courts are skeptical about its validity and helpfulness to the jury).

149. *See* State v. Watson, 437 N.W.2d 142, 146-48 (Neb. 1989) (discussing factors to be considered in determining identity of controlled substance).

150. *See* State v. Northrup, 825 P.2d 174, 182 (Kan. Ct. App. 1992) ("[T]he most reliable and least controversial method of proving the identity of a substance is a reliable chemical analysis of that substance.... [C]hemical evidence is preferable [to circumstantial evidence]"); *see also* State v. Johnson, 196 N.W.2d 717, 720 (Wisc. 1972) (finding that "[w]hile a chemical analysis may be the more scientific test to determine the nature of a drug," circumstantial evidence may be used where no testing is possible because the substance had been ingested).

151. *See, e.g.*, Weaver v. State, 543 So. 2d 443, 444 (Fla. Dist. Ct. App. 1989) (finding that evidence was insufficient to show defendant sold heroin where no chemical test was introduced and field test was inadequate); *In re* J.W., 597 So. 2d 1056, 1058-59 (La. Ct. App. 1992) (holding that evidence was insufficient to support conviction of distribution of cocaine where no laboratory report was admitted into evidence identifying the substance); *see also infra* note 157 (outlining cases in which chemical analysis alone was held sufficient to prove beyond a reason-

have enacted legislation mandating that a certified laboratory report indicating the chemical nature of a controlled substance serve as prima facie evidence of the identity of the substance.[152] Typically, however, the prosecution presents a witness, usually a state forensic chemist, to testify as to the identity of the substance.

The admissibility of such testimony falls within the ambit of Federal Rule 702. Under *Daubert v. Merrell Dow Pharmaceutical, Inc.*, a chemist's testimony about the chemical composition of a particular substance is clearly "'scientific . . . knowledge' . . . ground[ed] in the methods and procedures of science."[153] Assuming that the opinion is offered by a qualified expert, the requirements of Rule 702 are easily satisfied; the subject matter of the testimony is helpful to the jury,[154] and the evidentiary reliability of chemical tests identifying controlled substances required under *Frye* or *Daubert* is satisfied.[155]

As such, courts uniformly admit into evidence chemical analyses of a controlled substance,[156] and regularly find such evidence sufficient

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able doubt that the substance was an illicit controlled substance).

152. Admission of laboratory reports as evidence of the identity of a controlled substance has been contested on the grounds of inadmissible hearsay and as a constitutional violation of the confrontation clause. Both arguments have uniformly failed. Chemical analysis reports have been held to come under the business records exception to the hearsay rule. *See, e.g.*, United States v. Roulette, 75 F.3d 418, 422 (8th Cir. 1996) (holding that laboratory reports identifying substance as cocaine base were admissible under business records exception); People v. Tsombanidis, 601 N.E.2d 1124, 1133 (Ill. App. Ct. 1992) (concluding that reports on chemical analysis of substance were admissible under business records exception to the hearsay rule). Further, "firmly rooted exceptions to the hearsay rule do not violate the Confrontation Clause." *See Roulette*, 75 F.3d at 422 (quoting United States v. Baker, 855 F.2d 1353, 1360 (8th Cir. 1988)).

153. Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 590 (1993).

154. Federal Rule of Evidence 401 defines relevance as "having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." FED. R. EVID. 401.

155. *See* United States v. Bynum, 3 F.3d 769, 773 (4th Cir. 1993) (concluding that reliability may be demonstrated by satisfying *Frye*'s "widespread acceptance" standard); People v. Green, 626 N.Y.S.2d 78, 79 (App. Div. 1995) (police chemist testimony regarding quantitative analysis of drugs admissible where chemist stated that procedure was generally accepted in profession as reliable and chemist's credentials qualified chemist as expert).

156. *See, e.g.*, United States v. Abbas, 74 F.3d 506, 512 (4th Cir. 1996) (finding admissable chemist's expert testimony identifying substance as heroin because it relied on "standards" determined by other chemists); *Bynum*, 3 F.3d at 772-73 (concluding that chemist's chromatographic analysis was admissible because defendant did not show chromatography as unreliable or not generally accepted in scientific community); Willis v. State, 829 S.W.2d 417, 418 (Ark. 1992) (allowing laboratory report on identity of substance because it was attested to by a chemist); People v. Mazzella, 577 N.Y.S.2d 32, 33 (App. Div. 1991) (holding that chemist's opinion identifying substance was admissible, and that defendant's argument that the chemist did not test the substance against a known standard was without merit); *see also* People v. Paik, 628 N.E.2d 1140, 1147 (Ill. App. Ct. 1993) (finding that chemist was not required to independently determine the reliability of substance standards used for comparison to substance at issue); Bell v. State, 503 A.2d 1351 (Md. Ct. Spec. App. 1986) (holding that chemist's testimony was properly admitted where drugs themselves were not admitted into evidence); People v. McTootle, 602 N.Y.S.2d 425, 426 (App. Div. 1993) (stating that chemical test, which otherwise would have been inadmissible due to failure to test known standard, was admissible in conjunc-

as to the identity of the substance to uphold a conviction.[157] However, although a chemical analysis of the controlled substance for which a defendant is being prosecuted arguably provides the most accurate determination of the identity of the substance[158] and ventures minimal risk of prejudicial effect, for a variety of reasons chemical tests are sometimes unavailable at trial.[159] In such circumstances, prosecutors have used several alternative methods of proving the identity of a controlled substance as an essential element of the crime.

2. Police field tests

Law enforcement officers commonly conduct "field tests" of substances when preparing to make an arrest for drug offenses.[160] On occasion, where other evidence is unavailable, the prosecution may seek to rely on field-test results to establish the nature of the substance.[161] Courts are divided on both the admissibility and sufficiency of such evidence.[162]

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tion with expert testimony).

157. *See, e.g.*, United States v. Reddrick, 90 F.3d 1276, 1283 (7th Cir. 1996) (stating that chemist's report was sufficient to support conviction for cocaine base); United States v. Johnson, 12 F.3d 760, 766 (8th Cir. 1994) (holding that forensic chemist's testimony adequately demonstrated that substance was cocaine); United States v. Gaulteau, 4 F.3d 1003, 1004 (D.C. Cir. 1993) (finding that qualified expert's testimony that substance was cocaine base was sufficient); Emerson v. State, 469 S.E.2d 520, 522 (Ga. Ct. App. 1996) (ruling that forensic chemist testimony regarding tests on marijuana was sufficient); State v. Givens, 917 S.W.2d 215, 217 (Mo. Ct. App. 1996) (stating that forensic chemist's testimony that substance was cocaine was sufficient).

158. *See* People v. Newberry, 652 N.E.2d 288, 292 (Ill. 1995) (acknowledging that despite possibility that reliability of lab tests might not be great, "the jury will undoubtedly give such [chemical] analysis more deference than the initial field test procedures, which are inherently less precise and controlled."); State v. Northrup, 825 P.2d 174, 182 (Kan. Ct. App. 1992) ("[T]he most reliable and least controversial method of proving the identity of a substance is a reliable chemical analysis of that substance."); State v. Fletcher, 373 S.E.2d 681, 686 (N.C. Ct. App. 1988) ("Admittedly, it would have been better for the state to have introduced evidence of chemical analysis of the substance."); State v. Anderson, 500 N.W.2d 328, 329-30 (Wis. Ct. App. 1993) (holding that "[w]hile a chemical analysis may be a more scientific test to determine the nature of a drug" the court may rely on circumstantial evidence when no such test is available).

159. For instance, the substance may have been ingested, disposed of, or destroyed before the police could acquire possession and perform a chemical analysis. *See* State v. Johnson, 196 N.W.2d 717, 720 (Wis. 1972) (adopting position that when chemical analysis is not possible because substance was ingested, the court may rely on drug user's testimony).

160. A "field test" is a test utilized by police officers outside a laboratory for the purpose of affirming that a particular substance may be a controlled substance. Typically, field tests used by officers are merely indicative and not conclusive of the presence of a narcotic substance, yet they are admitted into evidence as relevant to whether the substance contains a narcotic drug. *See* United States v. Blotcher, No. 95-5590, 1996 WL 442882, at *6-7 (4th Cir. Aug. 7, 1996) (allowing officer who conducted field test to testify to results of such a test because it was reliable, customarily used by police, and tended to confirm presence of cocaine).

161. *See* United States v. 427 & 429 Hall Street, 842 F. Supp. 1421, 1425-26 (M.D. Ala. 1994) (stating that field tests are accepted, reliable and sufficient to establish reliability of an informant).

162. Courts are divided specifically on whether field tests constitute "scientific" evidence.

There seems to be little doubt that a field test must be reliable to be admissible.[163] Some courts have found positive field tests in and of themselves to be reliable and sufficient evidence for a jury to determine that a substance was a controlled substance.[164] Others hold that field tests may be sufficient to arrest or charge,[165] but cannot provide proof beyond a reasonable doubt.[166] The thread that explains these inconsistent results is a concern for reliability of the particular test under the circumstances in which it is offered.

3. Drug user testimony

Courts permit users of illicit substances to identify those substances with which they are familiar.[167] Although courts differ as to whether

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Some courts have concluded that "a field test cannot be elevated to 'scientific' evidence by the testimony of an expert." Smith v. State, 874 S.W.2d 720, 724 (Tex. Ct. App. 1994) (O'Connor, J., dissenting); *see also* Wilson v. State, 854 S.W.2d 270, 276 (Tex. Ct. App. 1993) (holding that field test admitted into evidence for limited purpose of establishing chain of custody of evidence is not scientific evidence). Other courts hold that a field test of controlled substances is "scientific" evidence and subject to the applicable rules of admissibility. *See Blotcher*, 1996 WL 442882, at *6-7 (analyzing admissibility of field test as scientific evidence under *Daubert v. Merrell Dow Pharmaceutical, Inc.*, 509 U.S. 579 (1993)); United States v. Helton, 10 M.J. 820 (A.F.C.M.R. 1981) (admitting field test under Rule 702); Galbraith v. Commonwealth, 446 S.E.2d 633, 637 (Va. Ct. App. 1994) (predicating admissibility of field test on state criteria of reliability). Thus, any expert opinion testimony regarding field test results must satisfy the requirements of Rule 702 or its state equivalent. *See Blotcher*, 1996 WL 442882, at *6-7; *Galbraith*, 446 S.E.2d at 637.

163. *See* L.R. v. State, 557 So. 2d 121, 122 (Fla. Dist. Ct. App. 1990) (asserting that evidence was insufficient where officer testified that substance field tested for cocaine, but officer was unable to testify as to the reliability of the field test).

164. *See, e.g., 427 & 429 Hall Street*, 842 F. Supp. at 1425 (holding that field test was sufficient to establish reliability of informant); People v. $1,002.00, 572 N.E.2d 385, 388 (Ill. App. Ct. 1991) ("A positive field test has been found sufficient to establish that a substance is a narcotic under both the preponderance of evidence and beyond a reasonable doubt standards of proof."); People v. Vazquez, 535 N.E.2d 981, 986 (Ill. App. Ct. 1989) (maintaining that field test was sufficient to establish that substance was a narcotic); Houston v. State, 553 N.E.2d 117, 119 (Ind. 1990) (affirming that field test alone was sufficient to establish that a substance was marijuana).

As noted, it is unclear whether field tests are examined under standard measures of admissibility for "scientific evidence." *See generally* People v. Swamp, 646 N.E.2d 774, 779 (N.Y. 1995) (Smith, J., dissenting) ("There is no showing here that the field test was generally accepted as reliable under *Frye v. United States*. . . . [A] single [field] test may or may not yield a valid result and . . . a complete laboratory analysis is required for a qualitative conclusion.").

165. *See Swamp*, 646 N.E.2d at 777-78 (clarifying that field test is sufficient for indictment but does not satisfy "beyond reasonable doubt" standard for trial).

166. *See* Weaver v. State, 543 So. 2d 443, 444 (Fla. Dist. Ct. App. 1989) (finding that field test was insufficient where officer could not remember name of test and did not know whether it was reliable); People v. Brightman, 565 N.Y.S.2d 989, 992-93 (Crim. Ct. 1991) (holding that field test was insufficient to form basis of prosecution for drug possession charges); State v. Jackson, 468 N.W.2d 431, 431 (Wis. 1991) (stating that field test results were sufficient for probable cause, but not sufficient for proof beyond a reasonable doubt).

167. *See* State v. Saez, 845 P.2d 1119, 1124 (Ariz. Ct. App. 1992) (noting that a majority of jurisdictions have recognized that drug abusers or addicts may possess sufficient qualifications to testify about matters at issue in narcotics prosecutions); *accord* Commonwealth v. Dawson, 504 N.E.2d 1056, 1057 (Mass. 1987) (noting that great weight of authority in this country permits an experienced user of a controlled substance to testify that a substance he saw and used

such testimony is that of a lay witness or an expert witness,[168] the most reasonable view maintains that such testimony is that of an expert witness because it is based on specialized experience,[169] rather than ordinary perceptions.[170] Even in cases where a witness is permitted to testify as a lay witness under Federal Rule 701, the witness qualifies to testify based on particular experience with a specific substance.[171] Thus, courts permitting such testimony under Federal Rule 701 continue to require that the testimony be reliable. In *United States v. Paiva,* for instance, the United States Court of Appeals for the First Circuit held that a witness, unqualified as an expert witness, could probably testify as a lay witness based on her vast prior experience and dependence on cocaine.[172]

Courts exclude testimony where the witness's experience with a drug are inadequate to prove expertise.[173] The greater the extent of the witness's expert qualifications, however, the broader the scope of

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was a particular drug).

For a discussion of earlier cases permitting drug user testimony, see generally J. Allison DeFoor II, *Consumer Testimony as Proof of Identity of the Controlled Substance in a Narcotics Case,* 33 U. FLA. L. REV. 682 (1981).

168. *Compare* State v. Saez, 845 P.2d 1119, 1125 (Ariz. Ct. App. 1992) (qualifying witness as expert on identification of cocaine based on experience with and personal knowledge of cocaine's appearance, packaging, price, effect, and method of ingesting), *with* United States v. Paiva, 892 F.2d 148, 157 (1st Cir. 1989) (recognizing that although drug user may not qualify as expert witness, drug user may be competent, based on past experience and personal knowledge, to qualify as lay witness that particular substance was cocaine or some other drug).

169. *See* FED. R. EVID. 702. Rule 702 states that "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of opinion or otherwise." *Id.*

170. *See* FED. R. EVID. 701. Rule 701 states that "[i]f the witness is not testifying as an expert, his testimony in the form of opinions or inferences is limited to those opinions or inferences which are (a) rationally based on the perception the witness and (b) helpful to a clear understanding of the witness' testimony or the determination of a fact in issue." *Id.*

171. *See Paiva,* 892 F.2d at 155-56.

172. *See id.* at 155-57. It is unclear why the court detailed the witness's experience and qualifications to testify given that Federal Rule 701 requires nothing more than the opinions of the witness to be based on personal knowledge, rational, and helpful to the jury. *See* FED. R. EVID. 701; *see also* Moon v. State, 560 N.E.2d 76, 77 (Ind. Ct. App. 1990) (holding that witnesses were permitted to testify that substance was cocaine based on frequent and extensive personal use of cocaine).

Other courts have held that the qualifications of a lay witness go to the weight and not the admissibility of the evidence. *See* State v. Rubio, 798 P.2d 206, 208 (N.M. Ct. App. 1990) (permitting cocaine dealer to testify as a lay witness that substance was cocaine).

173. *See* People v. McLean, 365 P.2d 403, 405 (Cal. 1961) (holding that witness who smoked what she believed to be marijuana on about seven occasions was not qualified to distinguish between tobacco and marijuana); *In re* Waylon M., 181 Cal. Rptr. 413, 414 (Ct. App. 1982) (holding that witness was unqualified to testify due to inexperience in identifying narcotics and lack of background or knowledge regarding narcotics); People v. Kenny, 282 N.E.2d 295, 296 (N.Y. 1972) (holding that witness was not qualified to identify marijuana where the witness only had two experiences with the drug); State v. Frazier, 252 S.E.2d 39, 50 (W. Va. 1979) (holding that high school student was unqualified to identify joints as marijuana, despite past experience with smoking marijuana, due to "complete absence of any objective factors or any special familiarity with the substance").

permissible testimony a court will allow. An extreme example appears in *United States v. Johnson*,[174] where a witness who had been exposed to marijuana a "great deal," and had smoked it over one thousand times, was permitted to testify as to the foreign source of the marijuana in question.[175]

A witness may be qualified as an expert based on past experience with a substance, yet still be prevented from testifying because the testimony is not reliable. Such was the case in *Copeland v. State*,[176] in which a drug addict was qualified as an expert, but the identification of the drug in question was held unreliable because the drug was identified by sight, and no other testimony corroborated how the witness identified the substance.[177]

4. Opinion testimony based on circumstantial evidence

Qualified experts or laypersons[178] often testify in drug prosecutions to illuminate otherwise mysterious behavior or speech used by accused drug criminals. Without assistance, many jurors would find it difficult to understand the code language used by dealers,[179] the process of preparing and packaging drug materials,[180] the record-keeping of drug dealers,[181] and whether a quantity of a given controlled substance was consistent with personal use or was more likely intended for distribution.[182] Officers qualify as experts in such areas by way of their "knowledge, skill, experience, training, or education" under Federal Rule 702.[183] An officer may testify, for instance, that

174. 575 F.2d 1347 (5th Cir. 1978).

175. *See id.* at 1360-61. *But see* Pedraza v. Jones, 71 F.3d 194, 197 (5th Cir. 1995) (refusing to allow witness to give lay or expert testimony regarding heroin withdrawal despite thirty years of addiction).

176. 430 N.E.2d 393 (Ind. Ct. App. 1982).

177. *See id.* at 396.

178. *See* State v. Watson, 437 N.W.2d 142 (Neb. 1989) (allowing inexperienced user to testify as witness to physical attributes, characterizing terms, and preparation and effect of the substance).

179. *See* United States v. Garcia, 994 F.2d 1499, 1506 (10th Cir. 1993) (permitting expert testimony regarding drug trade jargon).

180. *See* United States v. Navarro, 90 F.3d 1245, 1261 (7th Cir. 1996) (qualifying Drug Enforcement Agent with twenty-four years experience under Federal Rule 702 to testify about use of inositol powder, plastic baggies and other paraphernalia); United States v. Penny, 60 F.3d 1257, 1259 (7th Cir. 1995) (refusing to formally qualify officer as expert, but permitting testimony as to use of coffee beans in drug smuggling based on his prior investigation experience).

181. *See* United States v. Eschverri, 982 F.2d 675, 680 (1st Cir. 1993) (acknowledging that trial court may allow a law enforcement officer to identify an otherwise incomprehensible document as a drug ledger and explain its contents).

182. United States v. Watson, No. 94-3413, 1995 WL 628114, at *2 (10th Cir. Oct. 26, 1995) (finding that officer with several years experience as an undercover narcotics agent had sufficient expertise to testify that possession of a certain amount of cocaine was evidence of the intent to distribute).

183. FED. R. EVID. 702.

crack cocaine was intended for distribution rather than personal use because it was packaged in separate wrappers.[184] An officer may be qualified to give such an expert opinion under Federal Rule 702 due to several years of undercover narcotics experience involving numerous purchases of crack cocaine.[185] Thus, an officer's experience and training provide a reliable basis from which he or she may render an opinion.

Based in part on these cases, lay[186] and expert[187] opinion testimony is sometimes used to identify a suspected substance. Many jurisdictions have held that circumstantial evidence is admissible and, sometimes, sufficient to identify an illicit controlled substance.[188] Such circumstantial evidence typically takes the form of evidence regarding the "secretiveness of the transaction[,] references made to the drug by the defendant and others, . . . testimony by witnesses who have a significant amount of experience with the drug in question, . . . behavior characteristics of sale and use of a particular substance, . . . and prior involvement by the defendant in drug trafficking."[189]

184. *See Watson*, 1995 WL 628114, at *2 (thirteen separate containers).

185. *See id.*

186. For examples of lay opinion testimony, see United States v. Brown, 887 F.2d 537, 542 (5th Cir. 1989) (allowing lay witness testimony as to experience in identifying cocaine); Chancey v. State, 349 S.E.2d 717, 725 (Ga. 1986) (admitting testimony of lay witness who saw defendant use white powdery substance in manner consistent with cocaine); and, Swain v. State, 805 P.2d 684, 686 (Okla. Crim. App. 1991) (finding lay witness testimony sufficient to support determination that defendant possessed marijuana, even though no witness who testified that substance appeared to be marijuana was qualified as an expert).

187. For examples of expert witness testimony, see United States v. Washington, 44 F.3d 1271, 1282 & n.45 (5th Cir. 1995) (citing well-established rule that an experienced narcotics agent may testify as an expert with respect to methods of operation unique to the drug trade); United States v. Almada-Aldama, 462 F.2d 952, 952 (9th Cir. 1972) (qualifying a U.S. Customs Agent as an expert due to extensive experience with marijuana) and State v. Stahl, 482 N.W.2d 829, 834 (Neb. 1992) (holding that police officer was an expert by virtue of training and experience).

188. *See, e.g.*, United States v. Uwaeme, 975 F.2d 1016 (4th Cir. 1992); United States v. Meeks, 857 F.2d 1201 (8th Cir. 1988); United States v. Schrock, 855 F.2d 327 (6th Cir. 1988); United States v. Osgood, 794 F.2d 1087 (5th Cir. 1986); United States v. Murray, 753 F.2d 612 (7th Cir. 1985); United States v. Harrell, 737 F.2d 971 (11th Cir. 1984); United States v. Crisp, 563 F.2d 1242 (5th Cir. 1977); Jenkins v. State, 248 So. 2d 758 (Ala. Crim. App. 1971); Winters v. State, 646 P.2d 867 (Alaska Ct. App. 1982); State v. Cunningham, 497 P.2d 821 (Ariz. Ct. App. 1972); People v. McLean, 365 P.2d 403 (Cal. 1961); People v. Edwards, 598 P.2d 126 (Colo. 1979); A.A. v. State, 461 So. 2d 165 (Fla. Dist. Ct. App. 1984); State v. Schofill, 621 P.2d 364 (Haw. 1980); People v. Robinson, 153 N.E.2d 65 (Ill. 1958); Warthan v. State, 440 N.E.2d 657 (Ind. 1982); Edwards v. Commonwealth, 489 S.W.2d 23 (Ky. 1972); People v. Boyd, 236 N.W.2d 744 (Mich. Ct. App. 1975); State v. Kerfoot, 658 S.W.2d 578 (Mo. Ct. App. 1984); State v. Dunn, 664 P.2d 893 (Mont. 1970); State v. Pipkin, 245 A.2d 72 (N.J. 1968); People v. Kenny, 282 N.E.2d 295 (N.Y. 1972); Cory v. State, 543 P.2d 565 (Okla. Crim. App. 1975); Commonwealth v. Leskovic, 307 A.2d 357 (Pa. Super. Ct. 1973); Commonwealth v. Aikens, 118 A.2d 205 (Pa. Super. Ct. 1955); Miller v. State, 330 S.W.2d 466 (Tex. Crim. App. 1959); State v. Hutton, 502 P.2d 1037 (Wash. Ct. App. 1972); State v. Haller, 363 S.E.2d 719 (W. Va. 1987).

189. State v. Watson, 437 N.W.2d 142, 146-47 (Neb. 1989) (internal citations omitted). The United States Court of Appeals for the Fourth Circuit summarized circumstantial evidence that may be relied upon to establish that a substance was a controlled substance:

In the context of identifying a controlled substance, however, some caution is warranted in treating circumstantial evidence as sufficient. Every circumstance incident to a sale of narcotics offered to identify the narcotic may be present in a sale of imitation substances. A seller of imitation drugs, committing a fraud upon the buyer, must represent that the substance in question is a genuine illicit substance. Thus, the transaction will entail all the same circumstances incident to a sale of genuine illicit substances, including price, secrecy of the transaction, and utilization of descriptive terms.[190] On its own, such evidence indicates that the substance was genuine as much as it indicates that the substance was an imitation. This "as likely as" level of probativeness fails even a preponderance standard, let alone the required evidentiary showing of the identity of the substance beyond a reasonable doubt.

As a result, courts that admit this kind of evidence remain concerned about questions of reliability. In *Provo City Corp. v. Spotts*,[191] for example, the court determined that testimony showing that the substance in question was used as an illicit drug, appeared to be an illicit drug, and smelled like marijuana was the "outer limit of what [the court] would affirm for a possession case where the substance itself or a chemical data test was not produced."[192]

5. Visual identification of marijuana

Although a chemical test is more reliable, a police officer's identification of marijuana may serve as a substitute provided that the police officer is qualified to render such an expert opinion, and that the identification is reliable. Marijuana, compared to other controlled substances, is particularly amenable to visual identification.

> Marijuana, not being an extract or preparation difficult or impossible to characterize without chemical analysis, but consisting of the dried leaves, stems, and seeds of a plant which anyone reasonably familiar therewith should be able to identify by appearance, it is

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> The substance had the appearance of illicit cocaine; when sampled and tested by an experienced user of cocaine, it had the effect of cocaine; the price paid for the substance was "high"; its sale and delivery were conducted furtively and with deviousness; and finally, all persons dealing with the substance treated it and dealt with it as cocaine.

United States v. Scott, 725 F.2d 43, 46 (4th Cir. 1980).

190. *See* People v. Watkins, 526 N.E.2d 448, 448-49 (Ill. App. Ct. 1988). In *Watkins*, undercover officers purchased two tin-foil packets of tan powder through burglar gates guarding the apartment door. The packets were produced upon the officer's request for two "dime-bags" of heroin, which were exchanged for twenty dollars, the going rate. Subsequent chemical analysis later determined that the tan powder was not a controlled substance. *See id.*

191. 861 P.2d 437 (Utah Ct. App. 1993).

192. *Id.* at 443.

> not error to permit officers who have had experience in searching for and obtaining marijuana to testify that a certain substance is marijuana; and other police officers have also been held qualified so to testify.[193]

Thus, like all other expert testimony, a police officer must first qualify to give such testimony. In *State v. Stahl*,[194] an undercover police officer was qualified to testify that a substance was marijuana based on his twenty hours of training in drug identification, on an additional 100 hours of training in criminal investigation received over the course of his career, and on his participation in drug investigations and coordination of state drug control efforts.[195] Likewise, in *United States v. Almada-Aldama*,[196] the Ninth Circuit held that a customs agent who had seen bricks of marijuana on numerous occasions, had been trained to identify marijuana, and had never been mistaken in visually identifying marijuana, could identify the substance.[197] Conversely, an officer not sufficiently trained in identifying marijuana should not be permitted to testify as an expert. Thus, in *People v. Park*,[198] the court held that a deputy sheriff's testimony that a substance was in fact marijuana should not have been admitted where the officer lacked training in identifying the substance.[199]

The rules of evidence aside, good reason exists as to why an officer must be qualified as an expert to testify that a substance is marijuana. As explicated by the Supreme Court of Illinois in *Park*, the potential rate of erroneous identification of marijuana is significant—almost fifteen percent.[200] The court stated, "[a]t the very least... [identification is] highly prone to error in the hands of anyone but an expert."[201] Another observer has estimated the error rate in marijuana identification to be as high as twenty percent.[202]

In sum, all of the established methods of identification of a controlled substance reflect the new flexibility regarding opinion testimony. At the same time, cases show that courts will not admit any conceivable opinion a party wishes to offer. To the contrary, the de-

193. Willoughby v. Marucci, No. 92-L-186, 1993 WL 410014, at *1 (Ohio Ct. App. Sept. 30, 1993) (citing State v. Maupin, 330 N.E.2d 708, 713 (Ohio 1975)).
194. 482 N.W.2d 829 (Neb. 1992).
195. *See id.* at 834.
196. 462 F.2d 952 (9th Cir. 1972).
197. *See id.* at 952.
198. 380 N.E.2d 795 (Ill. 1978).
199. *See id.* at 797.
200. *See id.* at 799.
201. *Id.* at 798. The court based its skepticism of morphological identification of marijuana on statistics from the Wisconsin State Crime Laboratory that demonstrated that only 14.4% of samples of suspected marijuana in fact were not marijuana. *See id.*
202. *See* Kurzman & Fullerton, *supra* note 41.

cisions continue to reflect a traditional concern for reliability of opinion testimony without which evidence must be excluded.

C. *Visual Identification of White Powders*

1. *Expertise*

To qualify a police officer as an expert in identifying controlled substances under Federal Rule 702, the trial court must determine that the education or experience of an officer fairly matches the subject matter of the proposed testimony.[203] At first glance, qualifying an officer as an expert in identifying white powders may appear to be the logical extension of the expertise of an officer in other narcotics-related areas. For example, it may seem logical to determine that an officer who, by training and experience, qualifies to testify as to the identity of any controlled substance based on the circumstances surrounding a drug transaction or an arrest, or to testify that a vegetable matter is marijuana based on the officer's visual inspection of the substance, may also qualify to testify that a white powder is cocaine or heroin based upon visual inspection of the substance. Likewise, if an experienced user of a particular drug may qualify to testify as to the identity of a substance based on experience with that substance, it may seem that an officer with years of experience in narcotics should qualify to testify to the identity of the substance as well. Although police officers possess experience and training that enables them to identify any controlled substance by the circumstances surrounding a transaction or to identify a controlled substance such as marijuana by visual inspection, police officers possess no such experience and training that enables them to identify a controlled substance such as heroin or cocaine by visual inspection.

Courts routinely permit police officers to testify that, based on the circumstances surrounding a transaction or an arrest, the substance which was the subject of that transaction was likely to be a particular controlled substance.[204] The officer typically is qualified to render such expert opinion testimony based on experience and training. When an officer testifies based on the circumstances surrounding an arrest or transaction that a substance is a particular controlled substance, an officer is stating his opinion based upon inferences from those circumstances.[205] It is critical to recognize, however, that the

203. *See* 7 WIGMORE ON EVIDENCE, *supra* note 106, § 1923.

204. *See supra* notes 193-99 and accompanying text.

205. *See* State v. Watson, 437 N.W.2d 142, 145 (Neb. 1989) (holding that circumstances surrounding arrest constituted sufficient evidence to establish guilt beyond a reasonable doubt).

officer here is properly qualified an expert on circumstances surrounding an arrest or transaction—not on the chemical composition of the substance itself.[206]

Likewise, experienced users of narcotic substances are regularly qualified to give expert testimony as to the identity of a particular substance which they have used.[207] Courts typically qualify the user as an expert based on prior use of the substance and resultant familiarity with the effects of the substance when ingested.[208] When a drug user gives expert opinion testimony as to the identity of a substance based on his experience ingesting the particular substance, the drug user infers the identity of the substance based on the effects of the substance when ingested.[209] Thus, the drug user is properly qualified as an expert on the effects of a particular substance when ingested—not on the chemical composition or appearance of the substance itself.

The cases in which a substance is identified visually or by chemical analysis, however, are distinct from both the cases of expert police identification of controlled substances based on the circumstances surrounding a transaction or arrest, and user identification of a controlled substance based on the effects of that substance when ingested. Although in the latter cases the witness is actually testifying to some attribute external to the substance itself from which the identity of the substance may be inferred in the former cases the witness is testifying to the chemical composition of the substance itself. Witnesses in the latter category who testify to external attributes of the substance are qualified to do so based on experience or training regarding those attributes. It follows that a witness testifying to the chemical composition of the substance be qualified to do so based on education, training or experience relating specifically to recognition of the chemical composition of the substance.

The courts often qualify police officers as experts to testify that a vegetable matter is marijuana, based on visual inspection.[210] These cases differ from the cases of officers testifying to the identity of controlled substances based on the circumstances, or of drug users testi-

206. *See* United States v. Nelson, No. 89-10040, 1990 WL 177963, at *2 (9th Cir. Nov. 14, 1990) (holding that DEA agent's testimony as to the nature of the chemical substance was proper).

207. *See supra* notes 171-81 and accompanying text.

208. *See id.* Conversely, where the experience of a witness with a drug is too brief to render the witness sufficiently familiar with the effects of the drug, the witness will not be permitted to testify. *See supra* note 173 and accompanying text.

209. *See* United States v. Paiva, 892 F.2d 148, 155 (1989) (holding that lay witness could testify as to identity of substance after tasting it).

210. *See supra* Part III.B.5.

fying based on the effects of a substance when ingested. An officer may be qualified as an expert to testify that a substance is marijuana by merely looking at it based on years of experience and training that presumably render the officer very familiar with the distinctive physical properties of marijuana.[211] Indeed, it is only possible for an officer to gain such expertise because of the distinctive physical attributes of marijuana.[212] The officer therefore is properly qualified as an expert on discerning the distinctive physical properties of marijuana.

In contrast, while police officers are typically qualified to testify as experts in narcotics trafficking and may be found to have expertise in identifying marijuana, they are not usually qualified to testify as experts in chemical analysis.[213] Police officers usually do not have advanced degrees in science, are not trained in the chemical properties of a substance, and do not perform laboratory analyses of substances. In contrast to the identification of marijuana, it is impossible for an officer to visually discern the identity of powdered substances, because white powdery substances are not visually distinguishable.[214] Thus, no amount of experience or training would qualify a police officer to testify as to the identity of those white powdery substances.

Not surprisingly, in the years before the drug war, several courts recognized that police officers are not experts in distinguishing white powdery substances by sight.[215] For example, in *Berkovich v. Hicks*[216]—a false arrest and imprisonment case—the trial court excluded plaintiff's offer of expert testimony on the distinctions between the tastes of cocaine and Nutrasweet[217] because "such testimony could have un-

211. *Compare* State v. Stahl, 482 N.W.2d 829, 834 (Neb. 1992) (holding that undercover police officer was qualified as an expert to identify marijuana on basis of receiving twenty hours of training in drug identification and 100 additional hours of training in criminal investigation), *with* People v. Park, 380 N.E.2d 795, 797 (Ill. 1978) (ruling that deputy sheriff who had not been trained in marijuana identification was not qualified to testify as an expert).

212. *See* BERNHEIM, *supra* note 52, § 4.01, at 4-6 (noting that courts have upheld marijuana-related convictions for offenses in which the sole evidence of the contraband was the opinion testimony of the police officers qualified as experts).

213. *See* United States v. Nelson, No. 89-10040, 1990 WL 177963, at *2 (9th Cir. Nov. 14, 1990) (holding that police officer witness qualifies as an expert in narcotics trafficking but not chemical drug analysis).

214. "[W]e are unwilling to say that an experienced officer can look at a white or brown powdered substance and testify that it is heroin since morphine, codeine, paregoric, other opiates, other controlled substances, and non-controlled substances also appear in white or brown powdered form." Curtis v. State, 548 S.W.2d 57, 59 (Tex. Crim. App. 1977).

215. *See, e.g.*, State v. Symmonds, 310 N.E.2d 208, 215 (Ill. 1974) (stating that "even an expert cannot positively identify heroin or distinguish it from another white powdery substance solely by visual inspection"); People v. Williams, 185 N.E.2d 686, 687 (Ill. 1962) (holding that only an expert could identify the white powder as a narcotic); *Curtis*, 548 S.W.2d at 59 (expressing unwillingness to state that an experienced officer can look at a substance and testify that it is a controlled substance).

216. 922 F.2d 1018 (2d Cir. 1991).

217. *See id.* at 1024.

fairly prejudiced the [officers] by creating the misleading inference that police officers are required to differentiate white powdery substances with the skill of an expert."[218]

2. Reliability and helpfulness to the trier of fact

Under Federal Rule of Evidence 702, a witness may qualify as an expert on a particular subject and render opinion testimony on that subject provided that the testimony will assist the trier of fact and is reliable.[219] As noted, the federal rule embodies the "skilled witness" exception to the common law rule against opinion testimony,[220] yet is applied more flexibly than its common law predecessor.[221] Despite its flexibility, the federal rule continues to delineate boundaries of admissibility that maintain the common law requisites of helpfulness and reliability.[222] Although the Rule has been interpreted broadly to permit police expert opinion testimony on a range of subjects,[223] permitting police identification of visually indistinguishable controlled substances such as heroin and cocaine under the guise of expertise eviscerates the standards of admissibility under the Rule.

Police officers should not offer expert opinion testimony based on visual identification of a controlled substance because of the unreliability of such evidence. Indeed, the rate of error in police identification of controlled substances is upwards of sixty percent.[224] The case law does not make clear upon what basis the officer is able to render his expert opinion regarding the identity of the substance, other than the officer's experience and training. However, as noted, police officers are not trained in nor do they perform chemical analyses.

The test for the reliability of expert opinion evidence varies depending on whether or not the evidence offered is scientific.[225] Al-

218. *Id.*

219. *See supra* Part III.A.

220. *See* FED. R. EVID. 702 (allowing a witness qualified as an expert to give opinion testimony based on knowledge, skill, experience, training, or education, if it will aid the trier of fact when hearing testimony that is beyond common experience).

221. *See supra* Part III.A (comparing the common law rule disallowing opinion testimony with the liberally applied Federal Rules allowing witnesses to state opinions or draw inferences when they are rationally based and helpful to the trier of fact).

222. *See* Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 589 (1993) (asserting that the trial judge under Federal Rule 702 must ensure that scientific or specialized knowledge allowed into testimony is relevant, reliable and will assist the trier of fact); FED. R. EVID. 701 advisory committee's note.

223. *See supra* Part III.B.4 (offering summary of circumstances in which police have been permitted to testify as experts in drug prosecutions).

224. *See* Kurzman & Fullerton, *supra* note 41, at 523-24.

225. *See supra* note 135 and accompanying text (reiterating "gatekeeping" factors that a court should consider in the context of evaluating scientific evidence as established in *Daubert*).

though the subject of the police officer's testimony in the instant case states a scientific conclusion—that the chemical composition of a powdered substance is consistent with a controlled substance—it is debatable whether the testimony is itself "scientific knowledge."[226] Expert opinion issuing from "specialized" rather than "scientific" knowledge must still meet general standards of evidentiary reliability.[227] Therefore, for the instant purpose of evaluating police testimony, the arguably less stringent standard[228] of evidentiary reliability will be used. Evidentiary reliability, as distinguished from scientific reliability, essentially requires that the evidence be trustworthy.

The unreliability of visual identification of suspected controlled substances means that other requirements of expert opinion testimony are also absent. For example, this form of testimony, if proffered, would be of little use to the trier of fact as required by the Federal Rule 702.[229] Under Federal Rule 702, expert testimony is unhelpful to the trier of fact if it is superfluous (nonrelevant) or if it is more likely to impede the jury's judgment than to assist the jury's judgment.[230] In fact, admitting such testimony more likely may serve the negative purpose of impeding the jury from exercising its independent judgment, because of the credibility a jury will ascribe to a police expert's testimony.[231]

Identification of an unknown substance based on purportedly specialized training is a matter for expert testimony.[232] Nevertheless, some courts admit this form of testimony as proper lay testimony.[233] For much the same reasons, lay opinion testimony identifying a sus-

226. *See supra* Part III.A (discussing whether such testimony is indeed "scientific knowledge" subject to *Daubert* analysis).

227. *See id.*

228. Although the *Daubert* standard concededly is more complex, involving several "gatekeeping factors" for the judge to consider, it may be the case that there is no heightened evidentiary standard that issues from these factors—that *Daubert* requires the same degree of reliability and relevance that nonscientific evidence must possess, but requires a distinct method for measuring reliability and relevance that is adapted to science.

229. *See* Imwinkelried, *supra* note 103, at 248 (noting that theory or principle must "assist the trier of fact" to be permissible premise for expert testimony and that a theory or principle of common knowledge therefore is not a permissible premise for expert testimony (citing FED. R. EVID. 702)).

230. *See supra* Part III.A.

231. *See* Nossel, *supra* note 120, at 245 ("The admission of ultimate issue expert testimony by law enforcement officers risks unfairly prejudicing defendants because of the danger that the jury will give more credence than is warranted to the testimony."); Phylis Skloot Bamberger, *The Dangerous Expert Witness*, 52 BROOK. L. REV. 855, 866 (1986) ("A prosecution fact witness who is converted to a government expert witness is not only endowed with the aura of special reliability and trustworthiness attributed to all expert witnesses, he is also 'vouched' for by the prosecution.").

232. *See supra* Part I.A (describing the traditional rule that no expert may offer opinion testimony that a particular substance is narcotic).

233. *See supra* Part I.B.

pected controlled substance should be inadmissible as well; there is no rational basis for the testimony[234] and it is not helpful to the trier of fact.[235] Further, a police officer's visual inspection will not satisfy the personal knowledge requirement implicit in Rule 701.[236]

3. Probative value and prejudicial effect

Even if admissible, under either Federal Rule 701 or 702, the trial court, in its discretion, may exclude evidence if the probative value of the evidence is substantially outweighed by the unfair prejudicial effect that the evidence would have on the defendant if admitted.[237] The case of police visual identification of narcotic substances invariably should be excluded under this standard.

Probative value is defined as evidence that "tends to prove an issue."[238] As noted earlier, police officers, like any other mortal human beings, are incapable of reliably identifying the chemical composition of a white powdered substance by simply looking at such substance. Without any rational or reliable basis for rendering such an opinion, little, if any probative value can be ascribed to such testimony.[239]

Evidence causes unfair prejudice where it tends to compel a decision on an improper basis.[240] In the instant case, the issue to be decided is whether the substance in question is in fact a narcotic. Where the sole evidence offered is the testimony of the police officer,

234. *See supra* note 52 and accompanying text. In the case of police officer testimony concerning the identification of a powdery white substance, the officer's only firsthand knowledge of the substance is his visual inspection of that substance. Thus, the officer must infer the chemical composition of the substance from its appearance. The inferential chain of reasoning may proceed as follows: cocaine and heroin are white powdery substances; the substance in question is white and powdery; therefore, the substance is heroin or cocaine. Such reasoning exceeds rationality as there are endless varieties of white powdery substances, indistinguishable from controlled substances.

235. *See supra* notes 106-16 and accompanying text. Rule 701 compels the exclusion of superfluous evidence by requiring that the testimony be helpful to the trier of fact. In other words, where the jury is capable of drawing their own conclusions, the lay witness's testimony is unhelpful and thus should not be permitted. Where a white powdery substance alleged to be a controlled substance is presented before the jury, there is little reason to believe that an officer's lay opinion concerning the identity of the substance assists the jury. Provided with information as to the appearance of particular controlled substances, the jury could draw their own conclusions as to the identity of the substance.

236. *See* Robinson v. State, 702 A.2d 741, 749-50 (Md. 1997) (holding that an officer's mere perception does not satisfy the personal knowledge requirement).

237. *See* FED. R. EVID. 403. Rule 403 states: "Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence." *Id.*

238. BLACK'S LAW DICTIONARY 1203 (6th ed. 1990).

239. *See* FED. R. EVID. 403 (requiring relevant evidence to contain value that is not outweighed by the danger of unfair prejudice).

240. *See id.*

the jury is asked to decide the issue of chemical composition of a substance based entirely on the word of an individual who possesses no competence in establishing chemical composition. In other words, the jury is asked to decide exclusively based on the credibility of the officer's testimony.

This circumstance poses the danger that the police officer's testimony will be given undue credibility.[241] Commentators have long recognized the general "aura of reliability" that expert opinion evidence has in front of the jury.[242] Because of the potentially unjustified reliability ascribed to expert testimony, courts caution that "the basis of . . . opinion testimony must be carefully scrutinized by the trial court judge."[243] Courts have recognized, for instance, that the danger may be greater when juries are not given data that the expert relies on for the conclusive testimony, but rather must rely on the expert's assertions that the conclusions are accurate.[244] Therefore, in circumstances where "the aura of reliability and trustworthiness that surrounds scientific evidence outweigh[s] any small aid the expert testimony m[ay] provide[]," courts have not hesitated in excluding the testimony.[245]

The usual dangers of unwarranted credibility in front of the jury that expert testimony poses are exacerbated in cases where the expert also happens to be a police officer.[246] The potential hazards are heightened further where an investigating officer serves both as a fact and expert witness.[247] The officer/witness's credibility is in effect legitimized by both the prestige conferred upon the witness by association with the government and by the potential implication that the

241. *See* Nossel, *supra* note 120, at 241 (arguing that testimony by investigators risks prejudice because juries may give such testimony undue credence and use it as substantive evidence of guilt); *see also* Bamberger, *supra* note 231, at 866-69 (suggesting that use of police investigators as fact and expert witnesses may prejudice the jury to give more weight to the testimony which, under Federal Rule 403, should be precluded as unfairly prejudicial).

242. *See* United States v. Baller, 519 F.2d 463, 466 (4th Cir. 1975) (discussing how scientific evidence appears objective and thus may carry undue weight with the trier of fact); 4 JACK B. WEINSTEIN & MARGARET A. BERGER, WEINSTEIN'S EVIDENCE, § 702, 05[3], 34-35 (2d ed. 1997).

243. Cella v. United States, 998 F.2d 418, 423 (7th Cir. 1993).

244. *See* United States v. Brien, 59 F.3d 274, 277 (1st Cir. 1995) (sustaining the district court's exclusion of expert testimony for lack of data or literature to support expert's assumptions); United States v. Fosher, 449 F. Supp. 76, 77 (D. Mass. 1978) (excluding expert testimony for lack of proof on whether expert's testimony would analyze specific testimony and be useful to trier of fact without undue prejudice and confusion).

245. United States v. Purham, 725 F.2d 450, 454 (8th Cir. 1984) (citing United States v. Fosher, 590 F.2d 381, 383 (1st Cir. 1979)).

246. *See* Nossel, *supra* note 120, at 245 (explaining that expert opinion testimony is especially powerful in a criminal trial when the expert is a law enforcement officer).

247. *See id.* at 245-46 (proposing that this danger is particularly pronounced when an investigating officer acts both as a factual and expert witness as the knowledge gained by the officer during the investigation supports the conclusions of the officer); *see also* Bamberger, *supra* note 231, at 866 (noting dangers of converting fact witness into expert witness).

witness is relying on information not presented to the jury.[248] The compounded effect of the investigating officer serving as a fact/expert witness, and the usual "aura of reliability" surrounding expert testimony, present a significant risk of causing the jury to reach a conclusion on an impermissible basis.[249] Given the substantial potential for unfair prejudice to result in light of the weak, if not absent, probative value of police controlled substance identification testimony, such evidence should be excluded under Rule 403.[250]

4. Speculative evidence

The empirical evidence presented here demonstrates that police officer visual identification of white powdery substances rests on the officer's conjecture, at best. Further, admitting such evidence requires the jury to speculate as to the possibility of whether the police officer was correct in identifying the substance. The visual identification rule thereby violates one of the basic foundations of evidence law—speculative evidence is inadmissible.[251] The ban on speculative evidence applies to experts as well as lay witnesses.[252] Courts thus regularly exclude expert opinion testimony where that testimony is based on speculation.[253] Further, the degree of speculation required to render evidence inadmissible is not substantial. Thus, where a scientist based his conclusions regarding causation in a products liability case on a working hypothesis he developed that had not yet been subjected to peer review, the court excluded the evidence as speculative.[254] The "methodology" used by police to identify controlled sub-

248. *See* Bamberger, *supra* note 231, at 866 (indicating that use of single witness for both factual and expert witness suggests to jurors that information not heard in testimony nonetheless supports the conclusion of the witness).

249. *See id.* at 869.

250. *See id.*

251. *Cf.* Walters v. State Road Dep't, 239 So. 2d 878, 881 (Fla. Dist. Ct. App. 1970) (maintaining that a basic rule of evidence in many jurisdictions regards testimony that is essentially speculative and conjectural as inadmissible).

252. *See* United States v. Sorrentino, 726 F.2d 876, 885 (1984) (striking testimony of a qualified expert where he did not appraise the objects in question based on visual inspection of the actual objects, but rather tried to appraise the objects in question based on visual inspection of photographs, as such testimony lacked the requisite factual basis to assist the trier of fact).

253. *See, e.g.*, Fedorczyk v. Caribbean Cruise Lines, 82 F.3d 69, 75 (3d Cir. 1996) (finding expert testimony that failure to adequately strip a tub as the cause of an accident to be mere speculation and therefore inadmissible); Everett v. Georgia-Pac. Corp., 949 F. Supp. 856, 858 (S.D. Ga. 1996) (excluding physician's testimony where opinion testimony is based on mere speculation and therefore will not assist the trier of fact); Gilbert v. Summers, 393 S.E.2d 213, 215 (Va. 1990) (maintaining that expert opinion which is not based on facts, knowledge or other evidence is speculative and has no evidentiary value).

254. *See* Rogers v. Ford Motor Co., 952 F. Supp. 606, 614-15 (N.D. Ind. 1997) (holding that professional engineer's testimony regarding an alternative seat belt design was inadmissible because he presented no evidence to show alternative design was better than original "defective" design); Cavallo v. Star Enter., 892 F. Supp. 756, 762 (E.D. Va. 1995) (excluding

stances (i.e., "I know heroin when I see it, just because I do") is surely far more speculative than that of many scientist's unproven hypotheses.

When the police officer's identification testimony is the only evidence offered as to the substance's identity, the jury is left to speculate as to one of the elements of the crime—whether the substance possessed or distributed was in fact a controlled substance. This is clearly a case of insufficient evidence.[255] As a matter of law, the case should not even go to the jury.[256] An appellate court can not legitimately affirm a conviction if the defendant could be as easily guilty as innocent, and there is no reasonable way of determining which is true.[257] By definition, such a case is one where the crime has not been proven by a reasonable doubt.[258]

5. The justice system's interest in accuracy

Unmentioned until now has been the issue of cost. Chemical tests are not free. There is, of course, no reason that the state be put to the expense of testing a substance if there is no real question about what it is. In most instances where there is no dispute that a substance is controlled, however, the defense will stipulate to that fact, for in such cases there will be no strategic advantage to antagonizing the prosecutor. The question of identification, then, will sometimes arise in cases where there is no agreement on the nature of the substance, even though the substance is available. Could such a case be

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expert testimony concluding that Retin-A use by a mother caused birth defects, in part because no studies were published on the subject).

255. When evidence to prove an element of a crime is deemed insufficient on appeal, a conviction must be reversed. *See* United States v. Taylor, 113 F.3d 1136, 1144-46 (10th Cir. 1997) (stating that evidence to support conviction must do more than raise mere suspicion of guilt and thus reversing a conviction for possession of a handgun on ground of insufficient evidence). Conviction solely on the basis of visual identification may well violate due process. The Fourteenth Amendment provides that "no state shall deprive any person of life, liberty, or property without due process of law." U.S. CONST. amend. XIV, § 1. The Fourteenth Amendment has been interpreted to require that in a criminal conviction, the government must prove each element of the crime charged beyond a reasonable doubt. *See In re* Winship, 397 U.S. 358, 368 (1970) (holding that due process requires the government to prove each element of a charge beyond a reasonable doubt, even in juvenile delinquency proceedings). Indeed, where a reviewing court deems that evidence upon which a conviction was based was insufficient to prove the crime beyond a reasonable doubt, the conviction shall be overturned. *See* Jackson v. Virginia, 443 U.S. 307, 324 (1979) (deciding that federal habeas corpus relief should be granted to state convicted applicants where the trial record shows "no rational trier of fact could have found proof of guilt beyond a reasonable doubt").

256. *See* United States v. Henderson, 693 F.2d 1028, 1032 (11th Cir. 1982) (explaining that a trial judge should not hand a case to a jury if evidence presented was so scant that jurors would have to use speculation or conjecture to determine guilt).

257. *See* United States v. Andrews, 75 F.3d 552, 556 (9th Cir. 1996) (reversing conviction where evidence was speculative and thereby insufficient).

258. *See id.* at 556 (holding that convictions based on speculative evidence alone must be overturned).

tried without a definitive answer through a chemical test? Perhaps as a matter of litigation strategy, both sides have an incentive to "play chicken," to leave the matter unresolved to avoid creating evidence which could be devastating to their case. If the lab finds the white powder is baking soda, a defendant whom the prosecutor may "know" is a drug dealer may have to be discharged. On the other hand, evidence that the white powder is indeed cocaine could destroy a particular defense strategy. Although it is easy to see why the lawyers might not want a chemical test, it is harder to figure out why the justice system should tolerate this kind of game-playing.

IV. THE WAR ON DRUGS

The disturbing trend in narcotics cases, identified here as the visual identification rule, begs explanation. Why would prosecutors introduce baseless police testimony to prove an element of a crime in their case in chief? Why have trial courts permitted irrational and unreliable testimony by police officers to establish the identity of controlled substances? Why have appellate courts nodded in approval of such practices? The answer to these questions may lie in the substance of the offenses in question—i.e., these cases are sui generis because they involve drugs.

United States policy toward illicit substances in the twentieth century has been formulated under the perception that the "drug problem" constitutes a societal crisis warranting emergency measures in response. During the 1980s, the nation's anti-drug efforts reached a fever pitch in the "War on Drugs." The drastic intensification of drug enforcement yielded increases in arrests and incarcerations for drug offenses, but not without significant costs. The "emergency" of the drug war served as justification for the rollback of constitutional protections. Further, increased volume in criminal drug arrests and prosecutions, unaccompanied by proportionate increases in law enforcement and judicial resources, strained the criminal justice system's capacity to process their caseloads. Given these circumstances, the criminal justice system has been forced to improve efficiency in drug prosecutions, possibly at the expense of the quality of justice for drug offense defendants.

A. The History of the Drug War Emergency

The United States has sought to control the use and trade of drugs since the adoption of the Harrison Act in 1914,[259] which confined the

259. Harrison Act, 1914, ch. 1, 38 Stat. 785.

distribution of heroin and cocaine to physicians.[260] Drug policy focused on public health issues until the 1920s when the Temperance movement, in conjunction with "attitudes of nationalism, nativism, fear of anarchy and of communism" shifted public perception to view drug abuse as a national security threat.[261] This era saw the enactment of the Volstead Act, enforcing the Eighteenth Amendment's prohibition on alcohol,[262] and the establishment of the Federal Narcotics Bureau.[263] For the most part, however, the perception of drug abuse as a national security threat subsided until a brief revival in the McCarthy Era, culminating in the passage of the Narcotics Control Act of 1956.[264] During the 1960s, drug use became more commonplace among affluent white Americans.[265] The government's approach to the drug problem during this decade was one of "benign neglect."[266] Congress responded to the increased drug use of white Americans with the Comprehensive Drug Abuse Prevention and Control Act of 1970,[267] which mitigated the criminality associated with drug use while simultaneously stiffening penalties for drug trafficking.[268]

Professor Steven Duke has noted that policy shifted in the 1970s from benign neglect to the zealous "War on Drugs."[269] The first "drug war" was inaugurated by President Richard Nixon in 1973.[270] Nixon's drug war, however, was a mere skirmish in comparison to the colossal efforts launched by the Reagan administration in the 1980s. Formally announced by President Ronald Reagan in 1982,[271] the War

260. *See* STEVEN B. DUKE & ALBERT C. GROSS, AMERICA'S LONGEST WAR: RETHINKING OUR TRAGIC CRUSADE AGAINST DRUGS 84-85 (1993).

261. *See* UNITED STATES DEP'T OF JUSTICE, DRUGS, CRIME, AND JUSTICE SYSTEM: A NATIONAL REPORT FROM THE BUREAU OF JUSTICE STATISTICS 79 (1992) [hereinafter 1992 NATIONAL DRUG REPORT].

262. Volstead Act, 1919, ch. 85, 41 Stat. 305.

263. *See* 1992 NATIONAL DRUG REPORT, *supra* note 261, at 79.

264. *See* Narcotic Control Act of 1956, ch. 629, 70 Stat. 567.

265. *See* Ruth D. Peterson, *Discriminatory Decision Making at the Legislative Level: An Analysis of the Comprehensive Drug Abuse Prevention and Control Act of 1970*, 9 LAW & HUMAN BEHAV. 243, 250 (1985) (suggesting that political crisis over drug use in the 1970's was a reaction to changing patterns of drug use including increasing numbers of middle and upper class white youths).

266. *See* Steven B. Duke, *Drug Prohibition: An Unnatural Disaster*, 27 CONN. L. REV. 571, 574 (1995) (arguing that the "evils of drug prohibition would be drastically reduced" if the United States returned to its pre-Nixon attitude of neglect toward illicit drug use).

267. Comprehensive Drug Abuse Prevention and Control Act of 1970, Pub. L. No. 91-513, 84 Stat. 1236.

268. *See generally* Peterson, *supra* note 265 (explaining the racial and economic rationale for the Comprehensive Drug Abuse Prevention and Control Act of 1970).

269. *See* Duke, *supra* note 266, at 574 (discussing Nixon's "all-out, global war on the drug menace" (citing MESSAGE FROM THE PRESIDENT OF THE UNITED STATES TRANSMITTING REORGANIZATION PLAN NO. 2 OF 1973, ESTABLISHING A DRUG ENFORCEMENT ADMINISTRATION, H.R. DOC. NO. 93-69, at 3 (1973))).

270. *See id.*

271. *See* President's Radio Address to the Nation, 18 WEEKLY COMP. PRES. DOC. 1249-50

on Drugs was marked by deep public concern, bordering on hysteria, toward the nation's drug problem.[272] Under the leadership of President Reagan, the nation focused unprecedented energy and resources towards eliminating illicit drug use and trafficking.[273] Increases in drug enforcement, however, outpaced increases in resources allocated to the judiciary.[274]

The drug war commanded bipartisan support.[275] Indeed, the atmosphere towards waging the drug war in Congress was one of competition between the parties. The level of inter-party "one-upsmanship" caused one Congressman to remark that "[e]ach member and each committee and each party tried to outdo the other in its enthusiasm to wage the war against drugs. We should have been more careful."[276] The zeal and enthusiasm with which the War on Drugs was waged, however, helped create a common perception that the exigencies of the drug crisis necessitated the limited sacrifice of constitutional protections from governmental intrusion on privacy and due process of law.[277]

The crisis mentality surrounding the drug war also was reflected in the media attention given it. It is probable that the intense media attention given to the drug war has had a significant impact on a defendant's ability to receive a fair trial when charged with drug related offenses. Certainly, prosecutors have recognized the value of media-inspired public fervor over the drug war, evidenced by their invocation of drug war rhetoric during opening and closing arguments.[278]

(1982) (announcing administration's new drug policy which combined efforts of different government agencies to provide structure in carrying out drug campaign).

272. *See* Craig Reinarman & Harry G. Levine, *Crack in Context: Politics and Media in the Making of a Drug Scare*, 16 CONTEMP. DRUG PROBS. 535, 536 (1989) (describing the frenzy of political and media attention that the "War on Drugs" received in the 1980s which consistently characterized drug use in catastrophic proportions).

273. *See* STEVEN WISOTSKY, BEYOND THE WAR ON DRUGS: OVERCOMING A FAILED PUBLIC POLICY 5-6 (1990).

274. *See infra* Part IV.B.2.

275. *See* Reinarman & Levine, *supra* note 272, at 563-66 (asserting that drugs became a "hot" issue for liberals and conservatives during the political campaigns of the 1980s, with both sides using accusation that opponent was "soft on drugs").

276. *See* 132 CONG. REC. 22,666 (1986) (statement of Rep. Frenzel) (expressing his dissatisfaction with the bill's cost of roughly two billion dollars).

277. *See* Neal R. Sonnet, *The War on Drugs—Or the Constitution?*, TRIAL, Apr. 1990, at 27 (noting that sixty-two percent of persons contacted in poll said they would be "willing to give up a few of the freedoms we have in this country if it meant we could greatly reduce the amount of illegal drug use," including "warrantless searches of homes, random vehicle stops, drug testing, and school locker searches" (citing Richard Morin, *Many in Poll Say Bush Plan is not Stringent Enough; Mandatory Drug Tests, Searches Backed*, WASH. POST, Sept. 8, 1989, at A1)).

278. *See* United States v. Solivan, 937 F.2d 1146, 1157 (6th Cir. 1991) (holding that prosecutor's closing appeal to jurors invoking War on Drugs constituted a prejudicial remark and reversible error). *But see* United States v. Bascaro, 742 F.2d 1335, 1352-54 (11th Cir. 1984) (finding that prosecutor's closing comments regarding narcotics cases and War on Drugs as an analogy to invasion of United States shores did not constitute reversible error). *See generally*

Indeed, media saturation during the drug war led Judge Abner J. Mikva of the United States Court of Appeals for the District of Columbia to remark: "Frankly, I think it is getting harder and harder for a defense lawyer to get a fair trial in a drug case."[279] The significant impact that media attention has on public perception of social issues, particularly in the case of the drug war, has inevitably affected treatment by juries and courts of drug cases.[280]

B. Impact of the Drug War on the Judiciary

1. "Drug exception" to the Bill of Rights

In addition to engendering sharp media attention and strong public concern, the nation's increased efforts in the War on Drugs has impacted the criminal justice system as a whole. The intensification of the criminal justice effort has enlarged the volume of narcotics cases processed, straining law enforcement as well as judicial resources. The growing pressures on the criminal justice system throughout the 1980s unfortunately have resulted in a diminution of constitutional protections afforded to defendants.

Commentators such as Professors Steven Wisotsky and Paul Finkelman have noted that one of the salient "casualties" of the War on Drugs has been constitutional protections and civil liberties.[281] During the War on Drugs, law enforcement agencies developed new and constitutionally questionable methods of detecting and appre-

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Mark S. Davies, Comment, *Enlisting the Jury in the "War on Drugs": A Proposed Ban On Prosecutors' Use of "War on Drugs" Rhetoric During Opening and Closing Argument of a Narcotics Trial*, 1994 U. CHI. LEGAL F. 395, 397 (arguing that courts deem improper any "War on Drugs" rhetoric during opening or closing statements).

279. *Selecting Impartial Juries: Must Ignorance Be a Virtue in Our Search for Justice?, Panel One: What Empirical Research Tells Us, and What We Need to Know About Juries and the Quest for Impartiality*, 40 AM. U. L. REV. 547, 565 (1991) (remarks by Judge Abner J. Mikva, United States Court of Appeals for the District of Columbia).

280. *See* Jack C. Doppelt, *Generic Prejudice: How Drug War Fervor Threatens the Right to a Fair Trial*, 40 AM. U. L. REV. 821, 835-36 (1991). Professor Doppelt concludes:

> In this age of mass media, the crusading War on Drugs is a powerful rallying cry that pierces a criminal justice system designed to ensure that each defendant receives a fair trial.... Common sense should tell us that the daily drumbeat of the War on Drugs might influence the way in which both jurors and judges dispense justice to a defendant accused of a drug crime.... The challenge for the legal system is to ensure generic prejudice does not result in a brand of generic justice consumed by the passion to win the War on Drugs.

Id.

281. *See* Paul Finkelman, *The Second Casualty of War: Civil Liberties and the War on Drugs*, 66 S. CAL. L. REV. 1389, 1390 (1993) (observing that since the "War on Drugs" began, all branches of government, both state and federal, have condoned a drug exception to the law); Steven Wisotsky, *Crackdown: The Emerging "Drug Exception" to the Bill of Rights*, 38 HASTINGS L.J. 889, 890 (1987) (noting that all three branches of government have used little effort to curb constitutional and nonconstitutional limits on the exercise of governmental power when enforcing drug laws).

hending drug offenders.[282] These new methods naturally invited constitutional challenges on behalf of defendants. The tendency of the judiciary, however, has been in favor of the law enforcement innovations—largely at the expense of constitutional protections.[283] "[I]t is almost as if a majority of the Court was hell-bent to seize any available opportunity to define more expansively the constitutional authority of law enforcement officials."[284]

The Fourth Amendment[285] has been at the center of debate regarding the limitations (or absence of limitations) on law enforcement practices.[286] The impact of the drug war on the scope of Fourth Amendment protection from unreasonable search and seizure has been dramatic.[287] Intensified law enforcement efforts involving wiretaps,[288] as well as innovations in search and seizure such as police saturation patrols and street sweeps,[289] drug courier profiles,[290] aerial

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282. *See* Finkelman, *supra* note 281, at 1410 (noting that "[z]ealous law enforcement officials are inclined to stretch the limits of the Constitution in their desire to win the war" on drugs). Some believe there has been an increase in police perjury which is connected to the War on Drugs. *See generally* Gabriel J. Chin & Scott C. Wells, *The "Blue Wall of Science" as Evidence of Bias and Motive to Lie: A New Approach to Police Perjury*, 59 U. PITT. L. REV. 233 (1998).

283. *See* FRANCIS A. ALLEN, HABITS OF LEGALITY: CRIMINAL JUSTICE AND THE RULE OF LAW 41 (1996) ("The exigencies of drug-law enforcement have provided powerful motivations in the ongoing erosion of constitutional protections against abuse by public agents in the administration of criminal justice."). This trend, however, has not proceeded without vociferous criticism. *See* Skinner v. Railway Labor Executives Ass'n, 489 U.S. 602, 641 (1989) (Marshall, J., dissenting) ("There is no drug exception to the Constitution, any more than there is a communism exception or an exception for other real or imagined sources of domestic unrest."); Hartness v. Bush, 919 F.2d 170, 174 (D.C. Cir. 1970) (Edwards, J., dissenting).

> Faced regularly with the grim results of the illegal drug trade, the judiciary may well be tempted to offer aid to the government in its War on Drugs. But no matter how pressing the perceived need, the judiciary is simply without authority to trim back the Fourth Amendment. There is, and can be, no "drug exception" to the Fourth Amendment.

Id. (footnote omitted); United States v. Laymon, 730 F. Supp. 332, 341 (1990) ("If this nation were to win its 'War on Drugs' at the cost of sacrificing its citizens' constitutional rights, it would be a Pyrrhic victory indeed.... Law enforcement officials are not licensed to disregard the law—especially not the law enshrined in the Constitution.").

284. Wayne R. LaFave, *Fourth Amendment Vagaries (Of Improbable Cause, Imperceptible Plain View, Notorious Privacy, and Balancing Askew)*, 74 J. CRIM. L. & CRIMINOLOGY 1171, 1222 (1983).

285. The Fourth Amendment to the United States Constitution states:

> The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable search 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.

286. *See* Wisotsky, *supra* note 281, at 907 (arguing that the assault on constitutional protections "reached its apogee in the realm of search and seizure").

287. As one author notes, "The sheer number of cases on this subject is overwhelming. A comprehensive look at the drug war and Fourth Amendment law would require a book-length study." Finkelman, *supra* note 281, at 1411.

288. *See* Wisotsky, *supra* note 281, at 913-14.

289. *See* Adrienne L. Meiring, *Walking the Constitutional Beat: Fourth Amendment Implications of Police Use of Saturation Patrols and Roadblocks*, 54 OHIO ST. L.J. 497, 500-01 (1993) (noting that a "saturation patrol" involves law enforcement inundating a neighborhood targeted for its high

surveillance,[291] drug testing,[292] thermal surveillance,[293] and the demise

incidence of crime, greatly increasing police/citizen contact, and "vigorous[ly] enforc[ing] all criminal and traffic laws, including minor misdemeanors" and *Terry* stops, in an effort to increase detection); John A. Powell & Eileen B. Hershenov, *Hostage to the Drug War: The National Purse, the Constitution, and the Black Community*, 24 U.C. DAVIS L. REV. 557, 613 n.233 (1991) (noting that a "street sweep" occurs where law enforcement personnel round up all individuals on a given block and conduct searches and questioning).

290. A "drug courier profile" is a list of characteristics likely to be possessed by a drug trafficker, used by law enforcement to initiate stops. *See* Florida v. Royer, 460 U.S. 491, 494 n.2 (1983).

In *United States v. Sokolow*, the Supreme Court upheld a search based on a drug courier profile where the characteristics under the profile satisfied the reasonable suspicion requirements under the "totality of factors" test. *See* United States v. Sokolow, 490 U.S. 1, 9-11 (1989). In his dissent, Justice Marshall remarked that the holding in *Sokolow* demonstrated the Court's "willingness when drug crimes or antidrug policies are at issue, to give short shrift to constitutional rights." *Id.* at 17 (Marshall, J., dissenting) (citing his own dissent in Skinner v. Railway Labor Executives Ass'n, 489 U.S. 602, 636 (1989) (Marshall, J., dissenting)). For further discussion of the implications of *Sokolow*, see generally Steven K. Bernstein, *Fourth Amendment Using the Drug Courier Profile to Fight the War on Drugs*, 80 J. CRIM. L. & CRIMINOLOGY 996 (1990); Finkelman, *supra* note 281, at 1423-26; Michael J. Mills, Note, *Reasonable Suspicion and the Fourth Amendment:* United States v. Sokolow, 23 CREIGHTON L. REV. 45 (1989-90); Jodi Sax, Note, *Drug Courier Profiles, Airport Stops and the Inherent Unreasonableness of the Reasonable Suspicion Standard After* United States v. Sokolow, 25 LOY. L.A. L. REV. 321 (1991).

291. In *Florida v. Riley*, the Supreme Court upheld the warrantless observation of the interior of an enclosed greenhouse with a helicopter. *See* Florida v. Riley, 488 U.S. 445, 452 (1989). In his dissent, Justice Brennan commented on the effect of the holding in *Riley*: "The question is not whether you or I must draw the blinds before we commit a crime. It is whether you and I must discipline ourselves to draw the blinds every time we enter a room, under pain of surveillance if we do not." *Id.* at 464 (Brennan, J., dissenting) (quoting Anthony G. Amsterdam, *Perspectives on the Fourth Amendment*, 58 MINN. L. REV. 349, 403 (1974)). For a further discussion of the implications of *Riley*, see David J. Stewart, *Recent Development,* Florida v. Riley*: The Emerging Standard for Aerial Surveillance of the Curtilage*, 43 VAND. L. REV. 275 (1990); John R. Dixon, Note, *Warrantless Aerial Surveillance and the Open View Doctrine:* Florida v. Riley, 17 FLA. ST. U.L. REV. 157 (1989); Jon Gavenman, Comment, Florida v. Riley*: The Descent of Fourth Amendment Protections in Aerial Surveillance Cases*, 17 HASTINGS CONST. L.Q. 725 (1990); Daniel R. Hansen, Note, *Warrantless Aerial Surveillance and* Florida v. Riley*: The Loss of Liberty*, 1990 UTAH L. REV. 407; Gregory E. Sopkin, Comment, *The Police Have Become Our Nosy Neighbor:* Florida v. Riley *and Other Supreme Court Deviations from Katz*, 62 U. COLO. L. REV. 407 (1991).

292. *See* Vernonia Sch. Dist. 47J v. Acton, 515 U.S. 646, 666 (1995) (holding random urinalysis requirement for student participation in athletics constitutional). For the implications of *Vernonia*, see generally Finkelman, *supra* note 281, at 1411, n.149; Kevin C. Newsom, *Suspicionless Drug Testing and the Fourth Amendment:* Vernonia School District 47J v. Acton, 19 HARV. J.L. & PUB. POL'Y 209 (1995); Christopher S. Hagge, Note, Vernonia School District 47J v. Acton*: The Demise of Individualized Suspicion in Fourth Amendment Searches and Seizures*, 31 TULSA L.J. 559 (1996); C. Lane Mears, Casenote, *Another Slice of the Right to Privacy Pie: Do Public Schoolchildren Maintain Any Fourth Amendment Rights After* Vernonia Sch. Dist. 47J v. Acton, 115 S. Ct. 2386 (1995), 37 S. TEX. L. REV. 591 (1996); Samantha Osheroff, Note, *Drug Testing of Student Athletes in* Vernonia School District v. Acton*: Orwell's 1984 Becomes Vernonia's Reality in 1995*, 16 LOY. L.A. ENT. L.J. 513 (1995); Joaquin G. Padilla, Comment, Vernonia School District 47J v. Acton*: Flushing the Fourth Amendment—Student Athletes' Privacy Interests Go Down the Drain*, 73 DENV. U. L. REV. 571 (1996).

293. Thermal surveillance is current law enforcement heat detecting technology that permits police to gain information as to the contents of residences. *See* United States v. Robinson, 62 F.3d 1325, 1328 n.2 (11th Cir. 1995). For cases upholding warrantless thermal surveillance, see United States v. Ishmael, 48 F.3d 850 (5th Cir. 1995) and United States v. Ford, 34 F.3d 992 (11th Cir. 1994). For a thorough discussion of jurisprudence regarding the constitutional validity of thermal surveillance as used by law enforcement officers, see Lisa Tuenge Hale, United States v. Ford*: The Eleventh Circuit Permits Unrestricted Police Use of Thermal Surveillance on Private Property Without a Warrant*, 29 GA. L. REV. 819 (1995); M. Annette Lanning, Note, *Thermal Sur-*

of the "knock and announce" rule,[294] all justified by the exigencies of the War on Drugs, have significantly encroached on Fourth Amendment protections of personal privacy.

In addition to expanding governmental search and seizure methods at the expense of privacy rights, the drug war has encroached upon due process rights,[295] most notably in the area of civil forfeiture.[296] Initially, during the 1970s, courts were divided as to whether a defendant must be given notice and a hearing prior to civil forfeiture proceedings.[297] At the height of the drug war, however, courts shifted toward overwhelming approval of governmental civil forfeiture practices without notice.[298] It was not until the 1993 Supreme

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veillance: Do Infrared Eyes in the Sky Violate the Fourth Amendment?, 52 WASH. & LEE L. REV. 1771 (1996); Michael D. O'Mara, Comment, *Thermal Surveillance and the Fourth Amendment: Heating Up the War On Drugs*, 100 DICK L. REV. 415, 417-24 (1996); Matthew L. Zabel, Comment, *A High-Tech Assault on the "Castle": Warrantless Thermal Surveillance of Private Residences and the Fourth Amendment*, 90 NW. U. L. REV. 267 (1995).

294. The common law knock and announce rule, elevated to a constitutional right by the Supreme Court in *Ker v. California*, 374 U.S. 23 (1963), requires that police officers executing a search warrant first knock and identify themselves, state the purpose for demanding entry, and allow time for the door to be opened before forcibly entering. *See id.* at 40-41. Several courts have adopted a blanket exception to the knock and announce rule in narcotics cases due to the risk that evidence will be disposed of before the police obtain entry. *See* United States v. Kennedy, 32 F.3d 876, 882 (4th Cir. 1994); United States v. Moore, 956 F.2d 843, 851 (8th Cir. 1992). The United States Supreme Court subsequently held in *Wilson v. Arkansas* that the previous knock and announce requirement is only one of several requirements to be considered in determining the reasonableness of the search. *See* Wilson v. Arkansas, 115 S. Ct. 1914, 1918-19 (1995).

In 1997, however, the Supreme Court held that the Fourth Amendment does not permit a blanket exception to the knock and announce rule for drug investigations. *See* Richards v. Wisconsin, 117 S. Ct. 1416, 1422 (1997). For a discussion of the demise of the knock and announce rule, see John C. Barnoski, Casenote, *Common Law "Knock and Announce" Principle Forms Part of Reasonableness Inquiry Under Fourth Amendment*—Wilson v. Arkansas, 6 SETON HALL CONST. L.J. 1231 (1996); Charles Patrick Garcia, Note, *The Knock and Announce Rule: A New Approach to the Destruction-of-Evidence Exception*, 93 COLUM. L. REV. 685 (1993); Jennifer Goddard, Note, *The Destruction of Evidence Exception to the Knock and Announce Rule: A Call for Protection of Fourth Amendment Rights*, 75 B.U. L. REV. 449 (1995).

295. *See* Finkelman, *supra* note 281, at 1431 (arguing that the government's claim of necessity is a threat to a citizen's fundamental due process rights).

296. The 1984 Comprehensive Forfeiture Act, amending Pub. L. No. 91-513, 84 Stat. 1236 (1970) (codified as amended at 21 U.S.C. § 881 (1994)), permits the government to confiscate all property derived from or used in any manner in violation of federal drug law. *See* 21 U.S.C. § 853(e) (1994). Under the Act, the government may also obtain, prior to conviction, a protective order preventing a defendant from possessing any property that might be subject to seizure. *See* 21 U.S.C. § 853(c) (1994).

For a discussion of the disproportionate impact that civil forfeiture practices associated with drug enforcement has had on the poor, see Jack Yoskowitz, *The War on the Poor: Civil Forfeiture of Public Housing*, 25 COLUM. J.L. & SOC. PROBS. 567 (1992).

297. *See* Sally R. Weist, Note, *Civil Drug Forfeitures After* James Daniel Good Real Property: *Preseizure Notice and Hearing Do Not Weaken the Powerful Weapon in "The War on Drugs,"* 4 WIDENER J. PUB. L. 663, 679-83 (1995) (discussing lower court split on whether pre-seizure notice was required).

298. *See id.* at 682. One commentator noted: "For many years, the government ha[s] enjoyed almost unanimous favorable rulings on any and every issue raised in a federal civil forfeiture case." *Id.* at 682 n. 101 (quoting Robert M. Sondak, *The Mysterious Civil Forfeiture Law*, FLA. B.J., Mar. 1994, at 25).

Court case *United States v. James Daniel Good Real Property*,[299] that a defendant was guaranteed notice and a hearing prior to governmental seizure of real property.[300] Forfeiture also created problems regarding the quality of the defendant's legal representation.[301] Forfeiture or freezing of a defendant's assets could force the defendant to rely on appointed counsel.[302] As a consequence, public defenders have increased caseloads and make it less liely that clients will receive satisfactory representation.[303]

The drug war has served as the catalyst for other civil innovations designed to deter the drug trade that also incidentally inhibit constitutional protections. For instance, almost half of the states have revived depression era civil taxes on controlled substances.[304] The tax on controlled substances impinges upon constitutional rights by requiring that persons in possession of taxable substances report and pay assessments on their holdings of drugs.[305] By requiring self-reporting to the tax authorities, these state laws have essentially required that persons in possession of drugs incriminate themselves—in violation of the constitutional privilege against self-incrimination.[306]

2. Strain on judicial resources

In addition to the drug war's impact on constitutional protections, the expansion of drug enforcement activity has significantly impacted judicial and criminal justice resources. As a result of the nation's increased efforts in drug enforcement, arrest and incarceration rates for drug offenses rose dramatically, seriously taxing law enforcement and judicial resources.[307] Between 1980 and 1993, the total number

299. 510 U.S. 43 (1993).

300. *See id.* For commentary on *James Daniel*, see Tony M. Franzese-Damron, Note, United States v. James Daniel Good Real Property: *Pre-Hearing Seizure of Real Property in Civil Forfeiture Cases and the 1993 Trilogy of Restraint*, 1994 DET. C. L. REV. 1293; Peter W. Salsich, III, Note, *A Delicate Balance: Making Criminal Forfeiture a Viable Law Enforcement Tool and Satisfying Due Process After* United States v. James Daniel Good Real Property, 39 ST. LOUIS U. L.J. 585 (1995); Weist, *supra* note 297, at 663.

301. *See* Finkelman, *supra* note 281, at 1444-45.

302. The forfeiture of attorney's fees in particular "threaten[s] the future of an independent criminal defense bar, ignore[s] the constitutional presumption of innocence, and deprive[s] accused persons of the constitutional right to retain defense counsel of their choice." Neal R. Sonnett, *War on Drugs—Or the Constitution?*, TRIAL, Apr. 1990, at 24.

303. *See* Finkelman, *supra* note 281, at 1444 (describing ways in which prosecutors can prevent criminal defendants from securing adequate counsel).

304. Ann L. Iijima, *The War on Drugs: The Privilege Against Self-Incrimination Falls Victim to State Taxation of Controlled Substances*, 29 HARV. C.R.-C.L. L. REV. 101, 101-02 n.2 (1994).

305. *See id.* at 102 n.2.

306. For a thorough discussion of the impact on the privilege against self incrimination caused by controlled substance taxes, see generally *id.*

307. For a thorough discussion of the impact of increased drug enforcement efforts on law enforcement, see DAVID W. RASMUSSEN & BRUCE L. BENSON, THE ECONOMIC ANATOMY OF A

of criminal case filings per year in federal court increased by seventy percent, yet the total number of authorized judgeships failed to increase proportionately.[308] The increase in criminal caseloads can be explained by the increase in drug enforcement. Indeed, the average number of drug filings per year almost quadrupled during the 1980s and early 1990s.[309] Congress has failed, however, to appropriate resources proportionate to the increase in the judiciary's workload.[310] As a result, the quality of justice has been adversely affected.[311]

The problem is exacerbated by the increase in prosecutions resulting in jury trials as a result of mandatory minimum sentences.[312] While eighty-five to ninety percent of federal criminal cases were historically resolved through plea bargains,[313] drug defendants facing lengthy mandatory minimum prison sentences have little incentive to deal.[314]

Overwhelming caseloads, in large part due to the drug war, have thus led to the adoption of innovative and novel judicial processing of drug cases. For instance, federal prosecutors have succeeded in

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DRUG WAR: CRIMINAL JUSTICE IN THE COMMONS (1994). For a discussion of the impact of increased drug enforcement efforts on the federal judiciary, see Kim Dayton, *Judicial Vacancies and Delay in the Federal Courts: An Empirical Evaluation*, 67 ST. JOHN'S L. REV. 757 (1993); Patrick E. Longan, *The Shot Clock Comes to Trial: Time Limits for Federal Civil Trials*, 35 ARIZ. L. REV. 663, 672-73 (1993). Dayton remarks:

> There is no question that the War on Drugs has had an impact on the federal courts: the number of criminal drug prosecutions (felony and misdemeanor) has more than tripled since 1981, and the number of criminal defendants prosecuted per felony case has increased in recent years as well. There were 8925 criminal trials (felony and misdemeanor) in the federal courts in 1991, compared to 6542 in 1981, and there has been a substantial increase in the number of lengthy criminal trials. In addition, because of the Speedy Trial Act and the Speedy Trial Clause of the Sixth Amendment, which require that criminal cases be handled relatively expeditiously, these heavy caseloads have consumed a substantial share of many courts' judicial resources. Mandatory minimum sentences for many drug offenses and the peculiarities of the Federal Sentencing Guidelines have both decreased the incentives to plead guilty, and greatly complicated the sentencing process, consuming more judicial resources . . . .

Id. at 762-63 (citations omitted).

308. *See* Longan, *supra* note 307, at 672.

309. *See id.* at 672-73.

310. *See* Patrick E. Longan, *Faces of Washington: The Budget Crises and the Courts*, 43 FED. LAW. 26, 27-28 (1996). Congress expanded the jurisdiction of the federal courts in civil and criminal matters over the last few years, but has repeatedly short-changed the judiciary in the budget. *See id.*

311. *See id.* at 28 ("Congress has caused a deterioration in the quality of justice rendered in the federal courts simply by giving the courts too much to do.") (citation omitted); *see also* Honorable Vaughn R. Walker, *Federalizing Organized Crime*, 46 HASTINGS L.J. 1127, 1154 (1995) ("When courts are compelled to absorb so much so quickly, what would otherwise be ripple effects become major dislocations.").

312. *See generally* U.S. SENTENCING COMM'N, SPECIAL REPORT TO CONGRESS: MANDATORY MINIMUM PENALTIES IN THE FEDERAL CRIMINAL JUSTICE SYSTEM (1991).

313. *See* Walker, *supra* note 311, at 1155 n.130 (quoting Patricia M. Wald, *A Report from the Front in the War on Drugs*, 7 GA. ST. U. L. REV. 1, 9 (1990)).

314. *See id.* at 1155.

consistently relying on single hearsay witnesses in grand jury proceedings involving drug offenses in the face of challenges of prosecutorial misconduct.[315] Although courts have proceeded with caution in affirming such cases, they have proceeded nonetheless. Recognizing that "the single-witness policy provides an efficient means of obtaining indictments in our overcrowded criminal justice system," the United States Court of Appeals for the Second Circuit cautioned that "we must be wary that we do not exalt expedience at the expense of fundamental fairness."[316] Nevertheless, despite these warnings, the end result has been to permit the single-witness.

Federal prosecutors also have attempted (and failed) to expand jurisdiction in drug related in rem civil forfeiture cases so that service of process may issue beyond the jurisdiction of the district court.[317] The government based its arguments on legislative history from a criminal forfeiture statute founded on conserving "valuable judicial and law enforcement resources" in light of the "unmanageable" backlog of civil forfeiture drug cases.[318]

States also have responded to the strain on resources posed by the drug war. In an effort to deal more efficiently with New Jersey's "sudden and tremendous surge in case filings" attributable to the drug war, the New Jersey Legislature, for instance, has pioneered numerous innovations to improve judicial and prosecutorial efficiency.[319] Similarly, the New York judiciary has attempted to consolidate its narcotics cases in New York City with the creation of the "Supreme Court, Part N" of New York County, with jurisdiction exclusively over narcotics matters.[320]

The strain on resources has generated changes in minimum evidentiary requisites in narcotics cases as well, particularly in the identification of controlled substances. To alleviate the burden of requiring in court testimony of the states' chemists who test controlled substances at issue to determine their identity, several states statuto-

315. *See* United States v. Al Fenton, 755 F. Supp. 72, 76-77 (S.D.N.Y. 1991) (refusing to find prosecutorial misconduct in the absence of a pattern of abuse).

316. *See* United States v. Brito, 907 F.2d 392, 395 (2d Cir. 1990).

317. *See* United States v. Contents of Accounts Nos. 3034504504 and 144-07143 at Merrill, Lynch, Pierce, Fenner & Smith, Inc., 971 F.2d 974, 982 (3d Cir. 1992) [hereinafter *Contents of Accounts*] (denying government's proposal to read nationwide service of process into 21 U.S.C. 981(h)); *see also* United States v. 51 Pieces of Real Property, Roswell, New Mexico, 17 F.3d 1306, 1310 (10th Cir. 1994) (again denying government's proposal of nationwide service in 21 U.S.C. 981(h) here involving real property in New Mexico alleged to be part of a money laundering scheme).

318. *See Contents of Accounts*, 971 F.2d at 981.

319. *See* State v. Shaw, 618 A.2d 294, 300 (N.J. 1993) (discussing legislative response to drug war).

320. *See* N.Y. JUD. LAW § 177(a)-(e) (McKinney 1990).

rily permit that a certified copy of the laboratory report serve as competent evidence of the identity of the substance.[321] States also have attempted to expedite drug case processing by statutorily lowering the minimum evidentiary proof required at preliminary hearings.[322]

Efficiency in drug identification has also been improved by courts permitting chemists to infer the identity of an aggregate of substances from tests of a sample of the substance, rather than a test of the entire quantity. For example, where 100 alleged methaqualone tablets are confiscated, an Illinois appellate court affirmed a ruling allowing a chemist to infer the identity of the 100 tablets by testing three randomly drawn samples.[323]

In sum, the cumulative effects of the War on Drugs have had significant consequences for the administration of justice in narcotics cases. The recession of constitutional liberties, coupled with the increased strain on judicial and law enforcement resources, compounded by heightened media attention, has created an atmosphere in which courts are more likely to risk violations of a criminal defendant's substantive and procedural rights in narcotics cases. The constitutional atmosphere is inevitably pertinent to courts' evidentiary determinations in cases of police visual identification testimony.

The drug war likewise has impacted the administration of justice at the micro-level in narcotics prosecutions. The most recent manifestation of such effects, however, is in evidentiary rulings—those regarding the visual identification of narcotic substances. As demonstrated, the evidentiary standards of admissibility for both expert and

321. *See, e.g.*, CONN. GEN. STAT. § 21a-283 (1995); D.C. CODE ANN. § 33-556 (1996); IDAHO CODE § 37-2745 (1996); N.D. CENT. CODE § 19-03.1-37 (1995 & Supp. 1997); OR. REV. STAT. § 475.235(3) (1995); WASH. REV. CODE ANN. § 43.43.680 (West 1996).

322. The Virginia Department of Criminal Justice Services noted that a 1991 law passed in the state legislature expedited case processing in light of the backlog in the crime laboratory by permitting officers to present the results of field tests at preliminary hearings. *See* DEPARTMENT OF CRIMINAL JUSTICE SERVICES, DRUGS IN PERSPECTIVE: A CRIMINAL JUSTICE PERSPECTIVE 45 (1991).

323. *See* People v. Kaludis, 497 N.E.2d 360, 364 (Ill. App. 1986). The establishment of the identity of a controlled substance via random sampling is limited, however, to those cases where the aggregate quantity of substances is sufficiently homogenous to the naked eye. *See* People v. Ayala, 422 N.E.2d 127, 129 (Ill. App. 1981). Thus, where the evidence consists of two bags of white powder, as a matter of law, a conclusive test for heroin of one bag fails to prove beyond a reasonable doubt that the other bag also contains heroin. *See id.*; *see also* Ross v. State, 528 So. 2d 1237, 1239-40 (Fla. App. 1988) (finding chemical test of two out of ninety-two packets of powder insufficient to prove the content of remaining packets although all packets were found in one paper bag and all packets looked alike); People v. Maiden, 569 N.E.2d 120, 125 (Ill. App. 1991) (finding chemist test of one out of three bottles of alleged PCP insufficient to prove content of remaining bottles as a matter of law). Notably, the rule against inferring the identity of one bag of powdered substance from a test of another bag that looks similar bears directly on whether an officer may visually identify a powder substance. *See supra* Part II.C.

lay opinion testimony have undergone a transition in recent years. In addition to liberalizing the standards of admissibility for such evidence, this transition has been accompanied by a substantial degree of confusion as to how the rules are applied. As such, the rules of evidence regarding narcotics identification were an unlikely mechanism by which the systemic pressures of the drug war could be repelled. The visual identification rule is a direct result of that failure.

CONCLUSION: ARE THE RULES OF EVIDENCE THE NEXT CASUALTY OF THE WAR ON DRUGS?

In recent years, the nation has pursued criminal narcotics enforcement in the context of a War on Drugs—emergency measures adapted to meet perceived emergency circumstances. This drug war policy has resulted in the circumscription of constitutional protections and has imposed severe pressures on judicial and law enforcement resources. The past few years also have seen the transformation of evidentiary standards of admissibility, due in large part to the widespread adoption of the Federal Rules of Evidence. Particularly in the area of lay opinion and expert testimony, these rules have caused greater flexibility and leniency in admitting such evidence. This combination of systemic drug war pressures and the liberalizing of Federal Rules of Evidence threaten evidentiary standards in the interests of expediting a prosecution.

Coinciding with the drug war, a few courts have developed the visual identification rule. Careful analysis, however, reveals that the visual identification rule fails even the most liberal reading of the rules of evidence. In a word, police officers possess absolutely no credentials which might permit them to rationally infer the identity of a white powdered substance by simply looking at it. Unlike the case of marijuana, heroin, cocaine, and other powdered substances possess no physical attributes which reveal identity. The visual identification rule violates constitutional due process if such testimony is exclusively relied upon to prove the identity of the substance. Such testimony fails requisites of evidentiary reliability, is without probative value, and, coming from the mouth of a police officer, is quite prejudicial, potentially suggesting to the jury that "he knows something they don't." Further, the large risk of error in a visual identification may have extreme consequences for the defendant, given that lesser penalties may be associated with different drugs or imitation controlled substances.

This Article also has demonstrated that the longstanding rule holding circumstantial evidence of a substance's identity to be sufficient

should be rescinded. In light of the pervasive traffic in imitation controlled substances, the risk that the substance at hand was an imitation substance carrying lesser penalties for violations is great. Although such evidence ought to be admitted to demonstrate that the circumstances were "consistent with" a particular substance, such evidence alone can only in rare circumstances be held sufficient.[324] The prosecution should be required to secure a stipulation of the identity of the substance from defense counsel in cases where, in their discretion, the government chooses not to test a particular substance.

Irrespective of the connection between the drug war and the visual identification rule, the emerging practice of police officer opinion testimony about the identity of indescript chemical substances should be cause for alarm. From society's perspective, there is a substantial interest in requiring that the police and prosecution establish every element of a crime beyond a reasonable doubt. From a jurisprudential perspective, the value of expert opinion testimony must be protected from the devaluation that may occur by eliminating standards of admissibility for opinion testimony.

In addition to offending the rules of evidence, admitting police visual identification evidence risks the dilution of evidentiary standards outside the context of criminal drug prosecutions. If a court may admit visual identification testimony by police concerning narcotics, why not admit similarly unfounded expert opinion in other types of criminal cases? Why not in civil litigation? Without careful attention, the effects of the emergency of the War on Drugs on the rules of evidence may indeed spillover and distort litigation in general.

324. For instance, where the substance cannot be tested because of actions of the defendant (i.e., the substance was disposed of), circumstantial evidence, by necessity, may be sufficient. *See* Unites States v. Wright, 16 F.3d 1429, 1439 (6th Cir. 1994) ("The identity of a drug may be ascertained by circumstantial evidence . . . ." (citing United States v. Schrock, 885 F.2d 327, 334 (6th Cir. 1984))).