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The Admissibility of Laboratory Reports in Criminal Trials: The Reliability of Scientific Proof

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I. INTRODUCTION

The use of scientific evidence in criminal prosecutions has increased significantly. The number of crime laboratories has tripled in the last two decades.¹ New scientific procedures are introduced in evidence every year. Neutron activation

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1. Peterson, Ryan, Houlden & Mihajlovic, *The Uses and Effects of Forensic Science in the Adjudication of Felony Cases*, 32 J. FORENSIC SCI. 1730, 1731 (1987).

analysis,² atomic absorption,³ scanning electron microscopy,⁴ and trace metal detection⁵ are but a few of the techniques now used in criminal prosecutions.⁶ A survey of lawyers and judges revealed that "[t]hree quarters of the responders indicated about 1/3 of their cases utilized scientific evidence."⁷ More important, however, is the impact of this type of evidence. One study, which surveyed jury attitudes, observed: "About one quarter of the citizens who had served on juries which were presented with scientific evidence believed that had such evidence been absent, they would have changed their verdicts—from guilty to not guilty."⁸

Frequently, the most expedient way to introduce scientific evidence at trial is through the admission of a laboratory report.⁹ The results of drug analyses,¹⁰ fingerprint examinations,¹¹ intoxication tests,¹² rape victim examinations,¹³ and various other scientific techniques¹⁴ have been admitted in this fashion. Similarly,

2. *E.g.*, *United States v. Stifel*, 433 F.2d 431, 435-41 (6th Cir. 1970), *cert. denied*, 401 U.S. 994 (1971); *State v. Coolidge*, 109 N.H. 403, 419-22, 260 A.2d 547, 549-61 (1969), *rev'd on other grounds*, 403 U.S. 443 (1971). *See generally* Annotation, *Admissibility of Evidence of Neutron Activation Analysis*, 50 A.L.R.3d 117 (1973); Comment, *The Evidentiary Uses of Neutron Activation Analysis*, 59 CALIF. L. REV. 997 (1971).

3. *E.g.*, *Chatom v. State*, 348 So. 2d 838, 842 (Ala. 1977); *State v. Chatman*, 156 N.J. Super. 35, 38-40, 383 A.2d 440, 441-42 (App. Div. 1978); *State v. Sparks*, 297 N.C. 314, 326-28, 255 S.E.2d 373, 381-82 (1979); *State v. McCall*, 698 S.W.2d 643, 651 (Tenn. Crim. App. 1985). *See generally* Watkins & Watkins, *Identification of Substances by Instrumental Analysis*, in 22 AM. JUR. PROOF OF FACTS 385, 476-87 (1969).

4. *E.g.*, *People v. Palmer*, 80 Cal. App. 3d 239, 145 Cal. Rptr. 466 (1978). *See generally* Judd, *Scanning Electron Microscopy as Applied to Forensic Evidence Analysis*, in PRACTISING LAW INSTITUTE, SCIENTIFIC AND EXPERT EVIDENCE 873 (2d ed. 1981).

5. *E.g.*, *Reid v. State*, 267 Ind. 555, 558-60, 372 N.E.2d 1149, 1151-52 (1978); *State v. Snyder*, 190 N.J. Super. 626, 631-33, 464 A.2d 1209, 1211-12 (Law Div. 1983); *State v. Daniels*, 37 Ohio App. 2d 4, 5-6, 305 N.E.2d 497, 498 (1973); *Brotherton v. State*, 666 S.W.2d 126, 129-30 (Tex. App. 1983). *See generally* Stevens & Messler, *Trace Metal Detection Technique*, in PRACTISING LAW INSTITUTE, SCIENTIFIC AND EXPERT EVIDENCE 1075 (2d ed. 1981).

6. *See generally* Giannelli, *The Admissibility of Novel Scientific Evidence*: *Frye v. United States, a Half-Century Later*, 80 COLUM. L. REV. 1197 (1980).

7. O. SCHROEDER, A LEGAL STUDY CONCERNING THE FORENSIC SCIENCES PERSONNEL 19 (Assessment of the Forensic Sciences Profession vol. 3, March 1977).

8. Peterson, Ryan, Houlden & Mihajlovic, *supra* note 1, at 1748.

9. "Directors of crime laboratories estimate that their examiners testify in court in less than 10% of the cases they examine. Consequently, it is principally the reports themselves which convey scientific information to various users in the criminal justice system." *Id.*

10. *E.g.*, *United States v. Frattini*, 501 F.2d 1234, 1235-36 (2d Cir. 1974) (lab report identifying substance as cocaine); *United States v. Parker*, 491 F.2d 517, 520-21 (8th Cir. 1973) (lab report identifying substance as heroin), *cert. denied*, 416 U.S. 989 (1974); *United States v. Ware*, 247 F.2d 698, 699 (7th Cir. 1957) (lab report identifying substance as heroin). *But see* *State v. Russell*, 114 N.H. 222, 224-25, 317 A.2d 781, 782 (1974) (lab report identifying substance as marijuana excluded under federal and state constitution); *State v. Henderson*, 554 S.W.2d 117, 122 (Tenn. 1977) (lab report identifying substances as LSD and marijuana excluded on constitutional grounds).

11. *See* *United States v. Taylor*, 4 C.M.A. 232, 238-39, 15 C.M.R. 232, 238-39 (1954).

12. *E.g.*, *Kay v. United States*, 255 F.2d 476, 480 (4th Cir. 1958) (certificate of blood alcohol test), *cert. denied*, 358 U.S. 825 (1958); *State v. Laroche*, 112 N.H. 392, 397, 297 A.2d 223, 226 (1972) (report of breathalyzer test); *State v. Smith*, 312 N.C. 361, 381, 323 S.E.2d 316, 318 (1984) (affidavit of breath tests results). *But see* *Moon v. State*, 300 Md. 354, 368-73, 478 A.2d 695, 702-04 (1984) (admission of hospital report of blood alcohol test violated right of confrontation), *cert. denied*, 469 U.S. 1207 (1985).

13. *E.g.*, *Virgin Islands v. St. Ange*, 458 F.2d 981, 982 (3d Cir. 1972) (hospital lab report identifying sperm on vaginal smear); *United States ex rel. Lurry v. Johnson*, 378 F. Supp. 818, 822 (E.D. Pa. 1974) (hospital record of rape victim examination); *Robertson v. Cox*, 320 F. Supp. 900, 900 (W.D. Va. 1970) (lab report identifying seminal fluid); *Henson v. State*, 332 A.2d 773, 775 (Del. 1975) (hospital record of rape victim examination); *Commonwealth v. Franks*, 359 Mass. 577, 580-81, 270 N.E.2d 837, 839-40 (1971) (hospital report identifying sperm). *But see* *Pickett v. Bowen*, 798 F.2d 1385, 1386-87 (11th Cir. 1986) (medical report of sex abuse victim examination excluded on constitutional grounds).

14. *E.g.*, *Hardy v. State*, 53 Ala. App. 75, 78, 297 So. 2d 399, 402 (1974) (firearms identification report); *State*

pathological findings have been introduced through autopsy reports.¹⁵ Some of these reports have been prepared by public agencies, such as police crime laboratories and medical examiner offices.¹⁶ Others have been prepared by private hospitals.¹⁷ In some cases, laboratory reports have been used to establish ultimate issues, such as the identity of a controlled substance in a drug prosecution.¹⁸

The admissibility of scientific reports raises a number of evidentiary issues. Sometimes the report is used in conjunction with expert testimony, either to refresh recollection¹⁹ or as recorded recollection.²⁰ In either case, the expert is present in court and subject to cross-examination on such matters as his qualifications, the procedures employed, and the meaning of any conclusions reached. When the report is used as a substitute for expert testimony, however, cross-examination is foreclosed and important hearsay and confrontation issues are raised.²¹

Prior to the adoption of the Federal Rules of Evidence (Federal Rules) in 1975, most federal courts admitted laboratory reports under either the public²² or business records²³ exceptions to the hearsay rule. State cases were in accord.²⁴ In addition,

v. Taylor, 486 S.W.2d 239, 242 (Mo. 1972) (lab report of examination of burglary debris); *In re Nelson*, 83 Misc. 2d 1081, 1083-84, 374 N.Y.S.2d 982, 984-86 (Fam. Ct. 1975) ("ballistics" report); *State v. Kreck*, 86 Wash. 2d 112, 121, 542 P.2d 782, 788 (1975) (lab report of blood test).

15. *E.g.*, *Grover v. State*, 41 Md. App. 705, 710-11, 398 A.2d 528, 531 (1979); *Burleson v. State*, 585 S.W.2d 711, 712-13 (Tex. Crim. App. 1979). *But see Commonwealth v. McCloud*, 457 Pa. 310, 315-17, 322 A.2d 653, 657 (1974) (autopsy report excluded under state constitution).

16. *E.g.*, *United States v. Parker*, 491 F.2d 517, 520-21 (8th Cir. 1973) (Bureau of Narcotics and Dangerous Drugs laboratory), *cert. denied*, 416 U.S. 989 (1974); *United States v. Ware*, 247 F.2d 698, 699 (7th Cir. 1957) (Bureau of Narcotics laboratory); *Robertson v. Cox*, 320 F. Supp. 900 (W.D. Va. 1970) (medical examiner's office).

17. *E.g.*, *Virgin Islands v. St. Ange*, 458 F.2d 981, 982 (3d Cir. 1972) (hospital lab report identifying sperm on vaginal smear); *United States ex rel. Lurry v. Johnson*, 378 F. Supp. 818, 822 (E.D. Pa. 1974) (hospital record of rape victim examination); *Henson v. State*, 332 A.2d 773, 775 (Del. 1975) (hospital record of rape victim examination).

18. *See cases cited supra* note 10.

19. *E.g.*, *United States v. Franklin*, 747 F.2d 497, 498 (8th Cir. 1984) (chemists refreshed recollection prior to trial by reviewing reports prepared at the time cocaine tested). In this situation, however, the analyst's in-court testimony and not the laboratory report is the evidence. The report may be introduced in evidence only by the adverse party and then only for impeachment. *See* FED. R. EVID. 612.

20. *E.g.*, *United States v. Marshall*, 532 F.2d 1279, 1285-86 (9th Cir. 1976) (report identifying substance as cocaine admitted where chemist testified that he had analyzed the substance and correctly prepared the report but had no independent recollection of the tests). *See* FED. R. EVID. 803(5).

21. The admissibility of lab reports raises additional evidentiary issues. Because most laboratory reports in criminal cases are prepared by government laboratories, they qualify as self-authenticating documents and thus may be admitted without extrinsic evidence. *See* FED. R. EVID. 902; *United States v. Davis*, 14 M.J. 847, 848 n.2 (A.C.M.R. 1982) ("A laboratory report may also be admitted as an official record when it is accompanied by an authenticating certificate.").

The original writing ("best evidence") rule requires the production of the original document in order to prove the content of a writing. FED. R. EVID. 1002. An exception, however, is typically recognized for public records, under which certified copies of public records are admissible. FED. R. EVID. 1005. *See also People v. Brown*, 128 Misc. 2d 149, 152, 488 N.Y.S.2d 559, 563 (Co. Ct. 1985) ("Properly certified or authenticated copies of the test results are . . . admissible as copies of official records. . . .").

22. *E.g.*, *Kay v. United States*, 255 F.2d 476, 480-81 (4th Cir. 1958) (certificate of blood alcohol test), *cert. denied*, 358 U.S. 825 (1958). *See generally Imwinkelried, The Constitutionality of Introducing Evaluative Laboratory Reports Against Criminal Defendants*, 30 HASTINGS L.J. 621 (1979).

23. *E.g.*, *United States v. Fratini*, 501 F.2d 1234, 1235-36 (2d Cir. 1974) (lab report identifying substance as cocaine); *United States v. Parker*, 491 F.2d 517, 520-21 (8th Cir. 1973) (lab report identifying substance as heroin), *cert. denied*, 416 U.S. 989 (1974); *Virgin Islands v. St. Ange*, 458 F.2d 981, 982 (3d Cir. 1972) (hospital lab report identifying sperm on vaginal smear); *United States v. Ware*, 247 F.2d 698, 699 (7th Cir. 1957) (lab report identifying substance as heroin).

24. *E.g.*, *Henson v. State*, 332 A.2d 773, 775 (Del. 1975) (hospital record of rape victim examination admitted as a business record); *State v. Taylor*, 486 S.W.2d 239, 242 (Mo. 1972) (lab report of examination of burglary debris admitted as business record); *State v. Snider*, 168 Mont. 220, 229, 541 P.2d 1204, 1209 (1975) (lab report identifying

many courts had rejected confrontation challenges.²⁵ The advent of the Federal Rules and their adoption by numerous states,²⁶ however, has cast doubt on the earlier cases. For example, a leading case, *United States v. Oates*,²⁷ held a DEA chemist's report inadmissible under the Federal Rules.²⁸ Moreover, the confrontation issue remains clouded. As an American Bar Association study has noted, the constitutionality of admitting "certain scientific reports in criminal cases" is an issue left open by the Federal Rules.²⁹ The Supreme Court has never addressed the issue,³⁰ and the Court's recent confrontation cases do not point to a clear answer. The lower courts are divided.³¹

This Article examines the issues raised by the admissibility of prosecution laboratory reports in lieu of expert testimony. Part II discusses the problems that arise under the Federal Rules of Evidence. Part III considers the constitutional question.

substance as marijuana admitted as public record); *State v. Larochele*, 112 N.H. 392, 395, 297 A.2d 223, 225 (1972) (report of breathalyzer test admitted as public record); *In re Kevin G.*, 80 Misc. 2d 517, 519, 363 N.Y.S.2d 999, 1001 (Fam. Ct. 1975) (lab report identifying substance as heroin admitted as public and business records); *People v. Porter*, 46 A.D.2d 307, 311, 362 N.Y.S.2d 249, 255 (1974) (lab report of blood-alcohol test admitted as business record); *State v. Kreck*, 86 Wash. 2d 112, 114-16, 542 P.2d 782, 784-85 (1975) (lab report of blood examination admitted as business record).

But see State v. Russell, 114 N.H. 222, 224, 317 A.2d 781, 782 (1974) (lab report identifying substance as marijuana does not qualify as a business record).

25. *E.g.*, *Kay v. United States*, 255 F.2d 476, 480-81 (4th Cir. 1958) (certificate of blood alcohol test), *cert. denied*, 358 U.S. 825 (1958); *United States ex rel. Lurry v. Johnson*, 378 F. Supp. 818, 822 (E.D. Pa. 1974) (hospital record of rape victim examination); *Robertson v. Cox*, 320 F. Supp. 900, 900 (W.D. Va. 1970) (lab report identifying seminal fluid); *Henson v. State*, 332 A.2d 773, 775 (Del. 1975) (hospital record of rape victim examination); *Commonwealth v. Franks*, 359 Mass. 577, 580-81, 270 N.E.2d 837, 839-40 (1971) (hospital report identifying sperm); *Commonwealth v. Harvard*, 356 Mass. 452, 461-62, 253 N.E.2d 346, 351-52 (1969) (lab report identifying substance as marijuana); *State v. Larochele*, 112 N.H. 392, 397, 297 A.2d 223, 226 (1972) (report of breathalyzer test results); *In re Kevin G.*, 80 Misc. 2d 517, 521-24, 363 N.Y.S.2d 999, 1004-07 (Fam. Ct. 1975) (lab report identifying substance as heroin); *Robertson v. Commonwealth*, 211 Va. 62, 65, 175 S.E.2d 260, 262 (1970) (lab report identifying seminal fluid); *State v. Kreck*, 86 Wash. 2d 112, 121, 542 P.2d 782, 788 (1975) (lab report of blood test).

But see State v. Russell, 114 N.H. 222, 224-25, 317 A.2d 781, 782 (1974) (lab report identifying substance as marijuana excluded under federal and state constitution); *Commonwealth v. McCloud*, 457 Pa. 310, 315-17, 322 A.2d 653, 657 (1974) (autopsy report excluded under state constitution).

26. Thirty-three jurisdictions have adopted rules of evidence patterned after the Federal Rules. *See* 1 J. WEINSTEIN & M. BERGER, *WEINSTEIN'S EVIDENCE* T-1 (1986).

27. 560 F.2d 45 (2d Cir. 1977).

28. *Id.* at 84.

29. *Emerging Problems Under the Federal Rules of Evidence*, 1983 A.B.A. SEC. LIT. REP. 7.

30. In an early case, *Diaz v. United States*, 223 U.S. 442 (1912), the Court in dictum stated that an autopsy report "could not have been admitted without the consent of the accused . . . because the accused was entitled to meet the witnesses face to face." *Id.* at 450.

31. Courts finding a confrontation violation include: *Pickett v. Bowen*, 798 F.2d 1385, 1386-87 (11th Cir. 1986) (medical report of sex abuse victim examination); *United States v. McClintock*, 748 F.2d 1278, 1290-92 (9th Cir. 1984) (reports on the value of gems); *Stevens v. Bordenkircher*, 746 F.2d 342, 348 (6th Cir. 1984) (death certificate); *Stewart v. Cowan*, 528 F.2d 79, 85 (6th Cir. 1976) ("ballistics" report); *Moon v. State*, 300 Md. 354, 368-73, 478 A.2d 695, 702-05 (1984) (hospital report of blood alcohol test); *State v. Henderson*, 554 S.W.2d 117, 122 (Tenn. 1977) (lab report identifying substances as LSD and marijuana).

Courts rejecting a confrontation challenge include: *United States v. Victor*, 10 M.J. 69, 72 (C.M.A. 1980) (lab report identifying substance as marijuana); *Howard v. United States*, 473 A.2d 835, 838 (D.C. App. 1984) (lab report identifying substance as heroin); *Grover v. State*, 41 Md. App. 705, 710-11, 398 A.2d 528, 531 (1979) (autopsy report); *State v. Smith*, 312 N.C. 361, 381, 323 S.E.2d 316, 318 (1984) (affidavit of breath analysis test results); *Burleson v. State*, 585 S.W.2d 711, 712-13 (Tex. Crim. App. 1979) (autopsy report).

The courts have consistently excluded psychiatric reports on confrontation grounds. *See Kienlen v. United States*, 437 F.2d 843, 848-49 (10th Cir. 1971); *Phillips v. Neil*, 452 F.2d 337, 348 (6th Cir. 1971), *cert. denied*, 409 U.S. 884 (1972); *People v. Johnson*, 11 Ill. App. 3d 395, 401-02, 296 N.E.2d 763, 768 (1973); *Gregory v. State*, 40 Md. App. 297, 325, 391 A.2d 437, 454 (1978).

The principal focus of the Article is on reports prepared by police crime laboratories, the type of report most commonly encountered in criminal prosecutions.

No matter how the issue is framed, the reliability of the report is the central concern. The hearsay issue initially involves an inquiry into Congress' intent in enacting the public and business records exceptions to the hearsay rule. As applied to laboratory reports, however, this intent is unclear. Thus, traditional analysis, which focuses on the trustworthiness of the hearsay statement, must be considered. Similarly, the constitutional analysis turns on the reliability of these reports as well as on the right of face-to-face confrontation. This Article concludes that reliability concerns should preclude the admission of laboratory reports when offered by the prosecution but proposes a procedure in Part IV by which these reports may be admitted consistent with constitutional values.

II. FEDERAL RULES OF EVIDENCE

Federal Rule 803(8),³² which codifies the public records exception to the hearsay rule, has been the principal obstacle to the admissibility of laboratory reports in federal trials. The public records exception is supported by several rationales. First, because of "the assumption that a public official will perform his duty properly,"³³ public records are considered reliable. Second, "the unlikelihood that [the official] will remember details independently of the record"³⁴ makes reliance on the record a necessity in many cases.

Although rule 803(8) was intended to facilitate the use of public records, its application in criminal cases has spawned a number of problems. Initially, the classification of different kinds of public records can sometimes be troublesome. The rule recognizes three types of public records: (A) records relating to the activities of the office, (B) records involving matters observed pursuant to a duty, and (C) investigative reports.³⁵ The distinctions between these subdivisions are not precise³⁶ and thus there may be an "overlap."³⁷ Because the limitations on admissibility differ depending on the type of public record involved, it is sometimes critical to determine which subdivision of the rule applies.³⁸ Courts have considered both subdivision (B) and subdivision (C) when ruling on the admissibility of laboratory reports.

32. FED. R. EVID. 803(8) provides:

Records, reports, statements, or data compilations, in any form, of public offices or agencies, setting forth (A) the activities of the office or agency, or (B) matters observed pursuant to duty imposed by law as to which matters there was a duty to report, excluding, however, in criminal cases matters observed by police officers and other law enforcement personnel, or (C) in civil actions and proceedings and against the Government in criminal cases, factual findings resulting from an investigation made pursuant to authority granted by law, unless the sources of information or other circumstances indicate lack of trustworthiness.

33. FED. R. EVID. 803(8) advisory committee note.

34. *Id.*

35. *See supra* note 32.

36. *See* 4 D. LOUISELL & C. MUELLER, FEDERAL EVIDENCE 724 (1980) ("[T]he three clauses simply do not create watertight compartments.").

37. *United States v. Oates*, 560 F.2d 45, 67 (2d Cir. 1977) ("[T]here may be no sharp demarcation between the records covered by exception 8(B) and those referenced in exception 8(C), . . . and indeed there may in some cases be actual overlap. . . .").

38. For example, classifying a record as a subdivision (A) record bypasses the criminal trial limitations codified in subdivisions (B) and (C). *See* M. GRAHAM, HANDBOOK OF FEDERAL EVIDENCE 877 n.16 (2d ed. 1986) ("Instead of attempting to place such a limitation upon Rule 803(8)(B), it is suggested that records of routine activities, not related to

A. Investigative Reports

Rule 803(8)(C) encompasses public records containing "factual findings resulting from an investigation made pursuant to authority granted by law."³⁹ The federal drafters referred to such records as "evaluative reports."⁴⁰ In a leading case, *United States v. Oates*,⁴¹ the Second Circuit stated that it "seems indisputable to us that the chemist's official report and worksheet [identifying a substance as heroin] . . . can be characterized as [investigative] reports. . . ."⁴² As the rule explicitly provides, investigative reports are not admissible in criminal cases when offered *against the accused*; they are, however, admissible if offered against the prosecution.⁴³ According to the federal drafters, this result is required "in view of the almost certain collision with confrontation rights which would result from their use against the accused in a criminal case."⁴⁴

If accepted, the *Oates* position would be dispositive: Congress presumably agreed with the confrontation analysis offered by the drafters, and laboratory reports, as investigative reports, are therefore inadmissible. *Oates*, however, has been both distinguished and criticized. Distinguishing *Oates*, the North Dakota Supreme Court in *State v. Manke*⁴⁵ held a laboratory report admissible under its version of rule 803(8)(C) where the analyst was present in court and subject to cross-examination.⁴⁶ In such a case, the court reasoned, confrontation rights are protected, and thus the rationale for the limitation in criminal cases is inapplicable.⁴⁷ Since the chemist in *Oates* was not present at trial,⁴⁸ *Manke* is not necessarily inconsistent. More importantly, the court's analysis is sound; the opportunity to cross-examine the expert at trial eliminates the constitutional issue.

A far more serious challenge to *Oates* is based on a different reading of the legislative history. In discussing *Oates*, Judge Weinstein and Professor Berger have written:

No legislative history indicates a Congressional intention to bar the admissibility of those records which prior to the enactment of the Federal Rules had been admitted pursuant to the business records exception. The Advisory Committee's intention was not to restrict admissibility. . . .⁴⁹

a specific investigation, like the recording of serial numbers, are properly included with Rule 803(A) as activities of the office." (citations omitted)).

39. FED. R. EVID. 803(8)(C).

40. FED. R. EVID. 803(8) advisory committee note.

41. 560 F.2d 45 (2d Cir. 1977).

42. *Id.* at 67. See also *Bradford Trust Co. v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 805 F.2d 49, 54-55 (2d Cir. 1986) (fingerprint and handwriting reports admissible under rule 803(8)(C) in a civil case).

43. See generally Annotation, *Admissibility Under Rule 803(8)(C) of Federal Rules of Evidence, of "Factual Findings Resulting from Investigations Made Pursuant to Authority Granted by Law"*, 47 A.L.R. FED. 321 (1980).

44. FED. R. EVID. 803(8) advisory committee note.

45. 328 N.W.2d 799 (N.D. 1982) (lab analyses of pillow and bed sheets in sex abuse prosecution).

46. *Id.* at 802-05.

47. *Id.*

48. *United States v. Oates*, 560 F.2d 45, 64-65 (2d Cir. 1977).

49. 4 J. WEINSTEIN & M. BERGER, *WEINSTEIN'S EVIDENCE* 803-264 (1987).

As noted earlier, the prior federal cases generally had admitted laboratory reports.⁵⁰ Although the court in *Oates* believed that the prior cases were not dispositive,⁵¹ the issue remains debatable because laboratory reports were never mentioned in the legislative history.⁵²

The conflict between *Oates* and the prior cases, however, may involve more than an issue of congressional intent. The *Oates* court obviously viewed the underlying chemical procedure as an "evaluative" process. In contrast, one of the leading pre-Federal Rules cases viewed a blood alcohol test as involving "an objective fact, not a mere expression of opinion."⁵³ This latter characterization suggests that rule 803(8)(C) may not apply; the rule governs only investigative or evaluative reports, not the simple recording of objective facts. Hence, an appreciation of the scientific procedure is as important as an understanding of the legal issues. Indeed, as will be developed later in this Article, the scientific issue is the determinative issue.

B. Matters Observed Pursuant to Duty: The Police Records Exclusion

Courts have also considered the admissibility of laboratory reports under rule 803(8)(B) - reports of matters observed and recorded pursuant to a legal duty. For example, the court in *Oates* concluded that laboratory reports "might also be within the ambit" of this provision,⁵⁴ a ruling that required the court to examine rule 803(8)(B)'s explicit exclusion of police records: "[I]n criminal cases matters observed by police officers and other law enforcement personnel" are inadmissible.⁵⁵

The police records exclusion did not appear in the rule as promulgated by the Supreme Court.⁵⁶ It was added by amendment from the floor of the House of Representatives.⁵⁷ Several aspects of the legislative history are noteworthy. First, confrontation concerns played a prominent role in the floor debates. The sponsor of

50. See cases cited *supra* notes 22-23.

51. *United States v. Oates*, 560 F.2d 45, 74 n.31 (2d Cir. 1977) (Prior cases were decided before enactment of Federal Rules and "before the recent wave of cases broadening the interpretation of the confrontation clause. . .").

52. See Alexander, *The Hearsay Exception for Public Records in Federal Criminal Trials*, 47 ALBANY L. REV. 699, 720 (1983) ("The problem with [the *Oates*] interpretation of rule 803(C) . . . is that prior to adoption of the Federal Rule, federal courts approved the admissibility of certain types of laboratory reports under the business records exception." (footnote omitted)).

53. *Kay v. United States*, 255 F.2d 476, 481 (4th Cir. 1958), *cert. denied*, 358 U.S. 825 (1958).

54. *United States v. Oates*, 560 F.2d 45, 65 (2d Cir. 1977).

55. See generally Annotation, *Construction and Application of Provision of Rule 803(8)(B), Federal Rules of Evidence, Excluding from Exception to Hearsay Rule in Criminal Cases Matters Observed by Law Enforcement Officers*, 37 A.L.R. FED. 831 (1978).

56. See 56 F.R.D. 183, 301 (1973).

57. One problem caused by the amendments involves the admissibility of police records offered by the defense. On its face, rule 803(8)(B) would appear to exclude all police records, whether offered by the prosecution or the defense. In this respect, subdivision (B) differs from subdivision (C), which expressly excludes investigative reports in criminal cases only when offered by the prosecution. In *United States v. Smith*, 521 F.2d 957 (D.C. Cir. 1975), the D.C. Circuit addressed this issue: "[T]he apparently absolute language of 803(8)(B) had its origin in congressional concern that use of reports against defendants would be unfair." *Id.* at 969 n.24. Accordingly, "803(8)(B) should be read, in accordance with the obvious intent of Congress and in harmony with 803(8)(C) to authorize the admission of the reports of police officers and other law enforcement personnel at the request of the defendant in a criminal case." *Id.* at 968 n.24.

See also *OHIO EVID. R. 803(8)(B)* (explicitly exempting reports "offered by the defendant" from the police records exclusion); *State v. Theriault*, 485 A.2d 986, 996-97 (Me. 1984) (police lab report offered by defendant admissible as business record).

the amendment, Representative Dennis, stated: "I think in a criminal case you ought to have to call the policeman on the beat and give the defendant the chance to cross examine him, rather than just reading the report into evidence. That is the purpose of this amendment."⁵⁸ Representative Holtzman believed the amendment "reaffirms the right of cross examination," a right that "guarantees due process of law and a fair trial."⁵⁹ Similarly, Representative Johnson commented that without the amendment, the Supreme Court would declare the rule "unconstitutional."⁶⁰ Second, the legislative history also indicates concern about the reliability of police reports. For example, the Senate Committee Report contains the following comment on the amendment:

Ostensibly, the reason for this exclusion is that observations by police officers at the scene of the crime or the apprehension of the defendant are not as reliable as observations by public officials in other cases because of the adversarial nature of the confrontation between the police and the defendant in criminal cases.⁶¹

In other words, the police officers' role in the "often competitive enterprise of ferreting out crime"⁶² undercuts the reliability of their reports. This is a somewhat different concern than the one raised in the House debates, which seemed to emphasize the right to face-to-face confrontation and cross-examination, notwithstanding the reliability of a report.⁶³

The congressional concerns about confrontation and reliability, however, focused on one particular type of police report—a report by a "police officer," an "investigator," or as expressed by the amendment's sponsor, a "policeman on the beat."⁶⁴ The example used in the House debates involved an officer who "made a report that he saw Mr. X with a gun on such and such an occasion. . . ."⁶⁵ This emphasis on crime scene investigations that entail adversarial confrontations with the accused has led to divergent interpretations of Congress' intent in enacting the police records exclusion.

58. 120 CONG. REC. 2387 (1974).

59. *Id.* at 2388.

60. *Id.*

61. S. REP. NO. 1277, 93d Cong., 2d Sess. 17, *reprinted in* 1974 U.S. CODE CONG. & ADMIN. NEWS 7051, 7064.

62. The quoted phrase comes from a Supreme Court decision contrasting the function of a neutral and detached magistrate with that of a policeman in determining probable cause. *Johnson v. United States*, 333 U.S. 10, 14 (1948).

63. The reliability of police reports did not seem to be a concern of Representative Dennis, the sponsor of the amendment. Representative Smith argued against the amendment because he believed it made police officers "second-class citizens and persons less trustworthy than social workers or garbage collectors." 120 CONG. REC. 2388 (1974). Representative Dennis disagreed:

I would like to say on that point that of course is not my idea. I think the point is that we are dealing here with criminal cases, and in a criminal case the defendant should be confronted with the accuser to give him the chance to cross-examine. This is not any reflection on the police officer

Id.

64. 120 CONG. REC. 2387 (1974).

65. *Id.* at 2388 (remarks of Representative Brasco).

1. Routine Records

In *Oates* the Second Circuit adopted a literal interpretation of the police records exclusion, under which *all* police reports are inadmissible.⁶⁶ According to the court, prosecution laboratory reports fell within the exclusion.⁶⁷ In contrast, other courts have adopted a more flexible approach, holding that the exclusion does not apply to all police records. For example, the Ninth Circuit has held that "Congress did not intend to exclude [police] records of routine, nonadversarial matters. . . ."⁶⁸ The court focused on the Senate Committee Report's language concerning the "adversarial nature of the confrontation" between the police and the defendant "at the scene of the crime or the apprehension of the defendant."⁶⁹ One court accepting this view has stated:

In the case of documents recording routine, objective observations, made as part of the everyday function of the preparing official or agency, the factors likely to cloud the perception of an official engaged in the more traditional law enforcement functions of observation and investigation of crime are simply not present. Due to the lack of any motivation on the part of the recording official to do other than mechanically register an unambiguous factual matter . . . , such records are, like other public documents, inherently reliable.⁷⁰

Under this approach courts have admitted police reports containing the routine recording of license plate⁷¹ and serial numbers,⁷² chain of custody documents,⁷³ warrants of deportation,⁷⁴ a marshall's return on service of an injunction,⁷⁵ and breathalyzer calibration certificates.⁷⁶

If laboratory analyses are considered routine and objective, they are admissible under this approach.⁷⁷ According to one court, a chemist "does no more than seek to establish an intrinsically neutral fact. . . ."⁷⁸ Another has stated that reports of chemical analyses "contain[] objective facts rather than expressions of opinion."⁷⁹ Thus, one commentator has written:

66. *United States v. Oates*, 560 F.2d 45, 72 (2d Cir. 1977).

67. *Id.* at 78-80.

68. *United States v. Orozco*, 590 F.2d 789, 793 (9th Cir.), *cert. denied*, 442 U.S. 920 (1979).

69. *Id.* (quoting S. REP. NO. 1277, 93d Cong., 2d Sess. 17).

70. *United States v. Quezada*, 754 F.2d 1190, 1194 (5th Cir. 1985) (citations omitted).

71. *United States v. Puente*, 826 F.2d 1415, 1418 (5th Cir. 1987) (customs officer's recording of license plate numbers admissible); *United States v. Orozco*, 590 F.2d 789, 793-94 (9th Cir.) (customs officer's recording of license plate numbers admissible), *cert. denied*, 442 U.S. 920 (1979).

72. *United States v. Grady*, 544 F.2d 598, 604 (2d Cir. 1976) (routine recording of serial numbers of firearms unrelated to commission of crime admissible).

73. *United States v. Coleman*, 631 F.2d 908, 910-12 (D.C. Cir. 1980).

74. *United States v. Quezada*, 754 F.2d 1190, 1194 (5th Cir. 1985); *United States v. Hernandez-Rojas*, 617 F.2d 533, 535 (9th Cir.), *cert. denied*, 449 U.S. 864 (1980).

75. *United States v. Union Nacional de Trabajadores*, 576 F.2d 388, 391 (1st Cir. 1978).

76. *United States v. Wilmer*, 799 F.2d 495, 501 (9th Cir. 1986), *cert. denied*, 107 S. Ct. 1626 (1987).

See also *United States v. Gilbert*, 774 F.2d 962, 964-65 (9th Cir. 1985) (notations on fingerprint card admissible as routine, nonadversarial record).

77. *E.g.*, *State v. Smith*, 312 N.C. 361, 381, 323 S.E.2d 316, 327 (1984) (rejecting *Oates* and admitting report of breath analysis tests). *See also* *State v. Smith*, 66 Or. App. 703, 707, 675 P.2d 510, 512 (1984) (distinguishing *Oates* and admitting certificate of breathalyzer inspections).

78. *United States v. Evans*, 21 C.M.A. 579, 582, 45 C.M.R. 353, 356 (1972) (LSD analysis).

79. *Howard v. United States*, 473 A.2d 835, 839 (D.C. App. 1984). *See also* *Kay v. United States*, 255 F.2d 476,

[A] routine report which merely identifies a substance or describes its objective characteristics, such as a report which states that a specimen is cocaine, or that a vaginal swab contains seminal fluid, or that a blood sample contains .15% alcohol, should qualify for admission under [rule 803(8)] if the tests upon which such a report is based are ministerial in nature, requiring the analyst to do little more than record the results of a mathematical computation or the reading of a dial.⁸⁰

The characterization of laboratory procedures as routine and objective is not without problems. As noted by one court, a laboratory report identifying a substance as marijuana is "not concerned with routine observations of acts, conditions or events observed or recorded by presumably neutral public officials."⁸¹ Rather, it involves "the *examination and evaluation* of crucial evidence against a defendant made after the commencement of a criminal prosecution and for use in that prosecution."⁸² Here again, the legal issue turns on an understanding of the scientific procedures involved—whether these procedures are "routine and objective" or "evaluative."

2. Other Law Enforcement Personnel

A related issue involves the meaning of the term "other law enforcement personnel." The police records exclusion applies only to reports prepared by "police officers and other law enforcement personnel."⁸³ In *Oates* the court held that chemists employed by the U.S. Customs Service were "law enforcement personnel."⁸⁴ According to the court, "any officer or employee of a governmental agency which has law enforcement responsibilities" is covered by that term, and "[c]hemists at the laboratory are, without question, important participants in the prosecutorial effort."⁸⁵

Because the legislative history provides no elaboration of the term "other law enforcement personnel," room for disagreement with the *Oates*' interpretation remains.⁸⁶ Indeed, the *Oates* court labelled the issue a "difficult question."⁸⁷ As previously noted, in adopting the police records exclusion, Congress focused on the

481 (4th Cir.) (Certificate of blood alcohol test results involves "an objective fact, not a mere expression of opinion. . . ."), *cert. denied*, 358 U.S. 825 (1958).

80. Alexander, *supra* note 52, at 727-28 (footnote omitted). See also S. SALTZBURG & K. REDDEN, FEDERAL RULES OF EVIDENCE MANUAL 837 (4th ed. 1986) ("But it is by no means clear that reports like those offered in [*Oates*], laboratory reports conducted according to scientific principles utilized in experiments conducted day after day the same way in controlled circumstances, were meant to be included under the heading 'Police Reports.'").

81. *State v. Matulewicz*, 198 N.J. Super. 474, 477, 487 A.2d 772, 773 (App. Div. 1985) (emphasis added).

82. *Id.* at 477, 487 A.2d at 773-74 (emphasis added).

83. FED. R. EVID. 803(8).

84. *United States v. Oates*, 560 F.2d 45, 68 (2d Cir. 1977).

85. *Id.*

86. Other courts have interpreted this phrase. See *United States v. Puente*, 826 F.2d 1415, 1417 (5th Cir. 1987) ("Customs Service officials are 'law enforcement personnel' within the meaning of Rule 803(8)(B)."); *United States v. Bohrer*, 807 F.2d 159, 162 (10th Cir. 1986) ("IRS agents appear to be law enforcement personnel. . . ."); *United States v. Orozco*, 590 F.2d 789, 793 (9th Cir.) (customs inspector at border qualified as "law enforcement personnel" under rule 803(8)(B)), *cert. denied*, 442 U.S. 920 (1979); *United States v. Hansen*, 583 F.2d 325, 333 (7th Cir.) (city building inspectors not "law enforcement personnel"), *cert. denied*, 439 U.S. 912 (1978); *United States v. Ruffin*, 575 F.2d 346, 356 (2d Cir. 1978) (IRS personnel who gather data and information routinely used in criminal prosecutions perform a law enforcement function).

87. *United States v. Oates*, 560 F.2d 45, 67 (2d Cir. 1977).

"policeman on the beat,"⁸⁸ and it may be that laboratory analysts should be treated differently. For example, one court has commented that a chemist does "not have an interest in the outcome of trials."⁸⁹ Many criminalists share this view: "The forensic scientist does not serve as an advocate for the plaintiff, prosecution, or defendant; he serves as an advocate for an opinion or conclusion based on objective physical evidence."⁹⁰ Accordingly, one commentator has concluded that laboratory analysts should not be considered "other law enforcement personnel":

Congress was concerned with confrontation rights and the adversarial positions of the defendant and the policeman "on the scene." This relation does not exist with a chemist or someone with similar duties. He does not face the defendant and is not on the streets. . . . The use of the phrase "other law enforcement personnel" should be restricted to actual Customs agents, FBI agents, and Treasury officials with police powers, such as the Secret Service. The mere fact that an individual works for a government agency that also has police personnel should not be a bar to his report coming into evidence, as the trustworthiness of his analytical tests (as in the case of the chemist) is simply not affected by the arrest confrontations that take place outside an office or a lab.⁹¹

There may be several problems with this view. First, many laboratory examiners are law enforcement officers and thus have "police powers."⁹² Second, the modern crime laboratory is an integral part of the law enforcement establishment.⁹³ "Of the approximately 300 crime laboratories in the United States, over 80 percent are in police departments."⁹⁴ Moreover, most laboratories only examine evidence submitted by the police or prosecution. A survey of 257 crime laboratories revealed that "[f]ifty-seven percent . . . would *only* examine evidence submitted by law enforcement officials."⁹⁵ For example, the services of the FBI laboratory are available without charge to all duly constituted state, county, and municipal law enforcement agencies in the United States.⁹⁶ Consequently, the neutrality of the analyst can be questioned.⁹⁷ A few crime laboratories, however, do analyze items

88. 120 CONG. REC. 2387 (1974).

89. *Howard v. United States*, 473 A.2d 835, 839 (D.C. App. 1984).

90. See Stone, *Capabilities of Modern Forensic Laboratories*, 25 WM. & MARY L. REV. 659, 674 (1984).

91. Grant, *The Trustworthiness Standard for Public Records and Reports Hearsay Exception*, 12 WEST. ST. U.L. REV. 53, 78 (1984).

92. See NATIONAL ADVISORY COMM'N ON CRIMINAL JUSTICE STANDARDS AND GOALS, POLICE 303 (1974) ("There are . . . many police laboratories that have been staffed almost exclusively with sworn personnel.").

93. See PRESIDENT'S COMM'N ON LAW ENFORCEMENT AND ADMIN. OF JUSTICE, *THE CHALLENGE OF CRIME IN A FREE SOCIETY* 255 (1967) ("The crime laboratory has been the oldest and strongest link between science and technology and criminal justice.").

94. *Symposium on Science and the Rules of Legal Procedure*, 101 F.R.D. 599, 633 (1984) (remarks of Professor Joseph Peterson). See also Peterson, Mihajlovic & Bedrosian, *The Capabilities, Uses, and Effects of the Nation's Criminalistics Laboratories*, 30 J. FORENSIC SCI. 10, 11 (1985) ("Seventy-nine percent of all laboratories responding to our survey are located within law enforcement/public safety agencies.").

95. *Id.* at 13 (emphasis in original).

96. See FEDERAL BUREAU OF INVESTIGATION, *HANDBOOK OF FORENSIC SCIENCE* 7 (Rev. ed. 1984). See also Williams, *The FBI Laboratory—Its Availability and Use by Prosecutors from Investigation to Trial*, 28 U. KAN. CITY L. REV. 95, 99 (1960).

97. "Given what is known about reference group phenomena, the need that people have for social support of attitudes and conduct, and the process of socialization in occupational settings, it strains credulity to believe that these experts do not identify with prosecutors." M. SAKS & R. VAN DUZEND, *THE USE OF SCIENTIFIC EVIDENCE IN LITIGATION* 53 (1983) (footnotes omitted). See also *United States v. Oates*, 560 F.2d 45, 68 (2d Cir. 1977) ("Also of some interest perhaps is a remark made by [the expert] which indicates that the Customs chemists do not mentally disassociate themselves from those who undoubtedly are law enforcement personnel.").

submitted by the defense,⁹⁸ and these may have a more plausible claim to neutrality. For example, in *State v. Mankel*,⁹⁹ the court in admitting a laboratory report observed: "There is nothing to indicate the laboratory report was made with any improper motive. Section 19-01-10 . . . places the State Laboratories Department at the disposal of the prosecution and the defense counsel; hence it is independent of both parties."¹⁰⁰

Nonetheless, framing the issue in this way obscures the critical concern. While the analyst may not be absolutely neutral, he is further removed from the scene than the policeman on the beat, and thus the pressures to slant evidence are far less in most cases. Even if this observation is correct, however, it tells us nothing about the analyst's qualifications, the validity of his procedures, or the accuracy of his conclusions.¹⁰¹ Bias may be a problem, but it is not the main problem.

C. Business Records Exception

Prosecution laboratory reports may also be admissible as business records.¹⁰² Prior to the adoption of the Federal Rules, the admissibility of these reports as business records raised two issues: (1) whether the results reported were properly considered inadmissible opinions, as opposed to facts, and (2) whether the reports were excludable because they were prepared in anticipation of prosecution.¹⁰³ Federal Rule 803(6),¹⁰⁴ which governs the business records exception, settles the first issue by expressly providing for the admissibility of "opinions" and "diagnoses."

98. E.g., N.D. CENT. CODE § 19-01-10 (Supp. 1987); VA. CODE ANN. § 2.1-433 (1987); WIS. STAT. ANN. § 165.79(1) (West Supp. 1987). See generally Note, *Exploring the Limits of Brady v. Maryland: Criminal Discovery as a Due Process Right in Access to Police Investigations and State Crime Laboratories*, 15 U. RICH. L. REV. 189, 208-10 (1980).

99. 328 N.W.2d 799 (N.D. 1982).

100. *Id.* at 803. Even in this context, the neutrality of the analyst has been questioned:

Control of the forensic science laboratory in Virginia was transferred about 11 years ago from the Department of Public Safety, where it functioned as a police laboratory, to the Department of General Services, where it operates as part of the consolidated laboratory system of the state. I assure you that this was a change in name only and not in attitude of the personnel. Prosecuting attorneys and other members of the law enforcement community continue to be the main consumers of forensic services, and the forensic scientists still are in spirit, if no longer in law, members of that police community. A Virginia statute allows defense attorneys to use these services, but only four requests have been submitted in over a decade. As nearly as I have been able to determine, this disappointing response is due to mistrust by defense attorneys of the laboratory personnel, whom they consider to be employees of a police laboratory.

Symposium on Science and the Rules of Legal Procedure, 101 F.R.D. 599, 646 (1984) (remarks of Professor Andre Moenssens).

101. Even if laboratory reports are generally admissible as public records, the final clause of rule 803(8) may still bar admissibility. That clause recognizes the trial court's authority to exclude public records if "the sources of information or other circumstances indicate lack of trustworthiness." FED. R. EVID. 803(8). Application of this clause would directly raise the issue of the reliability of laboratory reports, at least on a case-by-case basis. It is not entirely clear, however, that the trustworthiness clause applies to records admitted under subdivision (B) of the rule. See 4 D. LOUISELL & C. MUELLER, FEDERAL EVIDENCE § 456 (1980).

102. See cases cited *supra* note 23.

103. See Imwinkelried, *The Constitutionality of Introducing Evaluative Laboratory Reports Against Criminal Defendants*, 30 HASTINGS L.J. 621, 626-29 (1979).

104. FED. R. EVID. 803(6) provides:

A memorandum, report, record, or data compilation, in any form, of acts, events, conditions, opinions, or diagnoses, made at or near the time by, or from information transmitted by, a person with knowledge, if kept in the course of a regularly conducted business activity, and if it was the regular practice of that business activity to make the memorandum, report, record, or data compilation, all as shown by the testimony of the custodian or other qualified witness, unless the source of information or the method or circumstances of preparation

1. *Litigation Records*

The second issue, the admissibility of records prepared in anticipation of litigation, however, remains problematic. Rule 803(6) contains a trustworthiness clause, under which business records are excludable if "the source of information or the method or circumstances of preparation indicate lack of trustworthiness."¹⁰⁵ One factor affecting reliability is the motivation of the person who prepares the report—whether the record was "prepared with an eye toward litigation."¹⁰⁶ The exclusion of "litigation records" has long been applied to police reports. For example, in *United States v. Ware*,¹⁰⁷ a pre-Federal Rules case, the Seventh Circuit wrote:

[E]ven if memoranda . . . are regularly prepared by law enforcement officers, they lack the necessary earmarks of reliability and trustworthiness. Their source and the nature and manner of their compilation unavoidably dictate that they are inadmissible under [the Federal Business Records Act]. They are also subject to objection that such utility as they possess relates primarily to prosecution of suspected law breakers, and only incidentally to the systematic conduct of the police business.¹⁰⁸

Nevertheless, the courts applying the litigation records exclusion generally have not extended it to laboratory reports.¹⁰⁹ For example, one court has stated: "We are not persuaded that a chemical examiner's report is made principally for the purpose of prosecution."¹¹⁰ This view, however, has not gone unchallenged. A different court has written that laboratory reports "cannot be said to have been prepared for any reason other than their potential litigation value."¹¹¹ In this context, the "litigation records" rule is comparable to the police records exclusion of rule 803(8): it raises the same underlying issue—whether the law enforcement function of a crime laboratory undercuts the reliability of its reports. Here again, posing the reliability issue in this way ignores far more significant aspects of the problem, such as the expert's qualifications and the validity of his procedures.

2. *Relationship with Public Records Exception*

In addition to the reliability issue, the business records exception raises another concern—whether this exception may be used in lieu of the public records

indicate lack of trustworthiness. The term "business" as used in this paragraph includes business, institution, association, profession, occupation, and calling of every kind, whether or not conducted for profit.

105. *Id.*

106. *United States v. Smith*, 521 F.2d 957, 966 (D.C. Cir. 1975). See also *United States v. Bohrer*, 807 F.2d 159, 162-63 (10th Cir. 1986) (IRS contact card prepared for litigation).

As *Smith* notes, the "litigation records" exclusion is derived from *Palmer v. Hoffman*, 318 U.S. 109 (1943). The advisory committee indicated that the trustworthiness clause was intended to codify *Palmer*. Fed. R. Evid. 803(6) advisory committee note.

107. 247 F.2d 698 (7th Cir. 1957).

108. *Id.* at 700. Accord *United States v. Smith*, 521 F.2d 957, 966-67 (D.C. Cir. 1975); *United States v. Brown*, 451 F.2d 1231, 1233-34 (5th Cir. 1971); *Sanchez v. United States*, 293 F.2d 260, 269 (8th Cir. 1961).

109. *E.g.*, *United States v. Frattini*, 501 F.2d 1234, 1235-36 (2d Cir. 1974); *United States v. Ware*, 247 F.2d 698, 699 (7th Cir. 1957); *In re Nelson*, 83 Misc. 2d 1081, 1083-84, 374 N.Y.S.2d 982, 984-86 (Fam. Ct. 1975).

110. *United States v. Evans*, 21 C.M.A. 579, 582, 45 C.M.R. 353, 356 (1972). See also *United States v. Strangstalien*, 7 M.J. 225, 228 (C.M.A. 1979).

111. *State v. Henderson*, 554 S.W.2d 117, 120 (Tenn. 1977).

exception.¹¹² Several courts have held that documents excludable under the public records exception are not admissible under any other hearsay exception. For example, in *Oates* the prosecution argued that the chemist's report was admissible as a business record.¹¹³ Although the Second Circuit recognized that as a general rule hearsay statements failing to satisfy the requirements of one exception may nonetheless be admissible under another exception,¹¹⁴ it found that Congress' "clear legislative intent" in excluding police and investigative reports in rule 803(8) precluded their admission under any other exception.¹¹⁵

Other courts have disagreed with *Oates* and have held that Congress intended to exclude these reports only when offered in lieu of the testimony of the declarant. According to these courts: "The accompanying testimony of the author minimizes the danger of unreliability by giving the trier of fact the opportunity to weigh his credibility and consider the circumstances surrounding preparation of the report."¹¹⁶ Under this view, if a laboratory report qualifies as a business record and the declarant also testifies, the report is admissible. For example, in *United States v. Coleman*,¹¹⁷ the District of Columbia Circuit upheld the admission of DEA chemical analysis forms where the examining chemist testified about the controlled substance. The court, though, reversed, without reaching the merits, as to those counts where a supervising chemist testified in place of the examining chemist.¹¹⁸ In this situation, the presence of the analyst at trial eliminates any serious hearsay or confrontation objection because the reliability of the laboratory results can be tested by cross-examination.

3. Nongovernmental Records

In addition, laboratory reports prepared by nongovernmental agencies, such as private hospital records, may fall within the business records exception.¹¹⁹ In this situation many of the issues discussed above do not arise. There is neither an overlap with the public records exception, nor are these records necessarily prepared with an eye toward litigation. Nevertheless, the reliability of the report remains an issue. The

112. See generally 4 D. LOUISELL & C. MUELLER, FEDERAL EVIDENCE §§ 452, 456 (1980); 4 J. WEINSTEIN & M. BERGER, WEINSTEIN'S EVIDENCE ¶ 803(6)[07] (1987); Annotation, *Admissibility Over Hearsay Objection of Police Observations and Investigative Findings Offered by Government in Criminal Prosecution Excluded from Public Records Exception to Hearsay Rule Under Rule 803(8)(B) or (C)*, *Federal Rules of Evidence*, 56 A.L.R. FED. 168 (1982).

113. *United States v. Oates*, 560 F.2d 45, 66 (2d Cir. 1977).

114. *Id.*

115. *Id.* at 68, 72, 77. Accord *United States v. Pinto-Mejia*, 720 F.2d 248, 257-58 (2d Cir. 1983) (certificate of foreign government); *United States v. Sims*, 617 F.2d 1371, 1377-78 (9th Cir. 1980) (FBI report); *United States v. Cain*, 615 F.2d 380, 382 (5th Cir. 1980) (prison escape report); *United States v. Ruffin*, 575 F.2d 346, 355-56 (2d Cir. 1978) (IRS computer printouts).

116. *United States v. King*, 613 F.2d 670, 673 (7th Cir. 1980) (Social Security forms admitted as business records where the preparers testified). Accord *United States v. Picciandra*, 788 F.2d 39, 44 (1st Cir. 1986) (recorded recollections of DEA agent who testified at trial admissible under Rule 803(5)), *cert. denied*, 107 S. Ct. 166 (1986); *United States v. Sawyer*, 607 F.2d 1190, 1193 (7th Cir. 1979) (recorded recollections of IRS agent who testified at trial admissible under Rule 803(5)), *cert. denied*, 445 U.S. 943 (1980). See also *Abdel v. United States*, 670 F.2d 73, 75 n.3 (7th Cir. 1982).

In *United States v. Yakobov*, 712 F.2d 20, 25-27 (2d Cir. 1983), the Second Circuit ruled *Oates* inapplicable to records admissible under rule 803(10), absent a public record.

117. 631 F.2d 908 (D.C. Cir. 1980).

118. *Id.* at 914-15.

119. See cases cited *supra* note 17.

trustworthiness clause of rule 803(6) covers more than litigation records; the "method or circumstances of preparation"¹²⁰ would encompass the scientific procedures upon which the laboratory report is based. The qualifications of the analyst, his methods, and findings all raise trustworthiness issues.

D. Summary

The admissibility of laboratory reports under the Federal Rules remains uncertain, principally because the issue is one of congressional intent and that intent as it relates to this type of report is difficult to discern. On the one hand, given the prior federal cases, which generally admitted such reports, and the legislative focus on "crime-scene" reports, it can be argued that laboratory reports should be admitted. On the other hand, those cases were decided "before the recent wave of cases broadening the interpretation of the confrontation clause,"¹²¹ and Congress clearly was concerned with confrontation values when it added the police records exclusion to rule 803(8)(B).¹²² Moreover, Congress may have assumed that laboratory reports were inadmissible investigative reports under rule 803(8)(C).

Given this uncertainty, a more fruitful analysis would focus directly on the reliability of laboratory examinations and how their results are reported. Such an analysis is the key to the hearsay rule. Attempting to determine whether laboratory analysts are law enforcement personnel or neutral scientists, or whether laboratory reports are litigation records, obscures this central issue. If laboratory procedures present serious trustworthiness issues, those issues apply to reports prepared by private as well as public laboratories.¹²³ Moreover, the reliability issue is an essential aspect of a confrontation analysis and thus is considered in the next section, which examines the sixth amendment requirements.

III. RIGHT OF CONFRONTATION

Even if laboratory reports are admissible under a hearsay exception,¹²⁴ the Confrontation Clause¹²⁵ may require exclusion. A hearsay declarant is, in effect, a "witness against" the accused. Thus, a literal interpretation of the Confrontation Clause would preclude the prosecution from introducing any hearsay statement,

120. FED. R. EVID. 803(6).

121. *United States v. Oates*, 560 F.2d 45, 74 n.31 (2d Cir. 1977).

122. See *supra* notes 58-60 and accompanying text.

123. See S. SALTZBURG & K. REDDEN, *supra* note 80, at 837 ("If a private laboratory's report would have been admitted, it is not clear why the Government's laboratory report [in *Oates*] should not have been admitted.')

124. For example, the Military Rules of Evidence explicitly provide for the admissibility of "forensic laboratory reports." MIL. R. EVID. 803(6) (business records); MIL. R. EVID. 803(8) (public records).

125. The sixth amendment provides that "[i]n all criminal prosecutions, the accused shall enjoy the right . . . to be confronted with the witnesses against him." U.S. CONST. amend. VI. In *Pointer v. Texas*, 380 U.S. 400 (1965), the Court held the right of confrontation applicable to state trials.

For discussions of the relationship between the hearsay rule and the Confrontation Clause, see 4 D. LOUISELL & C. MUELLER, *FEDERAL EVIDENCE* § 418 (1980); 4 J. WEINSTEIN & M. BERGER, *WEINSTEIN'S EVIDENCE* ¶ 800[04] (1987); Jonakait, *Restoring the Confrontation Clause to the Sixth Amendment*, 35 UCLA L. REV. 557 (1988); Lilly, *Notes on the Confrontation Clause and Ohio v. Roberts*, 36 U. FLA. L. REV. 207 (1984); Westen, *The Future of Confrontation*, 77 MICH. L. REV. 1185 (1979); Westen, *Confrontation and Compulsory Process: A Unified Theory of Evidence for Criminal Cases*, 91 HARV. L. REV. 567 (1978).

notwithstanding the applicability of a recognized hearsay exception. The Supreme Court has never adopted this interpretation.¹²⁶ The Confrontation Clause also could be interpreted as requiring only the right to cross-examine in-court witnesses and not out-of-court declarants. Under this view, all recognized hearsay exceptions would satisfy constitutional requirements. The Court has also rejected this view.¹²⁷

Instead of either of these two approaches, the Court has attempted to define an intermediate position, a task that has proved to be elusive.¹²⁸ In *Ohio v. Roberts*,¹²⁹ the Court identified two values operating in this context: the "Framers' preference for face-to-face accusation,"¹³⁰ and an "underlying purpose to augment accuracy in the factfinding process. . . ."¹³¹ From these values, the Court derived a two-step analysis that focused on the unavailability of the declarant and the reliability of the hearsay statement:

In sum, when a hearsay declarant is not present for cross-examination at trial, the Confrontation Clause normally requires a showing that he is unavailable. Even then, his statement is admissible only if it bears adequate "indicia of reliability."¹³²

This summation of confrontation requirements immediately raised problems. *Roberts* involved the admissibility of a preliminary hearing transcript as former testimony, a hearsay exception that traditionally required a showing of unavailability. Most hearsay exceptions, however, do not require such a showing.¹³³ Accordingly, the applicability of the Court's two-pronged test to these exceptions would represent a significant expansion of confrontation requirements. As one commentator has noted, "Beneath [*Roberts*'] apparently orthodox disposition . . . lies an interpretation of possibly far-reaching significance."¹³⁴

126. See *Ohio v. Roberts*, 448 U.S. 56, 63 (1980) ("[I]f thus applied, the Clause would abrogate virtually every hearsay exception, a result long rejected as unintended and too extreme.").

127. In *California v. Green*, 399 U.S. 149 (1970), the Court wrote:

While it may readily be conceded that hearsay rules and the Confrontation Clause are generally designed to protect similar values, it is quite a different thing to suggest that the overlap is complete and that the Confrontation Clause is nothing more or less than a codification of the rules of hearsay and their exceptions as they existed historically at common law. Our decisions have never established such a congruence; indeed, we have more than once found a violation of confrontation values even though the statements in issue were admitted under an arguably recognized hearsay exception. . . . The converse is equally true: merely because evidence is admitted in violation of a long-established hearsay rule does not lead to the automatic conclusion that confrontation rights have been denied.

Id. at 155-56. See also *Dutton v. Evans*, 400 U.S. 74, 86 (1970) ("It seems apparent that the Sixth Amendment's Confrontation Clause and the evidentiary hearsay rule stem from the same roots. But this Court has never equated the two, and we decline to do so now.").

128. See *United States v. Owens*, 105 S. Ct. 838, 843 (1988) ("This Court has recognized a partial (and somewhat indeterminate) overlap between the requirements of the traditional hearsay rule and the Confrontation Clause."); C. McCORMICK, *EVIDENCE* 749 (3d ed. 1984) ("A discussion of constitutional limitations upon the use of hearsay might well commence with the observation that their outline is somewhat less than clear." (footnote omitted)).

129. 448 U.S. 56 (1980).

130. *Id.* at 65.

131. *Id.*

132. *Id.* at 66.

133. For example, Federal Rule 803 contains twenty-four exceptions where the availability of the declarant is immaterial. See *FED. R. EVID.* 803(1)-(24).

134. See *Lilly*, *supra* note 125, at 224. But see M. GRAHAM, *EVIDENCE: TEXT, RULES, ILLUSTRATIONS AND PROBLEMS* 290-91 n.6 (1983) ("[T]he casualness displayed in making the comment with respect to unavailability . . . belies any intention to make a radical change in the law.").

A later case, *United States v. Inadi*,¹³⁵ however, supports a narrow reading of *Roberts*. *Inadi* addressed the admissibility of statements under the coconspirator exception—in particular, whether the prosecution must demonstrate the declarant's unavailability.¹³⁶ Limiting *Roberts* to former testimony cases,¹³⁷ the Court wrote: "*Roberts* cannot fairly be read to stand for the radical proposition that no out-of-court statement can be introduced by the government without a showing that the declarant is unavailable."¹³⁸ Nevertheless, in a more recent case, *Bourjaily v. United States*,¹³⁹ the Court again referred to the two-pronged test, albeit in qualified terms: "[T]he Court has, as a general matter only, required the prosecution to demonstrate both the unavailability of the declarant and the 'indicia of reliability' surrounding the out-of-court declaration."¹⁴⁰ Like *Inadi*, *Bourjaily* involved the coconspirator exception, but the issue before the Court concerned the reliability of such statements rather than the unavailability of the declarant. Together, these cases address the two-pronged test: *Inadi* held that a showing of unavailability is not required in this context; *Bourjaily* held that coconspirator statements are reliable. Accordingly, both reliability and unavailability are considered in the following sections.¹⁴¹

A. *Indicia of Reliability*

Several passages in *Roberts* indicate that most statements falling within the public and business records exceptions will have no difficulty satisfying the reliability requirement. In one passage, the Court stated that "certain hearsay exceptions rest upon such solid foundations that admission of virtually any evidence within them comports with the 'substance of the constitutional protection.'"¹⁴² In an accompanying footnote, the Court cited the business and public records exceptions as examples.¹⁴³ In another passage, the Court noted that "[r]eliability can be inferred without more in a case where the evidence falls within a firmly rooted hearsay exception."¹⁴⁴ From a historical viewpoint, both exceptions would appear to qualify as "firmly rooted."¹⁴⁵ Indeed, the Court adopted this historical approach in *Bourjaily*. Tracing the coconspirator exception back over a century and a half, the Court found the exception "firmly enough rooted in our jurisprudence."¹⁴⁶

135. 475 U.S. 387 (1986).

136. *Id.* at 391.

137. The Court wrote:

Roberts should not be read as an abstract answer to questions not presented in that case, but rather as a resolution of the issue the Court said it was examining: "the constitutional propriety of the introduction in evidence of the preliminary hearing testimony of a witness not produced at the defendant's subsequent state criminal trial."

Id. at 392-93 (citations omitted).

138. *Id.* at 394.

139. 107 S. Ct. 2775 (1987).

140. *Id.* at 2782 (citations omitted).

141. The Court also mentioned the two-pronged test in *Lee v. Illinois*, 476 U.S. 530, 539 (1986), which was decided during the same term as *Inadi*.

142. *Ohio v. Roberts*, 448 U.S. 56, 66 (1980) (quoting *Mattox v. United States*, 156 U.S. 237, 244 (1895)).

143. *Id.* at 66 n.8.

144. *Id.* at 66.

145. See 5 J. WIGMORE, EVIDENCE §§ 1517-61b (business records), §§ 1630-38a (public records).

146. *Bourjaily v. United States*, 107 S. Ct. 2775, 2783 (1987). For a critical assessment of the "firmly rooted" criteria, see Goldman, *Not So "Firmly Rooted": Exceptions to the Confrontation Clause*, 66 N.C.L. Rev. 1 (1987).

Although business and public records generally may bear adequate indicia of reliability, laboratory reports may not. Simply stated, not all business and public records are alike. The drafters of the Federal Rules recognized this by identifying three different categories of public records and placing different limitations on their admissibility. For example, although public records are generally admissible under rule 803(8), investigative reports are not when offered by the prosecution because "of the almost certain collision with confrontation rights which would result from their use against the accused in a criminal case."¹⁴⁷ Similarly, the inclusion of the trustworthiness clauses in both the public and business records exceptions supports the proposition that some of these records pose serious reliability risks.

B. *Reliability of Laboratory Reports*

Reliability issues involve two different but related problems—the first concerns the reliability of the scientific test itself; the second involves the way in which the test results are reported.

1. *Reliability of the Test*

There is little question that laboratory examinations may result in incorrect findings. Indeed, the Supreme Court has recognized that "the results of laboratory tests may be contrived,"¹⁴⁸ and in one instance an FBI analyst "reported results of lab tests that he did not in fact conduct."¹⁴⁹ Moreover, erroneous conclusions have been reported even with well-accepted scientific techniques. In one case, a court wrote: "The fingerprint expert's testimony was damning—and it was false."¹⁵⁰ Similarly, a firearms identification expert in a different case "negligently presented false demonstrative evidence in support of his ballistics testimony."¹⁵¹

These examples, however, are not determinative. Many business and public records undoubtedly contain errors, and yet their general reliability has long been acknowledged. The issue is whether laboratory reports pose such a greater risk of error than other types of public and business records that their admission infringes upon confrontation guarantees.

Unfortunately, the examples cited above cannot be dismissed as isolated instances. In 1978 the results of a Laboratory Proficiency Testing Program sponsored by the Law Enforcement Assistance Administration were reported.¹⁵² Over 200 crime

147. FED. R. EVID. 803(8) advisory committee note.

148. *United States v. Ash*, 413 U.S. 300, 320 (1973).

149. *State v. Ruybal*, 408 A.2d 1284, 1285 (Me. 1979). See also *State v. DeFronzo*, 59 Ohio Misc. 113, 118, 394 N.E.2d 1027, 1031 (C.P. 1978) (Expert represented that certain laboratory tests were conducted, when "no such tests were ever conducted."); Annotation, *Perjury or Wilfully False Testimony of Expert Witness as Basis for New Trial on Ground of Newly Discovered Evidence*, 38 A.L.R.3d 812 (1971).

150. *State v. Caldwell*, 322 N.W.2d 574, 586 (Minn. 1982). This case is discussed in Starrs, *A Miscue in Fingerprint Identification: Causes and Concerns*, 12 J. POLICE SCI. & ADMIN. 287 (1984).

151. *In re Kirschke*, 53 Cal. App. 3d 405, 408, 125 Cal. Rptr. 680, 682 (1975). For a discussion of this case as well as other illustrations of erroneous expert testimony, see Starrs, *In the Land of Agog: An Allegory for the Expert Witness*, 30 J. FORENSIC SCI. 289 (1985).

152. J. PETERSON, E. FABRICANT & K. FIELD, CRIME LABORATORY PROFICIENCY TESTING RESEARCH PROGRAM (L.E.A.A. Oct. 1978).

laboratories participated in this program, which involved such common forensic examinations as firearms, blood, drug, and trace evidence analyses. The Report concluded: "A wide range of proficiency levels among the nation's laboratories exists, with several evidence types posing serious difficulties for the laboratories. . . ." ¹⁵³ Thus, although some laboratories performed exceptionally well, the performance of others was disturbing: "65 percent of the laboratories had 80 percent or more of their results fall into the acceptable category. At the other end of the spectrum, 3 percent of laboratories had less than 50 percent of their responses considered acceptable." ¹⁵⁴ Similarly, certain types of examinations caused few problems, whereas others produced very high rates of "unacceptable proficiency." ¹⁵⁵ Unacceptable proficiency was most often attributed to: (1) misinterpretation of test results due to carelessness or inexperience; (2) failure to employ adequate or appropriate methodology; (3) mislabeling or contamination of primary standards; and (4) inadequate data bases or standard spectra. ¹⁵⁶ One of the report's authors later commented: "In spite of being a firm advocate of forensic science, I must

153. *Id.* at 3.

154. Peterson, *The Crime Lab*, in THINKING ABOUT POLICE 184, 195 (C. Klockars ed. 1983) [hereinafter *The Crime Lab*].

155. Unacceptable response rates for the various test samples were as follows:

Test Sample	Evidence Type	Rate
1	Controlled substance	7.8%
2	Firearms	28.2%
3	Blood	3.8%
4	Glass	4.8%
5	Paint	20.5%
6	Drugs	1.7%
7	Firearms	5.3%
8	Blood	71.3%
9	Glass	31.3%
10	Paint	51.4%
11	Soil	35.5%
12	Fibers	1.7%
13	Physiological Fluids (A)	2.3%
	(B)	1.6%
14	Arson	28.8%
15	Drugs	18.2%
16	Paint	34.0%
17	Metal	22.1%
18	Hair (A)	50.0%
	(B)	27.8%
	(C)	54.4%
	(D)	67.8%
	(E)	35.6%
19	Wood	21.5%
20	Questioned Documents (A)	5.4%
	(B)	18.9%
21	Firearms	13.6%

The number of laboratories responding ranged from a low of 65 to a high of 205. An unacceptable response did not necessarily mean an incorrect response. Other reasons for an unacceptable designation included a correct response for the wrong reason, an unsupported, inclusive response, multiple responses, and incomplete responses. *Id.* at 188-91.

156. J. PETERSON, E. FABRICANT & K. FIELD, *supra* note 152, at 258.

acknowledge that a disturbingly high percentage of laboratories are not performing routine tests competently, as shown by our proficiency testing."¹⁵⁷

Perhaps as troubling as the results of this study are the reasons that may underlie them. In 1967 the President's Crime Commission commented that "the great majority of police department laboratories have only minimal equipment and lack highly skilled personnel able to use the modern equipment now being developed and produced by the instrumentation industry."¹⁵⁸ A later commission concluded: "Too many police crime laboratories have been set up on budgets that preclude the recruitment of qualified, professional personnel."¹⁵⁹ Since the time these reports were issued, the number of crime laboratories has increased dramatically, from about 100 in 1968, to more than 300 in 1983.¹⁶⁰ Problems, however, remain.¹⁶¹ In particular, national standards to ensure the competency of examiners have not been developed. As explained by Professor Peterson:

[T]here are no minimum standards or certification requirements that must be satisfied before these examiners become responsible for analyzing the evidence and testifying in court. Nor are standard laboratory procedures available that the examiners are expected to follow when analyzing typical forms of evidence.¹⁶²

In addition, quality control procedures, such as independent proficiency testing, are not required by the majority of laboratories,¹⁶³ although attempts to change this situation have been undertaken.¹⁶⁴ Other problems, such as high caseload

157. *Symposium on Science and the Rules of Legal Procedure*, 101 F.R.D. 599, 645 (1984) (remarks of Professor Joseph Peterson).

Problems involving proficiency testing are not limited to crime laboratories. A proficiency testing program of laboratories engaged in urine analyses for drug detection reached the following conclusions: "Error rates for the 13 laboratories on samples containing barbituates, amphetamines, methadone, cocaine, codeine, and morphine ranged from 11% to 94%, 19% to 100%, 0% to 33%, 0% to 100%, 0% to 100%, and 5% to 100%, respectively." Hansen, Caudill & Boone, *Crisis in Drug Testing: Results of CDC Blind Study*, 253 J. AM. MED. A. 2382, 2382 (1985).

158. PRESIDENT'S COMMISSION ON LAW ENFORCEMENT AND ADMINISTRATION OF JUSTICE, *THE CHALLENGE OF CRIME IN A FREE SOCIETY* 255 (1967).

159. NATIONAL ADVISORY COMMISSION ON CRIMINAL JUSTICE STANDARDS AND GOALS, POLICE 304 (1974).

160. Peterson, Ryan, Houlden & Mihajlovic, *supra* note 1, at 1731-33.

161. "The newly formed laboratories and existing laboratories continued to suffer from the same old problems: lack of coordination, unqualified personnel, and the absence of uniform standards and procedures to guide the analysis and interpretation of evidence." Peterson, *The Crime Lab*, *supra* note 154, at 185.

162. *Symposium on Science and the Rules of Legal Procedure*, 101 F.R.D. 599, 642-43 (1984) (remarks by Professor Joseph Peterson).

Attempts to develop national certification standards in the forensic sciences has produced mixed results. The following passage summarizes these efforts:

Beginning in 1976, the forensic science field launched a major effort to establish peer-based certifying bodies that would review the credentials of persons in the field, administer qualifying examinations, and certify those qualified to practice in their chosen forensic specialty. To date, certification boards have been established in the areas of forensic toxicology, odontology, psychiatry, anthropology, and questioned-document examination (forensic pathology has had a long-standing certification board). A committee was established by crime-laboratory examiners to develop a set of guidelines for certification. These guidelines were presented to the nation's crime-laboratory personnel for approval in the form of a referendum. The subsequent response, unfortunately, was distinctly negative: the certification referendum was defeated by a 2-to-1 margin. Consequently, at the present time the criminalistic profession as a whole is without minimum standards regarding who is qualified to practice in the field.

Peterson, *Ethical Issues in the Collection, Examination, and Use of Physical Evidence*, in *FORENSIC SCIENCE* 35, 43 (G. Davies ed. 1986) [hereinafter *Ethical Issues*].

163. "Crime laboratories are unique among publicly supported scientific operations in that few participate in external quality assurance programs." Peterson, *The Crime Lab*, *supra* note 154, at 196.

164. A fee-based proficiency-testing program under the auspices of the Forensic Science Foundation and

volume,¹⁶⁵ have also been cited. The picture that emerges is one of inconsistency, with some very good laboratories at one end of the spectrum and some very poor ones at the other end.

Even when competent analysts use valid procedures, error may occur. The reason is that the conclusions drawn from many commonly employed procedures are based on subjective judgments,¹⁶⁶ with the result that disagreement among experts is possible. Courts excluding scientific reports have noted this problem.¹⁶⁷ Psychiatric evaluations and autopsy reports are perhaps the clearest examples. This problem, however, goes far beyond these illustrations. Even apparently routine and objective procedures involve an element of subjectivity. For example, a firearms identification examiner may conclude that two bullets had been fired from the same weapon.¹⁶⁸ Although a positive identification is based on objective data—the striations on the bullet surfaces—the examiner's conclusion rests on a subjective evaluation. There are no objective criteria used for this determination: "In general, the texts on firearms identification take the position that each practitioner must develop his own intuitive criteria of identity gained through practical experience."¹⁶⁹ In this sense, firearms identification is more of an art than a science.¹⁷⁰ Thus, it is not surprising that two

Collaborative Testing Services is available. See generally Lucas, Leete & Field, *An American Proficiency Testing Program*, 27 FORENSIC SCI. INT'L 71 (1985). Nevertheless, participation is voluntary and incomplete. "Only about one-third of the crime laboratories in the nation subscribe to these tests, and about one-half of the laboratories receiving samples actually return results." Peterson, *Ethical Issues*, *supra* note 162, at 44. The American Society of Crime-Laboratory Directors' accreditation program requires an independent testing program. See *F.B.I.*, 14 CRIME LABORATORY DIG. 37 (April 1987) (51 labs accredited since 1982). Participation, however, is voluntary and thus "crime laboratories that produce results of marginal quality may simply elect not to participate." Peterson, *Ethical Issues*, *supra* note 162, at 44.

165. See *Symposium on Science and the Rules of Legal Procedure*, 101 F.R.D. 599, 645 (1984) ("Unfortunately, errors in high-volume operations are not uncommon.") (remarks of Professor James Starrs); J. PETERSON, S. MIHAJLOVIC & M. GILLILAND, *FORENSIC EVIDENCE AND THE POLICE: THE EFFECTS OF SCIENTIFIC EVIDENCE ON CRIMINAL INVESTIGATIONS* 222 (Nat'l Institute of Justice, Oct. 1984) ("Laboratories must guard against examining cases superficially, which is likely to result if incoming case volume is high and there is pressure to turn around laboratory results as quickly as possible.").

166. As McCormick notes, identification evidence is based either on "the general experience of the criminalists or more exacting statistical studies." C. MCCORMICK, *EVIDENCE* 652 (3d ed. 1984) (footnote omitted). Fingerprint, firearms identification, and handwriting comparisons fall into the former category. Because they are not statistically-based, they are necessarily somewhat subjective, at least in the sense that adequate criteria do not exist which would permit the expert to articulate the precise foundations for his conclusion that a "match" exists or that there is a certain probability of identity. Thus, one expert may feel that a positive result is established while another feels equally strongly that the same evidence does not warrant such a conclusion. These identifications thus depend on the "intuitive ability" and "common sense" of the expert.

Comment, *The Evidentiary Uses of Neutron Activation Analysis*, 59 CALIF. L. REV. 997, 1022 (1971) (footnote omitted).

167. E.g., *United States v. McClintock*, 748 F.2d 1278, 1292 (9th Cir. 1984) ("[B]ecause of the various means of evaluation and apparent subjective decisions that enter into the evaluation of gems, McClintock's confrontation of the preparers of the reports may have been valuable to his defense."); *Commonwealth v. McCloud*, 457 Pa. 310, 312, 322 A.2d 653, 655 (1974) ("Frequently, the cause of death is seriously in issue and the subject of conflicting opinion by qualified physicians.").

168. E.g., *United States v. Wolff*, 5 M.J. 923, 926 (N.C.M.R. 1978), *petition denied*, 6 M.J. 305 (C.M.A. 1979); *People v. Torres*, 100 Ill. App. 3d 931, 937, 427 N.E.2d 329, 334-35 (1981); *State v. Harriman*, 469 So. 2d 298, 306-07 (La. App. 1985), *cert. denied*, 476 U.S. 1109 (1986); *State v. Hill*, 294 N.C. 320, 332-33, 240 S.E.2d 794, 802-03 (1978); *State v. Benton*, 413 A.2d 104, 112-13 (R.I. 1980); *State v. Schreuder*, 712 P.2d 264, 268-69 (Utah 1985); *McDaniel v. State*, 632 P.2d 534, 536-37 (Wyo. 1981).

169. Biasotti, *The Principles of Evidence Evaluation as Applied to Firearms and Tool Mark Identification*, 9 J. FORENSIC SCI. 428, 429 (1964). See also J. PETERSON, E. FABRICANT & K. FIELD, *supra* note 152, at 207 ("Ultimately, unless other issues are involved, it remains for the examiner to determine for himself the modicum of proof necessary to arrive at a definitive opinion.").

170. Biasotti, *supra* note 169, at 432 ("[W]e lack the fundamental statistical data needed to develop verifiable criteria. . . .").

experts may disagree about whether there are sufficient points of identity to render a positive conclusion.¹⁷¹ Fingerprint evidence raises the same problem. Because there is no consensus on the number of points necessary for an identification, fingerprint identification is "an evaluative art."¹⁷² Again, disagreement among experts remains a possibility:

In a murder case . . . state police fingerprint experts testified that a latent print lifted from the crime's scene was the defendant's by demonstrating 14 points of similarity. Defense was able to procure its own expert who proved three crucial points of dissimilarity. An acquittal followed.¹⁷³

Even where the scientific technique uses instrumentation, subjectivity may be a problem.¹⁷⁴

The point is not that most laboratory test results are erroneous or that examinations with a subjective element are unreliable. Indeed, the opposite is true. Rather, the point is that the risk of error is significant enough to preclude routine admission of test results without the opportunity to cross-examine the analyst.¹⁷⁵

2. Reliability of the Report

The laboratory report itself raises additional reliability concerns, mainly because of what it does *not* say. Typically, the report contains only the expert's conclusions. For instance, in a controlled substance prosecution the report may state only that the examined substance was "heroin."¹⁷⁶ Other critical information is not disclosed.

First, the bases for the analyst's findings frequently are not revealed. In particular, the laboratory report will often not indicate the specific test employed. For example, a gunshot residue report indicating that a person recently fired a weapon

171. See *In re Kirschke*, 53 Cal. App. 3d 405, 411, 125 Cal. Rptr. 680, 684 (1975) (One firearms identification expert made a conclusive identification, whereas other experts "were not able to make a positive identification. . . ."); *State v. Nemeth*, 182 Conn. 403, 408, 438 A.2d 120, 123 (1980) (One expert testified "that he was unable to determine whether the bullets had been fired from the same gun," whereas another "testified that both bullets had been fired from the same gun."); *Commonwealth v. Ellis*, 373 Mass. 1, 5, 364 N.E.2d 808, 812 (1977) ("The Commonwealth's two [firearms identification] experts did not fully agree.").

172. P. GIANNELLI & E. IMWINKELRIED, *SCIENTIFIC EVIDENCE* 539 (1986).

173. Note, *The Indigent's Right to an Adequate Defense: Expert and Investigational Assistance in Criminal Proceedings*, 55 CORNELL L. REV. 632, 638 n.38 (1970) (citation omitted). See also Osborn, *Proof of Finger-Prints*, 26 J. CRIM. L. & CRIMINOLOGY 587, 588 (1936) ("[E]rrors in [fingerprint] identification are not only possible but have been made.").

174. See generally Lewis, *The Element of Subjectivity in Interpreting Instrumental Test Results*, in PRACTISING LAW INSTITUTE, *SCIENTIFIC AND EXPERT EVIDENCE* 409, 430 (2d ed. 1981) ("No scientific function can be freed entirely from the threat of error induced through subjectivity.").

175. "Only a small percentage of the cases in any jurisdiction go to trial, so the technicians or scientists in the crime laboratories seldom are called upon to justify their procedures or conclusions under rigorous cross-examination. I think the realization that their work will not be reviewed - either by independent scientist or by opposing counsel and expert in court - decreases the care and completeness with which examiners process evidence." *Symposium on Science and the Rules of Legal Procedure*, 101 F.R.D. 599, 643 (1984) (remarks of Professor Joseph Peterson).

176. *United States v. Parker*, 491 F.2d 517, 525 (8th Cir. 1973) (reprinting laboratory report), *cert. denied*, 416 U.S. 989 (1974). See also *United States v. Davis*, 14 M.J. 847, 848 n.3 (A.C.M.R. 1982) ("[M]ost laboratory reports only state general conclusions. . . .").

may be based on the paraffin test,¹⁷⁷ neutron activation analysis,¹⁷⁸ atomic absorption,¹⁷⁹ scanning electron microscopy,¹⁸⁰ or some other procedure.¹⁸¹ Some of these tests are valid, while others are suspect.¹⁸² Similarly, a laboratory report identifying a substance as marijuana might not specify whether this conclusion is based upon a visual examination, the Duquenois-Levine test, thin-layer chromatography, or some other procedure. Many of these tests are not specific.¹⁸³

Additional problems concerning the bases of the expert's opinion exist. Federal Rule 703 expands the permissible bases of expert testimony. A testifying expert may rely on inadmissible evidence "[i]f of a type reasonably relied upon by experts in the particular field." In short, reliance on hearsay is sanctioned. This rule has proved controversial as applied to the *courtroom* testimony of experts.¹⁸⁴ Nevertheless, the rule may be justified at trial, in part, because cross-examination is available to disclose to the jury any deficiency in the bases. Thus, one court has written: "Expert reliance upon the output of others does not necessarily violate the confrontation clause where the expert is available for questioning concerning the nature and reasonableness of his reliance."¹⁸⁵ This is not the case, however, when a laboratory report is admitted; there may be no indication of the bases in the report much less whether reliance on extrajudicial sources was reasonable. For example, in one case a death certificate revealed the identity of the body and the cause of death.¹⁸⁶ Since autopsy procedures are relatively standardized, it might be assumed that these conclusions were based on such procedures. Later proceedings, however, revealed

177. A number of courts have admitted evidence derived from the paraffin test. *E.g.*, *Harris v. State*, 239 Ark. 771, 778, 394 S.W.2d 135, 140 (1965), *cert. denied*, 386 U.S. 964 (1967); *State v. Hoy*, 199 Kan. 340, 348, 430 P.2d 275, 281 (1967); *People v. Simpson*, 5 Mich. App. 479, 486-87, 146 N.W.2d 828, 831 (1966); *Brookins v. State*, 602 P.2d 215, 217 (Okla. Crim. App. 1979).

But see Brooke v. People, 139 Colo. 388, 393-94, 339 P.2d 993, 996 (1959); *Clarke v. State*, 218 Tenn. 259, 270, 402 S.W.2d 863, 869, *cert. denied*, 385 U.S. 942 (1966).

178. *E.g.*, *State v. Boyer*, 406 So. 2d 143, 146-48 (La. 1981); *Mills v. State*, 476 So. 2d 172, 176-77 (Fla. 1985), *cert. denied*, 475 U.S. 1031 (1986); *State v. Spencer*, 298 Minn. 456, 459-62, 216 N.W.2d 131, 134-35 (1974); *State v. Jackson*, 566 S.W.2d 227, 228-29 (Mo. Ct. App. 1978); *Commonwealth v. Sero*, 478 Pa. 440, 449-50, 387 A.2d 63, 68 (1978).

179. *E.g.*, *Chatom v. State*, 348 So. 2d 838, 842 (Ala. 1977); *State v. Chatman*, 156 N.J. Super. 35, 38-40, 383 A.2d 440, 441-42 (1978); *State v. Sparks*, 297 N.C. 314, 326-28, 255 S.E.2d 373, 381-82 (1979); *State v. McCall*, 698 S.W.2d 643, 651 (Tenn. Crim. App. 1985).

180. *See People v. Palmer*, 80 Cal. App. 3d 239, 252-53, 145 Cal. Rptr. 466, 472-73 (1978).

181. *See P. GIANNELLI & E. IMWINKELRIED, supra note 172, § 14-9.*

182. For example, the paraffin test has been criticized for its nonspecificity. Many substances other than gunpowder residues contain nitrates and thus produce a positive reaction, too. One study concluded that a positive reaction is produced by tobacco, tobacco ash, fertilizer, pharmaceuticals, leguminous plants, and urine. *Turkel & Lipman, Unreliability of Dermal Nitrate Test for Gunpowder*, 46 J. CRIM. L. & CRIMINOLOGY 281, 282 (1955). A more comprehensive study found that "'rust," colored fingernail polishes, residue from evaporated urine, soap and tap water" all produce a positive reaction. *Cowan & Purdon, A Study of the "Paraffin Test,"* 12 J. FORENSIC SCI. 19, 23 (1967).

183. *See P. GIANNELLI & E. IMWINKELRIED, supra note 172, ch. 23 (drug identification); Stein, Laessig & Indriksons, An Evaluation of Drug Testing Procedures Used by Forensic Laboratories and the Qualifications of Their Analysts*, 1973 WIS. L. REV. 727, 728.

184. *See 3 J. WEINSTEIN & M. BERGER, WEINSTEIN'S EVIDENCE 703-9 (1987) ("The most controversial aspect of Rule 703 is its second sentence. . . .")*

See also Carlson, Policing the Bases of Modern Expert Testimony, 39 VAND. L. REV. 577 (1986); *Carlson, Collision Course in Expert Testimony: Limitations on Affirmative Introduction of Underlying Data*, 36 U. FLA. L. REV. 234 (1984); *Rice, Inadmissible Evidence as a Basis for Expert Opinion Testimony: A Response to Professor Carlson*, 40 VAND. L. REV. 583 (1987).

185. *Reardon v. Manson*, 806 F.2d 39, 42 (2d Cir. 1986) (citations omitted).

186. *Stevens v. Bordenkircher*, 746 F.2d 342, 344 (6th Cir. 1984).

that most of this information was suspect. For example, the conclusion regarding the cause of death—recorded as gunshot wounds—was based not on an autopsy but rather on the statement of a witness as transmitted to the coroner through the police.¹⁸⁷

Second, even if a valid procedure is used, there is no way to determine, without the testimony of the analyst, if it was properly employed at the time of the examination. One court has noted:

Since most laboratory reports only state general conclusions, they may be given far more significance in court than they rightfully deserve. Inquiry during examination of the chemist may reveal the possibility of laboratory error due to the carelessness of the chemist sharing a limited area with others and due to the large number of samples being tested. The defense may further wish to ask what other substances were in the sample and how these would affect a true test reaction.¹⁸⁸

Similarly, admission of the laboratory report may cover up gaps in the chain of custody. The Second Circuit's concern about the chain of custody played a role in its exclusion of the chemist's report in *Oates*.¹⁸⁹

Third, information about the analyst is not reported. Only the name and position of the examiner usually appear. Academic degrees, years of experience, specialized training, and number of analyses performed cannot be determined. Nor can it be assumed that all analysts are competent. An article on drug testing describes the cross-examination of a drug expert with 43 years experience and more than 2500 court appearances as follows:

[The expert] admitted that not only did he not have a college degree, but that he had never even finished high school. He claimed that heroin was an alkaloid, which it is, but did not remember what an alkaloid was. He could not draw the structure of heroin or benzene, one of the commonest and simplest organic molecules. . . . In addition, he could not explain any single chemical reaction about which he had testified.¹⁹⁰

In another case, an expert testified that he had a master's degree in science "whereas in fact he never attained a graduate degree."¹⁹¹

In sum, there is nothing "scientific" about the way test results are typically reported. A scientist has commented:

For a report from a crime laboratory to be deemed competent, I think most scientists would require it to contain a minimum of three elements: (a) a description of the analytical techniques used in the test requested by the government or other party, (b) the quantitative or qualitative results with any appropriate qualifications concerning the degree of certainty

187. *Id.* at 346.

188. *United States v. Davis*, 14 M.J. 847, 848 n.3 (A.C.M.R. 1982). *See also* *United States v. Ware*, 247 F.2d 698, 701 (7th Cir. 1957) (concurring opinion) ("[T]he defendant at trial was helpless because he had no way to determine whether proper methods of analysis were used and were free from error in their execution.").

189. *United States v. Oates*, 560 F.2d 45, 75 (2d Cir. 1977) ("Nothing indicates who deleted the notation, when it was deleted, or why it was deleted and, as it relates to the issue of chain of custody, it is a matter of some importance."). *See generally* Giannelli, *Chain of Custody and the Handling of Real Evidence*, 20 AM. CRIM. L. REV. 527 (1983).

190. Stein, Laessig & Indriksons, *supra* note 183, at 728 (footnote omitted).

191. Doepel v. *United States*, 434 A.2d 449, 460 (D.C. App. 1981). *See generally* Startts, *Mountebanks Among Forensic Scientists*, in 2 FORENSIC SCIENCE HANDBOOK 2 (R. Saferstein ed. 1988).

surrounding them, and (c) an explanation of any necessary presumptions or inferences that were needed to reach the conclusions.¹⁹²

Judged by this standard, most reports are not "competent."¹⁹³ Without such information, it is impossible to evaluate the reported findings. In effect, the report masks critical reliability issues.¹⁹⁴ Instead of a probing cross-examination of the expert, the jury receives an "official" report, prepared by someone with "unquestioned" expertise.

C. Unavailability of the Analyst

The unavailability requirement set forth in *Roberts* presents additional difficulties. While establishing the unavailability of the declarant is not a prerequisite to the admissibility of business and public records under the hearsay rule,¹⁹⁵ *Roberts* states that the Confrontation Clause "normally" requires a showing of unavailability.¹⁹⁶ Thus, *Roberts* would appear to require a laboratory analyst's testimony unless the prosecution could establish his actual unavailability. The issue, however, is not that simple because the Court recognized an exception in *Roberts* and substantially modified the unavailability requirement in *Inadi*.

1. The Exception: The Utility of Cross-Examination

The exception to the unavailability requirement cited in *Roberts* is found in footnote seven. It reads:

A demonstration of unavailability, however, is not always required. In *Dutton v. Evans*, 400 U.S. 74 (1970), for example, the Court found the utility of trial confrontation so remote that it did not require the prosecution to produce a seemingly available witness.¹⁹⁷

Moreover, in his *Dutton* concurrence, Justice Harlan cited the business and public records exceptions, including a case admitting laboratory reports,¹⁹⁸ as examples of hearsay exceptions in which the production of the declarant would be "of small utility

192. *Symposium on Science and the Rules of Legal Procedure*, 101 F.R.D. 599, 632 (1983) (remarks of Professor Anna Harrison, Department of Chemistry, Mount Holyoke College).

193. The reason for this paucity of information may be explained in tactical, rather than scientific, terms: "Many criminal defense attorneys suspect that the unusual brevity of reports by FBI fingerprint or handwriting experts (e.g., often one or two short sentences) may be partially explained by the fact that defense counsel is entitled to copies of them prior to trial." Allis, *Limitations on Prosecutorial Discovery of the Defense Case in Federal Courts: The Shield of Confidentiality*, 50 S. CAL. L. REV. 461, 475 n.51 (1977).

194. 4 D. LOUISELL & C. MUELLER, *FEDERAL EVIDENCE* 754 (1980) ("Even reports of routine tests rest upon standards and are subject to risks of error which are not apparent on the face of the reports themselves.").

195. Following the traditional view, the Federal Rules place the business and public records exceptions in rule 803, which does not require a showing of the declarant's unavailability. See FED. R. EVID. 803(6), (8).

196. In an earlier case, *Barber v. Page*, 390 U.S. 719 (1968), the Court wrote: "[A] witness is not 'unavailable' for purposes of the . . . confrontation requirement unless the prosecutorial authorities have made a good-faith effort to obtain his presence at trial." *Id.* at 724-25. In *Roberts* the Court reaffirmed this test, noting that "if there is a possibility, albeit remote, that affirmative measures might produce the declarant, the obligation of good faith may demand their effectuation. . . . The ultimate question is whether the witness is unavailable despite good-faith efforts undertaken prior to trial to locate and present that witness." *Ohio v. Roberts*, 448 U.S. 56, 74 (1980).

197. *Ohio v. Roberts*, 448 U.S. 56, 65 n.7 (1980).

198. *Kay v. United States*, 255 F.2d 476 (4th Cir.), cert. denied, 358 U.S. 825 (1958).

to a defendant."¹⁹⁹ Nevertheless, the scope of the *Roberts* exception remains unclear.²⁰⁰

Does the Court mean that a showing of unavailability is excused if the proffered . . . statement is sufficiently reliable? Or is the Court commenting on the low probative value of the statement in *Dutton*? Or is it assessing the unlikelihood that defendant would have an interest in examining the declarant in person?²⁰¹

If, for example, the utility of the declarant's presence is minimal because the statement is reliable, the two prongs of *Roberts*—unavailability and reliability—are merged.²⁰² Any statement satisfying the reliability prong would automatically fall within the exception granted by *Roberts*. This reading of the exception would make the unavailability requirement meaningless.

Notwithstanding the uncertainty surrounding the *Roberts* exception, the utility of cross-examination in this context is demonstrated by the reliability problems associated with scientific proof discussed earlier.²⁰³ At trial, the expert could be cross-examined on his qualifications, the validity of the procedures employed, his adherence to those procedures, and the methods used to safeguard the chain of custody, as well as other issues.²⁰⁴ The value of this type of cross-examination is not diminished simply because the analyst might not remember the specific examination in question.²⁰⁵ In such a case, most of these issues can still be explored. Using the report and bench notes, the expert could testify about most of these issues.

199. *Dutton v. Evans*, 400 U.S. 74, 96 (1970).

200. *Dutton* itself left many questions unanswered. The statement at issue was made by a coconspirator and admitted under a state rule that went beyond the traditional hearsay exception. In ruling that admission of the statement did not violate the Confrontation Clause, the plurality opinion cited a number of factors. One court summarized these factors as follows:

The four reliability factors discussed in *Dutton* . . . are: (1) whether the declaration contained assertions of past fact; (2) whether the declarant had personal knowledge of the identity and role of the participants in the crime; (3) whether it was possible that the declarant was relying upon faulty recollection; and (4) whether the circumstances under which the statements were made provided reason to believe that the declarant had misrepresented the defendant's involvement in the crime. . . . The reliability factors discussed in *Dutton*, however, are not to be considered exhaustive, nor are all factors required to be present in order to admit the declarations. . . . An additional factor, sometimes discussed and its relevance debated, is whether the testimony of the coconspirator was "crucial" or "devastating."

United States v. Fleishman, 684 F.2d 1329, 1339 (9th Cir.), cert. denied, 459 U.S. 1044 (1982) (citations omitted). A commentator has made the following observation about these factors:

The difficulties exhibited in the *Dutton* opinion in articulating these tests, the uncertain relationship of one test to another, and the difficulties associated with applying one or all of the various tests to the facts of a given case, each contribute to the uncertainty existing as to the relationship of the hearsay rule to the confrontation clause.

M. GRAHAM, EVIDENCE: TEXT, RULES, ILLUSTRATIONS AND PROBLEMS 290 (1983).

201. J. WEINSTEIN, J. MANSFIELD, N. ABRAMS & M. BERGER, EVIDENCE, CASES AND MATERIALS 693 (1983).

202. *Id.* ("If inability at trial to demonstrate the unreliability of the statement is the crux of the *Roberts* footnote about *Dutton*, what is the impact of the second prong of the *Roberts* test - 'reliability' . . . ?").

203. See *supra* notes 148-94 and accompanying text.

204. See *United States v. Oates*, 560 F.2d 45, 81-82 (2d Cir. 1977) (Defendant could have questioned the examiner who prepared the lab report about his "personal qualifications and experience," whether tests "were correctly performed," "whether the procedures and analyses used are recognized in the profession as being reliable," and "whether any machines used were in good working order.").

205. According to one writer, "cross-examination would be of limited use in shedding light on the performance of a routine test in a busy laboratory because of the unlikelihood that the analyst would have any independent recollection of the text." Alexander, *supra* note 52, at 728. See also *In re Kevin G.*, 80 Misc. 2d 517, 523, 363 N.Y.S.2d 999, 1005 (Fam. Ct. 1975) ("It is impossible for a police laboratory chemist to recall the tests he performed and their results in an individual narcotics case of a routine nature.").

Moreover, in other contexts the Supreme Court has repeatedly emphasized the importance of trial confrontation of scientific proof. For example, in *United States v. Wade*²⁰⁶ the Court extended the right to counsel to pretrial identification procedures, in part, because the presence of counsel will “assure a meaningful confrontation at trial. . . .”²⁰⁷ The Court, however, went on to distinguish identification procedures from scientific analyses:

The Government characterizes the lineup as a mere preparatory step in the gathering of the prosecution’s evidence, not different—for Sixth Amendment purposes—from various other preparatory steps, such as systematized or scientific analyzing of the accused’s fingerprints, blood sample, clothing, hair, and the like. We think there are differences which preclude such stages from being characterized as critical stages at which the accused has the right to the presence of his counsel. Knowledge of the techniques of science and technology is sufficiently available, and the variables in techniques few enough, *that the accused has the opportunity for a meaningful confrontation of the Government’s case at trial through the ordinary processes of cross-examination of Government’s expert witnesses.* . . .²⁰⁸

Similarly, in rejecting a challenge to the admissibility of expert psychiatric testimony of future dangerousness in capital cases, the Court in *Barefoot v. Estelle*²⁰⁹ cited the traditional safeguards of the adversary system, which includes cross-examination: “We are not persuaded . . . that the fact-finder and the adversary system will not be competent to uncover, recognize, and take due account of [such testimony’s] shortcomings.”²¹⁰ Finally, in refusing to recognize a due process right to the preservation of breath samples in *California v. Trombetta*,²¹¹ the Court commented that “as to operator error, the defendant retains the right to cross-examine the law enforcement officer who administered the Intoxilyzer test, and to attempt to raise doubts in the mind of the fact-finder whether the test was properly administered.”²¹² Although these cases involved different constitutional issues, they have one thing in common—the Court’s explicit recognition of the value of trial confrontation of expert testimony.²¹³ It would be difficult to reconcile these pronouncements with the notion that cross-examination of an expert would be of “small utility.”

A recent decision, *Delaware v. Fensterer*,²¹⁴ also supports this view. In that

206. 388 U.S. 218 (1967).

207. *Id.* at 236.

208. *Id.* at 227–28 (emphasis added). See also *Gilbert v. California*, 388 U.S. 263, 267 (1967).

209. 463 U.S. 880 (1983).

210. *Id.* at 899.

211. 467 U.S. 479 (1984).

212. *Id.* at 490.

213. In *Ford v. Wainwright*, 477 U.S. 399 (1986), the Court held that the imposition of the death penalty on the insane violated the eighth amendment. Part of Justice Marshall’s opinion, which was joined by three other Justices, focused on the reliability of the procedures used to determine insanity - in particular, the failure to permit cross-examination of the opinions of psychiatric experts. He wrote:

Cross-examination of the psychiatrists, or perhaps a less formal equivalent, would contribute markedly to the process of seeking truth in sanity disputes by bringing to light the bases for each expert’s beliefs, the precise factors underlying those beliefs, any history of error or caprice of the examiner, any personal bias with respect to the issue of capital punishment, the expert’s degree of certainty about his or her own conclusions, and the precise meaning of ambiguous words used in the report.

Id. at 415.

214. 474 U.S. 15 (1985).

case, an FBI analyst testified that hair found at a murder scene had been forcibly removed. He further testified that there were three methods available to make this determination, but that he could not remember which method he had used to reach his conclusion.²¹⁵ The Delaware Supreme Court held that his lack of memory precluded the defense from testing the basis for the opinion by cross-examination and thus violated the right of confrontation.²¹⁶ The United States Supreme Court reversed. The Court's reasoning is instructive: "[T]he Confrontation Clause is generally satisfied when the defense is given full and fair opportunity to probe and expose these infirmities through cross-examination, thereby calling to the attention of the factfinder the reasons for giving scant weight to the witness' testimony."²¹⁷ Had the expert's findings been introduced through a laboratory report, however, there would have been no "opportunity to probe these infirmities." Indeed, they would have gone undisclosed.

2. United States v. Inadi

The *Roberts* exception is not the Court's only retreat from a strict unavailability requirement. As noted above, the Court in *Inadi* modified the unavailability requirement when ruling on the admissibility of coconspirator statements. The Court distinguished these statements from the preliminary hearing testimony at issue in *Roberts*. According to the Court, the latter is used as a substitute for trial testimony and thus should be permitted only when the declarant is unavailable.

[F]ormer testimony often is only a weaker substitute for live testimony. It seldom has independent evidentiary significance of its own, but is intended to replace live testimony. If the declarant is available and the same information can be presented to the trier of fact in the form of live testimony, with full cross-examination and the opportunity to view the demeanor of the declarant, there is little justification for relying on the weaker version.²¹⁸

In contrast, "[c]onspirators are likely to speak differently when talking to each other in furtherance of their illegal aims than when testifying on the witness stand."²¹⁹ By the time of trial, the position of the conspirator will have changed. Facing indictment or trial, the conspirator will have "little incentive to aid the prosecution," and thus "it is extremely unlikely that in-court testimony will recapture the evidentiary significance of statements made when the conspiracy was operating in full force."²²⁰ Accordingly, the Court ruled that a showing of unavailability is not required when coconspirator statements are introduced. This aspect of *Inadi* does not apply to the admissibility of laboratory reports. The circumstances do not change between the time the report is prepared and the time of trial; the analyst's relationship with the

215. *Id.* at 17.

216. *Fensterer v. State*, 493 A.2d 959, 964 (Del. 1985).

217. *Delaware v. Fensterer*, 474 U.S. 15, 22 (1985). On remand, the Delaware Supreme Court again held the expert's opinion inadmissible but on evidentiary rather than constitutional grounds. *Fensterer v. State*, 509 A.2d 1106 (Del. 1986).

218. *United States v. Inadi*, 475 U.S. 387, 394 (1986).

219. *Id.* at 395.

220. *Id.*

prosecution remains unaltered. Hence, the report is only a weaker substitute for live testimony.

Another aspect of *Inadi*, however, is more problematic. In upholding the admissibility of laboratory reports in the face of a confrontation challenge, a number of courts have cited the defendant's failure to subpoena the analyst.²²¹ For example, in *State v. Spikes*²²² the court wrote that defense counsel "could have subpoenaed [the preparers of a hospital report] to testify at trial."²²³ Language in *Inadi* would appear to support the relevance of this factor. After pointing out that the defendant had not attempted to subpoena the coconspirator, the Court wrote:

The Compulsory Process Clause would have aided respondent in obtaining the testimony of any of these declarants. If the Government has no desire to call a co-conspirator declarant as a witness, and if the defense has not chosen to subpoena such a declarant, . . . then it is difficult to see what, if anything, is gained by a rule that requires the prosecution to make that declarant "available."²²⁴

How critical this compulsory process argument is to the Court's confrontation analysis is difficult to evaluate. If taken to an extreme, this approach would permit the prosecutor to use hearsay instead of live testimony in all circumstances, justifying such conduct simply by citing the defense's failure to subpoena the declarant.²²⁵ This would, in effect, merge the confrontation and compulsory process guarantees, leaving the accused with only the latter protection. The issue is not new. In an article examining the relationship between the Confrontation and Compulsory Process Clauses, Professor Westen commented:

What distinguishes a witness "against" the accused from a witness "in his favor" is *not* the content of the witness' testimony but the *identity of the party relying* on his evidence. A person is a witness "against" the accused if he is one whose statements the prosecution relies upon in court in its effort to convict the accused; in order to use the statements of such a witness, the prosecution must take the initiative in identifying and producing him at trial.²²⁶

He goes on to conclude that the prosecution must call such a witness unless the hearsay statement "is such that the defendant could not reasonably be expected to wish to examine the declarant in person. . . ."²²⁷ Professor Graham has proposed a different analysis, which focuses on whether the hearsay statement is accusatory *at the time it is made*. "If the out-of-court statement was accusatory when made, the declarant is a witness against the defendant. Conversely, if the out-of-court statement was not accusatory, the declarant is not a witness against the defendant, and the

221. *E.g.*, *United States v. Miller*, 23 C.M.A. 247, 250, 49 C.M.R. 380, 383 (1974); *Burleson v. State*, 585 S.W.2d 711, 713 (Tex. Crim. App. 1979).

222. 67 Ohio St. 2d 405, 423 N.E.2d 1122 (1981), *appeal dismissed*, 454 U.S. 1131 (1982).

223. *Id.* at 411, 423 N.E.2d at 1128.

224. *United States v. Inadi*, 475 U.S. 387, 397-98 (1986) (footnotes omitted).

225. "*Inadi*'s logic should lead to the conclusion that the confrontation clause allows the prosecution to produce summaries of his evidence or *ex parte* affidavits without calling witnesses, so long as the defense can later produce those witnesses." Jonakait, *supra* note 125, at 621.

226. Westen, *supra* note 125, at 604 (emphasis in original). See also Lilly, *supra* note 125, at 231.

227. Westen, *supra* note 125, at 617-18.

confrontation clause has no application."²²⁸ Under either standard, laboratory examiners should be called as prosecution witnesses. Laboratory reports are "accusatory" when made and "relied" on by the prosecution at trial. Several courts have reached the same result, holding that the defendant's failure to call a prosecution expert as a witness is not a waiver of the right to confront him.²²⁹

In addition, given the inadequacy of pretrial discovery, placing the burden on the defendant to call the analyst would be unfair. Although some commentators have argued that the defendant's discovery rights provide adequate notice of the analyst's testimony,²³⁰ this is simply not true. While scientific reports are generally discoverable,²³¹ the report does not provide sufficient information. As discussed earlier, it typically reveals only the results of the analysis and nothing more.²³² Discovery depositions are generally unavailable in criminal cases,²³³ and thus the necessary information cannot be obtained through that device. Consequently, the defense may have no way of knowing what tests were used, whether the examiner was qualified, and so forth. Issuing a subpoena for the analyst in these circumstances would be a gamble, one which many defendants may forego. Thus, even if the report is unreliable, there may be no meaningful opportunity to contest it.

IV. CONCLUSION

The increased use of scientific proof in criminal trials, which has occurred in recent years, will undoubtedly continue. By emphasizing the importance of "extrinsic evidence independently secured through skillful investigation"²³⁴ and "modern scientific methods of crime detection,"²³⁵ the Supreme Court has encouraged this development. The Court's encouragement is salutary because the expanded use of scientific evidence will enhance the reliability of the factfinding process. Nevertheless, scientific proof, like other methods of proof, has its weaknesses and limitations. The routine admission of laboratory reports can be justified only if the presumption of reliability that generally attaches to business and public records also applies to these reports. Such a presumption is unwarranted. Accordingly, the analyst's conclusions should not be accepted at trial untested by cross-examination.

There may, however, be a solution which would protect the defendant's constitutional rights and yet relieve the prosecution of the burden of producing the analyst when scientific proof is not a contested issue in the case. Several jurisdictions

228. Graham, *The Confrontation Clause, the Hearsay Rule, and Child Sexual Abuse Prosecution: The State of the Relationship*, 72 MINN. L. REV. 523, 593 (1988). See also Graham, *The Confrontation Clause, the Hearsay Rule and the Forgetful Witness*, 56 TEX. L. REV. 151 (1978).

229. See *Phillips v. Neil*, 452 F.2d 337, 348-49 (6th Cir. 1971), cert. denied, 409 U.S. 884 (1972); *Gregory v. State*, 40 Md. App. 297, 328 n.28, 391 A.2d 437, 455 n.28 (1978) ("It [is] the State's burden—not that of appellant—to produce the witnesses against him.").

230. Alexander, *supra* note 52, at 729.

231. *E.g.*, FED. R. CRIM. P. 16(a)(1)(D); ME. R. CRIM. P. 16(b)(B); OHIO R. CRIM. P. 16(B)(1)(d).

232. See *supra* notes 176-94 and accompanying text.

233. A majority of jurisdictions do not permit discovery depositions in criminal cases. Instead, criminal depositions generally are limited to preserving the testimony of a witness who may be unavailable for trial. *E.g.*, FED. R. CRIM. P. 15(a); COLO. R. CRIM. P. 15(a); KY. R. CRIM. P. 7.10; WYO. R. CRIM. P. 17(a).

234. *Escobedo v. Illinois*, 378 U.S. 478, 489 (1964).

235. *Breithaupt v. Abram*, 352 U.S. 432, 439 (1957).

have enacted statutes that provide for the admissibility of laboratory reports if the defendant is served with a copy of the report and does not request the presence of the analyst at trial.²³⁶

These notice and demand statutes offer a possible answer to the constitutional problem. According to one court, a defendant's failure to request the analyst constitutes a waiver of the right to confrontation.²³⁷ In *Brookhart v. Janis*,²³⁸ however, the Supreme Court applied a stringent standard for waiving the right of confrontation, requiring the prosecution to establish "an intentional relinquishment or abandonment of a known right or privilege."²³⁹ A notice and demand statute would satisfy this standard only if the defendant is provided with sufficient information to make an informed decision. This would include, in addition to a copy of the report, information about the procedures employed in the analysis and the qualifications of the examiner. The current discovery provisions are insufficient because this information is typically not disclosed. If this information were provided and the defendant were given the opportunity to depose²⁴⁰ or interview the analyst,²⁴¹ a failure to request the analyst's trial testimony would satisfy the constitutional waiver standard.

Moreover, this type of provision would not appear to place an undue burden on the prosecution. Most defendants plead guilty. In the cases that go to trial, scientific evidence is often not a contested issue. Once the defense is satisfied that the analysis was properly performed, there would be little incentive to call the analyst.²⁴² If, however, the defense demands the presence of the examiner, for whatever reason, the sixth amendment requires the government to call him as a prosecution witness.

236. *E.g.*, MD. CTS. & JUD. PROC. CODE ANN. § 10-306(b) (Supp. 1987) (intoxication tests); OHIO REV. CODE ANN. § 2925.51(B), (C) (Anderson 1987) (controlled substances). See *State v. Reese*, 56 Ohio App. 2d 278, 382 N.E.2d 1193 (1978) (failure to serve copy of lab report on defendant renders report inadmissible).

See also IOWA CODE ANN. § 691.2 (West Supp. 1988) (lab report admissible unless defendant requests analyst to "testify in person"); ME. REV. STAT. ANN. tit. 17-A, § 1112(1) (1983) (lab report admissible unless defendant requests witness' testimony).

237. *E.g.*, *State v. Davison*, 245 N.W.2d 321, 323 (Iowa 1976), cert. denied, 430 U.S. 955 (1977); *State v. Kramer*, 231 N.W.2d 874, 880 (Iowa 1975).

238. 384 U.S. 1 (1966).

239. *Id.* at 4 (quoting *Johnson v. Zerbst*, 304 U.S. 458, 464 (1938)). In other confrontation cases, however, the Court has found a waiver by conduct. See *Taylor v. United States*, 414 U.S. 17 (1973) (waiver of right to be present where defendant flees after commencement of trial); *Illinois v. Allen*, 397 U.S. 337 (1970) (waiver of right to be present where defendant disrupts trial). These cases have led one commentator to suggest that a forfeiture, rather than waiver, theory is a more accurate description of the Court's decisions. See *Graham, The Right of Confrontation and the Hearsay Rule: Sir Walter Raleigh Loses Another One*, 8 CRIM. L. BULL. 99, 141 (1972).

240. Although discovery depositions are generally not permitted in criminal cases, this proposal would not be a radical departure from existing practice. For example, FED. R. EVID. 706(a) provides that the deposition of court-appointed experts "may be taken by any party."

241. One study suggests that this proposal would not present major problems. M. SAKS & R. VAN DUZEND, *THE USE OF SCIENTIFIC EVIDENCE IN LITIGATION* 38 (1983) ("The [prosecution] experts we spoke with said they were willing and available to meet with defense counsel and explain the strengths and weaknesses of the scientific evidence but such meetings rarely occurred.')

242. A survey of crime laboratories showed that analysts, on the whole, testify infrequently. "It was reported that on the average, crime laboratory examiners testified in 8% of drug cases (the percentage ranged from 0 to 86%) and 10% of criminalistics cases (the percentage ranged from 0 to 87%) where evidence was examined." Peterson, Mihajlovic & Bedrosian, *supra* note 94, at 15.