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Chapter 14: Evidence

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CHAPTER 14

Evidence

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§14.1. Introduction. The major development in the law of evidence during the *Survey* year was the adoption of the Federal Rules of Evidence. A study of those rules is beyond the scope of this Chapter and is better left to another forum.[1] Although the adoption of those rules necessarily dwarfs all other changes in the law of evidence over the last year, the courts of this Commonwealth have not been idle. This Chapter attempts to highlight those cases that either significantly change a rule of evidence, or analyze an existing rule in a new or unique manner.

§14.2. Relevancy: Evidence of Post-Sale, Pre-Accident Improvements. The novel question of the admissibility of evidence of improvements in a machine's safety mechanism, developed after sale of the machine but prior to the time of accident, was one of the issues presented by the case of *do Canto v. Ametek, Inc.*[1] The Supreme Judicial Court affirmed the ruling of the trial judge, who admitted such evidence for the limited purposes of (1) demonstrating the feasibility of redesign of the machine's safety features, (2) showing the defendant's knowledge, if any, of inadequacies in the machine's existing safety features, and (3) establishing the defendant's duty, if any, to warn past purchasers of any deficiency in the safety features.[2]

The plaintiff was injured in a commercial laundry while working on a flatwork ironer manufactured by the defendant. While feeding sheets into the ironer, her hand was caught in a sheet and pulled into the ironer, causing serious injuries.[3] A safety bar, located at some distance from the rollers in the ironer, was activated when the plaintiff's hand passed beneath it, cutting off electrical power to the

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§14.1. [1] *See generally* WEINSTEIN, WEINSTEIN'S EVIDENCE (1975).

§14.2. [1] 1975 Mass. Adv. Sh. 1591, 328 N.E.2d 873.
[2] *Id.* at 1594, 328 N.E.2d at 875-76.
[3] *Id.* at 1592, 328 N.E.2d at 875.

machinery.[4] Although the power was cut off, the momentum of the rollers (overtravel) continued to pull the sheet toward the ironer. When the machine was working at maximum speed, the distance of the overtravel was greater than the distance between the safety bar and the danger point on the roller, thereby bringing the plaintiff's hand under the heat and pressure of the ironer.[5] After the sale of the particular ironer on which the plaintiff was injured, but before the date of the injury, the defendant manufacturer redesigned the machine by adding a mechanism that reduced the amount of overtravel and by relocating the safety bar.[6]

The admissibility of evidence of remedial measures taken *subsequent* to an accident has received a good deal of attention. The rule that evidence of subsequent remedial measures may not be used as an admission of fault is well established;[7] the traditional rationale, based on considerations of relevancy and public policy, is twofold. The first rationale is that such evidence is not necessarily probative on the question of negligence. As Wigmore has observed:

> to improve the condition of the injury-causing object is therefore to indicate a belief merely that it has been capable of causing such an injury, but indicates nothing more and is equally consistent with a belief in injury by mere accident, or by contributory negligence, as well as by the owner's negligence.[8]

The same thought was more artistically stated by Baron Bramwell when he wrote that to take such evidence as evidence of negligence "would be . . . to hold that, because the world gets wiser as it gets older, therefore it was foolish before."[9]

Although evidence of subsequent remedial measures does not of itself prove negligence, there can be little doubt that under a normal standard of relevancy it would be admissible. Wigmore has noted that if the test for the admissibility of subsequent repairs were merely that of relevance, a rebuttable inference of defendant's negligence could arise.[10] Yet, even assuming that a rule such as Wigmore's has merit in terms of relevancy, another consideration tends to create an obstacle to admissibility: the likelihood that evidence of subsequent repairs will

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[4] *Id.*

[5] *Id.*

[6] *Id.* at 1593-94, 328 N.E.2d at 875.

[7] Ladd v. New York, New Haven & H.R.R., 335 Mass. 117, 138 N.E.2d 346 (1956); Manchester v. City of Attleboro, 288 Mass. 492, 193 N.E. 4 (1934); Shinners v. Proprietors of Locks & Canals, 154 Mass. 168, 28 N.E. 10 (1891); K. HUGHES, EVIDENCE, 19 MASS. PRAC. § 533, at 755 (1961) [hereinafter cited as HUGHES]; W. LEACH & P. LIACOS, HANDBOOK OF MASSACHUSETTS EVIDENCE 201 (4th ed. 1967) [hereinafter cited as LEACH & LIACOS].

[8] J. WIGMORE, EVIDENCE § 283, at 151 (3d ed. 1940) [hereinafter cited as WIGMORE].

[9] Hart v. Lancashire & Y. Ry., 21 L.T.R. (n.s.) 261, 263 (1869).

[10] WIGMORE, *supra* note 8, § 283, at 151.

have an inordinate impact upon a jury. As Hughes has suggested, despite its relevance, the prejudicial dangers of evidence of subsequent safety measures may outweigh the probative value of such measures.[11]

The trial judge in *do Canto* had instructed the jury that evidence of the post-sale safety improvements "is not in and of itself any evidence of negligence."[12] Because the issue before the Court on appeal was whether the evidence had been properly admitted for the three purposes specified, the Court never expressly confirmed this ruling of the trial judge. It appears that some of the same considerations noted in the discussion of post-accident improvements apply to the question of admission of evidence of pre-accident modifications. That machines designed after the injury-causing one have been improved does not necessarily show that the original machine was negligently designed. Presumably, a machine properly designed at the time of manufacture can subsequently be improved.

Notwithstanding the validity of admitting evidence of post-accident measures for such limited purposes, it is clear that evidence of pre-accident remedial measures may have more probative value, simply because the defendant has acted earlier—*i.e.*, he has reduced a risk prior to the occurrence of the injury. The countervailing consideration is that the potential for undue prejudice will be greater in the pre-accident situation because the changes have already been made at the time of injury. Unfortunately, the Court did not embark upon such an analysis or consider the effect of such an analysis upon the general question of admissibility of pre-accident remedial measures.

The second rationale for excluding evidence of post-accident repairs and improvements is one of policy: a defendant would be inhibited from immediately removing an existing danger if post-accident remedial measures could be introduced as an admission of negligence on his part.[13] This rationale has received severe criticism as of late. Weinstein has attacked it on three grounds, arguing that the lack of such a rule would not discourage remedial measures in most situations.[14] Some defendants will not even be aware of the implications of taking subsequent remedial measures. Others may be aware of the many exceptions under which such evidence may be admitted. Additionally, most defendants, especially responsibly insured ones, are likely to prevent the recurrence of a similar injury, especially inasmuch as evidence of the earlier accident would be admissible on the question of defendant's knowledge in a subsequent case.[15]

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[11] HUGHES, *supra* note 7, § 533, at 755.

[12] 1975 Mass. Adv. Sh. at 1594, 328 N.E.2d at 876.

[13] C. MCCORMICK, HANDBOOK OF THE LAW OF EVIDENCE, § 275, at 666 (2d ed. 1972) [hereinafter cited as MCCORMICK]; HUGHES, *supra* note 7, § 294, at 351; WIGMORE, *supra* note 8, § 283, at 151.

[14] WEINSTEIN, 2 WEINSTEIN'S EVIDENCE, 407—9-10 (1975) [hereinafter cited as WEINSTEIN].

[15] *Id.*

There are also strong arguments for not applying the traditional policy rationale in the post-sale, pre-accident situation. The Court in *do Canto* observed that there is no vested tort claim when improvements are contemplated in the pre-accident situation.[16] To counteract any fear of potential suit that could discourage the making of improvements are the stronger economic motivations of reducing future tort liability and of catering to customer demand for greater safety features.[17]

In *do Canto,* the defendant's argument for exclusion was based on the premise that pre- and post-accident improvements should receive similar treatment.[18] The Court, without elaboration, expressly refused to accept this contention as the rule in every situation.[19] Nonetheless, for purposes of the issue before it, the Court reasoned that if the modifications had occurred after the accident, the trial judge would have been within his discretion to admit the evidence for certain limited purposes.[20] Evidence of remedial measures undertaken subsequent to an accident is admissible for a number of purposes, *e.g.,* to show a defendant's control over the injury-producing premises.[21] Two of the three grounds upon which the evidence of the post-sale, pre-accident improvements was admitted—feasibility of making the safety improvements and knowledge of the danger at the time of the injury—are recognized bases upon which a judge in his discretion may admit evidence of post-accident remedial measures.[22] The Court stated: "We see no reason why evidence of pre-accident remedial measures should be any less admissible for the same purposes."[23] The third ground upon which the evidence was admitted, the defendant's duty to warn of any deficiency in the ironer's safety, was also upheld by the Court.[24]

In view of the Court's recognition of these three broadly based purposes for which evidence of modification in product design subsequent to sale is admissible, two problems come to the fore. First, it appears that such evidence will be admissible on one of these or other recognized grounds in almost every situation.[25] In this sense, the ex-

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[16] 1975 Mass. Adv. Sh. at 1596 n.3, 328 N.E.2d at 876 n.3.

[17] *Id.*

[18] *Id.* at 1594, 328 N.E.2d at 876.

[19] *Id.*

[20] *Id.* at 1595, 328 N.E.2d at 876.

[21] Finn v. Peters, 340 Mass. 622, 165 N.E.2d 896 (1960); Readman v. Conway, 126 Mass. 374 (1879); LEACH & LIACOS, *supra* note 7, at 201.

[22] 1975 Mass. Adv. Sh. at 1595, 328 N.E.2d at 876, *citing* Beverly v. Boston Elevated Ry., 194 Mass. 450, 80 N.E. 507 (1907). *See* Reardon v. Country Club at Coonamessett, Inc., 353 Mass. 702, 234 N.E.2d 881 (1968); Coy v. Boston Elevated Ry., 212 Mass. 307, 98 N.E. 1041 (1912) (feasibility).

[23] 1975 Mass. Adv. Sh. at 1595-96, 328 N.E.2d at 876.

[24] *Id.* at 1597, 328 N.E.2d at 877. *But see id.* at 1596 n.4, 328 N.E.2d at 876-77 n.4.

[25] *See* WEINSTEIN, *supra* note 14, at 407—10, and sources cited therein.

ception may swallow up the rule. Of course, to the extent that a jury can limit the application of such evidence to the purpose for which it has been admitted, the evidence is still not evidence of negligence itself.

Introduction of evidence of remedial measures to prove some point other than negligence should only be allowed when that point is actually controverted in the lawsuit.[26] Apparently, defendant Ametek had conceded in a general way that the design modifications were feasible. Nevertheless, the Court held that the evidence was not inadmissible simply because of the general concession.[27] The precise nature of the concession made by the defendant is not reported by the Court. The Court relied on the case of *Boeing Airplane Co. v. Brown*[28] in which the defendant manufacturer was willing to stipulate only that changes were feasible and had been made subsequent to the accident, but would not stipulate as to the specific changes actually made.[29] The proferred stipulation was held not sufficient to render inadmissible evidence of those remedial measures actually taken.[30] The *Boeing* case, however, was not tried before a jury,[31] and there is considerable doubt whether its principles are applicable to *do Canto,* where the risk of unduly prejudicing the jury must be considered.[32] It is suggested that the rule that such evidence is admissible only upon an issue actually controverted should be strictly applied. Otherwise, the evidence will certainly be admissible on almost every occasion.[33]

The second problem with the rule as presently applied is that the distinction between the use of such evidence to show negligence itself, and simply to show some other limited point, may be illusory. For example, as Weinstein has pointed out in regard to the federal rule: "While Rule 407 permits such evidence to be used to show feasibility of further improvements, the reasonableness of the condition at the time of the accident may turn in part on the feasibility of remedial measures. . . . Any decision that evidence is being used to show 'feasibility of precautionary measures' rather than negligence is to a considerable extent arbitrary."[34]

When such evidence is admitted for several, albeit "limited" pur-

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[26] *See* HUGHES, *supra* note 7, § 294, at 351-52, § 533, at 756; MCCORMICK, *supra* note 13, § 275, at 668. *See also* FED. R. EVID. 407.

[27] 1975 Mass. Adv. Sh. at 1596, 328 N.E.2d at 876.

[28] 291 F.2d 310 (9th Cir. 1961), *cited in* 1975 Mass. Adv. Sh. at 1596, 328 N.E.2d at 876.

[29] *Id.* at 315.

[30] *Id.*

[31] *Id.* at 312.

[32] *See id.* at 315 n.3. *See also* WEINSTEIN, *supra* note 14, at 407-15-16.

[33] *See* HUGHES, *supra* note 7, § 294 at 351-52; § 533 at 756; MCCORMICK, *supra* note 13, § 275, at 668.

[34] WEINSTEIN, *supra* note 14, at 407-11, 407-14.

poses, the distinction becomes, if possible, even more tenuous. In a case such as *do Canto,* where the evidence is employed to show knowledge of a risk, the feasibility of taking precautions against that risk, and the duty to warn of the risk, it is doubtful that the concept that the evidence is not proof of negligence will have any practical effect upon the jury or judge.

Unfortunately, the Court in *do Canto,* although faced with an interesting issue, dispensed with it with a minimum of analysis. The Court not only failed to confront the need for a fresh consideration of the efficacy of the present rule regarding remedial measures taken subsequent to injury, but also passed up an opportunity to set out the circumstances under which evidence of modifications in product design *prior* to injury will be admissible. *Do Canto* may be read to hint that the two situations will be treated alike. The Court, however, never holds any more than that evidence of pre-accident measures may be admitted in the trial judge's discretion for certain specified purposes, on the same terms upon which evidence of post-accident measures would be admissible.

§14.3. Impeachment: Records of Juvenile Offenses. Ordinarily, records of juvenile offenses will not be made available to, and cannot be used by, a party seeking to cross-examine a juvenile witness.[1] In *Commonwealth v. Ferrara,*[2] however, the Supreme Judicial Court held that in certain circumstances the confidentiality afforded juvenile records must give way to a defendant's sixth amendment right to confront the witnesses against him.[3]

In *Ferrara,* the defendants appealed from the trial judge's denial of a motion for the production of the juvenile records of a fourteen-year-old boy who testified for the prosecution.[4] The juvenile was the only witness who claimed to have seen the murder for which defendants were tried.[5] The evidence indicated that shortly after the murder the juvenile fled the scene of the crime and hid from the police. Three days later, he was taken into custody, and he remained in custody at the time of trial.[6]

The witness' juvenile record included numerous charges, none of which, however, were for violent offenses. The record included an ad-

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§14.3. [1] *See* G.L. c. 119, § 60.

[2] 1975 Mass. Adv. Sh. 2064, 330 N.E.2d 837.

[3] *Id.* at 2074, 330 N.E.2d at 842.

[4] *Id.* at 2065, 330 N.E.2d at 839. The Court rejected a construction of G.L. c. 119, § 60, that would limit its application to juveniles who are parties in an action. Rather, it held that the section protects the juvenile whether his status is that of party or witness. *Id.* at 2067, 330 N.E.2d at 840.

[5] *Id.* at 2065, 330 N.E.2d at 839.

[6] *Id.* at 2067, 330 N.E.2d at 840. By the time of trial, the custody had become protective custody. *Id.*

judication of delinquency for breaking and entering,[7] and a resulting order for confinement to the Youth Service Board, which was in suspended status at the time of the murder.[8]

The Supreme Judicial Court, relying on the United States Supreme Court's decision in *Davis v. Alaska,*[9] noted that the proper test of admissibility was whether the "juvenile records of the witness had a rational tendency . . . to show bias of the witness."[10] In concluding that the record in the instant case tended to show bias and thus that the records were admissible, the Court stated that the juvenile, who possessed a record of relatively serious delinquencies, may have been motivated by a desire to please the authorities, and to direct their investigation away from himself.[11]

In so holding, the Court rejected the prosecution's effort to distinguish *Davis,* on the ground, *inter alia,* that the juvenile records in that case were far more probative on the issue of bias than were the records in *Ferrara.* In *Davis,* there was a similarity between the offenses in the juvenile record and the one for which the defendant was being tried.[12] The prosecution in *Ferrara* contended that a juvenile with such a record would consider himself under investigation for the crime itself.[13] That possibility would not exist in the instant case, it was argued, where no connection existed between the nature of the charges on the juvenile record and the crime at issue. The prosecution attributed special significance to the absence of indications of violence in the juvenile record. Nevertheless, the difference in the nature of the offenses did not dissuade the Court from assuming that the juvenile might nevertheless possess and maintain a self-interest in deflecting suspicion from himself.[14]

The presence of three other factors was sufficient to support an inference that the juvenile witness may have been biased. First, he was present at the commission of the crime, and his flight from the murder scene may have revealed that he thought himself a likely suspect. Second, the Court also recognized that, as in *Davis,* the juvenile had an interest in pleasing the authorities, spawned doubtlessly by being in custody at the time of trial. Third, the Court found that the juvenile's

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[7] *Id.*

[8] *Id.*

[9] 415 U.S. 307 (1974).

[10] 1975 Mass. Adv. Sh. at 2070, 330 N.E.2d at 841.

[11] *Id.* at 2073, 330 N.E.2d at 842.

[12] *Id.* at 2071, 330 N.E.2d at 841. In *Davis,* the crimes charged were burglary and grand larceny. The juvenile witness had been adjudicated a delinquent for burglary and was on probation for that offense. *Id.*

[13] *Id.* In *Davis,* an additional consideration was that the metal safe, which the defendant Davis was accused of having stolen and broken into, was found abandoned near the juvenile witness' home. *Id.*

[14] *Id.* at 2073, 330 N.E.2d at 842.

testimony, as actually presented at the trial, indicated a concern by the witness with his own self-interest.[15]

The result reached in *Ferrara* is correct: on the facts, the defendant's constitutional right to cross-examine the witness was clearly a more vital concern than the Commonwealth's interest in protecting a juvenile. The juvenile was a crucial witness, and his conduct throughout the case was reasonably susceptible of the inference that he was motivated by a desire to ingratiate himself with the authorities.

§14.4. Impeachment: Civil Cases: Records of Prior Convictions. Section 21 of chapter 233 of the General Laws provides that—except in certain limited circumstances—the conviction of a witness for a crime may be shown to affect his credibility. Recently, in the 1974 decision of *Commonwealth v. DiMarzo,*[1] Justice Hennessey criticized the lack of discretion that this rule currently provides the trial judge.[2] He commented that prior convictions "even as applied only to the credibility issue, have little or no probative value in most instances."[3] Furthermore, he doubted whether limiting instructions to the jury would avoid prejudicing a criminal defendant's case.[4]

In two cases decided during the *Survey* year, *Walter v. Bonito*[5] and *Carey v. Zayre of Beverly, Inc.,*[6] the Court again expressed its displeasure with the current statutory rule. Both decisions involved issues raised by the admission of prior convictions for impeachment pur-

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[15] *Id.* The Court thought that at least one of the juvenile witness' answers at trial was particularly ripe for cross-examination. When asked why he ran away, the witness replied: " 'I don't recall because I was worried about other things, bigger things than this little . . . [trouble].' " *Id.* Compare the United States Supreme Court's reaction in Davis v. Alaska, 415 U.S. 308 (1974), to the juvenile witness' denial that he had ever been interrogated by police. *Id.* at 314. The Court doubted whether the juvenile would have denied any such contact with the police had he been under the belief that his testimony would be subject to cross-examination. The Court went on to state that "[i]t would be difficult to conceive of a situation more clearly illustrating the need for cross-examination." *Id.*

§14.4. [1] 1974 Mass. Adv. Sh. 215, 308 N.E.2d 538.

[2] *Id.* at 224-29, 308 N.E.2d at 544-47 (concurring opinion). *See generally* Commonwealth v. West, 357 Mass. 245, 258 N.E.2d 22 (1970); McLaughlin & Leonard, *Evidence,* 1970 ANN. SURV. MASS. LAW § 27.2, at 679-81.

[3] 1974 Mass. Adv. Sh. at 228, 308 N.E.2d at 546. The federal and Massachusetts rules differ substantially. The federal rule provides for impeachment by evidence of prior convictions only when the convictions were for crimes that (1) involve dishonesty or false statement; or (2) are punishable by death or imprisonment for more than a year and, in the discretion of the court, their probative value exceeds their prejudicial effect. FED. R. EVID. 609(a).

Rule 21 of the Uniform Rules of Evidence limits impeachment by prior convictions to crimes involving dishonesty or false statements. *See* 1975 Mass. Adv. Sh. at 617 n.2, 324 N.E.2d at 628 n.2.

[4] 1974 Mass. Adv. Sh. at 228, 308 N.E.2d at 546.

[5] 1975 Mass. Adv. Sh. 609, 324 N.E.2d 624.

[6] 1975 Mass. Adv. Sh. 619, 324 N.E.2d 619.

poses, and underline some of the problems with the statutory rule. Although *Walter* provides a guideline for determining reversible error when records of prior convictions are erroneously introduced,[7] when read together, the two cases do not appear to make a notable advance toward alleviating the inequities caused by the present rule.

In *Walter,* plaintiff brought suit to recover damages for injuries sustained as a result of defendant's allegedly negligent driving.[8] A major portion of the evidence consisted of the two drivers' conflicting accounts of the collision. As part of his affirmative case, the plaintiff called the defendant driver as his witness and proceeded to introduce into evidence records of that defendant's five prior convictions for motor vehicle violations.[9] The trial judge admitted most of the records, but limited their application to the impeachment of defendant's credibility.[10]

On appeal, the Supreme Judicial Court held that the records were improperly admitted.[11] The Court found that the trial judge's ruling violated section 23 of chapter 233 of the General Laws, which provides that "[t]he party who produces a witness shall not impeach his credit by evidence of bad character . . . ." This result was mandated by the Court's past decisions, which (1) hold that prior criminal convictions serve the purpose of proving bad character,[12] and (2) apply section 23 to a party who calls his opponent as a witness.[13] Although it is not surprising that the Court did not break with precedent in light of the recent adoption of Massachusetts Rule of Civil Procedure 43(b), which forbids such impeachment of a party when called as a witness by the adverse party,[14] the Court did admit that the Massachusetts position runs counter to the modern trend, which includes the federal rule.[15]

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[7] The Court stated:"[W]here . . . the prior convictions relate to offenses similar to the tort at bar, there is an especially serious danger that a jury will disregard limiting instructions and allow the convictions to influence their deliberations as substantive evidence." 1975 Mass. Adv. Sh. at 618, 324 N.E.2d at 628.

[8] 1975 Mass. Adv. Sh. at 609, 324 N.E.2d at 625. The defendant driver's employer was also a defendant. *Id.*

[9] The records included convictions for driving in a breakdown lane, speeding, operating under the influence, operating to endanger, and leaving the scene of an accident. *Id.* at 612-13, 324 N.E.2d at 626.

[10] *Id.* at 613, 324 N.E.2d at 626.

[11] *Id.*

[12] *Id.* at 614, 324 N.E.2d at 626. *See* Commonwealth v. Arsenault, 361 Mass. 287, 301, 208 N.E.2d 129, 138 (1972). *See also* C. MCCORMICK, HANDBOOK OF THE LAW OF EVIDENCE §§ 41-43, at 81-90 (2d ed. 1972); J. WIGMORE, EVIDENCE § 980, at 828 (Chadbourn rev. 1970) [hereinafter cited as WIGMORE]; W. LEACH & P. LIACOS, HANDBOOK OF MASSACHUSETTS EVIDENCE 121-26 (4th ed. 1967).

[13] Labrie v. Midwood, 273 Mass. 578, 174 N.E. 214 (1931).

[14] *See* Walter v. Bonito, 1975 Mass. Adv. Sh. at 614-15, 324 N.E.2d at 627.

[15] *Id.* at 614, 324 N.E.2d at 627. *See* FED. R. EVID. 607. *See also* UNIFORM EVIDENCE ACT, Rule 20, 9A U.L.A. 607 (1965); FED. R. CIV. P. 43(b); J. WIGMORE, *supra* note 12, § 899, at 663-67. The Court makes clear that if it were faced with a case of first impression, it would permit impeachment of one's own witness when the witness is the adverse party. 1975 Mass. Adv. Sh. at 614, 324 N.E.2d at 627.

The noteworthiness of *Walter* lies in the Court's finding that the error in admitting the convictions was sufficiently prejudicial to require a new trial, even though the trial judge had given curative, limiting instructions to the effect that the convictions were to be used only to impeach the defendant's credibility.[16] In reaching this decision, the Court emphasized the similarity between the behavior involved in the defendant's prior convictions and the behavior that was the subject of the instant case—the allegedly negligent driving. Specifically, the Court stated: "[W]here . . . the prior convictions related to offenses similar to the tort at bar, there is an especially serious danger that a jury will disregard limiting instructions and allow the convictions to influence their deliberations as substantive evidence."[17]

The holding of *Walter* is consistent with both the rationale of Justice Hennessey's opinion in *DiMarzo,* and the intuition of many trial lawyers, that the jury will frequently consider impeachment evidence for substantive purposes, even though they have been instructed otherwise.[18] The risk that the jury might misuse the evidence of the convictions would appear to increase in relation to the similarity existing between the behavior for which a witness was previously convicted and the behavior that is the gravamen of the case at bar.[19]

Ironically, if the convictions admitted in *Walter* had been introduced against the adverse party after he had taken the stand on his own behalf, it appears that under the mandate of section 21 of chapter 233 of the General Laws, those convictions would have been admissible regardless of the extent of similarity between the prior convictions and the case at bar. At the very least, the Court in *Walter* failed to indicate whether a test based upon similarity between convictions and conduct at issue will be applied to impeachment material that is otherwise properly admitted.[20]

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[16] 1975 Mass. Adv. Sh. at 617, 324 N.E.2d at 628. *See also* Commonwealth v. Cook, 351 Mass. 231, 237, 218 N.E.2d 393, 397 (1966).

[17] 1975 Mass. Adv. Sh. at 618, 324 N.E 2d at 628.

[18] *See also* McLaughlin & Leonard, *Evidence,* 1970 ANN. SURV. MASS. LAW § 27.2, at 679-81.

[19] By contrast, the rule in the criminal area is that a prior offense (*e.g.* rape), which may be the exact offense now before the jury for consideration, is admissible to impeach the defendant's credibility. G.L. c. 233, § 21. *See* Commonwealth v. DiMarzo, 1974 Mass. Adv. Sh. 215, 308 N.E.2d 538. Such an admission surely causes the jury to conclude that one who did it before has done it again—a conclusion unaffected by any instructions seeking to limit unsuccessfully the devastatingly awesome effect of such evidence.

A due process objection to the use of impeachment evidence authorized by G.L. c. 233, § 21, has consistently been rejected. *See, e.g.,* Commonwealth v. Boyd, 1975 Mass. Adv. Sh. 687, 691-92, 326 N.E.2d 320, 324.

[20] *See* Commonwealth v. DiMarzo, 1974 Mass. Adv. Sh. 215, 224, 308 N.E.2d 538, 544; Commonwealth v. West, 357 Mass. 245, 249, 258 N.E.2d 22, 24 (1970). *But see* Carey v. Zayre of Beverly, Inc., 1975 Mass. Adv. Sh. 619, 632-33, 324 N.E.2d 619, 624 (in holding that evidence of certain prior convictions was properly admitted, the Court considered the lack of similarity between the convictions and the substantive behavior involved).

In the second *Survey* year decision, *Carey v. Zayre of Beverly, Inc.*,[21] the plaintiff brought suit to recover damages for personal injuries sustained as a result of a fall in the defendant's store, allegedly caused by the defendant's negligence. The trial judge allowed the defendant to impeach the plaintiff by introducing records of plaintiff's six misdemeanor convictions.[22] On appeal from the admission of the convictions, the Supreme Judicial Court held that it was not reversible error to admit records of prior misdemeanor convictions to impeach the plaintiff. Unlike the situation in *Walter,* however, where the plaintiff called a defendant as his witness,[23] the impeached party in *Carey* took the stand in his own behalf.[24] In addition, on direct examination, the plaintiff admitted to some of the arrests that had resulted in the convictions.[25]

In *Carey,* the plaintiff first raised the issue whether records of his prior misdemeanor convictions could be used for impeachment purposes in a civil case where there had been no showing that he was afforded the right to counsel at the prior criminal proceedings. Initially, the Court focused on *Argersinger v. Hamlin,*[26] wherein the United States Supreme Court held that the sixth amendment forbids the imposition of a jail sentence for a misdemeanor unless the defendant is represented by counsel or waives his right to representation.[27] The Supreme Judicial Court also reviewed Supreme Court decisions holding, at least as to felonies, that the state cannot impeach a witness with evidence of a conviction obtained in violation of the right to counsel.[28] This review revealed two defects in the plaintiff's reliance on *Argersinger.* First, *Argersinger* forbids only the imposition of a jail sentence for a misdemeanor conviction where a defendant has been denied counsel. In contrast, plaintiff's convictions resulted in nothing worse than suspended sentences. The Supreme Judicial Court declined to extend *Argersinger* to cover that situation.[29] Second, much of the law applying the exclusionary rule occurs in criminal cases, for the

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[21] 1975 Mass. Adv. Sh. 619, 324 N.E.2d 619.

[22] *Id.* at 619-20, 324 N.E.2d at 619.

[23] 1975 Mass. Adv. Sh. at 612, 324 N.E.2d at 626.

[24] 1975 Mass. Adv. Sh. at 620, 324 N.E.2d at 619-20.

[25] *Id.,* 324 N.E.2d at 619. *See* Subilosky v. Commonwealth, 358 Mass. 390, 265 N.E.2d 80 (1970).

[26] 407 U.S. 25 (1972).

[27] *Id.* at 37. *Argersinger* has been held to apply retroactively. *See* Berry v. Cincinnati, 414 U.S. 29 (1973).

[28] Loper v. Beto, 405 U.S. 473 (1972); Burgett v. Texas, 389 U.S. 109 (1967). *See also* Gilday v. Commonwealth, 355 Mass. 799, 247 N.E.2d 396 (1969); Commonwealth v. Barrett, 1973 Mass. App. Ct. Adv. Sh. 383, 309 N.E.2d 215.

[29] *See* 1975 Mass. Adv. Sh. at 624-25, 324 N.E.2d at 621. Two of the plaintiff's convictions had been disposed of with suspended sentences. The Court did not choose between the divided authorities as to whether such disposition falls within or without the aegis of *Argersinger. Id.* at 623-24, 324 N.E.2d at 621.

reason that the government should be deterred from profiting from its own illegal conduct. That rationale does not apply in a civil suit, at least where the government is not a party.[30] Finally, the Court stated that even if it were to extend *Argersinger* to cover this case, the party seeking to exclude his prior conviction would have the burden of proving that he was denied counsel.[31] Plaintiff had not met his burden on these facts.

Plaintiff advanced Rule 10 of the General Rules of the Supreme Judicial Court, which requires provision of counsel when "imprisonment may be imposed,"[32] as an additional reason for exclusion of the prior convictions. As to this argument, the Court pointed out that the plaintiff's constitutional claims were stronger where a mere court rule served as the basis for the claim.[33]

After an extensive discussion of the application of constitutional law and court rules, the Court concluded that these issues "need not be resolved."[34] Three of the six convictions would have been admissible even if the Court had adopted an extended rule of exclusion by virtue of either *Argersinger* or Rule 10.[35] As to the three convictions otherwise admissible, they predated the adoption of Rule 10 and depended on an extension of the right to counsel to cases involving only a fine, and special circumstances.[36] Again, the Court did not decide whether this extension was warranted, because the plaintiff had made no showing that he was denied the right to counsel.[37] The convictions in which plaintiff may have been denied a right to counsel, said the Court, were merely cumulative, thus impliedly of little prejudicial effect, especially where plaintiff admitted that he had been arrested in connection with the convictions.[38]

Carey thus indicates that where a prior conviction, for which there is some question whether there was a denial of representation, is offered for impeachment purposes, the rule of admissibility will depend upon whether the forum is civil or criminal. The rule in criminal cases is that prior convictions in which the defendant's right to counsel had been violated will be excluded.[39] Furthermore, in the Commonwealth, the prosecution has the burden of showing that there was no violation of the defendant's right to counsel in obtaining the prior conviction.[40]

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[30] *Id.* at 625, 324 N.E.2d at 621. *See* Note, *Constitutional Exclusion of Evidence in Civil Litigation,* 55 VA. L. REV. 1484 (1969).

[31] 1975 Mass. Adv. Sh. at 627, 324 N.E.2d at 622.

[32] 347 Mass. 809 (1964). *See also* 355 Mass. 803 (1969) (amendment broadening the rule), *as amended,* S.J.C. R. 3:10.

[33] 1975 Mass. Adv. Sh. at 627-28, 324 N.E.2d at 622.

[34] *Id.* at 629, 324 N.E.2d at 623.

[35] *Id.*

[36] *Id.*

[37] *Id.* at 630, 324 N.E.2d at 623.

[38] *Id.* at 631-32, 324 N.E.2d at 624.

[39] Loper v. Beto, 405 U.S. 473 (1972); Burgett v. Texas, 389 U.S. 109 (1967).

[40] Gilday v. Commonwealth, 355 Mass. 799, 247 N.E.2d 396 (1969).

In civil cases, *Carey* suggests that it is unlikely that an exclusionary rule will be applied at all. Even if a limited exclusionary rule is utilized, the burden of demonstrating the illegality of the prior conviction because of lack of proper representation will almost certainly be on the person seeking to exclude the evidence.[41]

The Court in *Carey* touches upon the reason for such a distinction. The usual rationale for employing the exclusionary rule in criminal cases is one of deterrence. The government should not be encouraged to engage in illegal conduct by being allowed to employ the fruits thereof.[42] In a criminal case, the rule would forbid using in a later prosecution a conviction obtained against a defendant who was denied his right to representation in a previous prosecution. The Court is of course correct that the deterrence rationale is inapplicable to a suit between private parties.

Nevertheless, there is another rationale for exclusion, which the Court discussed only briefly in *Carey*: the reliability of a conviction that has been obtained in violation of the right to counsel.[43] In light of the Court's recognition in *DiMarzo* and *Walter* that in many instances the convictions will have questionable probity and that they may cause disproportionate or even awesome damage to an impeached party's case, it is surprising that the Court did not place greater emphasis upon the reliability question.[44] After stating that "lack of counsel immediately calls into question the reliability and hence the probative value of the convictions used," the Court simply sought sanctuary in the statement that "the argument for exclusion is weakened by its appearance in a civil context."[45]

Despite the judicial recognition of the potential inequities of a rule of law providing a trial judge with no discretion in limiting the use of prior convictions for impeachment purposes, the *Walter* and *Carey* cases cannot fairly be read to alleviate the problem. The question that remains is whether, where impeachment evidence is properly admitted under the broad terms of section 21 of chapter 233 of the General Laws, under what circumstances, if any, will the prejudicial impact of such evidence bring about judicial limitation of its use? Al-

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[41] As a practical matter, such information will be more readily accessible to the person who was convicted. Carey v. Zayre of Beverly, Inc., 1975 Mass. Adv. Sh. at 630, 324 N.E.2d at 622.

[42] *Id.* at 625-26, 324 N.E.2d at 621. *See* Mapp v. Ohio, 367 U.S. 643 (1961); Weeks v. United States, 232 U.S. 383 (1914); Note, *Constitutional Exclusion of Evidence in Civil Litigation,* 55 VA. L. REV. 1484 (1969).

[43] 1975 Mass. Adv. Sh. at 627, 324 N.E.2d at 622.

[44] The Court seemed to recognize this argument in its discussion of Seelig v. Harvard Cooperative Soc'y, 355 Mass. 532, 246 N.E.2d 642 (1969) (statements procured in violation of *Miranda* warnings held admissible in a civil action), but did not pursue the distinction between the cases. The Court did note, however, that a violation of *Miranda* has a less direct relation to reliability. 1975 Mass. Adv. Sh. at 627, 324 N.E.2d at 622.

[45] 1975 Mass. Adv. Sh. at 627, 324 N.E.2d at 622.

though both *Walter* and *Carey* recognize that the potential for prejudice is greatest when there is a substantive similarity between the conviction record and the crime alleged at trial, they cannot fairly be read to establish a rule requiring exclusion of convictions for impeachment purposes when such similarity exists.

§14.5. Implied Admissions: Failure to Call a Witness. In *Commonwealth v. Franklin,*[1] the Supreme Judicial Court examined the circumstances under which one party's failure to call a witness may lead to an inference that the witness would have testified adversely to that party's interest. More particularly, *Franklin* involved a defendant who challenged convictions for rape and armed robbery. The Court found no prejudicial error in a jury instruction permitting an adverse inference to be drawn from the defendant's failure to call any alibi witnesses other than his mother.[2]

Although *Franklin* does not create any new law,[3] it is noteworthy because it succinctly delineates the factors to be considered by the trial judge in determining whether an adverse inference may properly be drawn from a party's failure to produce witnesses. The Court indicated that a judge should consider: (1) whether the case against the defendant "is so strong that, if innocent, he would be expected to call [a witness];" (2) whether the witness is physically available; and (3) whether the defendant has greater knowledge of the identity and location of the witness than the prosecution.[4] With these considerations in mind, a judge may find that the defendant's overall position respecting such a witness is superior to the prosecution's and that his failure to call the witness may be commented upon.

After setting forth these guidelines, the Court suggested that caution should restrain the trial judge in allowing the inference,[5] because it could have a substantial prejudicial effect upon the jury's deliberations. The reason for the Court's emphasis on a cautious approach lies in the variety of situations in which a defendant may decide not to call a witness, even though that witness' testimony would support him. In some cases, a witness may not be called by a defendant because his vulnerability to cross-examination might outweigh the advantages to

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§14.5. [1] 1974 Mass. Adv. Sh. 1483, 318 N.E.2d 469.

[2] *Id.* at 1493, 318 N.E.2d at 475. The defendant had conceded that such alibi witnesses existed and were physically available. *Id.*

[3] The Court, while enunciating the rules of law for general application, *id.* at 1490, 318 N.E.2d at 474, invoked the litany that each case must be decided on its own facts, *id.* at 1491, 318 N.E.2d at 475, and cautioned that in this area, "there is no hard and fast rule . . . ." *Id.* at 1492, 318 N.E.2d at 475. *See* Commonwealth v. O'Rourke, 311 Mass. 213, 222, 40 N.E.2d 883, 888 (1942). *See also* Grady v. Collins Transp. Co., 341 Mass. 502, 170 N.E.2d 725 (1960); Commonwealth v. Finnerty, 148 Mass. 162, 167, 19 N.E. 215 (1889).

[4] 1974 Mass. Adv. Sh. at 1492, 318 N.E.2d at 475.

[5] *Id.* at 1493, 318 N.E.2d at 476.

be gained by his favorable testimony. The Court conceded that some explanations that a defendant might offer to a jury for his failure to call a witness may be dangerous;[6] to remedy this problem, the Court suggested that the reasons supporting a defendant's failure to call a witness be explained to the trial judge.[7]

A witness' availability to the defendant, a factor that the Court considered important in determining the propriety of an adverse inference,[8] deserves comment. *Franklin* indicates that a witness will not be considered "available" merely by virtue of a legal or consanguinal relationship existing between the defendant and the witness; rather, availability or control relate to the "physical availability of the witness, and the likelihood that he can be produced by summons or otherwise."[9] In most cases, control will in practice be determined by the defendant's knowledge of the name and address of the potential witness and of his availability by summons, although the physical availability of the witness may not by itself by determinative in deciding whether the witness is within the control of the party.[10] Whether or not one must look at the relationship between the witness and the party to determine the requisite control was left for enunciation in future cases.

Later in the *Survey* year, in *Commonwealth v. Happnie,*[11] the Appeals Court applied the *Franklin* rule overzealously. In *Happnie,* a witness for the Commonwealth testified that the defendant had discussed the robbery, in the presence of both herself and the defendant's wife, on two separate occasions.[12] There was no evidence regarding the "physical whereabouts" of defendant's wife.[13]

In his closing argument to the jury, the prosecutor commented upon the defendant's failure to call his wife to rebut the testimony of the Commonwealth's witness.[14] The trial judge instructed the jury that if they found that defendant's wife was available, but not called, it would be permissible to infer that her testimony would not be favorable to

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[6] *Id.*

[7] *Id.* at 1493-94, 318 N.E.2d at 476. *See* Commonwealth v. Happnie, 1975 Mass. App. Ct. Adv. Sh. 554, 326 N.E.2d 25.

[8] 1974 Mass. Adv. Sh. at 1492, 318 N.E.2d at 475.

[9] *Id.*

[10] Commonwealth v. Happnie, 1975 Mass. App. Ct. Adv. Sh. 554, 558-59, 326 N.E.2d 25, 28.

[11] 1975 Mass. App. Ct. Adv. Sh. 554, 326 N.E.2d 25.

[12] *Id.* at 555, 326 N.E.2d at 27.

[13] *Id. cf.* Commonwealth v. Spencer, 212 Mass. 438, 452, 99 N.E. 266, 272 (1912) (defendant's wife present in court during trial).

[14] 1975 Mass. App. Ct. Adv. Sh. at 555, 326 N.E.2d at 27. The defendant did not testify. *Id.* Comment on a defendant's failure to testify is, of course, violative of his fifth amendment right against self-incrimination. *See* Griffin v. California, 380 U.S. 609 (1965).

defendant.[15] On appeal, the defendant argued that no showing that his wife was physically available to testify had been made.[16]

In affirming the conviction, the Appeals Court ruled that there was no error in either the prosecutor's comment or the trial judge's charge, and that an inference adverse to the defendant could be drawn from his failure to produce his wife or offer an explanation for her absence.[17] The implication of this holding is that a defendant now has the burden of showing why he has not produced a witness. In short, the Appeals Court has fashioned the *Franklin* suggestion that defendant explain the reason for a witness' absence into a rule of evidence—namely, that failure to meet the burden of explaining the absence of a witness permits a jury to infer that the witness was available to the defendant.

The *Happnie* requirement ignores the Court's acknowlegment in *Franklin* that, at times, "it may be tactically unwise for the defendant to offer explanation to the jury of the reasons for his failure to produce the witness."[18] In *Happnie,* for example, the existence of the relationship of marriage between defendant and witness did not compel a jury conclusion that the witness was available to the defendant. To permit the judge to instruct the jury that they may draw such an inference is to *require* the defendant to make an explanation to a judge for the witness' unavailability.

The *Franklin* and *Happnie* cases may have created more problems than they settled. If, for example, in his closing argument a prosecutor comments on the absence of a defendant's wife and, thereafter, the defendant approaches the trial judge to indicate that his wife is hospitalized and dying of cancer, the court surely will not instruct the jury that it may draw an adverse inference from the wife's absence. Must the court grant a mistrial or, instead, in order to avoid prejudice, permit defense counsel to make this explanation to the jury, thereby injecting irrelevant sympathy into the case?[19] These unanswered questions are left for future resolution in the wake of *Happnie* and *Franklin.* The existence of such questions provides an atmosphere in which the imaginative defense counsel senses occasions for reversible error.

§14.6. Attorney-Client Privilege. The principle that communications between an attorney and his client that are intended to be made public are not privileged was the basis for decision in two cases de-

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[15] 1975 Mass. App. Ct. Adv. Sh. at 555-56, 326 N.E.2d at 27.

[16] *Id.* at 556, 326 N.E.2d at 27.

[17] *Id.* at 561, 326 N.E.2d at 29.

[18] 1974 Mass. Adv. Sh. at 1493, 318 N.E.2d at 476.

[19] If the court allows the latter course, it is permitting the defense to introduce "evidence" without testimony.

cided during the *Survey* year.[1] In *Peters v. Wallach,*[2] a suit in equity to enforce a settlement agreement, the defendants argued that their attorney could not be shown to have had the authority to settle the case, because the only evidence of such authority was inadmissible under the attorney-client privilege.[3] Since the clients' grant of authority to settle must of necessity be communicated to the other party, the Court held that it was not privileged.[4]

Commonwealth v. Michel[5] involved an attempt to cross-examine a codefendant as to possible bias stemming from an arrangement with the prosecution, which included a provision that the indictment against him in the instant case would be nol prossed.[6] Since all negotiations between the codefendant and the prosecutor's office had been conducted through the codefendant's attorney, the trial judge ruled that information as to the arrangement communicated by the attorney was privileged.[7] The Supreme Judicial Court, however, held that although an attorney's advice whether to accept an offer would be privileged, the communication of the terms of the offer, already known to the prosecution and likely to be presented to the court, is not so privileged.[8]

§14.7. Scientific Evidence: Results of Breathalyzer Test. In *Commonwealth v. Brooks,*[1] the Supreme Judicial Court corrected a legislative oversight to avoid undermining the statute that concerns the admission into evidence of breathalyzer tests.[2] Section 24(1)(e) of chapter 90 of the General Laws permits the introduction of "evidence of the percentage, *by weight,* of alcohol in the defendant's blood . . . ."[3] Although the defendant in *Brooks* had voluntarily submitted to a breathalyzer test,[4] he challenged the introduction into evidence of the results of that test, on the theory that the breathalyzer machine that produced the results measured the percentage of alcohol in the defendant's blood *by volume.*[5] The Court, after engaging in a lengthy historical re-

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§14.6. [1] Peters v. Wallach, 1975 Mass. Adv. Sh. 61, 321 N.E.2d 806; Commonwealth v. Michel, 1975 Mass. Adv. Sh. 1108, 327 N.E.2d 720.
[2] 1975 Mass. Adv. Sh. 61, 321 N.E.2d 806.
[3] *Id.* at 68, 321 N.E.2d at 809.
[4] *Id.* at 69, 321 N.E.2d at 809.
[5] 1975 Mass. Adv. Sh. 1108, 327 N.E.2d 720.
[6] *Id.* at 1114, 327 N.E.2d at 723.
[7] *Id.*
[8] *Id.* at 1116-17, 327 N.E.2d at 724.

§14.7. [1] 1974 Mass. Adv. Sh. 2196, 319 N.E.2d 901. *See also* Commonwealth v. Bernier, 1975 Mass. Adv. Sh. 221, 322 N.E.2d 414.
[2] G.L. c. 90, § 24(1)(e).
[3] *Id.* (emphasis added).
[4] 1974 Mass. Adv. Sh. at 2196, 319 N.E.2d at 902.
[5] *Id.* at 2198, 319 N.E.2d at 903.

view of the role of alcohol in vehicular accidents,[6] and in the semantical niceties of statutory construction,[7] concluded that the statute requires that the alcohol content of the blood be measured only in a weight/volume percentage, not in a weight/weight percentage.[8] The measurement is to be expressed in terms of grams of alcohol per 100 milliliters or cubic centimeters of blood, not in terms of milligrams of alcohol per 100 milligrams of blood.[9] Because the test administered to the defendant was calibrated in the former measurements, the results of the test were held to be properly admitted into evidence.[10]

STUDENT COMMENT

§14.8. Admissibility of Expert Testimony Based on Voice Spectrograms: *Commonwealth v. Lykus.*[1] Paul Cavalieri disappeared on November 2, 1972. Two days later his family received a telephone call demanding a ransom payment. This call was followed by four similar calls, which were recorded by police with the permission of the Cavalieris. On April 12, 1973, the remains of a body later identified as that of Paul Cavalieri were found. Edward Lykus was subsequently tried before a jury on three indictments which charged him with the kidnapping and first degree murder of Paul Cavalieri, and with extortion from Cavalieri's father.[2]

A portion of the evidence offered by the prosecution at trial was expert testimony, based in part on voice spectrograms,[3] that the voice on the recorded extortionate calls was that of the defendant. The trial judge's ruling on the admissibility of this testimony was preceded by an extensive voir dire hearing at which experts for both parties testified. Lieutenant Ernest W. Nash of the Michigan State Police De-

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[6] *Id.* at 2198-2200, 319 N.E.2d at 903-04. *See* Newman, *Proof of Alcoholic Intoxication,* 34 KY. L.J. 250 (1946); Watts, *Some Observations on Police-Administered Tests for Intoxication,* 45 N.C.L. REV. 34 (1966).

[7] 1974 Mass. Adv. Sh. at 2202-04, 319 N.E.2d at 904-05. For example, the Court applied the rule that words in a statute must be considered in light of the other words surrounding them. *Id. See* Animal Rescue League v. Assessors of Bourne, 310 Mass. 330, 333, 37 N.E.2d 1019, 1021 (1941). The Court also applied the rule that a statute should be interpreted to be effective for the purpose for which it was enacted. 1974 Mass. Adv. Sh. at 2209, 319 N.E.2d at 905. *See* A. Belanger & Sons, Inc. v. Joseph M. Concannon Corp., 333 Mass. 22, 25, 127 N.E.2d 670, 672 (1955).

[8] 1974 Mass. Adv. Sh. at 2202-03, 319 N.E.2d at 905.

[9] *Id.* at 2210, 319 N.E.2d at 907.

[10] *Id.,* 319 N.E.2d at 908.

§14.8. [1] 1975 Mass. Adv. Sh. 719, 327 N.E.2d 671.

[2] *Id.* at 719-20, 327 N.E.2d at 672.

[3] The term "voiceprint identification," the popular name for the process used in *Lykus,* will not be used in this note because it suggests a similarity to fingerprint identification. Although the two processes are similar in some superficial aspects, such an analogy is entirely unwarranted at this time. See note 77 *infra.*

partment, whose expert testimony was to be offered at trial, testified at length in favor of admissibility. His testimony was supported by that of Dr. Oscar Tosi, a professor of psychoacoustics, acoustics, phonetics, and physics at Michigan State University.[4] Dr. Louis Gerstman, a professor of psychology and of speech and hearing sciences at City College of the City University of New York,[5] testified for the defense in opposition to the introduction of spectrographic evidence.

On the basis of the testimony at voir dire, the trial judge held the spectrographic identification admissible in evidence. Defendant Lykus was convicted on all charges, and appealed to the Supreme Judicial Court on the sole issue whether the trial judge properly admitted the spectrographic evidence. After reviewing the evidence at voir dire, cases from other jurisdictions, and relevant scientific articles, the Court HELD: Spectrographic identification has received general acceptance within the relevant scientific community and is, therefore, properly admissible under careful scrutiny.[6]

The Supreme Judicial Court thus joined the small but growing number of appellate courts[7] that have permitted the admission of expert testimony based on spectrographic analysis. Although other appellate courts have held spectrographic evidence admissible, many of them[8] did not apply the standard for admission that was purportedly applied by the Court in *Lykus*. The test applied by the Supreme Judicial Court was a modification of the traditional standard for the admissibility of scientific evidence. The traditional standard was first enunciated in *Frye v. United States:*[9] "[W]hile courts will go a long way in admitting expert testimony deduced from a well recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained *general acceptance in the particular field in which it belongs.*"[10]

Massachusetts adopted the *Frye* test as its own standard for the ad-

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[4] 1975 Mass. Adv. Sh. at 724, 327 N.E.2d at 673.

[5] *Id.* at 724, 327 N.E.2d at 674.

[6] *Id.* at 736-37, 327 N.E.2d at 678-79. The Court placed the following limitation on the full admissibility of spectrographic evidence:

> We add that the admission of expert testimony as to spectrographic analysis should be subject to the closest of judicial scrutiny, particularly in any case where there is an absence of evidence of voice identification other than that of the voiceprint or where, but for the voiceprint, there would be insufficient evidence to warrant any inference of the defendant's guilt.

Id. at 737-38, 327 N.E.2d at 679.

[7] See cases cited in note 49, *infra.*

[8] *See, e.g.,* Alea v. State, 265 So.2d 96 (Fla. Dist. Ct. App. 1972); Worley v. State, 263 So.2d 613 (Fla. Dist. Ct. App. 1972); State *ex rel.* Trimble v. Hedman, 291 Minn. 442, 192 N.W.2d 432 (1971).

[9] 293 F. 1013 (D.C. Cir. 1923).

[10] *Id.* at 1014 (emphasis added).

missibility of scientific evidence in *Commonwealth v. Fatalo.*[11] A variation of this standard was developed by the California Court of Appeals in *People v. Williams,*[12] where the court held that all that is necessary to satisfy *Frye* is general acceptance of a technique "by those who would be expected to be familiar with its use."[13] This modified version of the *Frye* rule was applied in *Lykus.*[14] Thus, acceptance was required only by those who were familiar with the use of spectrographic identification, rather than by an entire scientific field. The *Williams* modification seems particularly appropriate for spectrographic identification because the spectrographic technique, being related to such disparate disciplines as phonetics and electronics, does not belong to an identifiable scientific field.

This casenote will begin with an explanation of the technique of spectrographic voice identification and then will examine the experimental results offered in support of the reliability of the technique. The *Lykus* opinion itself will then be analyzed, with particular emphasis on two questions: (1) whether the *Frye* standard of general acceptance by the relevant scientific community was satisfied in *Lykus,* and (2) whether the general acceptance standard should have been applied to the spectrographic evidence involved in *Lykus.* It will be submitted that the *Frye* standard was not satisfied in *Lykus* and that, even if it was satisfied, the general acceptance standard should not have been applied in the first instance.

The first step involved in the spectrographic voice identification process used in *Lykus* is to obtain a voice exemplar from an individual.[15] Certain words (cue words) or sounds are extracted from

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[11] 346 Mass. 266, 191 N.E.2d 479 (1963).

[12] 164 Cal. App. 2d Supp. 858, 331 P.2d 251 (1958).

[13] *Id.* at 862, 331 P.2d at 254. *Williams* dealt with the admissibility of the results of a Nalline test to detect the recent use of narcotics. The prosecution introduced favorable expert testimony, but each of the experts admitted on cross examination that the medical profession generally was unfamiliar with the technique and therefore it could not truthfully be said that the technique had acquired general acceptance by the medical profession as a whole. *Id.* at 861-62, 331 P.2d at 253. Since many people in the medical profession would never become familiar with such a specialized technique, the evidence would never be admissible under a strict interpretation of *Frye.* Thus, the court held that general acceptance was required only by those in the specialized field dealing with the narcotics problem and not by the medical profession as a whole. *Id.* at 862, 331 P.2d at 254.

[14] 1975 Mass. Adv. Sh. at 735, 327 N.E.2d at 678.

[15] In *Lykus,* the exemplar was obtained voluntarily. Brief for Defendant at 29. In several cases, however, exemplars have been obtained without the consent or even the knowledge of the defendant. *See, e.g.,* People v. King, 266 Cal. App.2d 437, 441, 72 Cal. Rptr. 478, 481 (1968); State *ex rel.* Trimble v. Hedman, 291 Minn. 442, 444, 192 N.W.2d 432, 433 (1971). For a discussion of the constitutional issues involved in obtaining a voice exemplar from an individual see Note, *Voiceprint Identification,* 61 GEO. L. J. 703, 727-44 (1972). The Supreme Court settled some of these constitutional issues in United States v. Dionisio, 410 U.S. 1 (1972). In *Dionisio,* a grand jury subpoenaed about

this exemplar and scanned electronically by a high speed sound spectrograph.[16] The spectrograph then produces a sound spectrogram, which is a visible graph of the frequency and amplitude of the sound or sounds over time.[17] An examiner compares this visual display with spectrograms of identical words or sounds spoken by an unknown individual. In addition to analyzing the visual displays of the samples to be compared, the examiner listens to the two voices.[18] On the basis of this visual and aural comparison, the examiner decides whether the two exemplars were produced by the same person.

This identification decision is necessarily subjective because the voice of an individual is not invariant; in fact, no person ever utters the same word or sound twice with all of the spectrographic characteristics remaining exactly alike.[19] Thus, the examiner must decide whether similar but not identical spectrograms represent the same word spoken on different occasions by the same speaker (intraspeaker variability) or the same word spoken by different speakers (interspeaker variability).[20] Consequently, the reliability of an identification or an elimination depends to a great degree on the experience and the qualifications of the examiner.

Although spectrographic identification is a subjective technique, a remarkable rate of correct identifications was obtained through the use of the method in a recent experiment by Dr. Oscar Tosi and his associates at Michigan State University.[21] This experiment has been the watershed event for admission of spectrographic evidence in criminal litigation in the United States.

The Tosi experiment, which was accorded considerable weight by the Court in *Lykus,*[22] investigated the reliability of the spectrographic identification technique by varying a number of factors that affect normal criminal investigations. Spectrograms were obtained from 250 college-age American males who spoke the same dialect. Among the variables examined in the study were the number of cue words, their

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20 persons to give voice exemplars for identification purposes. The Court held that compelling production of the exemplars did not violate the defendants' Fifth Amendment rights because the exemplars were to be used for identification purposes rather than for their testimonial content. *Id.* at 7. The Court also held that compulsory production of the exemplars did not violate defendants' Fourth Amendment rights because that Amendment provides no protection for what is knowingly exposed to the public. *Id.* at 14.

[16] For a technical discussion of the spectrograph itself, see Presti, *High-Speed Sound Spectrograph,* 40 J. ACOUSTICAL SOC'Y AM. 628 (1966).

[17] 1975 Mass. Adv. Sh. at 726, 327 N.E.2d at 674.

[18] Tosi, Oyer, Lashbrook, Pedrey, Nicol and Nash, *Experiment on Voice Identification,* 51 J. ACOUSTICAL SOC'Y AM. 2030, 2031-32 (1972) [hereinafter cited as *Experiment*].

[19] *Id.*

[20] *Id.*

[21] *Experiment, supra* note 18.

[22] 1975 Mass. Adv. Sh. at 731, 327 N.E.2d at 676.

context, the number of known speakers, the amount of background noise, the time lapse between production of the two spectrograms, and the use of either closed or open trials.[23] Examiners were given one month of training in basic speech principles and in spectrographic interpretation. During the experiment the examiners were allowed fifteen minutes to evaluate either six or nine pairs of spectrograms and to come to a positive conclusion of either identification or elimination. Although they were forced to make a decision in each case, examiners were allowed to rate the degree of confidence they had in their decision. Visual comparison of the spectrograms was the only allowable means of identification; they were not allowed to compare the voices aurally.

In the situations that most closely correspond to those encountered in criminal cases—open trials,[24] noncontemporaneous spectrograms,[25] and cue words in a fixed or random context[26]—Tosi found a false identification rate[27] of 6%.[28] When the confidence ratings were taken into account, Tosi found that a false identification rate of 2% would

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[23] *Experiment, supra* note 18, at 2033. A closed trial is one in which the examiner knows that a matching spectrogram is among those to be examined. Thus, a closed trial is essentially an elimination process. Open trials, on the other hand, are trials in which the examiner does not know whether a matching spectrogram is present and thus cannot use the elimination process to arrive at a conclusion. *Id.*

[24] *See* note 23 *supra.* The examiner will not know in any criminal case whether the voice of the criminal will be among the voices of the suspects. Thus, open trials approximate the real situation more closely than closed trials.

[25] Since a voice exemplar is usually obtained some time after the original spectrogram, noncontemporaneous experimental situations, in which spectrogams are obtained at different times, are more relevant to actual cases than contemporaneous situations. *See, e.g.,* State v. Andretta, 61 N.J. 544, 552, 296 A.2d 644, 648 (1972), where the exemplars were to be taken five years after the original spectrogram was produced. In cases where there is a great lapse of time between spectrograms, the effects of aging on the voice become important. *See* Endres, Bambach, and Flosser, *Voice Spectrograms as a Function of Age, Voice Disguise, and Voice Imitation,* 49 J. ACOUSTICAL SOC'Y AM. 1842 (1971).

[26] Context of the cue words is important because of the effect of the sounds spoken before and after the cue word on the spectral content of the cue word. A recent experiment has suggested that identification is always more difficult when the cue word is in context than when it is spoken in isolation. B. Hazen, *Effects of Differing Phonetic Contexts on Spectrographic Speaker Identification,* 54 J. ACOUSTICAL SOC'Y AM. 650, 657 (1973) [hereinafter cited as *Effects*]. Both fixed and random context situations are relevant to actual cases, depending on the content of the voice exemplar. In some cases the content of the exemplar is entirely unrelated to that of the original taped conversation. In other cases, such as *Lykus,* the defendant is instructed to speak some or all of the same words found on the original tape, thus ensuring that the context of the words to be compared will be identical on both tapes. Brief for Defendant at 29.

[27] Although there were several types of error for which rates were computed, *Experiment, supra* note 18, at 2036, the false identification rate is the only significant one for legal purposes.

[28] *Experiment, supra* note 18, at 2041.

have been obtained if the examiners had been allowed to express no opinion when uncertain.[29]

It is Tosi's opinion that the error rate will decrease when the process is applied in an actual case. He has presented several reasons to support this conclusion.[30] First, although the experimental examiners were given only fifteen minutes to come to a decision, the professional examiner will have as much time as necessary to reach a conclusion. Second, the professional examiner will have qualifications and training[31] that exceed those of the experimental examiners. Third, the professional examiner, unlike the examiners in the experiment, is not obligated to make a decision. Fourth, the professional examiner will be able to use as many cue words as he deems necessary to make a decision, whereas the experimental examiners were limited to either six or nine cue words. Fifth, the professional examiner will be allowed to listen to the voices as well as to compare them visually. All of these factors, according to Dr. Tosi, will tend to increase the reliability of the result in an actual case.[32]

Despite the high rate of accuracy found in the experiment, Dr. Tosi's application of the results to actual cases has been criticized as being premature.[33] Dr. Peter Ladefoged, a recent convert to the Tosi position,[34] has cautioned that three important variables were not taken into account in the Tosi experiment.[35] The first of these variables is the sex of the speaker. Dr. Tosi's experiment dealt exclusively with male voices, but, according to Dr. Ladefoged, the higher pitch of female voices makes them harder to compare spectrographically.[36]

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[29] *Id.*

[30] *Id.* at 2042. The Court in *Lykus* seemed to find Dr. Tosi's testimony to this effect very persuasive. 1975 Mass. Adv. Sh. at 732, 327 N.E.2d at 677.

[31] To ensure that the qualifications and training of professional examiners are adequate, the nonprofit International Association of Voice Identification was established in 1971. Black, Lashbrook, Nash, Oyer, Pedrey, Tosi and Truby, *Reply to "Speaker Identification by Speech Spectrograms: Some Further Observations,"* 54 J. ACOUSTICAL SOC'Y AM. 535, 536 (1973) [hereinafter cited as *Reply*].

[32] *Experiment, supra* note 18, at 2042.

[33] *Effects, supra* note 26, at 659; Bolt, Cooper, David, Denes, Pickett, and Stevens, *Speaker Identification by Speech Spectrograms: Some Further Observations,* 54 J. ACOUSTICAL SOC'Y AM. 531 (1973) [hereinafter cited as *Observations*].

[34] Dr. Ladefoged had testified against admissibility of spectrographic evidence in several early cases, *see, e.g.,* People v. King, 266 Cal. App.2d 437, 454, 72 Cal. Rptr. 478, 489 (1968); State *ex rel.* Trimble v. Hedman, 291 Minn. 442, 455, 192 N.W.2d 432, 439 (1971), but has changed his position since the publication of Tosi's study. *See* United States v. Addison, 498 F.2d 741, 744 (D.C. Cir. 1974). However, the reservations expressed by Ladefoged prompted the *Addison* court to characterize his conversion as a "limited one," more an "abatement of skepticism" than a complete acceptance. *Id.* at 744-45.

[35] *See* People v. Law, 40 Cal. App. 3d 69, 114 Cal. Rptr. 708 (1974); State *ex rel.* Trimble v. Hedman, 291 Minn. 442, 192 N.W.2d 432 (1971).

[36] State *ex rel.* Trimble v. Hedman, 291 Minn. 442, 456, 192 N.W.2d 432, 440 (1971).

The other two omitted variables, disguise and mimicry,[37] seem to be related. Disguise of the suspect's voice would be more important in a criminal investigation than in a legal proceeding because it would most likely lead only to an improper elimination of a suspect. Mimicry, on the other hand, is of profound significance in a legal proceeding because it could lead to an improper *identification* of a suspect. It does not seem very probable that the courts would allow spectrographic analysis into evidence if it were shown that the process was unable to distinguish a suspect's voice from that of a skilled mimic.

Other critics of Dr. Tosi's experiment have noted several more variables that could affect the application of his results to actual cases, but were not considered in the experimental design.[38] Instead of answering these criticisms directly, Tosi has merely reiterated his unproven hypotheses as to why reliability will increase in actual cases.[39] Criticism of Tosi's experiment does not center on the validity of his results, but focuses instead on his premature application of those results to actual cases. The critics point out that further studies are needed before the technique should be applied in a legal context.[40] Although Tosi has admitted that further studies are needed in the area of spectrographic identification,[41] he feels that his results are sufficiently complete at the present time to warrant forensic application of the technique.[42]

In deciding whether the spectrographic evidence offered in *Lykus* was admissible the Court purported to apply the *Frye* standard of general acceptance in the particular field to which a technique

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[37] *See* People v. Law, 40 Cal. App. 3d 69, 80, 114 Cal. Rptr. 708, 715 (1974).

[38] In addition to disguise and mimicry, variables not investigated included room acoustics, recording conditions, and changes in the psychological state of the speaker. *Observations, supra* note 33, at 532-33. The latter variable could have a substantial effect in a criminal case because of the psychological stress that a defendant might experience if compelled to produce an exemplar. Recent studies have suggested that the spectral content of a person's speech changes in conjunction with his emotional state. Williams and Stevens, *Emotions and Speech: Some Acoustical Correlates,* 52 J. ACOUSTICAL SOC'Y AM. 1238 (1972); Hecker, Stevens, von Bismarck, and Williams, *Manifestations of Task-Induced Stress in the Acoustic Speech Signal,* 44 J. ACOUSTICAL SOC'Y AM. 993 (1968). One author has suggested that these issues should be explored in court, but this approach should not be adopted until further experimentation has been carried out on the effects of voice mimicry, a variable that brings the validity of the entire technique into question. Greene, *Voice Identification: The Case In Favor of Admissibility,* 13 AM. CRIM. L. REV. 171, 194 (1975).

[39] *Reply, supra* note 31, at 536.

[40] *Effects, supra* note 26, at 659; *Observations, supra* note 33, at 533-34.

[41] With respect to mimicked and disguised voices, Dr. Tosi has testified: "I think more research is welcome and should be done and I intend to do more research." People v. Law, 49 Cal. App. 3d 69, 78, 114 Cal. Rptr. 708, 714 (1974).

[42] Dr. Tosi has also testified: "In mimicking it's possible that more research will clarify, will bring more figures to the thing. But, in other cases I don't think that— I feel that the research is completed." People v. Law, 40 Cal. App. 3d 69, 79, 114 Cal. Rptr. 708, 714 (1974).

belongs.[43] The Court based its conclusion on an examination of decisions from other jurisdictions, relevant scientific articles, and the evidence at voir dire concerning the reliability and general acceptance of the technique.[44] Justice Kaplan pointed out several flaws in the majority's reasoning and dissented on the ground that the *Frye* standard had not been satisfied.[45]

In reaching its conclusion that the *Frye* test had been met in *Lykus,* the Court noted the growing acceptance of the technique by appellate courts that had considered the admissibility issue since the Tosi study.[46] In his dissenting opinion, however, Justice Kaplan pointed out that many of the cases had been decided before the scientific community had had enough time to study Dr. Tosi's results and to react to them.[47] The recent reaction of the scientific community, according to Justice Kaplan, had been prevailingly negative.[48] Nonetheless, the reaction of the courts to Dr. Tosi's study has been overwhelmingly favorable, both prior and subsequent to the *Lykus* decision.[49]

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[43] 1975 Mass. Adv. Sh. at 725, 327 N.E.2d at 674.

[44] *Id.* at 736, 327 N.E.2d at 678.

[45] *Id.* at 741, 327 N.E.2d at 680.

[46] *Id.* at 728-29, 327 N.E.2d at 675. There were three appellate decisions on the subject prior to the Tosi study. In United States v. Wright, 17 U.S.C.M.A. 183 (1967), a case that involved identification of the maker of obscene telephone calls, the United States Court of Military Appeals held that spectrographic identification of the defendant by Mr. Lawrence Kersta, the developer of the technique, was admissible. The court reasoned that since aural comparison by the court members was possible, they could determine for themselves the margin of error in Mr. Kersta's opinion. *Id.* at 189.

State v. Cary, 49 N.J. 343, 230 A.2d 384 (1967), *on remand,* 99 N.J. Super. 323, 239 A.2d 680 (1968), *appeal granted,* 53 N.J. 256, 250 A.2d 15 (1969), *aff'd,* 56 N.J. 16, 264 A.2d 209 (1970), was a murder case in which the state sought to compel the defendant to produce a voice exemplar for spectrographic comparison by Kersta. After the case made several trips to the New Jersey Supreme Court, the spectrographic evidence was held inadmissible because the technique was not generally accepted by the scientific community. 99 N.J. Super. at 334, 239 A.2d at 685.

In People v. King, 266 Cal. App. 2d 437, 72 Cal. Rptr. 478 (1968), the prosecution sought to identify defendant as the man who made incriminating statements on a television interview. Visual identification was impossible because network personnel refused to identify the man on the film, invoking the newsman's privilege under California law. The Court held the spectrographic evidence inadmissible because of the lack of general acceptance of the technique and because of Kersta's lack of expert qualifications. *Id.* at 460, 72 Cal. Rptr. at 493.

[47] 1975 Mass. Adv. Sh. at 743, 327 N.E.2d at 680.

[48] *Id.*

[49] *See* United States v. Baller, 519 F.2d 463 (4th Cir. 1975); United States v. Franks, 511 F.2d 25 (6th Cir. 1975), *cert. denied,* 422 U.S. 1042 (1975); Hodo v. Superior Court, 30 Cal. App. 3d 778, 106 Cal. Rptr. 547 (1973); People v. Watson, Cal. App. 3d Dist. (May 7, 1973) (unreported); Alea v. State, 265 So.2d 96 (Fla. Dist. Ct. App. 1972); Worley v. State, 263 So.2d 613 (Fla. Dist. Ct. App. 1972); State *ex rel.* Trimble v. Hedman, 291 Minn. 442, 192 N.W.2d 432 (1971); State v. Andretta, 61 N.J. 544, 296 A.2d 644 (1972). *Contra,* United States v. Addison, 498 F.2d 741 (D.C. Cir. 1974); People v. Law, 40 Cal. App. 3d 69, 114 Cal. Rptr. 708 (1974). For a list of trial court decisions on the admissibility of spectrographic voice identification testimony, see Greene, *Voiceprint Identification: The Case In Favor Of Admissibility,* 13 AM. CRIM. L. REV. 171, 184-85 n.66 (1975).

The Supreme Judicial Court's focus on decisions in other jurisdictions was not particularly apposite, however, because three of the four published decisions[50] favoring admissibility did not apply the *Frye* standard of general acceptance within the relevant scientific community that the Court purportedly applied in *Lykus*. For example, in *State ex rel. Trimble v. Hedman,*[51] the first case to consider the admissibility of spectrographic evidence after publication of the Tosi study, the Supreme Court of Minnesota applied the traditional rule for admission of expert testimony rather than the *Frye* rule for admission of scientific evidence.[52] The Court held that spectrographic evidence was admissible for the purpose of corroborating opinions based on aural comparison alone.[53] The Florida District Court of Appeals also held spectrographic evidence admissible for corroborative purposes in *Worley v. State*[54] and *Alea v. State,*[55] but did not apply *Frye*.

Prior to the *Lykus* decision itself, the California Court of Appeals, in *Hodo v. Superior Court,*[56] was the only appellate court that had held affirmatively that spectrographic identification had acquired general acceptance with the relevant scientific community. However, in *People v. Law,*[57] the California Court of Appeals for another district suggested in dicta that the technique in general did not have the requisite acceptance within the relevant scientific community.[58] The court went on to hold that with respect to disguised and mimicked voices in particular, the technique had not gained general acceptance in the scientific

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[50] Hodo v. Superior Court, 30 Cal. App. 3d 778, 106 Cal. Rptr. 547 (1973); Alea v. State, 265 So.2d 96 (Fla. Dist. Ct. App. 1972); Worley v. State, 263 So.2d 613 (Fla. Dist. Ct. App. 1972); State *ex rel.* Trimble v. Hedman, 291 Minn. 442, 192 N.W.2d 432 (1971). The Supreme Judicial Court mentioned that State v. Andretta, 61 N.J. 544, 296 A.2d 644 (1972) supported its conclusion, but that case did not deal specifically with the issue of admissibility of spectrographic evidence. Because the narrow question in *Andretta* was whether the defendants could be compelled to produce voice exemplars, the New Jersey Supreme Court chose not to reconsider its previous rejection of spectrographic evidence in State v. Cary, 49 N.J. 343, 230 A.2d 384 (1967), *on remand,* 99 N.J. Super. 323, 239 A.2d 680 (1968), *appeal granted,* 53 N.J. 256, 250 A.2d 15 (1969), *aff'd.,* 56 N.J. 16, 264 A.2d 209 (1970), until the question of admissibility is squarely presented to the court again. 61 N.J. at 551-52, 296 A.2d at 648. Nevertheless, the court seemed to suggest that it was now favorably disposed to the technique and ordered that the defendants be required to produce voice exemplars. *Id.*

[51] 291 Minn. 442, 192 N.W.2d 432 (1971).

[52] *Id.* at 456, 192 N.W.2d at 440. The court stated that opinions of qualified experts are admitted only to aid the factfinder in a field where he has no particular knowledge or training, and the weight to be given to the opinion of an expert lies entirely with the factfinder. *Id.*

[53] *Id.* at 457, 192 N.W.2d at 441.

[54] 263 So.2d 613 (Fla. Dist. Ct. App. 1972).

[55] 265 So.2d 96 (Fla. Dist. Ct. App. 1972).

[56] 30 Cal. App. 3d 778, 106 Cal. Rptr. 547 (1973).

[57] 40 Cal. App. 3d 69, 114 Cal. Rptr. 708 (1974).

[58] *Id.* at 84, 114 Cal. Rptr. at 718.

community and was, therefore, inadmissible.[59] In addition, the United States Court of Appeals for the District of Columbia had recently given a strict interpretation to its own *Frye* standard in *United States v. Addison,*[60] holding spectrographic evidence inadmissible because the technique had not attained the requisite general acceptance of the scientific community.[61] The decisions from other jurisdictions, then, did not lend a great deal of support to the Supreme Judicial Court's conclusion that *Frye* had been satisfied.

After reviewing the relevant decisions from other jurisdictions, the Court proceeded to a discussion of the evidence at voir dire. The Court summarized Dr. Tosi's results and listed his reasons for his conclusion that a professional examiner will achieve more reliable results than the laboratory examiners.[62] Justice Kaplan, in his dissent, pointed out that Dr. Tosi's conclusion has no experimental support.[63] Nonetheless, the Court evaluated the opinions of the critics in light of Dr. Tosi's unproven hypotheses and concluded with the following remarkable statement: "To the extent that a convincing case is made, as in this case, that the professional examiner will achieve more reliable results than the laboratory examiner, then to that extent the opposition can be discounted."[64]

The Court's position in this regard is highly questionable. The Court was merely being called upon to decide whether a significant controversy existed, and yet it seemed to be interposing itself as the arbiter of the dispute. Surely this is not what the framers of the *Frye* standard had in mind when they determined that general acceptance should be the test. When applying *Frye* the Court should not find that a scientific principle is generally accepted simply because the Court considers the opinions of critics unfounded. If that method of determining general acceptance is used, one of the primary goals of the *Frye* test—that only qualified experts, and not judges, will assess the validity of a scientific process[65]—will be destroyed. It is submitted, then, that the Court's process of discounting the opinions of critical experts because of the convincing nature of Dr. Tosi's presentation was an improper application of the *Frye* test.

The Court also discounted views of the critical experts at another point in the opinion, ostensibly for a different reason. After discussing the *Williams* variation of the *Frye* standard—general acceptance of a technique "by those who would be expected to be familiar with its

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[59] *Id.*
[60] 498 F.2d 741 (D.C. Cir. 1974).
[61] *Id.* at 745.
[62] 1975 Mass. Adv. Sh. at 732-33, 327 N.E.2d at 677.
[63] *Id.* at 746 n.7, 327 N.E.2d at 681 n.7.
[64] *Id.* at 733, 327 N.E.2d at 677.
[65] See text accompanying note 83 *infra.*

use"[66]—the Court stated in a footnote: "In this case we are disposed to give greater weight to those experts who have had direct and empirical experience in the field of spectrography."[67] Apparently, the Court was defining those who would be expected to be familiar with the use of spectrography to include only those with direct and empirical experience with the technique. Opinions of experts in related fields, such as acoustics, phonetics, speech and speech therapy, were discounted, even though those experts may have been familiar with the technique.[68]

Unfortunately, the Court did not explain why the opinions of those without empirical experience should be discounted. Justice Kaplan noted that in most scientific fields it is common for experts to review an experiment in light of their broad theoretical knowledge.[69] He added that it could not be plausibly said that the critical experts were either unqualified to have opinions worthy of respect or strangers to the relevant scientific field. The Court seemed to find additional comfort in the fact that one of the critical articles is only a "theoretical review of the Tosi report and is in the form merely of a four page letter . . . ."[70] Surely the theoretical nature of these criticisms does not render them any less substantive, nor does their brevity reduce their value.

As a practical matter, the Court's process of discounting opinions of experts with little or no empirical experience in spectrography was dispositive in *Lykus* because of the limited number of persons with empirical experience in the field. Since Dr. Tosi's study was one of the first large-scale experiments done in the field of spectrography, the group of experts "who would be expected to be familiar with its use" became, in essence, the participants in the Tosi study, who could hardly be characterized as disinterested in the forensic application of the technique. General acceptance by these experts was not difficult to find.

The Court suggested in dictum that the purported reliability of the spectrographic technique also supported its conclusion that the *Frye* standard had been satisfied.[71] Other courts have focused on the reliability of the technique as an important factor in the admissibility

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[66] See text accompanying notes 11-14 *supra.*

[67] 1975 Mass. Adv. Sh. at 736-37 n.6, 327 N.E.2d at 678 n.6.

[68] The *Williams* variation was developed to exclude only the opinions of those who were totally ignorant of the technique, and not the opinions of experts who were familiar with the technique in general but who had no empirical experience. See note 13 *supra.*

[69] *Id.* at 747 n.10, 327 N.E.2d at 682 n.10.

[70] *Id.* at 737 n.6, 327 N.E.2d at 679 n.6.

[71] *Id.* at 736, 327 N.E.2d at 678.

decision,[72] but these courts were not applying *Frye*. The emphasis on reliability would seem to be misplaced if the Court was really applying the *Frye* standard because reliability is irrelevant under *Frye*. In fact, in *Addison*, the court that first promulgated the *Frye* rule disapproved the trial court's emphasis on reliability,[73] since general acceptance of the claimed reliability is the only criterion for admissibility under *Frye*.

It is submitted, then, that the Court's finding of general acceptance of spectrography under *Frye* and *Fatalo* is highly questionable. Most jurisdictions that admitted Lt. Nash's testimony did not hold that the technique had gained general acceptance within the relevant scientific community. In addition, the Court's practice of discounting the opinions of critical experts seems highly improper under *Frye*. Even if the practice of discounting opinions were proper, the Court did not adequately explain why the critical opinions should have been discounted. The reliability of the technique also failed to support the Court's conclusion because reliability is irrelevant under *Frye*.

Quite apart from the question of whether the *Frye* standard was satisfied in *Lykus* is whether *Frye* should have been applied at all. The *Frye* test applies only to evidence based on a scientific principle or discovery, and the scientific basis of spectrographic identification is weak. The premise upon which the technique is founded, that the spectral characteristics of every voice are unique, has never been demonstrated by any empirical data.[74] Furthermore, that premise seems somewhat suspect in view of one authority's opinion that certain voices are "confusable" even when spectrographic analysis is used.[75] Although the results of the Tosi experiment would seem to rebut any suggestion that the basic premise of the technique is unfounded, that premise will still be subject to question until additional experiments have been carried out to investigate the effects of voice mimicry on spectrographic voice identification.

Even if its basic premise is accepted as a valid scientific principle,

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[72] *See, e.g.*, United States v. Franks, 511 F.2d 25 (6th Cir. 1975), *cert. denied*, 422 U.S. 1042 (1975); State *ex rel.* Trimble v. Hedman, 291 Minn. 442, 192 N.W.2d 432 (1971). *Frye* was not applied to spectrographic evidence in *Franks*, but the court stated in a footnote: "[W]e deem general acceptance as being nearly synonymous with reliability. If a scientific process is reliable, or sufficiently accurate, courts may also deem it 'generally accepted.' " *Id.* at 33 n.12. United States v. Brown, 13 CRIM. L. REP. 2203 (D.C. Super. Ct. May 1, 1973), is a much better reasoned opinion in favor of using reliability as a criterion for admissibility under *Frye*. The court in *Brown* reasoned that since reliability underlies the general acceptance test, the court must first decide whether the technique is reliable and then whether it is generally accepted as reliable. The *Brown* formulation is obviously more correct than the *Franks* approach, which would devitalize the general acceptance standard.

[73] *Addison*, 498 F.2d at 744.

[74] Comment, *The Evidentiary Value of Spectrographic Voice Identification*, 63 J. CRIM. L.C. & P. S. 343, 345 (1972).

[75] *Id.* at 351; United States v. Addison, 498 F.2d 741, 745 (D.C. Cir. 1974).

the identification process as a whole can hardly be called scientific. Once a spectrogram is produced the scientific aspect of the process is complete. The subsequent analysis of the spectrogram is more akin to an art than a science,[76] with the skill and experience of the examiner accounting for much of the reliability of the result. There are no objective decisional criteria, such as those used in fingerprint analysis[77] or ballistics, for the examiner to use in making an identification. One authority in the field, Dr. Peter Ladefoged, has testified: "I couldn't state exactly what it was that Lt. Nash was doing when he makes an identification, nor indeed what I'm doing myself. I can simply look at the patterns and say they are similiar [*sic*] . . . ."[78] The process becomes even more subjective when, as in *Lykus,* the examiner is required to compare a whispered telephone conversation held in a noisy environment with a later recording in a quiet laboratory. Both Dr. Tosi and Lt. Nash testified that in such a situation the examiner must rely very heavily on aural comparison.[79] Although aural comparison alone is admissible in most jurisdictions,[80] the jury should not be led to believe that a scientific process is involved if spectrogram comparison plays an insignificant part in the identification process.

Even in situations where visual comparison of spectrograms is helpful, the subjective aspect of the process does not end with a judgment that two spectrograms are similar. As was mentioned earlier,[81] the examiner must then make another subjective decision whether differences in similar spectrograms are due to intraspeaker variability or interspeaker variability. Thus the bulk of the spectrographic voice identification process is nothing more than an expert opinion.[82] It seems somewhat questionable, then, whether *Frye,* which deals with scientific evidence, should be applied to such an unscientific process.

The Court's application of *Frye* in *Lykus* is also suspect because the benefits derived from *Frye's* application are not obtained where, as is the case with spectrographic analysis, only a small number of experts are available. Proponents of the *Frye* rule have suggested that three

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[76] People v. King, 266 Cal. App. 2d 437, 451, 72 Cal. Rptr. 478, 487 (1968).

[77] For a discussion of the differences between spectrographic analysis and fingerprint analysis, see Bolt, Cooper, David, Denes, Stevens and Pickett, *Speaker Identification by Speech Spectrograms: A Scientist's View of its Reliability for Legal Purposes,* 47 J. ACOUSTICAL SOC'Y AM. 597 (1970).

[78] People v. Law, 40 Cal. App. 3d at 79 n.10, 114 Cal. Rptr. at 715 n.10.

[79] 1975 Mass. Adv. Sh. at 746 n.7, 748 n.12, 327 N.E.2d at 681 n.7, 682 n.12.

[80] *See, e.g.,* Commonwealth v. Lykus, 1975 Mass. Adv. Sh. 719, 732 n.4, 327 N.E.2d 671, 677, n.4; State *ex rel.* Trimble v. Hedman, 291 Minn. 442, 447-50, 192 N.W.2d 432, 435-37 (1971).

[81] See text at note 20, *supra.*

[82] At the time of the *Lykus* decision the process actually seemed to be little more than the opinion of one expert, Lt. Nash, since he had been the expert witness in every case in which an appellate decision had been rendered on the question of admissibility. *See* cases cited in note 49, *supra.*

benefits are derived from its application. First, the requirement of general acceptance assures that only qualified experts will assess the validity of a scientific process.[83] Second, the *Frye* test assures that experts will be available to testify for both the prosecution and defense when the validity of a scientific determination in an individual case is being questioned.[84] Third, application of the *Frye* standard prevents the trial of the technique rather than the trial of the real issues in the case.[85]

In its application of the *Frye* standard in *Lykus,* the Court noted that when only a small number of people claim to be experts in a particular area, two major goals of the standard are arguably put in jeopardy. First, the general validity of the technique may not be judged by qualified experts because of the small number of qualified people available. Second, lack of qualified personnel may deprive one of the parties of an expert who will testify in his behalf.[86] The Court did not discuss the validity of these apparently relevant objections to the application of *Frye* in *Lykus.* Instead, the Court proceeded to limit the number of available experts even further by discounting the opinions of those without empirical experience.[87] The objectives of *Frye* do not seem to be well served by its application in these circumstances.

A final argument against the application of *Frye* in *Lykus* is that the general acceptance standard is unworkable and should be discarded entirely. Despite its supposed advantages and despite its adoption by many jurisdictions[88] since its formulation in 1923, the *Frye* standard has been criticized as being unduly restrictive.[89] Critics suggest that the increasing prominence of scientific evidence makes the requirement of general acceptance impracticable, especially in view of the rapid acceleration of scientific advancement.[90] In addition, they point out that administrative agencies are accepting many of the forms of evidence that courts are rejecting.[91] The artificial standard of general acceptance is said to obscure what should be the proper considera-

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[83] United States v. Addison, 498 F.2d 741, 743-44 (D.C. Cir. 1974).

[84] *Id.* at 744.

[85] State v. Cary, 99 N.J. Super. 323, 332, 239 A.2d 680, 684 (1968).

[86] 1975 Mass. Adv. Sh. at 734, 327 N.E.2d at 677.

[87] *Id.* at 736, 327 N.E.2d at 678 n.6.

[88] *See, e.g.,* Commonwealth v. Fatalo, 346 Mass. 266, 191 N.E.2d 479 (1963); People v. Morse, 325 Mich. 270, 38 N.W.2d 322 (1949); State v. Arnwine, 67 N.J. Super. 483, 171 A.2d 124 (1961).

[89] *See, e.g.,* Strong, *Questions Affecting the Admissibility of Scientific Evidence,* 1970 U. ILL. L. FORUM 1, 14 [hereinafter cited as *Strong*]; Boyce, *Judicial Recognition of Scientific Evidence in Criminal Cases,* 8 UTAH L. REV. 313, 327 (1963) [hereinafter cited as *Boyce*].

[90] *Boyce, supra* note 89, at 327.

[91] *Id.*

tions when scientific evidence is offered.[92]

Foremost among *Frye's* critics is Professor McCormick,[93] who has proposed the following standard for the admissibility of scientific evidence:

> "General scientific acceptance" is a proper condition for taking judicial notice of scientific facts, but not a criterion for the admissibility of scientific evidence. Any relevant conclusions which are supported by a qualified expert witness should be received unless there are other reasons for exclusion. Particularly, probative value may be overborne by the familiar dangers of prejudicing or misleading the jury, and undue consumption of time. If the courts used this approach, instead of repeating a supposed requirement of "general acceptance" not elsewhere imposed, they would arrive at a practical way of utilizing the results of scientific advances.[94]

This approach, which seems to be little more than the traditional test for the admission of expert testimony,[95] would treat lack of general acceptance by the relevant scientific community as a factor to be considered in weighing the evidence, but not as a factor affecting admissibility. The McCormick formulation can be viewed as a three condition test for admissibility. First, any scientific evidence offered must be relevant; it must have some probative value to assist the jury.[96] Thus, some reasonable showing of the reliability of the technique must be made. Second, the scientific evidence must be offered by a qualified expert in the field from which the evidence is drawn. Third, and most important, there must be no other valid reasons for exclusion of the evidence. Under this test, the question of admissibility is solely within the traditional discretion of the trial judge.

Several courts have already apparently adopted an approach similar to that advocated by McCormick.[97] In *United States v. Wright,*[98] for example, after the prosecution made an initial showing of the reliability of spectrographic identification, the United States Court of Military Appeals treated the scientific evidence in the same way as expert testimony, leaving the question of weight to the finders of fact.[99] The

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[92] *Strong, supra* note 89, at 14. Professor Strong states that scientific evidence raises essentially the question of relevancy, and thus the proper considerations are the probative value of the evidence, its possible misuse in the hands of laymen jurors, and the degree of its dramatic intrusion on the ultimate legal issues in the case. *Id.*

[93] C. MCCORMICK, HANDBOOK OF THE LAW OF EVIDENCE, § 203, at 491 (2d ed. 1972).

[94] *Id.*

[95] *See id.* § 13, at 29-31. See note 52 *supra.*

[96] *Id.*, § 185, at 438; 1 J. WIGMORE, EVIDENCE, § 28, at 409-10 (3d ed. 1940).

[97] *E.g.,* Coppolino v. State, 223 So.2d 68, 70-71 (Fla. Dist. Ct. App. 1969), *appeals dismissed,* 234 So. 2d 120 (Fla. 1969), *cert. denied,* 399 U.S. 927 (1970).

[98] 17 U.S.C.M.A. 183 (1967).

[99] *Id.* at 189.

concurring opinion in *State v. Worley*[100] advocated a similar approach. The United States Court of Appeals for the Fourth Circuit recently chose not to apply *Frye* in *United States v. Baller,*[101] using instead the McCormick test: "Unless an exaggerated popular opinion of the accuracy of a particular technique makes its use prejudicial or likely to mislead the jury, it is better to admit relevant scientific evidence in the same manner as other expert testimony and allow its weight to be attacked by cross-examination and refutation."[102]

The Court in *Lykus* mentioned the McCormick approach at one point in the opinion[103] and noted the possibility that the Court had already modified the *Frye* and *Fatalo* holdings in two recent cases, *Commonwealth v. Devlin*[104] and *Commonwealth v. Gilbert.*[105] In *Devlin,*[106] a radiologist testified that, based on his years of experience in viewing X-rays, it was his opinion that no two persons have exactly the same bone structure. He then identified the remains of a murder victim by comparison of X-rays. The Court held that his testimony was admissible solely on the basis of his qualifications as an expert.[107] The *Frye* standard was not applied because no disputed scientific instrument, such as the polygraph, was involved, nor was the radiologist's opinion based on a "scientific theory."[108] The Court viewed his medical opinion as a product of his years of experience rather than as a product of a "scientific theory." The Court, however, did not explain just when and how a medical opinion based on experience becomes elevated to the stature of a "scientific theory," and thus subject to the restrictive *Frye* standard. The reasoning in *Devlin* was followed in *Gilbert,*[109] where the same method of identification was used and the evidence was once again held admissible.

Devlin and *Lykus* illustrate the problems the Court has faced in using the inflexible *Frye* standard. Both decisions, although possibly meritorious in result, seem questionable from an analytical perspective. The identical result could have been reached in either case

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[100] 263 So.2d 613, 615 (Fla. Dist. Ct. App. 1972).

[101] 519 F.2d 463 (4th Cir. 1975).

[102] *Id.* at 466, *citing* C. MCCORMICK, HANDBOOK OF THE LAW OF EVIDENCE, § 203, at 491 (2d ed. 1972).

[103] 1975 Mass. Adv. Sh. at 735, 327 N.E.2d at 678.

[104] 1974 Mass. Adv. Sh. 583, 310 N.E.2d 353.

[105] 1974 Mass. Adv. Sh. 1185, 314 N.E.2d 111.

[106] For a discussion of the Court's treatment of *Frye* in *Devlin,* see Fenton, *Evidence,* 1974 ANN. SURV. MASS. LAW § 9.7, at 175.

[107] 1974 Mass. Adv. Sh. at 588, 310 N.E.2d at 357.

[108] *Devlin* is closely analogous to *Lykus* in that both cases involved a single expert, see note 82, *supra,* using a little known comparative identification technique in which experience plays a major role. In *Lykus,* the Supreme Judicial Court declined to say whether *Devlin* was applicable to any circumstances other than those involved in that case.

[109] 1974 Mass. Adv. Sh. at 1190-91, 314 N.E.2d at 115.

within a sound analytical framework if the Court had simply rejected *Frye* and adopted the McCormick approach. In *Devlin* the normal rules for expert testimony were ultimately applied.[110] Use of the McCormick formulation in the first instance would have merely obviated the specious distinction between a medical opinion based on years of experience and a scientific theory. In *Lykus,* the Court held that the technique had acquired general acceptance, but still placed a limitation on the full admissibility of spectrographic evidence.[111] The result, from a trial judge's perspective, is almost identical to that which would have been reached under the McCormick test.

Before placing its caveat on the full admissibility of spectrographic voice identification, the *Lykus* Court stressed, as does McCormick, that the question of admissibility is still within the traditional discretion of the trial judge.[112] The Court then warned:

> We add that the admission of expert testimony as to spectrographic analysis should be subject to the closest judicial scrutiny, particularly in any case where there is an absence of evidence of voice identification other than that of the voiceprint or where, but for the voiceprint, there would be insufficient evidence to warrant any inference of the defendant's guilt.[113]

In any individual case a trial judge could reach the same result under the McCormick test because the evidence could still be excluded where prejudicial. A strong argument could be advanced that the aura of certainty engendered by the scientific nature of the evidence would be highly prejudicial in the absence of other voice identification evidence. The result under the McCormick test, then, would be very similar to that reached by the Court but would be analytically sounder.

The Court might have been reluctant to discard *Frye* entirely because it had recently applied the general acceptance standard in *Commonwealth v. A Juvenile (No. 1)*[114], where the defendant sought to introduce polygraphic evidence. The *Frye* standard was originally

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[110] 1974 Mass. Adv. Sh. at 588, 310 N.E.2d at 357.

[111] 1975 Mass. Adv. Sh. at 737-38, 327 N.E.2d at 679.

[112] *Id.* at 737, 327 N.E.2d at 679.

[113] *Id.* at 737-38, 327 N.E.2d at 678. Commonwealth v. Vitello, 1975 Mass. Adv. Sh. 769, 327 N.E.2d 819, decided after *Lykus,* does not provide much insight into the impact of this limitation on the *Lykus* holding. In *Vitello,* defendants were convicted of violations of various gaming laws, one of the convictions being for use of a telephone for the purpose of accepting wagers and registering bets. Lt. Nash used spectrographic voice identification to identify the defendants' voices from certain incriminating telephone calls. It is not clear from the opinion whether any additional evidence identified the defendants as the speakers. The Court did not discuss the issue at length, stating merely: "The opinions of Lt. Nash were properly received in evidence, under reasoning as shown in our opinion in Commonwealth v. Lykus . . . ." 1975 Mass. Adv. Sh. at 778, 327 N.E.2d at 827.

[114] 1974 Mass. Adv. Sh. 907, 313 N.E.2d 120.

formulated because of judicial reluctance to admit polygraphic evidence[115] and has stood as an effective bar to the admission of such evidence for many years. However, it is not necessary to use only one test for all types of scientific evidence. The Court could easily limit the *Frye* test to polygraphic evidence and adopt a different test or a variety of tests for other types of scientific evidence. The Court took the first step toward such a distinction in *Lykus* by distinguishing polygraphic analysis from spectrographic analysis and other comparative identification techniques.[116] The Court used this distinction to justify the different treatment accorded to spectrographic and polygraphic analysis under the *Frye* standard,[117] but the same distinction could be used to justify application of different standards entirely.

In conclusion, the Court ostensibly applied *Frye* in *Lykus,* but, as Justice Kaplan noted in dissent, its conclusion of general acceptability is somewhat suspect. Decisions from other jurisdictions do not directly support the Court's conclusion and the process of discounting critical opinions seems improper under *Frye.* However, the Court encountered these analytical difficulties solely because of its decision in the first instance to apply *Frye.* If a more liberal standard, such as the McCormick test, had been applied, admission of the evidence would have been considerably easier.

In both *Devlin* and *Lykus,* the Court has gone to some lengths to avoid the harshness of *Frye,* but it has not yet explicitly adopted a more liberal test, such as that proposed by McCormick. Whether the Court will discard the *Frye* standard in the future is not clear. If it does not adopt a new standard, the Court will probably be forced to avoid *Frye's* application, as it did in *Devlin,* or pay lip service to *Frye* while applying something that bears little resemblance to a general acceptance standard, as it did in *Lykus.* It is submitted that adoption of an approach similar to that advocated by McCormick would be the

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[115] *Frye* was one of the first cases to consider the admissibility of polygraphic evidence. The court cited no authority for the admissibility test it proposed. Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).

[116] 1975 Mass. Adv. Sh. at 727, 327 N.E.2d at 674-75. The Court distinguished the comparison involved in spectrographic analysis from the extrapolation made in polygraphic analysis and added that, in any case, polygraphic evidence may constitute an unwarranted intrusion into the jury's functions. *Id.*

[117] Polygraphic evidence was admitted in Commonwealth v. A. Juvenile (No. 1), 1974 Mass. Adv. Sh. 907, 313 N.E.2d 120, but admissibility was strictly limited to the following four situations: (1) where the defendant moves that he be allowed to submit to an examination conducted by an examiner of his own choosing; (2) where the defendant moves that he be allowed to submit to an examination administered by an expert chosen by the Commonwealth; (3) where the defendant moves to be allowed to submit to an examination conducted by a jointly selected examiner; (4) where the defendant moves that the court appoint an examiner. *Id.* No such limitations were imposed on the admissibility of spectrographic evidence in *Lykus.*

best way to avoid the inconsistencies that have appeared in the law as the Court has struggled with the *Frye* standard. The Court should recognize the limited utility of the artificial and inflexible *Frye* test and reject it as inappropriate for the various new types of scientific evidence.

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