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# APPLYING LAWYERS' EXPERTISE TO SCIENTIFIC EXPERTS: SOME THOUGHTS ABOUT TRIAL COURT ANALYSIS OF THE PREJUDICIAL EFFECTS OF ADMITTING AND EXCLUDING EXPERT SCIENTIFIC TESTIMONY

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## I. INTRODUCTION

The admissibility of expert scientific testimony is subject to a case by case analysis by trial courts,<sup>1</sup> which should admit the testimony if it will aid the factfinding process.<sup>2</sup> In its analysis, the court must consider the potential detriments of admitting the testimony: the science itself may be unreliable;<sup>3</sup> the expert witness may contribute more prejudice and confusion than information;<sup>4</sup> and rou-

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1. 3 J. WEINSTEIN & M. BERGER, *WEINSTEIN'S EVIDENCE* ¶ 702[02], at 702-12 (1982).

2. Federal Rule of Evidence 702 provides for admission whenever the evidence will "assist the trier of fact." If the Federal Rules do not apply, expert testimony "within the common knowledge of the average layman" can be excluded as unnecessary. *Bridger v. Union Ry.*, 355 F.2d 382, 387 (6th Cir. 1966). The latter standard has been roundly criticized on several grounds. Weinstein and Berger point out that the standard mistakenly assumes a bright line separating issues that are within the comprehension of jurors from those that are not. *See J. WEINSTEIN & M. BERGER, supra* note 1, ¶ 702[02], at 702-10. Moreover, experts can offer helpful testimony even in areas within the common knowledge of jurors. *Id.*; *see also* Ladd, *Expert Testimony*, 5 VAND. L. REV. 414, 418 (1952). Perhaps the least controversial formulation of an admissibility rule is Wigmore's: "On *this subject* can a jury receive from *this person* appreciable help?" 7 J. WIGMORE, *EVIDENCE* § 1923, at 29 (J. Chadbourn rev. ed. 1978). *See generally* McCORMICK'S HANDBOOK OF THE LAW OF EVIDENCE § 203 (2d ed. 1972) [hereinafter cited as McCORMICK]; J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702; Boyce, *Judicial Recognition of Scientific Evidence in Criminal Cases*, 7 UTAH L. REV. 313 (1964); Giannelli, *The Admissibility of Novel Scientific Evidence: Frye v. United States, a Half-Century Later*, 80 COLUM. L. REV. 1197 (1980); Strong, *Questions Affecting the Admissibility of Scientific Evidence*, 1970 U. ILL. L.F. 1.

3. *See* Giannelli, *supra* note 2; Tarlow, *Admissibility of Polygraph Evidence in 1975: An Aid in Determining Credibility in a Perjury-Plagued System*, 26 HASTINGS L.J. 917 (1975).

4. *See, e.g.,* *United States v. Amaral*, 488 F.2d 1148, 1152 (9th Cir. 1973):

The countervailing considerations most often noted to exclude what is relevant and material evidence are the risk that admission will: 1) require undue consumption of time, 2) create a substantial danger of undue prejudice or of con-

tine admission of expert scientific testimony on a particular subject eventually may cause further delays in already overburdened courts.<sup>5</sup>

The law of evidence provides a system of filters, each sensitive to one of these detriments. If the filters work well, all helpful information not possessing prohibitively detrimental effects is admitted.<sup>6</sup> The first filter is designed to exclude what might be called bad science—information ostensibly based on scientific techniques which is simply wrong. The design of this filter is the subject of the debate that continues to rage over the propriety and viability of the tests for the admission of novel scientific evidence first set out in *Frye v. United States*.<sup>7</sup> In essence, this first filter is a device for determining whether the scientific information is sufficiently reliable to help the jury reach accurate results in a context where “the court almost never will have sufficient personal expertise to evaluate the validity”<sup>8</sup> of the scientist’s conclusions.

The two remaining filters, which are the subject of this Article,

fusing the issues or of misleading the jury, 3) or unfairly and harmfully surprise a party who has not had a reasonable opportunity to anticipate the evidence submitted. Scientific or expert testimony particularly courts the second danger because of its aura of special reliability and trustworthiness.

5. See, e.g., *United States v. Thevis*, 665 F.2d 616, 641 (5th Cir. 1982) (“To admit such testimony in effect would . . . open the door to a barrage of marginally relevant psychological evidence.”); Note, *Did Your Eyes Deceive You? Expert Psychological Testimony on the Unreliability of Eyewitness Identification*, 29 STAN. L. REV. 969, 1027 (1977) (“Moreover, the broader possibility that almost every contested issue of fact at every criminal trial could elicit relevant testimony about scientific research suggests that allowing this type of evidence and the inevitable rebuttal could bring courts to a standstill.”).

6. See FED. R. EVID. 403 (Prejudice must “substantially outweigh” probative value). See generally J. THAYER, A PRELIMINARY TREATISE ON EVIDENCE AT THE COMMON LAW 530 (1898); 1 J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 403; Saltzburg, *A Special Aspect of Relevance: Countering Negative Inferences Associated with the Absence of Evidence*, 66 CALIF. L. REV. 1011, 1013-18 (1978).

7. 293 F. 1013, 1014 (D.C. Cir. 1923). See *infra* text accompanying note 53. For authorities debating the ramifications of the *Frye* test, see McCORMICK, *supra* note 2, § 203, at 490; Boyce, *supra* note 2, at 325; Giannelli, *supra* note 2; Moenssens, *Polygraph Test Results Meet Standards for Admissibility as Evidence*, in LEGAL ADMISSIBILITY OF THE POLYGRAPH 14, 17 (N. Ansley ed. 1975) [hereinafter cited as Moenssens, *Polygraph Test*]; Moenssens, *Admissibility of Scientific Evidence—An Alternative to the Frye Rule*, 25 WM. & MARY L. REV. 545 (1984) [hereinafter cited as Moenssens, *Admissibility*]; Strong, *supra* note 2, at 11-13.

8. J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[03], at 702-15.

are preeminently matters of judicial expertise.<sup>9</sup> One filter attempts to eliminate the distorting effect that expert testimony can have at a particular trial, and the other filter attempts to control the drastic costs that routine resort to expert testimony would entail for the legal system. These two filters often are used in analyzing the prejudicial effect of expert testimony, which may outweigh the testimony's relevancy. Although these filters receive some attention, they seldom draw detailed discussion from writers primarily concerned with the perplexing problems of the design and administration of methods for assessing the probative value of scientific evidence. The three filters overlap, and are often used simultaneously, like color filters attached to a lens.<sup>10</sup> Scientific testimony frequently passes without much difficulty through the first, science-sensitive filter, only to be excluded by the second, case-sensitive filter.<sup>11</sup> Occasionally, scientific testimony will pass through the first two filters, only to be excluded by the third.<sup>12</sup> This Article is concerned with the effect of excluding valid scientific evidence, evidence with sufficient probative value and scientific legitimacy to pass through the first filter.

Two propositions have dominated the restrictive treatment of valid scientific information. The first holds that information, although valid, will be misused by jurors who will be swayed by a witness whose aura of expertise will lead them to surrender their

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9. [F]actors, such as undue prejudice, confusion of issues, and waste of time, may be associated with scientific evidence, but often these factors overlap with the danger of misleading the jury or are of only secondary importance. Here, unlike the assessment of the probative value of novel scientific evidence, the trial judge appears to be on familiar turf; evaluating the misleading aspects of evidence is a problem judges face in admitting or excluding nonscientific evidence.

Giannelli, *supra* note 2, at 1237 (footnotes omitted). See also J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[03], at 702-19.

10. This is, of course, a drastic simplification in an area of law where any simplification must recognize numerous exceptions. An attempt at a more comprehensive schematic can be found in the "flow decision chart" designed by Professor Strong. See Strong, *supra* note 2, at 4-5.

11. See, e.g., *United States v. Brown*, 501 F.2d 146, 150 (9th Cir. 1974). See generally cases cited *infra* notes 19-23.

12. Systemic prejudice seldom appears as the sole grounds for exclusion. Several opinions, however, advert to this basis as one of the grounds for exclusion. See, e.g., *United States v. Thevis*, 665 F.2d 616, 641 (5th Cir. 1982).

own judgment.<sup>13</sup> The second holds that the court often can dispense with expert testimony because the advocate's presentation can convey the same information.<sup>14</sup> In other words, exclusion of scientific testimony does not foreclose an advocate's use of the idea behind the testimony. Courts that have been able to apply either proposition to a case often exclude expert testimony; courts that have been able to apply both propositions behave as if compelled to exclude the testimony.

In order to examine whether these propositions are valid and validly applied, an area of expertise must be isolated within which jurors might be tempted to surrender their own judgment. This field of knowledge also must supply advocates with some hope of conveying the expert's information in other ways. A number of cases involving the psychology of perception, memory, and expression in ordinary life provide an appropriate vehicle for this examination.<sup>15</sup> The cases reveal that, in applying the second, case-sensitive filter, trial judges can use a formidable array of devices to

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13. See, e.g., *United States v. Addison*, 498 F.2d 741, 744 (D.C. Cir. 1974) (ascribing to an expert witness "a posture of mystic infallibility in the eyes of a jury of laymen"); *United States v. Amaral*, 488 F.2d 1148, 1152 (9th Cir. 1973) ("aura of special reliability and trustworthiness"). The phenomenon also has been referred to as "a priestly aureole." H. KALVEN, *INDENCY AND THE SEVEN ARTS* 76-77 (1930).

14. See, e.g., *United States v. Amaral*, 488 F.2d 1148 (9th Cir. 1973); *Smith v. United States*, 389 A.2d 1356, 1359 (D.C. 1978); *State v. Warren*, 230 Kan. 385, 391-95, 635 P.2d 1236, 1241-43 (1981); *State v. Porraro*, 121 R.I. 882, 893, 404 A.2d 465, 471 (1979).

15. See, e.g., cases cited *infra* notes 19-23. The value of these cases as illustrative vehicles does not derive from their being typical of scientific evidence cases. In several respects they are atypical. For example, they usually do not involve specific propositions that are undiscoverable by nonscientific means, as do cases dealing with chemical tests or microscopic analysis. Cf. Strong, *supra* note 2, at 2. Moreover, Warren Court decisions ostensibly restricting the admissibility of physical evidence and lay testimony in criminal trials have multiplied offers of scientific proof as the prosecution works to fill the "evidence void." Giannelli, *supra* note 2, at 1199-1200; Imwinkelried, *A New Era in the Evolution of Scientific Evidence—A Primer on Evaluating the Weight of Scientific Evidence*, 23 WM. & MARY L. REV. 261, 262 (1981). The evidence discussed here is at least as likely to be offered by the defense as the prosecution. See, e.g., *Ibn-Tamas v. United States*, 407 A.2d 626 (D.C. 1979) (expert testimony on battered women); *State v. Baker*, 120 N.H. 773, 424 A.2d 171 (1980) (expert testimony offered on battered women to rebut defense claim of insanity). The distinction inverts the policy concerns of several commentators who have focused on a criminal defendant's vulnerability to inappropriate scientific proof. See, e.g., Giannelli, *supra* note 2, at 1240-45. Although this Article suggests a mode of analysis which may result in more frequent admission of psychological evidence, it does not take a position either for or against the admission of any particular variety of psychological testimony.

control the use of expert testimony, although advocates often are relatively helpless in finding any other means of conveying equivalent information. In other words, within a particular case, the trial process is better equipped to modulate the weight given to the expert's findings once they have been admitted than to compensate for their absence once the process has excluded them.

This conclusion prompts a further look at the systemic detriments that may accrue from the wholesale admission of expert testimony. Again, psychological evidence about normal perception, memory, and expression provides a useful starting place. The nature of the issues addressed by such psychological testimony assures its relevancy in many cases. The cumulative effect of expert testimony on an overburdened judicial system is a valid concern. Analysis of this effect involves a complex of issues that is different from—and sometimes obscured by—a case's internal relevancy analysis, and deserves explicit consideration.

## II. CONVEYING THE PSYCHOLOGY OF NORMAL LIFE

Expert psychological testimony, once received with wariness by the courts,<sup>16</sup> is now commonplace.<sup>17</sup> Indeed, courts have developed a near dependence on psychologists if the task is "to establish the presence or absence of mental disorders and the causal connections between such disorders and criminal or tortious conduct."<sup>18</sup> In recent years, however, inventive lawyers have begun to press for the admission of expert psychological testimony that may explain processes unrelated to disorders—processes that may occur naturally in everyday life.

The insights that these expert witnesses provide often challenge intuitive understandings. For example, psychological testimony has been offered to show that the stress of a bank robbery decreases, rather than increases, the ability of the victims to perceive the robbers,<sup>19</sup> that a woman can fear her husband but not immediately

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16. See generally Louisell, *The Psychologist in Today's Legal World*, 39 MINN. L. REV. 236 (1955); Robbins, *The Admissibility of Social Science Evidence in Person-Oriented Legal Adjudication*, 50 IND. L.J. 493 (1975); Comment, *The Psychologist as Expert Witness: Science in the Courtroom?*, 38 MD. L. REV. 539, 544-46 (1979).

17. Comment, *supra* note 16, at 546-47 (criticizing psychological testimony).

18. *Id.* at 539-40 (footnote omitted).

19. In *United States v. Amaral*, 488 F.2d 1148 (9th Cir. 1973), for example, the defense

offered the testimony of a psychologist to show that stress interfered with perception and that the eyewitness identification process was generally unreliable.

Interest in expert testimony concerning eyewitness identifications has been growing since the early 1970's, fueled by increasing scientific study in the field and by Burger Court decisions which, by limiting pretrial constitutional challenges to suggestive identification procedures, place the reliability of the identification process squarely before the jury. *Cf. Watkins v. Sowder*, 449 U.S. 341 (1981). See generally P. WALL, *EYE-WITNESS IDENTIFICATION IN CRIMINAL CASES* (1965); Grano, Kirby, Biggers and Ash: *Do Any Constitutional Safeguards Remain Against the Danger of Convicting the Innocent?*, 72 MICH. L. REV. 717 (1974); Levine & Tapp, *The Psychology of Criminal Identification: The Gap from Wade to Kirby*, 121 U. PA. L. REV. 1079 (1973).

The question has provoked an extraordinary amount of law review comment, much of which follows a pattern. The commentators advert to longstanding judicial distrust of eyewitness testimony, survey the burgeoning psychological literature supporting that mistrust, canvass the potential solutions, and finally, support one solution or another. See, e.g., Note, *supra* note 5 (preferring expert testimony); Note, *Eyewitness Identification Testimony and the Need for Cautionary Jury Instructions in Criminal Cases*, 60 WASH. U.L.Q. 1387 (1983) [hereinafter cited as Note, *Eyewitness Identification Testimony*] (preferring cautionary instructions); See generally Clifford, *The Relevance of Psychological Investigation to Legal Issues in Testimony and Identification*, 1979 CRIM. L. REV. 153 (discussing relevance of psychological evidence); Convis, *Testifying About Testimony: Psychological Evidence on Perceptual and Memory Factors Affecting the Credibility of Testimony*, 21 DUQ. L. REV. 579 (1983) (endorsing expert testimony); Ellis, Davies & Shepard, *Experimental Studies of Face Identification*, 3 NAT. J. CRIM. DEFENSE 219 (1977); Katz & Reid, *Expert Testimony on the Fallibility of Eyewitness Identification*, 1 CRIM. JUST. J. 177 (1977) (preferring expert testimony); Saltzburg, *supra* note 6, at 1058-60 (emphasizing burdensome and problematic results of expert testimony); Starkman, *The Use of Eyewitness Identification Evidence in Criminal Trials*, 21 CRIM. L.Q. 361 (1979) (favoring expert testimony); Comment, *Does the Eyewitness Really See?*, 21 WASHBURN L.J. 698 (1982) (approving use of instructions).

Dr. Loftus provides a distilled outline of the proposed psychological testimony:

When we experience an important event [a complex process occurs]. Nearly all of the theoretical analyses of the process divide it into three stages. . . . First, there is the *acquisition* stage—the perception of the original event—in which information is encoded, laid down, or entered into a person's memory system. Second, there is the *retention* stage, the period of time that passes between the event and the eventual recollection of a particular piece of information. Third, there is the *retrieval* stage during which a person recalls stored information.

E. LOFTUS, *EYEWITNESS TESTIMONY* 21 (1979).

Loftus continues by explaining that numerous factors in each stage can affect the accuracy and completeness of an eyewitness account. See also Note, *supra* note 5, at 974-89; Note, *Eyewitness Identification Testimony*, *supra*, at 1393-96. The commentators exhaustively discuss the factors but, for present purposes, it should suffice to say that an expert can be expected to testify that the reliability of a witness suffers if exposure time is short, events are violent, the stress is great, expectations are biased, and the events a witness is asked to recount are peripheral rather than central. Moreover, experts can be expected to testify that the memory of a witness decreases as the time since the event increases and that the addition of inaccurate post-event information and feedback from other witnesses can affect memory. See, e.g., *State v. Chapple*, 135 Ariz. 281, 293-94, 660 P.2d 1208, 1221 (1983). Finally, some experts will testify that identification procedures can result in misidentifica-

perceive leaving him as an option,<sup>20</sup> that a defendant is not the

tions, or at least in an inappropriate degree of confidence in a difficult identification, because of the form of the questions asked, the authoritarian presence of the police, and various other social psychological pressures inherent in the procedures. E. LOFTUS, *supra*, at 110; Note, *supra* note 5, at 985-89; Note, *Eyewitness Identification Testimony, supra*, at 1395 n.33; see also Buckhout & Greenwald, *Witness Psychology*, in SCIENTIFIC AND EXPERT EVIDENCE, 1291-1327 (E. Imwinkelried 2d ed. 1981).

The psychologists testifying for criminal defendants also have expressed the belief that jurors fail to understand the identification process and attribute an exaggerated reliability to eyewitness testimony. Indeed, such psychological testimony and the arguments of those who advocate the admission of the testimony is founded on a belief that jurors harbor fundamental misconceptions concerning this aspect of the psychology of everyday life.

20. *E.g.*, *Ibn-Tamas v. United States*, 407 A.2d 626 (D.C. 1979). In *Ibn-Tamas*, a criminal defendant charged with killing her husband entered a plea of self-defense and proffered the testimony of a psychologist to show that an identifiable class of women can be characterized as battered women, to explain why the behavior of these women varies from the lay understanding of normal domestic life, and to provide a basis for explaining to the jury that Ms. Ibn-Tamas would not have perceived withdrawal as a solution to the imminent danger that she perceived. *Id.* at 634.

Expert testimony on the battered woman or the battered wife has been discussed thoroughly in the context of self-defense claims. See, *e.g.*, Schneider & Jordan, *Representation of Women Who Defend Themselves in Response to Physical or Sexual Assault*, 4 WOMEN'S RTS. REP. 149 (1978); Note, *Defense Strategies for Battered Women Who Assault Their Mates: State v. Curry*, 4 HARV. WOMEN'S L.J. 161 (1981); Note, *The Use of Expert Testimony in the Defense of Battered Women*, 52 U. COLO. L. REV. 587 (1981) [hereinafter cited as Note, *The Use of Expert Testimony*]; Comment, *The Admissibility of Expert Testimony on Battered Wife Syndrome: An Evidentiary Analysis*, 77 NW. U.L. REV. 348 (1982).

Battered women testimony generally portrays a cycle of violence:

[V]iolence does not constantly occur in most battering relationships, nor does it occur randomly. Rather, there are three predictable phases: a phase of tension building, leading up to the second phase which is the acute battering incident, followed by a third phase, which is a period of loving contrition or at least a cessation of the violent behavior.

The third phase provides positive reinforcement for women to remain in the relationship. This periodic reinforcement provides a powerful incentive to remain in a battering relationship.

Walker, Thyfault & Browne, *Beyond the Juror's Ken: Battered Women*, 7 VT. L. REV. 1, 9 (1982). The expert's testimony is offered to show that various choices made by the defendant wife, which might seem to jurors to contradict a claimed fear of the husband by the wife, are a normal reaction of a woman subjected to this cycle of violence. For example, her failure to leave her husband can be explained as the result of a psychological paralysis induced by battering rather than by nonchalance. Comment, *supra*, at 351. Inherent in the nature of the battering relationship is the batterer's assumption of an aura of omnipotence and invulnerability in the eyes of the wife-defendant. This aura allows the husband to use force at inappropriate times or of an inappropriate degree which appears fully justified in the defendant's eyes. Note, *The Use of Expert Testimony, supra*, at 589. Courts have given expert testimony on this subject a mixed reception. See, *e.g.*, *Ibn-Tamas v. United States*, 407 A.2d 626 (D.C. 1979), *on remand*, 455 A.2d 893 (D.C. 1983) (exclusion upheld); *Smith v.*



author of her taperecorded speeches,<sup>21</sup> and that a driver approaching a grade crossing would not see a freight train parked astride it.<sup>22</sup> The instances multiply and probably will continue to do so as research progresses and the psychological model for explaining and evaluating human conduct achieves a firmer place in the legal system.<sup>23</sup>

State, 247 Ga. 612, 277 S.E.2d 678 (1981) (exclusion held reversible error); State v. Anaya, 438 A.2d 892 (Me. 1981) (reversing trial court's exclusion of testimony); State v. Barker, 120 N.H. 773, 424 A.2d 171 (1980) (introduction on behalf of prosecution upheld); Buhrlé v. State, 627 P.2d 1374 (Wyo. 1981) (exclusion upheld).

21. United States v. Hearst, 412 F. Supp. 893 (N.D. Cal. 1976) (*Hearst II*), *aff'd*, 563 F.2d 1331 (9th Cir. 1977). In *Hearst II*, the defense offered an expert in stylistics, a branch of psycholinguistics. This school of thought maintains that an examination of linguistic style can reveal the author of an utterance because no two individuals will convey a message in the same way. Comment, *Stylistics Evidence in the Trial of Patricia Hearst*, 1977 ARIZ. ST. L.J. 387. Other applications of linguistics evidence have been proposed. See, e.g., Arens & Meadow, *Psycholinguistics and the Confession Dilemma*, 56 COLUM. L. REV. 19 (1956); Niblett & Boreham, *Cluster Analysis in Court*, 1976 CRIM. L. REV. 175.

22. Southern Pac. Transp. Co. v. Lueck, 111 Ariz. 560, 535 P.2d 599, *aff'd on reh'g*, 112 Ariz. 277, 540 P.2d 1258 (1975).

The railroad crossing example fits the category of "human factors" expertise, defined by one of its practitioners as the "study of all the factors which combine to influence the decision of the individual, such as past experience, present feelings, and immediate motor response in terms of the present situation or environment." Note, *Evidence—Expert Testimony: Admissibility of Human Factors Testimony Under the Federal Rules of Evidence*, 60 N.C.L. REV. 411 (1981) (quoting Public Health Found. v. Cole, 352 So. 2d 877, 879 (Fla. Dist. Ct. App. 1977), *cert. denied*, 361 So. 2d 834 (Fla. 1978)). To date, testimony of this kind has been discussed most frequently in the context of railway-crossing and industrial accidents. See generally Fowler, *Railroad Litigation and the Human Factors Expert: Why the Plaintiff Missed the Train*, 4 AM. J. TRIAL ADVOC. 621 (1981); Fowler, *Human Factors Analysis*, TRIAL, Nov.-Dec. 1974, at 53; Perlman, *Use of Human Factors in a Product Liability Case*, 2 AM. J. TRIAL ADVOC. 47 (1978).

Human factors evidence has had a mixed reception in the courtroom. See, e.g., Southern Pac. Transp. Co. v. Lueck, 111 Ariz. 560, 535 P.2d 599 (evidence admissible), *aff'd on reh'g*, 112 Ariz. 277, 540 P.2d 1258 (1975); Buchman v. Seaboard Coast Line R.R., 381 So. 2d 229 (Fla. 1980) (evidence admissible); Public Health Found. v. Cole, 352 So. 2d 877 (Fla. Dist. Ct. App. 1977) (evidence admissible); Seaboard Coast Line R.R. v. Kubalski, 323 So. 2d 32 (Fla. Dist. Ct. App. 1975) (exclusion proper); Olson v. A.W. Chesterton Co., 256 N.W.2d 530 (N.D. 1977) (evidence admissible); Owre v. Crown Zellerbach Corp., 260 Or. 454, 490 P.2d 504 (1971) (exclusion proper); McAdams v. Pak-Mor Mfg., 602 S.W.2d 374 (Tex. Civ. App. 1980) (evidence admissible).

23. Cf. Simon, *Homo Psychologicus: Notes on a New Legal Formalism*, 32 STAN. L. REV. 487 (1980). Expert testimony concerning the psychology of eyewitness identification was offered persistently before the arrival of any very hopeful precedential authority. See United States v. Brown, 501 F.2d 146 (9th Cir. 1974); United States v. Amaral 488 F.2d 1148 (9th Cir. 1973); People v. Bradley, 115 Cal. App. 3d 744, 171 Cal. Rptr. 487 (1981); State v. Warren, 230 Kan. 385, 635 P.2d 1236 (Kan. 1981); State v. Barry, 25 Wash. App. 751, 611

A jury arrives at its conclusions by applying both specific and general propositions.<sup>24</sup> Lay evidence sometimes will provide a specific proposition, such as that the material on the defendant's club is blood. The common experience of the jurors then can be expected to provide the general proposition that the blood tends to prove a battery. Scientific evidence can enter this process at either or both levels,<sup>25</sup> by detecting and typing blood where it is invisible, or by providing a general theory of blood-typing which could eliminate the putative victim as the source of the blood. Proponents of psychological testimony concerning perception, memory, and expression argue that jurors, despite their everyday experience, often cannot be relied on to apply correct general propositions to the specific data adduced at trial. In fact, they warn that jurors are not simply ignorant about general principles of everyday psychology in the same way that they might be ignorant of the Doppler shift principle for the measurement of speed, but that jurors often harbor serious misconceptions which, if applied as general principles, greatly endanger the accuracy of the factfinding process.<sup>26</sup>

If jurors do harbor such misconceptions, the law of evidence should not perpetuate them unnecessarily.<sup>27</sup> The question becomes whether expert testimony addressing these questioned general propositions is the best, or even an acceptable, means of dispelling the misconceptions.

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P.2d 1262 (1980). *State v. Chapple*, 135 Ariz. 281, 660 P.2d 1208 (1983), is the first decision finding an abuse of discretion in the trial court's exclusion of expert testimony on the psychology of eyewitness identification.

24. McCORMICK, *supra* note 2, § 203; Strong, *supra* note 2, at 2-4.

25. McCORMICK, *supra* note 2, § 206, refers to the variety of specific scientific techniques that have been used to uncover otherwise undetectable evidence, and catalogues some of the burgeoning literature in specialized fields. A good illustrative case is *United States v. Stifel*, 433 F.2d 431 (6th Cir. 1970), *cert. denied*, 401 U.S. 994 (1971). In *Stifel*, the United States Court of Appeals for the Sixth Circuit discussed at length the means by which the neutron activation analysis technique generates new data, and the general principles by which that data can be used to identify the source of particular materials.

26. See, e.g., Deffenbacher & Loftus, *Do Jurors Share a Common Understanding Concerning Eyewitness Behavior?*, 6 LAW & HUM. BEHAV. 15 (1982); Loftus, *Psychological Aspects of Courtroom Testimony*, in 347 ANNALS, N.Y. ACAD. SCI. 27 (1980); Walker, Thyfault & Browne, *supra* note 20; Note, *supra* note 5, at 970-73 nn.7-9.

27. FED. R. EVID. 402; 1 J. WIGMORE, *supra* note 2, §§ 9, 10 (3d ed. 1940). See also FED. R. EVID. 403.

### III. TRIAL COURT ANALYSIS

The burden of deciding whether expert testimony is the best method to dispel misconceptions falls, with force, on trial courts. Broad general rules are available for trial judges confronted with an offer of expert psychological testimony. On the surface, these rules appear to be fairly straightforward. For example, rule 702 of the Federal Rules of Evidence states: "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." Although some controversy lingers over the content of these general rules, the real difficulties arise in applying general principles, such as those of rule 702, to specific cases. A resort to appellate decisions is not helpful to the judge or advocate who must apply these principles to the expert testimony of a psychologist. This is due in part to appellate application of the abuse of discretion standard, in part to some confusing properties of the appellate opinions themselves, but mainly to the ad hoc nature of all relevancy decisions.

Federal and state courts adhere to the rule recognized in *Salem v. United States Lines*<sup>28</sup> that "[t]he trial judge has broad discretion in the matter of the admission or exclusion of expert evidence, and his action is to be sustained unless manifestly erroneous." Whatever comfort it may provide an apprehensive trial judge who fears reversal, however, the abuse of discretion standard contributes to a tendency in appellate courts to refrain from detailed comment on proffered expert testimony. Frequently, the appellate court will go to considerable length to disclaim an intention to comment on the merits of the issue: "This is not to say that admission of such testimony would have been improper. At a new trial, admission . . . will again be within the discretion of the trial court."<sup>29</sup> As a result, the opinions provide some guidance in extreme situations where evidence must or must not be admitted, but are less helpful in the broad range of cases in which either

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28. 370 U.S. 31, 35 (1962). See generally J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[02]; 2 J. WIGMORE, *supra* note 2, § 561 (J. Chadbourne rev. ed. 1979).

29. *United States v. Benveniste*, 564 F.2d 335, 339 n.3 (9th Cir. 1977).

course is permissible.

Appellate opinions are also somewhat unwieldy because of the bewildering thicket of overlapping legal principles that apply to the question of admissibility of expert scientific testimony. In reviewing a trial judge's exclusion of psychological testimony concerning battered women, for example, the District of Columbia Court of Appeals considered whether the proffered evidence invaded the province of the jury, was within the ken of the average layman, allowed the expert to decide the case in place of the jurors, was proposed by an expert qualified in her field, was offered by an expert in a field that permits the assertion of a reasonable opinion, and was of sufficient probative value to outweigh any potential prejudicial impact.<sup>30</sup>

The admission of expert evidence is an area in which obsolete, or at least obsolescent, terms and tests have shown a remarkable ability to survive and to penetrate appellate opinions. Moreover, appellate courts upholding the exclusion of expert evidence seldom confine themselves to a single justification; the phrase, "and furthermore," seems to echo throughout the opinions. The United States Court of Appeals for the First Circuit demonstrated this tendency in *United States v. Fosher*<sup>31</sup> when it upheld the exclusion of expert psychological testimony on eyewitness identifications because it did not assist the trier of fact,<sup>32</sup> was not relevant,<sup>33</sup> would have confused the jury,<sup>34</sup> would have consumed an inordinate amount of time,<sup>35</sup> was not based on a generally accepted body of scientific knowledge,<sup>36</sup> and was adequately replaced by cross-examination.<sup>37</sup> The court did not indicate whether each of these grounds alone would have been sufficient to exclude the expert testimony.

The need for conscientious trial court analysis is enhanced by

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30. *Ibn-Tamas v. United States*, 407 A.2d 626, 632-35 (D.C. 1979), *on remand*, 455 A.2d 893 (1983).

31. 590 F.2d 381 (1st Cir. 1979).

32. *Id.* at 383.

33. *Id.*

34. *Id.*

35. *Id.* at 383-84.

36. *Id.* at 383.

37. *Id.* at 382.

these factors, of course, but it probably arises from the nature of the task itself. A review of the caselaw reveals that the division between questions concerning threshold admissibility and questions concerning the weight given to evidence is not applied in its familiar fashion when scientific evidence is at issue. Courts seldom resolve the question of its admissibility without implicitly determining the weight that the evidence deserves and predicting the weight that the jurors will give it. If the predicted weight seems inappropriate, probative scientific evidence often is excluded.<sup>38</sup> The question framed by one court qualifying its own liberal approach to admissibility was whether "an exaggerated popular opinion of the accuracy of a particular technique makes its use prejudicial or likely to mislead the jury."<sup>39</sup>

#### IV. DETERMINING THE WEIGHT THAT THE EVIDENCE DESERVES

The two principal tests for the admissibility of scientific evidence are genuinely different. The traditional test of *Frye v. United States*<sup>40</sup> is more restrictive than the McCormick relevancy test.<sup>41</sup> Proponents of the *Frye* test generally place less trust in the jurors' ability to weigh scientific evidence.<sup>42</sup> The two tests, however, have some similarities. Both tests involve primarily<sup>43</sup> a deter-

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38. [T]he courts, when undertaking to pass on the question whether the evidence has sufficient probative value to assist the jury, mix that question with the one of effect on the jury, and seemingly require that the probative value be as great as the courts decide the jury will think it to be. In the case of matters labelled "lie-detector," "truth-serum," "voiceprint," or "mathematical certainty," the courts seem to conclude that the jury will consider the tests infallible, and so require that they be shown to be infallible before they are admitted.

McCORMICK, *supra* note 2, § 203, at 490 n.32 (citations omitted).

39. *United States v. Baller*, 519 F.2d 463, 466 (4th Cir.), *cert. denied*, 423 U.S. 1019 (1975).

40. 293 F. 1013 (D.C. Cir. 1923).

41. See McCORMICK, *supra* note 2, § 203, at 491 ("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.") (footnotes omitted). See generally Giannelli, *supra* note 2, at 1223-24.

42. See Imwinkelried, *The Standard for Admitting Scientific Evidence: A Critique from the Perspective of Juror Psychology*, 28 VILL. L. REV. 554, 563 (1983) ("The judicial skepticism of jurors' ability to evaluate the evidence is deep-seated, with courts often relying on that skepticism as a rationale for the *Frye* test.") (citations omitted).

43. Each test also embraces secondary concerns. Through its general acceptance standard,

mination of the reliability and the validity of scientific information developed in fields in which judges have no personal expertise. Both tests rely on the same sources of information in arriving at a determination and both create, as a necessary by-product of the decisional process, a sense of the appropriate weight that the proffered scientific evidence deserves.

Various types of scientific evidence have been recognized as sufficiently reliable to warrant a presumption of probative value. Courts have taken judicial notice of the principles "underlying radar, intoxication tests, fingerprints, firearms identifications, and handwriting comparisons."<sup>44</sup> As one writer notes, "[i]n some cases, the validity of a technique—radar and intoxication tests are the principal examples—has been recognized legislatively."<sup>45</sup> This recognition relieves the proponent of the burden of proving the validity and reliability of the scientific methods; in effect, it recognizes the logical relevancy of the scientific information and reserves only legal relevancy questions, such as prejudice.<sup>46</sup>

Certain factfinding areas are so dependent on expert testimony that, as Judge Weinstein and Professor Berger note, "the plaintiff loses if he fails to sustain the burden of coming forward with expert evidence."<sup>47</sup> In these areas, such as medical malpractice, a trial court can determine admissibility by resorting to precedent. If all questions of logical relevance and the acceptability of counter-

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the *Frye* test ensures that a "reserve of experts" will be available to help forestall abuse of any probative value that the evidence possesses. See *People v. Kelly*, 17 Cal. 3d 24, 31, 549 P.2d 1240, 1244-45, 130 Cal. Rptr. 144, 148-49 (1976). Either test can deal with these concerns, but "[i]t is predominately on the basis of [the] reliability argument that the *Frye* test must be judged." Giannelli, *supra* note 2, at 1207. See also J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[03].

44. Giannelli, *supra* note 2, at 1203 (footnotes omitted).

45. *Id.* See also J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[03], at 702-15 ("When the proffered opinion evidence relates to a topic which has been judicially recognized as a proper subject for expert testimony, the court need only consider whether this evidence will aid the jury in deciding the particular issues in the case."); Strong, *supra* note 2, at 6-9 (discussing the controversy over the standard for judicial notice of scientific evidence). See generally Davis, *Judicial Notice*, 55 COLUM. L. REV. 945 (1955).

46. The familiar, yet much criticized, shorthand of legal and logical relevancy is a convenience here; however, it could well contribute to further confusion elsewhere. See McCORMICK, *supra* note 2, § 185, at 441; 1 J. WIGMORE, *supra* note 2, § 12 (3d ed. 1940).

47. J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[02], at 702-09 (footnotes omitted). See generally Ladd, *supra* note 2; Comment, *Medical Malpractice—Expert Testimony* 60 NW. U.L. REV. 834 (1966).

vailing detriments are resolved, then the court should admit the evidence. Different problems confront courts when the scientific evidence is novel.

The admissibility test applied by a court<sup>48</sup> will shape to some extent the judicial determination of the weight that the scientific evidence deserves. The choice between tests continues to be discussed,<sup>49</sup> and dissatisfaction with the existing alternatives is growing, rather than abating.<sup>50</sup> For present purposes, it is enough to sketch the two principle approaches derived from *Frye v. United States* and the relevancy approach usually associated with Professor McCormick.<sup>51</sup>

In *Frye*, the United States Court of Appeals for the District of Columbia Circuit upheld the exclusion of evidence derived from a forerunner of the modern polygraph, and promulgated its influential test<sup>52</sup> for the admissibility of novel scientific evidence:

Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while 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.<sup>53</sup>

The test has survived despite an onslaught of almost savage criticism.<sup>54</sup>

Numerous critics have pointed out the difficulties of applying the *Frye* test. Not the least of these difficulties is knowing whether

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48. See *supra* notes 40-41 and accompanying text.

49. See Moenssens, *Admissibility*, *supra* note 7. See generally Decker & Handler, *Voiceprint Identification Evidence—Out of the Frye Pan and into Admissibility*, 26 AM. U.L. REV. 314 (1977).

50. See, e.g., Giannelli, *supra* note 2, at 1250.

51. See 293 F. 1013, 1014 (D.C. Cir. 1923); McCORMICK, *supra* note 2, § 203, at 491.

52. Imwinkelried, *supra* note 15, at 264 ("Until very recently, *Frye* was the almost universal view among American courts.").

53. 293 F. at 1014. See generally Giannelli, *supra* note 2, at 1204-18.

54. Giannelli, *supra* note 2, at 1219; see also McCORMICK, *supra* note 2, § 203, at 490; Boyce, *supra* note 2, at 325; Strong, *supra* note 2, at 11-13.

to apply *Frye* at all.<sup>55</sup> The *Frye* test also leaves open the difficult determination of who must accept the scientific procedure. Particularly in interdisciplinary areas, identification of the appropriate field of expertise for general acceptance is difficult. General acceptance itself is a standard subject to various interpretations.<sup>56</sup> Moreover, commentators question "whether the *Frye* standard requires general acceptance of the scientific technique or of both the underlying principle and the technique applying it."<sup>57</sup>

Proponents of the *Frye* test have responded that the general acceptance standard assures the existence of "a minimal reserve of experts . . . who can critically examine the validity of a scientific determination in a particular case."<sup>58</sup> The root of the *Frye* standard's justification is that the scientific community most qualified to assess the reliability of scientific information will make the decision. In the eyes of its supporters, the *Frye* rule provides a necessary bulwark against the situation, allegedly created by the McCormick approach, in which "the court will generally be forced to accept the probative value of the evidence as what a qualified expert testifies it to be."<sup>59</sup>

A lively debate continues over the viability of the *Frye* test in the face of the Federal Rules of Evidence.<sup>60</sup> Some jurisdictions have explicitly abolished the *Frye* standard through their common

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55. See Giannelli, *supra* note 2, at 1208-09. The author cites the view of Professor Moenssens that

[d]eciding what is the proper field to which a novel test belongs is in itself a chore. Most novel tests represent new approaches to the solution of old problems by a process which is unknown, or belongs to a different field. Because of this, the person developing a novel test frequently finds himself on the fringes of his scientific discipline, and perhaps overlapping into other disciplines.

Moenssens, *Polygraph Test*, *supra* note 7, at 17.

56. See, e.g., Kirk, *The Interrelationship of Law and Science*, 13 BUFFALO L. REV. 393 (1964).

57. Giannelli, *supra* note 2, at 1211 (footnotes omitted).

58. *United States v. Addison*, 498 F.2d 741, 744 (D.C. Cir. 1974).

59. Strong, *supra* note 2, at 22.

60. Compare J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[03], at 702-16 ("The silence of the rule and its drafters should be regarded as tantamount to an abandonment of the general acceptance standard."), with Giannelli, *supra* note 2, at 1229 ("[I]t can be argued that because *Frye* was the established rule and no statement repudiating *Frye* appears in the legislative history, the general acceptance standard remains intact.") (footnotes omitted).



law powers.<sup>61</sup> Even where the McCormick relevancy approach has replaced the *Frye* standard, however, the criteria of the *Frye* test remain significant. General acceptance, although downplayed as the *sine qua non* of admissibility, is still considered. "A technique unable to garner *any* support, or only miniscule support, within the scientific community, would be found unreliable by a court,"<sup>62</sup> even under the McCormick approach. Conversely, although the McCormick approach is more dependent on the qualifications of the testifying expert, a determination under the *Frye* test also implicates the expert's qualifications.<sup>63</sup>

The differences between the tests will affect the specific types of evidence admitted. Although literal application of the *Frye* standard will exclude some evidence because of the test's built in "cultural lag," the McCormick test, unhampered by the general acceptance standard, will admit the same evidence.<sup>64</sup> The *Frye* test also ordinarily will vary the emphasis given to a particular criterion; general acceptance will receive less attention when other detrimental factors are present.

Under any test, trial judges are forced to gauge the weight that the scientific evidence deserves without personal scientific expertise. The trial judge also will arrive at an assessment of the weight the evidence deserves based on information derived from the same sources; the choice of a test does not change the available sources of information. Scientific and legal literature are useful either in determining general acceptance or in informing the court about probative value.<sup>65</sup> Judicial opinions can be consulted for guidance.<sup>66</sup> Finally, under any approach, testimony from expert witnesses offered to support admission or exclusion of particular evidence inevitably will contribute to an opinion regarding the appropriate weight.

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61. See, e.g., *State v. Williams*, 388 A.2d 500 (Me. 1978); see also *Romero, The Admissibility of Scientific Evidence Under the New Mexico and Federal Rules of Evidence*, 6 N.M. L. Rev. 187 (1976).

62. *United States v. Williams*, 583 F.2d 1194, 1198 (2d Cir. 1978), *cert. denied*, 439 U.S. 1117 (1979).

63. See, e.g., *Giannelli*, *supra* note 2, at 1215-16.

64. *Id.* at 1217.

65. *Id.* at 1217-18.

66. *Id.* at 1218-19; see also *Strong*, *supra* note 2, at 14.

Advocates will present these sources of information as part of the adversary process. Professor Imwinkelried has pointed out the reluctance of lawyers to attack the weight of scientific evidence after it has been admitted against them.<sup>67</sup> The reasons behind this reluctance, however, should not contribute to any similar demureness in debating the weight of evidence in the context of admissibility determinations. Admissibility is determined outside the presence of the jury,<sup>68</sup> and the fear of reinforcing the expert's testimony before the jurors is one of the factors that discourages concerted attacks on the weight of scientific evidence once it is admitted. Indeed, the prevailing sense of impotence<sup>69</sup> in the face of admissible scientific evidence ought to promote a tendency among trial lawyers to do their best to exclude the evidence altogether by contributing helpful information gathered from these sources during the admissibility decisionmaking process.<sup>70</sup>

#### V. PREDICTING THE WEIGHT THAT THE EVIDENCE WILL RECEIVE

A workable notion of the weight that particular evidence deserves can be derived from expert testimony, scientific literature, legal literature, and judicial opinions. The discretionary decision to admit the evidence, however, requires a prediction that the trier of fact will not use the evidence inappropriately. The trial judge cannot make that prediction intelligently without first anticipating the likely effects of a chain of discretionary decisions concerning the use of the evidence at trial. The trial court's analysis must concentrate on the scope and content of the voir dire, the examination of witnesses, the arguments of counsel, and the instructions to the jury.

By focusing on these factors, the trial court can answer two questions: first, whether the adversary process will modulate the weight that the jury will give to the expert testimony and prevent undue influence due to the aura of expertise; and second, whether the adversary process permits counsel to convey the scientific information through alternative techniques that preserve the idea

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67. Imwinkelried, *supra* note 15, at 272.

68. See FED. R. EVID. 104.

69. See Imwinkelried, *supra* note 15, at 272-73.

70. Imwinkelried, *supra* note 42, at 562.

behind the evidence while ensuring that jurors will grant the information appropriate weight.

### A. *The Aura of Expertise*

Courts dislike the aura of special reliability and trustworthiness that surrounds expert testimony. The courts fear that jurors will give undue weight to information conveyed by scientific experts because of the means of its conveyance.<sup>71</sup> Whether the aura exists, however, is open to question. One authority has noted that "the clear weight of the available hard data calls into question the assumption underlying *Frye*, namely, that scientific testimony overwhelms the typical lay juror."<sup>72</sup> Although the issue has to be considered unresolved, jurors apparently are willing to rely on their own ideas even if contradicted by expert testimony.<sup>73</sup>

Jurors are adept at disposing of information with which they disagree.<sup>74</sup> They can remember the parts of a statement that they wish to hear, and can distort the parts of the statement with which they disagree. Finally, they can recall selectively those parts of a statement that support their own views.<sup>75</sup> Jurors may use all three tactics in areas of testimony in which they are likely to hold views contrary to those provided by the expert. For example, if jurors believe that a woman who anticipated violence from her husband would simply leave, they might not suspend automatically their ordinary human reactions to inconsistent information in favor of someone holding a doctoral degree in psychology.

Assuming, for the sake of argument, that jurors will have some tendency to defer to a scientific expert,<sup>76</sup> the belief that they will defer to different experts equally is difficult to sustain. Limited

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71. See, e.g., *United States v. Amaral*, 488 F.2d 1148, 1152 (9th Cir. 1973).

72. Imwinkelried, *supra* note 42, at 570.

73. McCORMICK, *supra* note 2, § 211, at 521-22 nn.95-97.

74. Cf. Austin, *Jury Perceptions on Advocacy: A Case Study*, LITIGATION, Summer 1982, at 15, 16-17 (discussing jurors' skepticism of expert witnesses); Bettinghaus, *Cognitive Balance and the Development of Meaning*, 13 J. COM. 94 (1963) (experimentally demonstrating the tendency to reconcile or reject inconsistent information).

75. See McGaffey, *A Realistic Look at Expert Witnesses in Obscenity Cases*, 69 NW. U.L. REV. 218, 229-31 (1974).

76. Cf. Imwinkelried, *supra* note 42, at 556-70. Professor Imwinkelried discusses at some length the available evidence concerning juror deference to experts, and finds little support in the published data for the existence of the phenomenon. *Id.* at 570-71.

empirical research supports the argument that jurors are willing to trust their own knowledge. In the context of the psychology of everyday life, the jurors' knowledge must be assumed: "[M]ost jurors probably consider themselves better amateur psychologists than amateur physicians, chemists, or metallurgists. They are likely to be less swayed by testimony about perception and memory than by testimony about cervical discs. . . ." <sup>77</sup> Trial courts offered scientifically valid information cannot exclude the evidence merely because it is scientific without at least attempting to assess the actual extent of the aura of expertise surrounding the information.

The absence of conclusive studies of juror psychology should not obscure the availability of another line of inquiry that courts are well suited to undertake. If the court can control, or if opposing counsel can attack, expert testimony through readily available trial tools, then the risk of jury confusion or prejudice can be minimized. Professor Saltzburg has noted "that the adversary system is largely based on exposure of weaknesses in witnesses, testimony, and physical evidence through cross-examination, impeachment, and counter-evidence. Evidence not attacked is evidence readily accepted." <sup>78</sup> These means for controlling and limiting the effect of expert testimony must play a part in the trial court's analysis. If the tools cannot be applied on a practical level, then the inability to control or attack the aura of expertise justifies the exclusion of potentially misleading scientific information. If, on the other hand, counsel is provided with the tools for vigorously probing the expert's testimony, then the court can guard against the aura of expertise.

### *B. Controlling the Aura of Expertise: The Trial Judge's Controls*

The trial judge has the threshold responsibility for ensuring that the expert called to testify is more than a mannequin dressed in professional degrees and honors. Under any test of probative value, the expert witness must have "sufficient skill, knowledge, or experience in that field or calling as to make it appear that his opinion or inference will probably aid the trier in his search for the

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77. Convis, *supra* note 19, at 584.

78. Saltzburg, *supra* note 6, at 1058.

truth."<sup>79</sup> In considering the effect of the aura of expertise emanating from valid scientific testimony, only an exaggerated regard for a witness' opinions is of concern, not spurious expertise.

Wigmore's formulation of the problem is also worth recalling: "On *this subject* can a jury from *this person* receive appreciable help?"<sup>80</sup> Wigmore's question is a reminder of the trial judge's power to direct the expert's testimony toward a limited subject. An expert in the psychology of normal life could testify about several subjects. The psychologist called by the defense in *Ibn-Tamas v. United States*,<sup>81</sup> for example, offered to describe the phenomenon of wife-battering, and to give her opinion of the extent to which the defendant's behavior corresponded with battered women that she had studied.<sup>82</sup> Similarly, psychologists called to challenge the reliability of eyewitness identifications could deliver a general lecture concerning the nature of human perception, memory, and expression,<sup>83</sup> comment on specific factors, such as stress, that are present in the particular case,<sup>84</sup> or express an opinion concerning the reliability of a particular witness.<sup>85</sup>

The trial judge's power to choose among these subjects can be considered a derivative of his power to control the form of testi-

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79. McCORMICK, *supra* note 2, § 13. See also FED. R. EVID. 702; J. WIGMORE, *supra* note 2, § 1923. The question of the expert's qualifications is within the discretion of the trial court. See FED. R. EVID. 104(a); *Soo Line R.R. v. Fruehauf Corp.*, 547 F.2d 1365, 1374 (8th Cir. 1977); J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[04].

80. J. WIGMORE, *supra* note 2, § 1923.

81. 407 A.2d 626 (D.C. 1979).

82. *Id.* at 631.

83. *But see* *State v. Griffin*, 626 P.2d 478, 481 (Utah 1981).

84. See *State v. Chapple*, 135 Ariz. 281, 295-96, 660 P.2d 1208, 1223-24 (1983). The Advisory Committee's notes to rule 702 of the Federal Rules of Evidence point out:

Most of the literature assumes that experts testify only in the form of opinions. The assumption is logically unfounded. The rule accordingly recognizes that an expert on the stand may give a dissertation or exposition of scientific or other principles relevant to the case, leaving the trier of fact to apply them to the facts. Since much of the criticism of expert testimony has centered upon the hypothetical question, it seems wise to recognize that opinions are not indispensable and to encourage the use of expert testimony in nonopinion form when counsel believes the trier can itself draw the requisite inference.

FED. R. EVID. 702 advisory committee note. See generally J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[05]; Note, *The Expert as Educator: A Proposed Approach to the Use of Battered Woman Syndrome Expert Testimony*, 35 VAND. L. REV. 741 (1982).

85. *Cf.* FED. R. EVID. 702-704.

mony, or as part of his general power to control the scope of direct examination. The trial judge has ample power to limit expert testimony to specific data or general propositions. Even after the enactment of rule 704 of the Federal Rules of Evidence, which abolished the ultimate issue rule,<sup>86</sup> courts have shown a heightened sensitivity to the prejudicial effect of expert testimony if the subject matter of that testimony relates closely to the ultimate issue.<sup>87</sup> That understandable wariness, however, should not obscure the fact that the trial judge may permit the expert to testify on some limited subjects even if the expert cannot safely be permitted to testify on every question for which his testimony is offered.

The trial judge also must instruct the jury on the use of expert testimony.<sup>88</sup> Jury instructions are a potentially powerful tool for dispelling the aura of expertise and for reminding the jurors of their responsibility as ultimate triers of facts. Whether instructions can accomplish these goals is a question that can be answered only provisionally until authoritative empirical research appears.<sup>89</sup> Even then, a comparison of the efficacy of different instructions directed at different topics of expert testimony will be necessary. Nevertheless, a number of factors suggest that jurors will respond to cautionary instructions. Jurors are predisposed to trust their own judgment,<sup>90</sup> and an instruction designed to encourage them to do so should find a receptive audience. Instructions of this kind can be drafted clearly, with none of the problems encountered with instructions on concepts such as reasonable doubt or the presumption of innocence.<sup>91</sup> Although the instructions will include some comment on the weight to be given to expert testimony, they are

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86. "Testimony in the form of an opinion or inference otherwise admissible is not objectionable because it embraces an ultimate issue to be decided by the trier of fact." FED. R. EVID. 704. See also McCORMICK, *supra* note 2, § 12.

87. See Strong, *supra* note 2, at 13.

88. See generally J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[03], at 702-20.

89. As one author has noted, the empirical literature concerning the efficacy of limiting instructions is surprisingly scarce. Haddad, *Post-Bruton Developments: A Reconsideration of the Confrontation Rationale, and a Proposal for a Due Process Evaluation of Limiting Instructions*, 18 AM. CRIM. L. REV. 1, 40-41 (1980). See generally Severance & Loftus, *Improving the Ability of Jurors to Comprehend and Apply Criminal Jury Instructions*, 17 LAW & SOC'Y REV. 153 (1982).

90. See *supra* notes 72-77 and accompanying text.

91. See Severance & Loftus, *supra* note 89, at 185-86.

more likely to be heeded than instructions that ask jurors to ignore relevant evidence because the primary thrust of cautionary instructions is toward apportioning the roles of expert and juror.<sup>92</sup> Carefully drafted instructions will assist jurors in evaluating expert testimony. The jurors' willingness to undertake this task, however, can evaporate quickly if the jurors are not given the means to perform it.

The trial judge's influence on the jurors' ability to perform the evaluation function will be felt most strongly in his control of opposing counsel. The means and extent of the adversarial challenge to the expert's testimony are matters for trial court discretion. Judicial anticipation of the extent to which opposing counsel will attack expert testimony is an integral part of predicting the weight that the scientific evidence will receive.

### *C. Controlling the Aura of Expertise: Adversary Attack*

Ironically, the expert scientific witness, characterized in judicial opinions as the invulnerable magician, Merlin,<sup>93</sup> often appears in the memoirs of legendary trial lawyers exposed as either Rube Goldberg, fabricating ever more fantastic devices, or Dr. Pangloss, pompously offering increasingly inane opinions.<sup>94</sup> Both sides un-

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92. See, e.g., 2 E. DEVITT & C. BLACKMAR, *FEDERAL JURY PRACTICE AND INSTRUCTIONS* (3d ed. 1977).

The rules of evidence ordinarily do not permit witnesses to testify as to opinions or conclusions. An exception to this rule exists as to those whom we call "expert witnesses". Witnesses who, by education and experience, have become expert in some art, science, profession, or calling, may state their opinions as to relevant and material matter, in which they profess to be expert, and may also state their reasons for the opinion.

You should consider each expert opinion received in evidence in this case, and give it such weight as you may think it deserves. If you should decide that the opinion of an expert witness is not based upon sufficient education and experience, or if you should conclude that the reasons given in support of the opinion are not sound or if you feel that it is outweighed by other evidence, you may disregard the opinion entirely.

*Id.* § 72.07. But cf. *Bruton v. United States*, 391 U.S. 123 (1968) (an instruction to disregard a defendant's confession in deciding the codefendant's case violates the confrontation clause of the sixth amendment). See generally Haddad, *supra* note 89, at 40-42.

93. See, e.g., *People v. Collins*, 68 Cal. 2d 319, 320, 438 P.2d 33, 66 Cal. Rptr. 497 (1968) (mathematical expert takes on role of "a veritable sorcerer" who "casts a spell" over jurors).

94. See, e.g., E. GERTZ, *A HANDFUL OF CLIENTS* 277-78 (1976) (recounting a five-page effort by opposing counsel to extract a comprehensible statement from an expert witness); G.

doubtedly overstate the case, but most observers would agree that experts have a number of vulnerabilities.<sup>95</sup>

The most obvious vulnerability involves the spectre of opposing expert witnesses with similar credentials who hold conflicting views. If Dr. Loftus testifies that stress adversely affects perception in identification cases and Dr. McCloskey testifies that it does not, the probable result is a neutralized expert witness.<sup>96</sup> Modern interpretations of the learned treatise rule give trial judges the discretion to facilitate this sort of challenge to expert testimony without the presence of an army of psychologists. If the expert's opinion has been contradicted in scientific literature, the existence of the contradiction can be brought before the jury.<sup>97</sup> In such a situation, the jurors nevertheless may choose to believe the expert witness, but they will not believe him solely because of his aura of expertise.

Moreover, in situations involving the psychology of normal life, the expert ordinarily will be at a disadvantage in comparison to lay eyewitnesses.<sup>98</sup> Very few identification cases will go to trial without

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SPENCE & A. POLK, *GUNNING FOR JUSTICE* 80 (1982) (medical expert mistakes leg for arm); F. WELLMAN, *LUCK AND OPPORTUNITY* 43-44 (1938) (expert testimony based on the expert's knowledge of a case in which decedent's pupils were not symmetrically contracted; the decedent wore a glass eye).

95. This discussion leaves aside the widely held intuitive belief that the types of people who become experts are the types of people who will have difficulty communicating with jurors. See generally McGaffey, *The Expert Witness and Source Credibility—The Communication Perspective*, 2 AM. J. TRIAL ADVOC. 57, 60 (1978). Although anecdotal evidence cannot be conclusive, experts may not be any *less* likely than lay people to suffer from the barriers that psychologists believe jurors erect against witnesses from different social classes.

96. Convis, *supra* note 19, at 584.

97. See generally McCORMICK, *supra* note 2, § 321; J. WIGMORE, *supra* note 2, §§ 1690-1708. Wigmore advocates a broad hearsay exception for learned treatises. Most current formulations are less liberal. For example, the Federal Rules of Evidence provide a hearsay exception

[t]o the extent called to the attention of an expert witness upon cross-examination or relied upon by him in direct examination, [for] statements contained in published treatises, periodicals, or pamphlets on a subject of history, medicine, or other science or art, established as a reliable authority by the testimony or admission of the witness or by other expert testimony or by judicial notice.

FED. R. EVID. 803(18). However, as McCormick notes, "[v]irtually all courts do, to some extent, permit the use of learned materials in the cross-examination of an expert witness." McCormick, *supra* note 2, § 321, at 743.

98. See Imwinkelried, *supra* note 42, at 570 ("Jurors not only trust their own perception and memory; they tend to trust the perception and memory of other lay witnesses as well.")



a witness who is certain of her identification. Testimony about the battered wife syndrome rarely will be crucial unless an eyewitness has testified for the prosecution in a manner that eliminates any overtly threatening circumstances.<sup>99</sup> The experts rarely will have all the data that the eyewitnesses have and often will have gathered the information they do have through means that seem less trustworthy.<sup>100</sup> Experts testifying about general insights into perception gather information through experiments. The design of the experiments themselves, however, often will seem inapplicable to the eyewitness testimony. The familiar method of staging a crime in a classroom, for example, often leads to a demonstration of the frequency of misidentification, but not necessarily to the conclusion that a group of students in a classroom is as observant as an individual police officer in a particular situation.<sup>101</sup> Jurors understandably may prefer the testimony of eyewitnesses to the contradicted conclusions of experts presented by partisans.

The expert witness also must face cross-examination. If he has testified about a highly technical subject yielding a numerical result, he may feel some sense of security.<sup>102</sup> Trial lawyers, perhaps because of an accurate assessment of the inadequacies of their own training, are notoriously reluctant to incur the risks involved in challenging such an expert.<sup>103</sup> A trial judge analyzing the probable

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(citations omitted); Note, *supra* note 5, at 970 & n.7.

99. See, e.g., *supra* note 20 and cases cited therein.

100. See Note, *supra* note 22, at 420.

101. Counsel counteracting expert testimony inevitably will attempt to separate the specific situation at issue in the trial from the general findings about perception, memory, and testimony that the experts provide. That process can be expected to consume a significant amount of time if, for example, the prosecutor attempts to distinguish his case from the general proposition that stress impedes perception or if the defense lawyer tries to distinguish his case from the popular conception that stress enhances perception. This mode of attack has the advantage of being one with which most experienced trial lawyers are familiar.

102. See Imwinkelried, *supra* note 15, at 272-73.

103. See generally A. AMSTERDAM, B. SEGAL & M. MILLER, TRIAL MANUAL 3 FOR THE DEFENSE OF CRIMINAL CASES § 378 (3d ed. 1974).

Cross-examining an expert witness is ordinarily a difficult and risky business. Most experts who testify are also expert testifiers, and counsel who attacks them needlessly does so at the peril of being made to look like a knave or a fool—both appearances proving, frequently, far more harmful to the defendant's case than is the substance of the expert's testimony.

*Id.* at 1-376.

weight that a jury will give to expert testimony about the psychology of normal life, however, cannot assume that such evidence will draw the same perfunctory challenge as chemical test results.

From a tactical point of view, cross-examination is a question of balancing the risk that a contemplated question will impose an undesirable cost on the examiner against the benefits that may accrue from a desirable admission.<sup>104</sup> There is no reason to cross-examine an expert on the psychology of normal life unless the direct testimony has called into question the jurors' existing confidence in their own understanding. When cross-examination is necessary, the counterintuitive aspects of the expert's testimony provide the examining lawyer with an added margin of safety.<sup>105</sup> The prospect of an unexpected answer from a chemist may deter a questioner because the answer will be the only information the jurors have on the subject. If common sense can contradict even the most damaging answer an expert can give, however, counsel will be encouraged to probe.

The likelihood of a vigorous challenge also can be increased if the trial judge gives full scope to the rules requiring notice and discovery of expert witnesses. The inflated worth of an expert's testimony resulting from the expert's prestige may not justify an assault on his testimony if a significant risk exists that counsel will provoke an unanticipated and devastating response during the attack. Full discovery often will remove that risk,<sup>106</sup> and permit a more informed and effective cross-examination. The effectiveness of cross-examination also will be determined to some extent by the availability to the lawyer of training materials suggesting effective approaches. These vary from subject to subject, however, and the various software techniques have drawn a substantial body of tac-

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104. See Bergman, *A Practical Approach to Cross-Examination: Safety First*, 25 UCLA L. REV. 547, 549 (1978).

105. *Id.* at 563-71.

106. See Giannelli, *supra* note 2, at 1240-42. Explicit rules requiring notice are not common in criminal contexts. *But see* FED. R. CRIM. P. 12.2 (insanity); FED. R. EVID. 412(c)(1). Moreover, unfair surprise has lost much of its force as a grounds for exclusion. 1 J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 403[06], at 403-60. Nevertheless, a court with the power to exclude prejudicial evidence has, in practical terms, the power to insist on ameliorative steps as a condition for admission. *See generally* Berens, *Pretrial Challenges to Expert Testimony*, LITIGATION, Summer 1982, at 27.

tical commentary.<sup>107</sup> A final consideration suggesting that opposing counsel can be expected to dispel the aura of expertise is the consensus that an attack on an expert is unlikely to utterly destroy the witness. Rather, the advocate will succeed if he merely neutralizes the expert's testimony.<sup>108</sup>

## VI. CONVEYING THE PSYCHOLOGIST'S INFORMATION BY ALTERNATIVE MEANS

A lawyer who complains that his case has been crippled by the exclusion of expert testimony about the psychology of normal life can expect to be compared to the defendant who killed his parents and sought mercy as an orphan. Trial lawyers often treat the expert witness as a quick fix for a difficult situation.<sup>109</sup> This tendency results partly from professional preoccupation with questions of admissibility, and yet contributes to that preoccupation. In any event, this narrow view of the expert's usefulness often results in the lawyer's failure to establish communication with the expert and to absorb the expert's learning. In assessing the undesirable effects of the exclusion of expert testimony, the fairest approach is to put aside this mode of lawyering and to consider what might be accomplished by a lawyer who has informed himself about the underlying knowledge and who attempts to introduce that knowledge into the trial through the tools and tactics of advocacy. If a conscientious trial lawyer can convey the idea behind the expert's evidence without bringing the expert to the stand, the question of the

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107. See, e.g., R. KEETON, TRIAL TACTICS AND METHODS, 147-57 (1954); A. LEVIN & H. CRAMER, PROBLEMS AND MATERIALS ON TRIAL ADVOCACY 129-57 (1968); J. ZISKIN, COPING WITH PSYCHIATRIC AND PSYCHOLOGICAL TESTIMONY (3d ed. 1981 & Supp. 1983); Dawson, *Cross-Examination of the Expert Witness*, 8 EMPL. REL. L.J. 294 (1982); Schmidt, *Cross-Examination of an Expert Witness*, 13 ST. MARY'S L.J. 89 (1981); Walter, *Using the Opponent's Expert to Prove Your Case*, LITIGATION, Winter 1982, at 10; Weber, *Attacking the Expert Witness*, 31 FED'N INS. COUNS. Q. 299 (1981).

108. See, e.g., Walter, *supra* note 107.

109. Cf. Fallis, *Confronting the Expert Witness—The Prosecution Perspective*, in SCIENTIFIC AND EXPERT EVIDENCE 75 (E. Imwinkelried 2d ed. 1981) (discussing techniques for cross-examining and discrediting expert witnesses); Jenner, *Meeting Expert Testimony—The Defense Perspective*, in SCIENTIFIC AND EXPERT EVIDENCE 87 (E. Imwinkelried 2d ed. 1981) (discussing techniques for cross-examining and discrediting expert witnesses); Parlour & Jones, *Bridging the Lawyer-Clinician Communication Gap*, 43 ALA. LAW. 141 (1982) (reviewing the use of expert witnesses); Younger, *A Practical Approach to the Use of Expert Testimony*, 31 CLEV. ST. L. REV. 1 (1982).

prejudicial effects surrounding expert scientific evidence can be avoided.

### A. *Voir Dire*

The scope and extent of the voir dire examination of potential jurors is entrusted to the discretion of the trial courts.<sup>110</sup> Assuming that proponents of expert testimony on the psychology of everyday life are correct that jurors labor under serious misconceptions concerning perception, memory, or expression, imaginative use of the voir dire might be a vehicle for solving that problem without resorting to expert testimony. If undesirable jurors are stricken, their misconceptions are no longer a concern; if they can be educated during the voir dire, their misconceptions have been corrected without scientific evidence.

Broad claims have been made that the voir dire is a means of rooting out jurors with disadvantageous preconceptions.<sup>111</sup> In the memoirs of legendary litigators, the claims often rest on particularly arcane manipulations of racial, ethnic, and religious stereotypes. In the more sober literature of modern social scientists, the fundamental method for evaluating jurors continues to involve stereotyping, but the definitions of the groups and the identification of the individuals are produced by more sophisticated means.<sup>112</sup> Where Clarence Darrow was guided by the rule "no Germans", a well informed lawyer now may seek jurors with beliefs, attitudes, or values similar to the defendant's. A substantial collection of written material is available to guide this search.<sup>113</sup> In

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110. *Hamling v. United States*, 418 U.S. 87, 138-40 (1974). See generally Babcock, *Voir Dire: Preserving "Its Wonderful Power"*, 27 STAN. L. REV. 545 (1975); W. MATHES & E. DEVIET, *FEDERAL JURY PRACTICE AND INSTRUCTIONS* § 2.01 (1965); Note, *The Limitations on Voir Dire Examination of Jurors in Criminal Prosecutions*, 1950 WASH. U.L.Q. 381; Comment, *Court Control Over the Voir Dire Examination of Prospective Jurors*, 15 DE PAUL L. REV. 107 (1965).

111. See generally GINGER, *JURY SELECTION IN CRIMINAL TRIALS—NEW TECHNIQUES AND CONCEPTS* §§ 7.3-18 (1980); NATIONAL JURY PROJECT, *JURYWORK: SYSTEMATIC TECHNIQUES* (2d ed. 1983); Field, *Voir Dire Examination—A Neglected Art*, 33 U. MO. K.C.L. REV. 171 (1965); McConahay, Mullin & Frederick, *The Uses of Social Science in Trials with Political and Racial Overtones: The Trial of Joan Little*, 41 LAW & CONTEMP. PROBS. 205 (1977).

112. See NATIONAL JURY PROJECT, *supra* note 111, at 195-211.

113. See, e.g., *id.*; Solender & Solender, *Minimizing the Effect of the Unattractive Client on the Jury: A Study of the Interaction of Physical Appearance with Assertions and Self-Experience References*, 5 HUM. RTS. 201 (1976); Wasserman & Robinson, *Extra-Legal In-*

extraordinary cases, the social scientists themselves can guide counsel toward desirable personality traits<sup>114</sup> and help him interpret the panel's responses for clues indicative of those traits.<sup>115</sup>

To the extent that a trend is discernible, however, it is away from extensive voir dire. In federal courts, individual, lawyer-conducted voir dire has virtually disappeared.<sup>116</sup> Any attempt to solve the problem of jury preconceptions during voir dire will affect adversely the time savings achieved by this practice. If the preconceptions that one might want to identify do not lend themselves to easily phrased voir dire questions, a direct question may be necessary. Counsel must decide whether to show his hand by asking directly: "Do any of you believe that memory for faces does diminish very quickly?" or "Do any of you believe that a woman who was really fearful would not have left her husband?"

The clarity of the questions and the answers, however, has obvious consequences in an adversary context. They will rarely lead to a successful challenge for cause, but will often convince the opposing counsel that the juror whose misconceptions have been identified is exactly the type of juror the opponent seeks.<sup>117</sup> If the misconception is material, its preservation will be as much in one party's interest as its elimination is in the other's. Unless scientific misconceptions are unevenly distributed across the jury pool, the likely result is an evenly divided group of jurors holding opposing views of the same issue.

Even that hope, however, can be sustained only in the abstract. Practically speaking, each of the lawyers selecting jurors will have an extremely complex agenda operating during voir dire. Each attorney will try to find a basis for a challenge for cause, make a record, convey central legal principles, disarm surprising or damag-

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*fluences, Group Processes and Jury Decision-Making: A Psychological Perspective*, 12 N.C. CENT. L.J. 96 (1980).

114. See, e.g., McConahay, Mullin & Frederick, *supra* note 111, at 218; Note, *Forensic Sociology and Psychology: New Tools for the Criminal Defense Attorney*, 12 TULSA L.J. 274, 278-81 (1976).

115. See, e.g., Suggs & Sales, *Using Communication Cues to Evaluate Prospective Jurors During the Voir Dire*, 20 ARIZ. L. REV. 629 (1978).

116. See *The Jury System in the Federal Courts*, 26 F.R.D. 409, 466 (1960).

117. See Kaplan, Klein & Freid, *General Aims of Prosecution Versus Defense in Selection and Influence of Jurors in a Criminal Trial, A Brief Working Model*, 21 J. Soc. & BEHAV. SCI. 69 (1975).

ing evidence that he expects the other side to offer, and establish a good relationship with the jurors.<sup>118</sup> Even if the jury selection task involved nothing more complex than the selection of favorable jurors, psychological misconceptions only rarely will be foremost in the lawyer's mind, and the use of the information will always be subject to competing considerations.

### *B. The Examination of Witnesses*

Our adversary system places great emphasis on cross-examination, "the greatest legal engine ever invented for the discovery of truth."<sup>119</sup> Many decisions dealing with expert testimony about the psychology of everyday life demonstrate hostility towards these offers of proof, viewing the offers as efforts by trial lawyers to shirk their duties as operators of the great engine.<sup>120</sup> The leading opinion upholding the exclusion of expert testimony about the effect of stress on perception notes that "effective cross-examination is adequate to reveal any inconsistencies or deficiencies in eyewitness testimony."<sup>121</sup>

A lawyer informed about the psychology of normal life should be able to generate much of the specific data that a psychologist would consider significant during the course of a trial. In this manner, psychological expertise differs from other fields of scientific evidence in which specific data—such as the alcohol content of blood—cannot be obtained, much less conveyed, without resort to scientific techniques.<sup>122</sup>

In the "human factors" case of *Seaboard Coast Line Railroad v. Buchman*,<sup>123</sup> counsel could have shown without resorting to expert testimony that the railroad crossing had a slight incline, that orange trees restricted the view of the tracks, and that multiple in-

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118. See A. AMSTERDAM, B. SEGAL & M. MILLER, *supra* note 103, § 335.

119. 5 J. WIGMORE, *supra* note 2, § 1367 (J. Chadbourn rev. ed. 1974).

120. See, e.g., *United States v. Amaral*, 488 F.2d 1148 (9th Cir. 1973); *Smith v. United States*, 389 A.2d 1356 (D.C. 1978); *State v. Warren*, 230 Kan. 385, 635 P.2d 1236 (1981); *State v. Porraro*, 121 R.I. 882, 404 A.2d 465 (1979).

121. *United States v. Amaral*, 488 F.2d at 1153.

122. See Strong, *supra* note 2, at 2-4.

123. 358 So. 2d 836, 840-42 (Fla. Dist. Ct. App. 1978), *rev'd*, 381 So. 2d 229, 230 (Fla. 1980) (trial judge has discretion to admit expert testimony to assist jurors when unusual circumstances might affect human response).

tersections of highways and rail crossings existed. In the "battered wife" case of *Ibn-Tamas v. United States*,<sup>124</sup> counsel did not have to rely on expert testimony to prove that the decedent's relationship with his wife had been marked by periodic violent episodes. In the eyewitness cases as well, the various factors that psychologists believe have a detrimental impact on reliable identifications ordinarily can be elicited through competent cross-examination of the eyewitness.<sup>125</sup> The ability to convey specific data, however, is only the beginning of the factfinding process. The jury must interpret those facts by applying general principles to specific data. The efficacy of the trial process in supplying these general propositions is not so consistent.

The eyewitness identification process illustrates the problems encountered during trial. A growing body of scientific literature suggests that however successful the trial lawyer may be in uncovering specific data tending to prove the stress and violence inherent in a criminal episode, jurors will interpret the data by applying the misconceived notion that stress enhances the reliability of identification.<sup>126</sup> Moreover, psychologists' findings suggest that the more vigorously counsel attacks the eyewitness on cross-examination, the more trouble he creates for himself. During his attack on an eyewitness, counsel ordinarily will be confronting a witness who is sincerely convinced of the accuracy of his identification. Examination of the witness probably will provoke the gestures, pauses, and tones that amount to demeanor evidence.<sup>127</sup> Unfortunately, the demeanor presented in these cases is a sincere, truth-telling one. If the jurors subscribe to the generally held belief that a truthful demeanor means a truthful and accurate witness,<sup>128</sup> the examiner may add to the jurors' faith in eyewitness testimony rather than reveal its problems.

Unfortunately, the problem will not always resolve itself into whether only specific data or general propositions are to be the subject of the experts' offer. Even general misconceptions yield in

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124. 407 A.2d 626 (D.C. 1979).

125. See, e.g., A. AMSTERDAM, B. SEGAL & M. MILLER, *supra* note 103, § 374.

126. See *supra* note 19.

127. See Convis, *supra* note 19, at 588; Note, *supra* note 5, at 994-95.

128. See generally Miller & Burgoon, *Factors Affecting Assessments of Witness Credibility*, in *THE PSYCHOLOGY OF THE COURTROOM* 169 (N. Kerr & R. Bray ed. 1982).

different degrees to nonexpert evidence. For example, most jurors are likely to believe initially that a woman who had reason to fear great bodily harm from her husband would simply leave,<sup>129</sup> and that the occasion for justified, lethal, self-defense could not arise. An advocate who has mastered the literature of psychology might succeed in portraying the cyclical nature of the battering relationship that ensnared his client.<sup>130</sup> By doing so, he might succeed in separating his case from the general principle, or might create a subrule, which would permit accurate factfinding without resort to expert testimony.

The traditional ammunition of the cross-examiner, facts known by the witness but not disclosed,<sup>131</sup> rarely provides a means of correcting a misconceived notion about the psychology of everyday life. The specific data that cross-examination can provide represent only the raw material of informed decisionmaking. The data must be incorporated into a framework of information useful to the jury. The closing argument historically has been regarded as the primary opportunity for integrating raw data.

### *C. Instructions and Argument*

Jury instructions are settled before closing arguments begin, and trial lawyers are taught to integrate the principles enunciated by the trial judge into their own accounts of the evidence.<sup>132</sup> Even in jurisdictions that curtail trial judges' power to comment on the evidence, closing arguments and jury instructions together can be a powerful means of conveying the underlying sense of the experts' testimony without incurring the various costs associated with expert testimony. Trial judges are encouraged to instruct the jury if any evidence supports an instruction;<sup>133</sup> the scope and extent of the closing arguments similarly are within their discretion.<sup>134</sup> Counsel trying to compensate for the exclusion of expert testimony concerning the psychology of everyday life have a reasonable

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129. See, e.g., Walker, Thyfault & Browne, *supra* note 20, at 5-6.

130. See *id.* at 9-10.

131. See Note, *supra* note 5, at 994.

132. See, e.g., A. AMSTERDAM, B. SEGAL & M. MILLER, *supra* note 103, §§ 446-447.

133. See, e.g., Brooke v. United States, 385 F.2d 279, 284 (D.C. Cir. 1967).

134. See, e.g., United States v. Sawyer, 443 F.2d 712, 713 (D.C. Cir. 1971).



amount of leeway in their search for alternative means of introducing the idea behind the expert's opinion.

Several courts have resorted to cautionary instructions as a substitute for expert testimony concerning the frailties of eyewitness identifications.<sup>135</sup> At least one commentator proposes instructions as a solution to the problem of jurors' disproportionate reliance on eyewitness testimony.<sup>136</sup> An examination of the nature of closing arguments and jury instructions, however, suggests the difficulty of generalizing about the efficacy of instructions and argument as substitutes for expert testimony.

The model instruction provided in *United States v. Telfaire*,<sup>137</sup>

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135. See, e.g., *United States v. Telfaire*, 469 F.2d 552 (D.C. Cir. 1972) (proposed model instruction).

136. Note, *Eyewitness Identification Testimony and the Need for Cautionary Jury Instructions in Criminal Cases*, 60 WASH. U.L.Q. 1387, 1390 (1983).

137. 469 F.2d at 558-59. The *Telfaire* instruction states, in part, that

[o]ne of the most important issues in this case is the identification of the defendant as the perpetrator of the crime. The government has the burden of providing [sic] identity, beyond a reasonable doubt. It is not essential that the witness himself be free from doubt as to the correctness of his statement. However, you, the jury, must be satisfied beyond a reasonable doubt of the accuracy of the identification of the defendant before you may convict him. If you are not convinced beyond a reasonable doubt that the defendant was the person who committed the crime, you must find the defendant not guilty.

Identification testimony is an expression of belief or impression by the witness. Its value depends on the opportunity the witness had to observe the offender at the time of the offense and to make a reliable identification later.

In appraising the identification testimony of a witness, you should consider the following:

(1) Are you convinced that the witness had the capacity and an adequate opportunity to observe the offender?

Whether the witness had an adequate opportunity to observe the offender at the time of the offense will be affected by such matters as how long or short a time was available, how far or close the witness was, how good were lighting conditions, whether the witness had had occasion to see or know the person in the past.

[In general, a witness bases any identification he makes on his perception through the use of his senses. Usually the witness identifies an offender by the sense of sight—but this is not necessarily so, and he may use other senses.]\*

(2) Are you satisfied that the identification made by the witness subsequent to the offense was the product of his own recollection? You may take into account both the strength of the identification, and the circumstances under which the identification was made.

If the identification by the witness may have been influenced by the circumstances under which the defendant was presented to him for identification, you

an eyewitness identification decision, is sensitive to the dangers of misidentification. The instruction nevertheless fails to meet the concerns of the advocates of expert testimony. The instruction urges jurors to focus on the factors that have an impact on identification, including witness capacity, the opportunity to observe, the circumstances under which the identification was made, the strength of the identification and the delay before the identification took place. No one would argue that the catalog is not a helpful directory of the factors that influence identifications. Unfortunately, the instruction provides no guidance concerning the way in which the factors affect the reliability of identification evidence. The *Telfaire* instruction calls attention to specific, significant data developed during the trial, but fails to supply the general propositions necessary to interpret the data.<sup>138</sup>

This disability may result from an overly restrictive view held by

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should scrutinize the identification with great care. You may also consider the length of time that lapsed between the occurrence of the crime and the next opportunity of the witness to see defendant, as a factor bearing on the reliability of the identification.

[You may also take into account that an identification made by picking the defendant out of a group of similar individuals is generally more reliable than one which results from the presentation of the defendant alone to the witness.]

[(3) You make [sic] take into account any occasions in which the witness failed to make an identification of defendant, or make an identification that was inconsistent with his identification at trial.]

(4) Finally, you must consider the credibility of each identification witness in the same way as any other witness, consider whether he is truthful, and consider whether he had the capacity and opportunity to make a reliable observation on the matter covered in this testimony.

I again emphasize that the burden of proof on the prosecutor extends to every element of the crime charged, and this specifically includes the burden of proving beyond a reasonable doubt the identity of the defendant as the perpetrator of the crime with which he stands charged. If after examining the testimony, you have a reasonable doubt as to the accuracy of the identification, you must find the defendant not guilty.

\*Sentences in brackets ([ ]) to be used only if appropriate.

*Id.*

138. See Note, *supra* note 5, at 1004.

Because the real dangers inherent in eyewitness identifications are not obvious to the lay juror, the cautionary instructions can be effective only if the judge goes beyond calling the issue to the jury's attention. This would require judges to go much further into actually commenting on the weight of the evidence than courts in this country have felt comfortable with or are permitted to do.

*Id.* (citations omitted).

the drafters of the *Telfaire* instruction of the material that might appropriately be included in an instruction.<sup>139</sup> A broader view of the role that instructions play in the trial would allow a court to incorporate as legislative facts data which an expert could provide, and also would allow the court to supply directly the necessary general propositions.<sup>140</sup> Courts also will take judicial notice of adjudicative facts that are either indisputable or easily verifiable.<sup>141</sup> If such facts exist in the context of the psychology of everyday life, they can be made a part of the charge to the jury. Unfortunately, the psychology of everyday life is not characterized by these kind of certainties. In any event, judicial notice is a peculiar solution to the problem of experts' tendency to "usurp the function of a jury." General propositions of everyday life that are matters of some debate should be debated by the jurors. Straining the boundaries of judicial notice would represent a significant readjustment in the concept of the jury trial.

If that drastic step is avoided, the shape of the closing arguments is dictated, to some extent, by the absence of expert testimony. Conscientious counsel may have read and applied the psychologists' writings to generate facts that previously would have seemed insignificant. He may have succeeded, for example, in portraying the cycle of violence that is said to be characteristic of all battering relationships. In arguing the significance of the facts, however, counsel is bound by the evidence in the case.<sup>142</sup> In some cases, one counsel will argue that a truly fearful woman would leave her husband while opposing counsel argues that she would not. The jurors will decide these cases on the basis of their own preconceptions, rather than on anything presented in court. The exclusion of the expert's testimony in many of these cases, therefore, will have foreclosed the use of the idea behind the expert's evidence.

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139. Saltzburg, *supra* note 6, at 1059 & n.187.

140. *Id.*

141. FED. R. EVID. 201 & advisory committee note. See generally McCORMICK, *supra* note 2, §§ 328-335; Strong, *supra* note 2, at 6-9 (discussing distinction between adjudicative and legislative facts).

142. See, e.g., *Berger v. United States*, 295 U.S. 78, 88 (1935).

## VII. SYSTEM-WIDE EFFECTS OF THE DECISION TO ADMIT EXPERT TESTIMONY

Many courts can empathize with Justice Hays, who dissented from the Arizona Supreme Court's finding of an abuse of discretion in excluding expert psychological testimony about the eyewitness identification process:

My concern here goes beyond the borders of this case. Once we have opened the door to this sort of impeaching testimony, what is to prevent experts from attacking any real or supposed deficiency in every other mental faculty? The peculiar risk of expert testimony with its scientific aura of trustworthiness and the possibility of undue prejudice should be respected. I have great reluctance to permit academia to take over the fact-finding function of the jury. Although clothed in other guise, that will be the practical effect. With little to distinguish this case from the general rule against admitting expert testimony on eyewitness identification, we are left with no guidelines to decide the deluge of similar issues which are sure to result.<sup>143</sup>

For many, the existence of alternative means of controlling the prejudicial effect of expert testimony within a case offers little solace. They believe that, even if potential control devices are available, a realistic view of our system of litigation suggests that they rarely will be used.<sup>144</sup> Moreover, adding the costs of the control devices to the costs of the newly admitted experts themselves may cripple the court system. The number of cases in which testimony about the psychology of everyday life might be material certainly sharpens these concerns.<sup>145</sup>

Opinions excluding expert psychological testimony about normal life express doubts concerning the benefits that admission of the

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143. *State v. Chapple*, 135 Ariz. 281, 300, 660 P.2d 1208, 1227 (1983) (Hays, J., dissenting).

144. Professor Imwinkelried notes the reluctance or inability of defense lawyers to attack chemists' results in drug cases. Imwinkelried, *supra* note 15, at 272. Another commentator notes that "a surprising number of novel techniques have gained admissibility without the presentation of [opposing] defense expert testimony." Giannelli, *supra* note 2, at 1243. See generally H. KALVEN & H. ZEISEL, *THE AMERICAN JURY* 139 (1966).

145. The number of eyewitness cases is self-evident. The number of battered woman cases, or at least the incidence of repeated domestic violence from which the defense can be derived, is also quite large. See generally Comment, *supra* note 20.

evidence will bring.<sup>146</sup> An implicit fear of these multiplied costs, however, may be the true foundation for judicial wariness. Expert testimony regarding a variety of topics, after all, is admitted with great regularity. The expert witnesses customarily admitted to testify are no less bedecked with degrees and honors than the psychologists. Even the police officer discussing why apparently innocent acts actually represent a criminal *modus operandi* has no less of an opportunity to project an aura. The existing tools of adversary presentation generally are deemed adequate to control the prejudicial effect of such testimony.<sup>147</sup>

The prejudice is also considered to be manageable in many cases involving the subject of perception, memory, and expression when the phenomena described are in some respect abnormal or deceptive.<sup>148</sup> Courts have admitted extrinsic, expert testimony when a psychiatrist was willing to describe a witness as a pathological liar.<sup>149</sup> Courts also have permitted expert testimony describing the effect on perception and memory of states induced by organic damage,<sup>150</sup> by drugs, or by alcohol.<sup>151</sup> In the Florida courts, where human factors testimony has been most extensively litigated,<sup>152</sup> the criterion for admissibility is the existence of extraordinary<sup>153</sup> circumstances.

One virtue of the abnormal and the extraordinary is that, by definition, they occur infrequently. This infrequency necessarily limits the number of trials in which scientific testimony will be offered.

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146. See, e.g., *St. Louis Southwestern Ry. v. Jackson*, 242 Ark. 858, 871-72, 416 S.W.2d 273, 281 (1967) (human factors); *Dyas v. United States*, 376 A.2d 827 (D.C. 1977) (eyewitness identification); *State v. Thomas*, 66 Ohio St. 2d 518, 521-22, 423 N.E.2d 137, 140 (1981) (battered wife).

147. See generally J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[02] (discussing the requirement of rule 702 of the Federal Rules of Evidence that expert testimony assist the trier of fact).

148. See *United States v. Hiss*, 88 F. Supp. 559 (S.D.N.Y. 1950), *aff'd on other grounds*, 185 F.2d 822 (2d Cir.), *cert. denied*, 340 U.S. 948 (1951); Convis, *supra* note 19, at 580-82; Juviler, *Psychiatric Opinions as to Credibility of Witnesses: A Suggested Approach*, 48 CALIF. L. REV. 648, 650-56 (1960).

149. 88 F. Supp. at 559-60.

150. See *Jones v. State*, 232 Ga. 762, 765, 208 S.E.2d 850, 853 (1974).

151. See *Fries v. Berberich*, 177 S.W.2d 640, 644 (Mo. Ct. App. 1944).

152. See generally Note, *supra* note 22, at 412-18.

153. See *Seaboard Coast Line R.R. v. Kubalski*, 323 So. 2d 32, 34 (Fla. Dist. Ct. App. 1975).

Opening the courtroom to this type of testimony, therefore, does not pose a serious cost problem. Although the costs of opening a new field of expert testimony are a legitimate concern, the factors that generate the concern will not translate mechanically into a useful formula for making a specific evidentiary decision.

The most obvious costs of a pattern of resort to a new field of expert testimony are direct costs, such as lawyers' and judges' time, and public funds.<sup>154</sup> The symbol of these costs, invoked even by sympathetic commentators is the "battle of experts."<sup>155</sup> This battle does not always have to take place, and if it does, it does not have to be an all-out war. Trial judges have considerable control over the number of experts that a party can call and the amount of time each expert will consume.<sup>156</sup> By confining expert testimony to general statements rather than allowing case-specific opinions, trial judges may be able to forestall a battle altogether.<sup>157</sup> Liberal application of the learned treatise rule may facilitate effective challenges to expert testimony without necessitating a parade.<sup>158</sup> Trial judges should not overlook the possibility that expert testimony actually may prove less costly than alternative means of conveying the same information.<sup>159</sup>

Direct cost, however, is only one type of cost, and the more thoughtful critics of expert testimony about the psychology of everyday life do not base their arguments on direct cost alone. They suggest instead that additional direct costs are not offset by a corresponding decrease in error costs,<sup>160</sup> which are "the product of two factors, the probability of error and the cost if an error oc-

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154. See Posner, *An Economic Approach to Legal Procedure and Judicial Administration*, 2 J. LEGAL STUD. 399 (1973).

155. See, e.g., Kaplan, *Forward*, in E. LOFTUS, *supra* note 19, at ix.

156. See, e.g., *Salem v. United States Lines*, 370 U.S. 31 (1962). See generally J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[02].

157. See J. WEINSTEIN & M. BERGER, *supra* note 1, ¶ 702[05].

158. See *supra* note 97.

159. In *United States v. Hearst*, 412 F. Supp. 893 (N.D. Cal. 1976), *aff'd*, 563 F.2d 1331 (9th Cir. 1977), for example, expert testimony concerning "stylistics" was excluded on a variety of grounds. The accepted practice of comparing documents with known samples to prove authorship, however, arguably achieves the same result by more laborious means. See 2 J. WIGMORE, *supra* note 2, § 383 (J. Chadbourn rev. ed. 1979).

160. See, e.g., Saltzburg, *supra* note 6, at 1058-60; Note, *supra* note 136, at 1425 ("For present purposes, however, the most serious objection is that expert psychological testimony overemphasizes the unreliability of eyewitness identifications") (citations omitted).

curs."<sup>161</sup> This perception appears to be based partly on pessimism concerning the quality of trial advocacy. Lawyers may be unable to use the tools provided to challenge scientific experts, and the aura of expertise actually may enhance the likelihood of error.<sup>162</sup> Even commentators who are willing to posit lawyer competence are alarmed by an uneven distribution of resources, particularly in the prosecution of indigent criminal defendants, which may render the presentation of scientific evidence so one-sided as to increase the chance of error.<sup>163</sup>

Many of these observations have merit. Lawyer incompetence is the topic of much discussion and cannot be ignored. Recognizing that incompetence exists, however, does not provide a reason for excluding helpful evidence in cases where incompetence does not exist. Similarly, the entirely plausible prediction that many criminal defendants will be provided with lawyers who will be ignorant of their opportunity to offer psychological experts does not necessarily explain why such testimony should be unavailable to defendants whose lawyers are better informed.<sup>164</sup>

Because the contribution of scientific evidence to reducing the probability of error cannot be judged except after the detailed ad hoc analysis suggested earlier,<sup>165</sup> the question remains whether systemic criteria are available for assessing the cost of error when it occurs. An obvious example is the policy against any increased probability of error in criminal prosecutions, an abhorrence reflected in the enhanced burden of proof borne by the prosecution.<sup>166</sup> A framework has been suggested that would allow for an expression of the intolerance for error in criminal cases concerning

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161. Posner, *supra* note 154, at 401.

162. Cf. Imwinkelried, *supra* note 15, at 272 (noting reluctance and lack of training of lawyers to attack scientific evidence).

163. See, e.g., Giannelli, *supra* note 2, at 1243-44.

164. Professor Saltzburg does anticipate that when psychological testimony about the eyewitness identification process is admitted, "its absence in any case may result in disappointed juror expectations and negative inferences." Saltzburg, *supra* note 6, at 1059. This may be true if expert testimony is understood to consist of opinions about the reliability of specific witnesses. It is difficult to see, however, how jurors will expect testimony about their misconceptions concerning identifications while simultaneously entertaining the misconceptions.

165. See *supra* notes 1-5 and accompanying text.

166. See Saltzburg, *Standards of Proof and Preliminary Questions of Fact*, 27 STAN. L. REV. 271, 282-85 (1975).

the admissibility of expert scientific evidence. Building on Professor Saltzburg's persuasive statement of the reasons for adjusting the standard of proof for preliminary fact questions to suit the particular fact question at issue,<sup>167</sup> Professor Giannelli has suggested that the prosecution should be required to establish the validity of a novel scientific technique beyond a reasonable doubt; criminal defendants and civil litigants would need to demonstrate validity only by a preponderance of the evidence.<sup>168</sup> Several courts have used due process<sup>169</sup> and compulsory process<sup>170</sup> rationales to buttress the admissibility of novel scientific evidence, such as polygraph results.

Any prejudice to the administration of justice that may result from the time consumed by expert testimony must be considered in light of the effect the testimony may have in reducing the probability of error, and in light of the cost of error if it should occur.<sup>171</sup> This consideration can begin, but cannot be completed without examining the facts of the particular case—not as they seem before the trial begins, but as they can be expected to appear at the end of the trial process.

### VIII. CONCLUSION

When the dust from the battle over the *Frye* test has settled, a single method for assessing the reliability and validity of scientific evidence may appear. Undoubtedly, a single approach—whether liberal or restrictive—would ameliorate the recurring problem of ensuring that evidence drawn from scientific fields in which judges have no personal knowledge has initial worth. Once that test has been applied, however, courts then must gauge the potential prejudice resulting from the decision to admit or exclude the

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167. *Id.* at 304.

168. Giannelli, *supra* note 2, at 1248.

169. *State v. Dorsey*, 88 N.M. 184, 185, 539 P.2d 204, 205 (1975); *Cullin v. State*, 565 P.2d 445, 456-58 (Wyo. 1977); see also Note, *Admission of Polygraph Results: A Due Process Perspective*, 55 IND. L.J. 157 (1979).

170. *State v. Sims*, 52 Ohio Misc. 31, 369 N.E.2d 24 (1977); see also Imwinkelried, *supra* note 15, at 267. See generally Westen, *The Compulsory Process Clause*, 73 MICH. L. REV. 71 (1974).

171. Cf. Posner, *supra* note 154, at 401 ("The economic goal is thus to minimize the sum of error and direct costs.") (emphasis added).



evidence.

A uniform approach to the problem of prejudice in all scientific evidence has many attractions. Unfortunately, the prejudice inherent in a particular offer of scientific proof may be very different from the prejudice inherent in other offers of scientific proof. Even the most widely perceived source of prejudice, "[a]n exaggerated popular opinion of the accuracy of a particular technique," will differ in its original extent, and differ in the degree to which it can be expected to yield to adversary challenge. The efficacy of alternative means of conveying the idea behind the evidence also will differ from case to case. Development of an habitual drift away from a practice of rigorous, ad hoc analysis and toward one of assuming that the prejudicial properties of all scientific evidence are alike actually will impede effective decisionmaking. An analysis of the mechanics of the trial process suggests that, in some cases, the aura of expertise can be controlled effectively. This control is essential in cases requiring information that cannot be conveyed effectively without scientific evidence. Detailed scrutiny of a particular offer of proof can reveal such a situation, and thereby enhance accurate factfinding.