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The Common Law Theory of Experts: Deference or Education?

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ARTICLES

THE COMMON LAW THEORY OF EXPERTS: DEFERENCE OR EDUCATION?

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Ironically, expert testimony is becoming both increasingly prevalent and increasingly controversial in this country. As expert testimony becomes more conventional, the chorus of concern over that testimony becomes louder and more agitated.[1] Why is that? Normally one would expect the opposite dynamic. One would expect the forces of stability to resist new developments most intensely at first, and for the controversy to subside over time. The explanation, we think, lies in the recognition that expert testimony can be perceived to be a challenge to certain fundamental concepts implicit in the structure of trials in the common law tradition, which calls into question whether the common law mode of trial prevalent in the United States can accommodate expert testimony without substantial change. This is not, however, the basis of the debate today in the literature on expert testimony. That literature is instead a potpourri of quite interesting doctrinal and logical points crafted to defend certain propositions concerning experts and expert testimony. Notwithstanding the outpouring of scholarly and judicial treatments of these various propositions, none of the issues seems to be moving toward closure, primarily because the doctrinal and logical points tend to hide rather than to expose the deeper question lurking in the shadows. The deeper question is whether fact finders are to be educated by or to defer to experts. The various debates about expert testimony, as enlightening as they have been, cannot be resolved without addressing that question.

The ideal trial at common law would put the fact finder (judge or juror, but henceforth "juror") into the heads of all the witnesses (party and nonparty) to the litigated event so that each juror would experience

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[1] *See, e.g.*, Hon. David L. Bazelon, *Veils, Values, and Social Responsibility*, 37 AM. PSYCHOLOGIST 115 (1982). See also the various citations throughout the remainder of this Essay.

firsthand the sensory inputs that subsequently are described through the testimony at trial. By residing in the heads of the witnesses, the juror would have access to the background and experience of each witness so that the juror would know how, and perhaps why, any particular witness observed what he or she did. The jury could then construct a composite picture of the events through a complex deliberative process in which the various sensory impressions of the witnesses were both described and appraised, but now by reference to the backgrounds of the jurors. After settling upon the most plausible account of what actually happened,[2] liability would be assigned according to its match with the legal requirements as articulated by the trial judge.

Lacking the ability to merge the minds of witness and juror, the common law instead approximates the ideal by requiring so far as practicable that witnesses restrict their testimony to what was observed, leaving out, again so far as practicable, declarations of inferences (opinions) that witnesses believe the observations to warrant.[3] Although the distinction between "fact" and "opinion" is recognized to be analytically untenable,[4] by nonetheless insisting on it trials at common law push witnesses to relate only their thinly varnished sensory impressions, leaving the fact finder to mediate among conflicting versions from the various witnesses, and thus to decide, for the purposes of the law, what actually happened as if the juror had access to the inner workings of the witnesses' minds. The juror is aided in this task by quite liberal rules of cross-examination that allow the cognitive and affective states of witnesses to be examined thoroughly for whatever clues they may yield as to why the witnesses testified as they did.

With by far the largest set of inferences that must be drawn from testimony, the common law's approximation of an ideal trial works quite well. The participants at trial, in particular witnesses and jurors, generally will have shared backgrounds, at least sufficiently so that effective communication is possible. Moreover, with respect to any particular inference, the presence of multiple fact finders in the form of jurors increases astronomically the odds that the jury collectively will be able to figure out what the witness was attempting to communicate.

But what if witness testimony emerges from, or can only be understood by reference to, an experience that the fact finder lacks? Or what if the connection between what a witness says and the full import of what the witness means is so arcane that the chances are virtually zero that the

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2 *See* Ronald J. Allen, *The Nature of Juridical Proof*, 13 CARDOZO L. REV. 373 (1991).

3 FED. R. EVID. 701.

4 *See, e.g.*, CHARLES T. MCCORMICK, HANDBOOK OF THE LAW OF EVIDENCE 22-23 (1954). McCormick recasts the fact/opinion rule as one of preference rather than one of exclusion. He observes that judges prefer that a witness express testimony in its concrete form, using as an example the "difference between the statement 'He was driving on the left-hand side of the road' . . . and 'He was driving carelessly' . . . ."

jury will understand what the spoken words are intended to convey? Both cases arise surprisingly frequently in the trial of disputes. For example, the problem arises whenever a witness is not fluent in English, as it often does when the common practice of a business or trade plays a role in litigation. And of course, whenever litigation involves scientific or technical issues, there is likely to be a distance between the fact finder's experience and the body of knowledge necessary to appraise the technical matter.

Whenever there has been this distance between common experience and the knowledge necessary for accurate adjudication, the common law system of trials has perceived two choices that could be made: either the necessary background information could be provided through testimony, or fact finders could defer to the judgment of others. Virtually always, the former choice has been selected. If a witness does not speak English, a translator will be provided, and the translation itself is subject to dispute until all parties are satisfied that the meaning of the witness's testimony has been communicated. When routine practices or conventions of trade or business matter, evidence is adduced on the topic like any other fact in issue so that the fact finder is put in a position to judge what the routine practices or conventions are. The dominant conception of a trial at common law, in short, has been that the parties must tie the trial evidence to the background and experience of typical members of the community, which constitutes the jury, so that those individuals may extract from the mass of conflicting data produced at trial the necessary inferences that determine what happened, and thus where liability lies.

The problem posed by expert testimony is that it does not fit easily into the common law model of the ideal trial. Experts are often expert because of years of specialized training, and thus there may be formidable barriers to educating the fact finder about the relevant issues at trial. Hence, pressure arises to defer to the expertise of experts as a means of keeping trials to a manageable length, but the pressure to defer constitutes a challenge to the core concept of trials. Expert testimony accordingly puts into issue our basic commitments to the ideal common law trial. Although the controversies over expert testimony purport to be about other things, they in fact are controversies over whether the common law norm of education should be supplanted by deference when someone qualified as an expert speaks, and thus they can be resolved only by addressing that issue. It is the failure to address this central question that makes the current literature interesting but unsatisfying. We will give four examples.

1. The Basis of Expert Testimony.—Rule 703 of the Federal Rules of Evidence provides that:

> The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at

> or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.[5]

In a series of insightful articles, Professor Ronald Carlson has exposed the implications of this seemingly innocuous provision.[6] As he points out, Rule 703 has a crucial ambiguity in that it fails to specify the status of the inadmissible data upon which an expert opinion might be based, and there are at least three possibilities:

(a) The data are not admissible and may only be referred to in a quite cursory fashion on direct examination,[7] which is Carlson's preference.

(b) The data are not admissible for substantive purposes, but are admissible for the purpose of assisting the fact finder in appraising the opinion offered by the expert.

(c) The data are admissible for substantive purposes, so that the expert's reliance on them creates in essence another exception to the hearsay rule.

Carlson argues in favor of the first possibility because the other two rend such a hole in the hearsay rule. The second possibility formally would not amount to the substantive admission of hearsay, but the concern is that the fact finder will not be able to make the finely tuned appraisal that separates credibility from substantive uses.[8] If that mental exercise cannot be done well, then (b) collapses to (c), which amounts to the collapse of the hearsay rule (and creates other problems) so far as expert testimony is concerned. Carlson ostensibly wants to bend the world of the experts to fit the law rather than expand the law to accommodate the experts. In doing so, he defends the present form of trial, but, as we shall see, at the cost of undercutting its substance.[9] To see the implications of Carlson's argument, we must first address the work of his primary critic, Professor Paul Rice.

According to Professor Rice, Rule 703 should be interpreted as creating an open-ended exception to the hearsay rule.[10] Rice, like Carlson,

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5 FED. R. EVID. 703.

6 *See, e.g.*, Ronald L. Carlson, *Policing the Bases of Modern Expert Testimony*, 39 VAND. L. REV. 577, 584 (1986); Ronald Carlson, *Collision Course in Expert Testimony: Limitations on Affirmative Introduction of Underlying Data*, 36 U. FLA. L. REV. 234 (1984).

7 *But see* FED. R. EVID. 705 ("The expert may . . . be required to disclose the underlying facts or data on cross-examination.").

8 *See, e.g., In re* Melton, 597 A.2d 892, 907 (D.C. 1991) (en banc) (regarding the trial judge's limiting instruction on the appropriate use of hearsay statements reported by psychiatrists at trial: "To tell the jurors that they are to consider the testimony about the punch [to Mrs. Melton's nose] as a basis for the expert's finding of dangerousness, but not with respect to whether Mr. Melton punched his mother, may call for mental gymnastics which only the most pristine theoretician could perform.").

9 *See infra* note 16 and accompanying text.

10 Paul Rice, *Inadmissible Evidence as a Basis for Expert Opinion Testimony: A Response to Professor Carlson*, 40 VAND. L. REV. 583, 590 (1987) ("If the judge properly screens expert opinion to ensure compliance with Rule 703's expanded basis requirements, no justification exists for precluding the finder of fact from hearing and using those facts supporting an opinion to the same extent as the expert."). Though no courts have yet endorsed Rice's approach to interpreting Rule

acknowledges that courts currently allow an expert to introduce otherwise inadmissible facts or data on direct examination when accompanied by the limiting instruction that the fact finder should consider such facts or data only in assessing the weight to be given to the expert's opinion.[11] The fact finder should not, however, accept the otherwise inadmissible facts or data as true when deciding whether to arrive at the same conclusion as the expert.[12] As Rice remarks, "If this practice sounds like judicial double talk, it is."[13]

Rice argues that Carlson's position as well as the actual practice at trial are exercises in illogic. His point is that the fact finder cannot accept the expert's opinion as true without implicitly accepting its putative factual basis as true, the court's exhortations to the contrary notwithstanding.[14] Carlson's fact finder, however, can only attach value to the expert's opinion on the basis of that expert's perceived credibility; the restriction on basis testimony, then, functions to turn the expert into a "super-fact finder capable of producing admissible substantive evidence (an opinion) from inadmissible evidence."[15] Rice prefers that the fact finder be allowed to hear and to use the facts or data that support the expert's opinion to the same extent that the expert uses them.

The debate between Professors Carlson and Rice has clearly advanced our understanding of expert testimony on many fronts, yet two problems linger. The first is that both Carlson's and Rice's positions are tenable, and nothing in the positions themselves commends one over the other.[16] The second is that the current practice of the courts of admitting the underlying data for the purpose of appraising the opinion creates little more than a muddle in its attempt to walk a middle way between the polar positions of Carlson and Rice. One is reminded of the man who was so open-minded that his brain fell out.

The debate is clarified, however, by viewing it as one about some-

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703, there is growing recognition that the cognitive demands placed on the fact finder by current practice are at least somewhat bizarre.

11 *See, e.g.*, United States v. Madrid, 673 F.2d 1114, 1118 n.4 (10th Cir.), *cert. denied*, 459 U.S. 843 (1982).

12 *But cf.* Fox v. Taylor Diving & Salvage Co., 694 F.2d 1349, 1356 (5th Cir. 1983) (hearsay can be heard for its truth because of opponent's failure to object).

13 Rice, *supra* note 10, at 584.

14 *Id.* at 585.

15 *Id.* at 586. *See also* United States v. Sims, 514 F.2d 147, 149 (9th Cir.) ("In a sense, the expert synthesizes the primary source material—be it hearsay or not—into properly admissible evidence in opinion form."), *cert. denied*, 423 U.S. 845 (1975).

16 Professor Rice accuses the present practice of not permitting jurors to consider the data underlying an expert's opinion as illogical, and thus indirectly accuses Professor Carlson of being illogical in promoting the conventional practice. Regrettably, Rice does not seem to understand the nature of "logic," by which we assume he means (although he does not so specify) first order predicate logic. No inconsistency arises from permitting an opinion but not its basis to be considered by a fact finder. Rice makes the common mistake of equating his own intuitions and policy preferences with the demands of logic.

thing that is only implicit in both authors' works. What separates the two is the extent to which they are willing to defer to experts, and ironically it is Professor Carlson, the defender of the common law form of trial, who is the more willing to defer.

According to Carlson, the expert must be restricted to a report of an opinion, with only the minimal information necessary to identify the basis of that opinion. Only facts known to the expert from personal experience with the person or incident in question will be admitted as part of the direct examination. The fact finder then accepts or rejects the expert's opinion, presumably based on some judgment of the expert's credibility. But this simply calls for deference to the expert. The fact finder will decide not by being informed and then convinced,[17] but instead by deferring to the judgment of the expert. It is here that the irony of Professor Carlson's position lies. He purports to be defending the common law mode of trial, but in reality, by defending a few select aspects of it (the hearsay rule in particular), he dramatically changes its basic conception. This is why Rice's criticism that Carlson's approach turns the expert into a "super-fact finder" seems curiously to miss the point; after all, if we are going to defer to the views of experts, a "super-fact finder" is precisely what an expert should be.

According to Rice, the basis of the expert's opinion, once properly screened for reasonableness, should be entered into evidence on direct examination regardless of whether it satisfies traditional hearsay exceptions. The expert thus makes available to the fact finder both knowledge of the relevant general principles and all facts in the case at bar that the expert considers both relevant and reliable; the fact finder then must reach a considered conclusion in light of the newly expanded available knowledge.[18] This, of course, is simply an argument for education over deference. If we prefer fact finders to be drawing their own inferences rather than deferring to experts, Carlson's concern that experts will attempt to dump large quantities of unscreened evidence into the record

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17 *Contra* Mason Ladd, *Expert Testimony*, 5 VAND. L. REV. 414, 428 (1952). According to Ladd, the exposition of an expert's testimony "should be conducted in such a manner that a juror should be able to say, 'My conclusion is in accord with the opinion of the expert, not because he has expressed the opinion, but because he made me understand the facts in such a way that my opinion is the same as his.' "

18 Rice also argues that the standard established in Rule 703—reasonable reliance on data by experts in a particular field—meets the traditional test for exceptions to the hearsay rule. According to Rice:

> The logic of sanctioning an expert's use of inadmissible evidence in forming opinions is that if the evidence is of the type experts reasonably rely upon in a particular field to form opinions, the expert will possess sufficient expertise in evaluating the evidence's reliability to justify its broader use in judicial proceedings. . . . If the witness possesses this ability (something that we apparently must presume under Rules 702 and 703 upon establishment of the witness'[s] general expertise, along with the fact of regular reliance upon the facts or data in question) and, more importantly, uses her expertise to evaluate the underlying information, the standards of trustworthiness for the admission of hearsay will be met.

Rice, *supra* note 10, at 587-88.

loses its force.[19] The expert will explain the general principles relevant to the case, the data relied upon in reaching any conclusions, why those data are relied on, and the reasoning employed to get from the data to the conclusion, all of which can be contested by the opposing party. The fact finder will then sort it out.

To resolve the debate between Carlson and Rice, one must choose between education and deference, or at least specify when each is appropriate. Sometimes we may want deference and sometimes we may want education. The arguments that these two individuals have constructed do not engage precisely because the crucial issue that separates them remains latent.

Our own preference is for education over deference, although we express this view quite tentatively. We express it tentatively because our task here is to show the significance of the distinction between education and deference in order to facilitate its subsequent elaboration by experts such as Carlson and Rice. Moreover, the choice is a complicated one that should be examined fully in its own right. In brief, there is something comforting about relegating to legal fact finders decisions about facts essential to legal liability, but it may come at a high cost.[20] In our view, the next debate over expert testimony should be whether that cost would be worth whatever benefits it would secure.

The distinction between education and deference also casts light on other aspects of the field of expert testimony. We now turn to the second of those, contained in the writings of Professor Imwinkelried.

2. The Structure of Expert Testimony.—In a recent, very interesting article, Professor Imwinkelried attempted to straighten out the conceptual muddle of expert testimony by a demonstration of the syllogistic structure of scientific testimony.[21] Professor Imwinkelried's work is enlightening in many respects, but, like the Carlson-Rice debate, it highlights rather than resolves the muddle by failing to address the central issue of the relationship between deference and education.

First, the positive contribution of Imwinkelried's work. Picking up on a suggestion first made by Judge Learned Hand that experts are used

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[19] *See also* Ronald L. Carlson, *Experts as Hearsay Conduits: Confrontation Abuses in Opinion Testimony*, 76 MINN. L. REV. 859 (1992) (urging that more attention be paid to the question of "whether judicial review of expert testimony should be passive, or whether the expert witness process should be marked by active judicial policing"). Some resolution on the choice between education and deference could well obviate the need for protracted debate on such questions. *See infra* note 40.

[20] Fact finder competence will most likely not distinguish education from deference. If a fact finder lacks the competence to understand a field, it is unclear to us how that same fact finder could make an intelligent choice about which experts to defer to. Similarly, abusive cases will arise no matter which perspective is adopted, and so the question seems to us to reduce to cost.

[21] Edward J. Imwinkelried, *The "Bases" of Expert Testimony: The Syllogistic Structure of Scientific Testimony*, 67 N.C. L. REV. 1 (1988).

to inform the jury of "uniform physical rules, natural laws, or general principles,"[22] Imwinkelried argues that "in the courtroom scientific testimony is ordinarily presented in a deductive, syllogistic format. . . . The major premise is a principle, procedure, or explanatory theory derived by the inductive scientific technique. . . . The symptoms displayed by the specific plaintiff are the witness' minor premise."[23] Moreover, he asserts, the structure of the Federal Rules of Evidence supports his thesis. Rule 702 reads: "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."[24] This, according to Imwinkelried, refers to the major premises an expert is employing; and because those premises are forged by an inductive scientific process, they are entitled to great deference, even though experts know of them not only from personal observation but also through studying the hearsay declarations of other experts.[25] Rule 703, by contrast, refers to the minor premise, which simply means the facts of the case. Here the expert is no more expert than the jury, and thus there is no reason to defer to the expert nor to loosen the normal evidentiary rules to admit otherwise inadmissible data.[26] If, for example, a patient had a fever, someone with firsthand knowledge of the fact easily can be called to testify. Even if the doctor would take the nurse's word for it, the legal system should not bend that far to accommodate the ways of doctors.

This is a very helpful addition to our understanding of expert testimony, in particular its recognition that there are occasions when the legal system should defer to expert bodies of knowledge, yet Imwinkelried's thesis remains suggestively incomplete. Imwinkelried purports to be dealing with the entire range of expert testimony, as the title of his article indicates, yet he immediately defines expert testimony to

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22 Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 HARV. L. REV. 40, 50 (1901). *See also* John W. Strong, *Questions Affecting the Admissibility of Scientific Evidence*, 1970 U. ILL. L.F. 1, 2-3 (by presenting the fact finder with scientific principles, the expert helps the fact finder apply needed general knowledge to specific data introduced in the case).

23 Imwinkelried, *supra* note 21, at 2-3.

24 FED. R. EVID. 702.

25 Imwinkelried, *supra* note 21, at 9. Not surprisingly, Hand arrived at a similar conclusion. Having determined that the jury is not qualified to formulate the appropriate major premises for the issue at bar, the court permits expert testimony. After the experts for each party do battle, the court leaves it to the jury to choose between "two statements each founded upon an experience confessedly foreign in kind to their own." Hand, *supra* note 22, at 54. Having shown the tension inherent in allowing partisan experts to testify on matters of opinion about which jurors are uninformed, Hand concludes that the judge, after consulting appropriate experts, should instruct the jury on general propositions to be applied to the facts of the case during the decision process. *Id.* This practice, were it implemented, would be a striking example of deference on the part of the fact finder.

26 Imwinkelried, *supra* note 21, at 10-13.

mean scientific testimony, which itself has for Imwinkelried a distinctive meaning:

> In the final analysis we call testimony "scientific" because it is generated by the distinctive scientific process. Scientific propositions and techniques are the product of experimentation. The scientist begins by postulating an hypothesis. She next designs an experiment to verify or disprove the hypothesis and then conducts the experiment and attempts to correlate the experimental results with the hypothesis. The scientist accepts the hypothesis as a scientific truth only if the experimental results validate the hypothesis.[27]

This is a satisfactory description of a significant part, but by no means all, of "science," and it is clearly an incomplete description of the expertise that is the basis of testimony in many trials. Astronomy and economics are surely sciences, but not ones that proceed very often in this fashion. And of course, one can be an expert under the Federal Rules without being a scientist. Indeed, many of the practitioners of two of the major forms of expert testimony at trial, Freudian-influenced psychiatry and clinical psychology, have resisted the application of scientific technique to their discipline.[28] Farmers are very likely experts when a case raising farming issues is tried in an urban setting. In order to make his argument, Imwinkelried has essentially reduced the scope of "expert" testimony to a subset of what actually occurs at trial. In this subset his argument may hold, but it does not speak to much of what passes for expert testimony at trial.

Yet another difficulty is that the distinction between the general principles applicable to a case and the actual facts of the case is more problematic than he acknowledges. He suggests that the distinction may be opaque "in some exceptional cases."[29] He gives as an example a case where a physician concludes that a patient does not have symptoms A, B, and C because the patient has reported symptom E, which the clinical literature indicates is a clear contraindication of A, B, and C. His solution to this problem in his theory is to argue that the minor premise has become the major premise. Perhaps so, but how is one to know when that is the case? Expertise can be clinical expertise, as Rule 702 makes clear, which means that the question will always be open whether an observation is part of the major or the minor premise under Inwinkelried's approach. A perfect example from another major source of expert testimony at trial is radiology. The reading of x-rays is in large part science and in large part art.[30] So yet another major form of expert

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27 *Id.* at 2.

28 *See generally* ADOLF GRUNBAUM, THE FOUNDATIONS OF PSYCHOANALYSIS: A PHILOSOPHICAL CRITIQUE (1984) (Chapters 7 and 9 are particularly helpful on this point). *See also* MARSHALL EDELSON, PSYCHOANALYSIS: A THEORY IN CRISIS (1988) (Chapters 12 and 15).

29 Imwinkelried, *supra* note 21, at 11.

30 Alan Lesgold et al., *Expertise in a Complex Skill: Diagnosing X-Ray Pictures*, *in* THE NATURE OF EXPERTISE 311 (Michael Chi et al. eds., 1988).

testimony cannot be easily accommodated within Imwinkelried's scheme.

The looseness of the categories of "major" and "minor" premise is indicated in Professor Imwinkelried's discussion of *United States v. Stifel*,[31] which held that evidence of neutron activation analysis (NAA) is admissible. In discussing the trial tactics of the parties, Professor Imwinkelried argues that the opponent made the mistake of focusing on the minor premise rather than on the major premise. According to Imwinkelried, the major premise in NAA testimony is that samples drawn from different places have different compositions, and the minor premise is "that NAA has the capacity to determine whether the two samples have the same minute quantities of chemical elements."[32] However accurately Professor Imwinkelried has structured the form of this argument, it does not advance his thesis. His thesis, remember, is that experts need not be deferred to on the minor premise, just because it deals with the facts of the case that the fact finder is as well qualified to decide as the expert. Whether "NAA has the capacity to determine whether the two samples have the same minute quantities of chemical elements" is hardly a matter, even today, within the common knowledge and experience of communities at large.

We have one last critical point that returns us to the thesis of this Essay. There is another factor missing from Imwinkelried's analysis. What if experts from both sides at trial testify about the "major premises" and their testimony conflicts? What if, for example, a Freudian psychiatrist testifies, followed by a neurologist who testifies that Freudian psychiatry is unscientific bunk? To say that the fact finder is to defer to expert testimony on major premises seems to assume away such conflicts, yet this type of conflict is quite prevalent in our system.[33] Imwinkelried's very interesting discussion neglects this point because it gets close to, but skirts around, the major analytical question posed by expert testimony, which is the choice between deference and education.

Again, and again only tentatively, our view is that Rules 702 and 703 merely demonstrate the unresolved conflict between deference and

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31 433 F.2d 431 (6th Cir. 1970), *cert. denied*, 401 U.S. 994 (1971).

32 Imwinkelried, *supra* note 21, at 21.

33 Samuel R. Gross, *Expert Evidence*, 1991 WIS. L. REV. 1113, 1120. Gross presents summary statistics based on reports on 529 civil trials that led to jury verdicts in California State Superior Courts in 1985 and 1986. According to Gross:

> In nearly three-quarters of the trials in which experts testified (or 63% of all trials) there were experts on both sides. In two-thirds of the trials with expert testimony (57% of all trials) there were opposing experts in the same general area of expertise—most often, opposing medical experts. Similarly, for over two-thirds of the appearances by expert witnesses, there were opposing experts in the same general area. Again, such conflicts were particularly common for medical witnesses—their testimony was opposed by other medical witnesses 78% of the time. In sum, most expert witnesses were disputed by similar experts for the opposing side, and most juries had to resolve such disputes.

Id.

education. The words of Rule 702 have a clear and distinct meaning. *Pace* Imwinkelried, Rule 702 clearly anticipates instructing the fact finder on the expertise possessed by the witness, with no distinction drawn between major and minor premises of an argument. The rule merely authorizes a witness "qualified as an expert by knowledge, skill, experience, training, or education, [to] testify thereto in the form of an opinion or otherwise."[34] The obvious referent of "thereto" is the "knowledge, skill, experience, training, or education" of the expert, and thus Rule 702 merely authorizes the presentation of that knowledge for whatever value it may have for the fact finder.[35] Rule 703, by contrast, equally clearly embraces a deference rationale. For reasons previously discussed, only deference can be served by admitting an opinion without the underlying data.[36]

3. The Frye *Controversy.*—A third, mercifully brief, example of the significance of the distinction between education and deference is the dispute over the status of *Frye v. United States*.[37]* *Frye* held that scientific evidence has to be generally accepted in the relevant discipline before it is admissible at trial. As Professor Imwinkelried discusses, the status of *Frye* under the Federal Rules of Evidence is ambiguous.[38] The primary argument of *Frye*'s supporters is that Rule 703 incorporates it by the Rule's reference to data "of a type reasonably relied upon by experts in the particular field."[39] Professor Imwinkelried dismisses this argument on the ground that *Frye* clearly deals with the major premise of the expert testimony, whereas Rule 703 deals with the minor premise.

Our view is different from, but consistent with, Imwinkelried's. In a system designed to encourage deference, such as that embraced by Rule 703, *Frye* makes perfect sense. If fact finders must either defer to an

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34 FED. R. EVID. 702.

35 *See* FED. R. EVID. 702 advisory committee's note ("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.").

36 Rule 704(b) draws the line on deference, somewhat arbitrarily, at the mental state of a criminal defendant, which in our judgment merely confirms that the crucial issue of expert testimony has yet to be adequately analyzed.

37 293 F. 1013 (D.C. Cir. 1923).

* The Supreme Court's recent holding that the *Frye* doctrine did not survive the Federal Rules of Evidence highlights the distinction between deference and education. *See* Daubert v. Merrell Dow Pharmaceuticals, No. 92-102, 1993 U.S. LEXIS 4408 (June 28, 1993).—ed.

38 Imwinkelried, *supra* note 21, at 24-27. *Compare* 3 J. WEINSTEIN & M. BERGER, WEINSTEIN'S EVIDENCE ¶ 702[03], at 702-36 (1988) (Rule 702's silence as to *Frye* "arguably" signals the test's repeal) *with* 2 S. SALTZBERG & M. MARTIN, FEDERAL RULES OF EVIDENCE MANUAL 15 (5th ed. 1990) (Rule 702's silence as to *Frye* signals acceptance of the test). *See generally* Clifford Knaggs, *The Admissibility of Evidence and Expert Testimony Based on Science, Technology, or Other Specialized Knowledge—Is the* Frye *Standard Consistent with the Federal Rules of Evidence?*, 4 COOLEY L. REV. 641 (1987).

39 FED. R. EVID. 703.

expert or choose (unintelligently) between competing experts, some check on irrationality is necessary. *Frye* provides precisely that check. However, a system designed to encourage education has considerably less need of such a check, for the check will come from the pedagogical process itself. As the fact finder becomes informed about an area of knowledge, charlatans will be exposed.[40] The Federal Rules thus do not embrace *Frye* just because they are considerably less dedicated to deference than their common law predecessors.[41] Education is clearly permitted, perhaps encouraged, under the Rules, apparently more so than previously was the case.

4. The Expert Witness Controversy in the Torts Literature.—The dispute over expert testimony in the evidence literature is replicated by torts scholars. So, too, is its somewhat misdirected quality. We give two examples.

In a recent article, Peter Huber summarizes his very interesting and telling argument against what he calls "junk science in the courtroom."[42] According to Huber, the solution to the problem is to prohibit experts from providing idiosyncratic testimony, and instead to require them to report "the scientific consensus. Define the relevant community whose consensus views should prevail. Then require expert witnesses to report not their own, personal views, but the consensus views of that community."[43] He continues:

> The consensus scientific community supplies stopping points in abundance for those who care to find them. An authoritative scientific pronouncement on Bendectin by the Food and Drug Administration might be one. Or a report by the National Institutes of Health on electronic fetal monitors . . . . Such institutions, established and funded to make difficult scientific calls, draw on the best and broadest scientific resources. This is not to suggest that they are infallible; of course they aren't. They are just less fallible—

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[40] Nonetheless, one would predict that scrutiny of the sufficiency of the evidence would be more intense under an education model than a deference model. Under a deference model, a court would simply make the decision whether to defer (or to allow deference). If deference were in order, a court would not be in a position to second-guess the evidentiary basis of an expert's view, or at least doing so would be in tension with the decision to defer. Under an education model, an expert's testimony would be no different from any other form of evidence, so far as sufficiency of the evidence is concerned.

[41] *See, e.g.*, Albert S. Osborn, *Reasons and Reasoning in Expert Testimony*, 2 LAW & CONTEMP. PROBS. 488, 489 (1935):

> As is well known, the ancient view of all expert testimony was that the expert's mere opinion was to be accepted or rejected wholly on the reputation and qualifications of the witness. This necessarily still is the rule regarding those classes of expert testimony that are not susceptible of illustration and explanation so as to be weighed by the ordinary hearer. This is the class of testimony that can be rendered almost valueless in case of conflict and in many instances deserves the severest criticism. A bare opinion is a dangerous basis for a verdict.

[42] Peter Huber, *Junk Science in the Courtroom*, 26 VAL. U. L. REV. 723 (1992) [hereinafter Huber, *Junk Science*]; *see also* PETER HUBER, GALILEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM (1991).

[43] Huber, *Junk Science*, *supra* note 42, at 743.

> much less fallible—than a thousand juries scattered across the country grappling with the complexities of immune system impairment after being educated by fringe scientists peddling iconoclastic theories about "chemically induced AIDS." Judges therefore have abundant reasons to promote the former and to be far more cautious about admitting the latter.[44]

This, of course, is a clarion call for deference. It is in essence an argument about the cognitive deficiencies of jurors as a justification for transferring authority from juror to judge, just as Judge Learned Hand argued for many years ago.[45] But interestingly, Huber does not have, or at least does not express, a consistently negative impression of the educational capacity of jurors:

> To hold experts to serious scientific standards is not to abandon venerable legal principle but to reaffirm it. The expert witness is the only kind of witness who is permitted to reflect, opine, and pontificate in language as conclusory as he may wish.[46] We give him the considerable license he enjoys because some facts are meaningful only in the context of those larger patterns of facts we call science. It's useless for a pathologist to describe in fine details what he saw when the reagent was added to the blood sample, if he may not also explain blood types, genetic rules, and why harmonious coupling between Charlie Chaplin (group O) and Joan Berry (group A) could not have produced Carol Ann (group B). The expert, in other words, is there to provide a bridge between the particular facts of a case and patterns of facts that can be observed and understood only through much wider study.[47]

Virtually none of this passage follows from his previous argument, and it demonstrates the analytical confusion that infects the debate over experts by the failure to engage on the distinction between deference and education. This paragraph is a halfway house between the two, whereas his previously quoted argument was an unconstrained argument for deference. If the previous argument is correct, there is no need at all to "explain blood types, genetic rules," or virtually anything else to the jury except the conclusion of the expert's analysis. The explanation of blood typing would have to be made to the judge to qualify the expert, but after being qualified there would be no reason to repeat the testimony for the jury. This stark presentation of the implications of Huber's argument probably explains why he seems not to accept its full implications himself, for it amounts to a dramatic shift of authority from jury to judge.

Huber's argument also highlights some of the implications of the choice between deference and education. If jurors are competent to understand the underlying principles that an expert will utilize, then the cost of education is merely the time it takes to achieve. If, by contrast, the jurors are not competent to understand the relevant material, then

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44 *Id.* at 745.

45 *See supra* notes 22 and 25.

46 Regrettably, while this is effective rhetoric, it is largely false.

47 Huber, *Junk Science*, *supra* note 42, at 747.

the cost of education is not only the time but the risk of unintelligent decisions, which of course is the argument for deference. But a problem remains. If jurors cannot comprehend the relevant material, neither, one would think, would they be able to decide intelligently to which expert to defer. Thus, Huber's argument collapses to an argument forbidding contesting experts before the jury, although presumably parties would be allowed to present evidence and argument to the judge as to which expert should be allowed to testify.

We now see clearly the depth of the challenge of the proponents of deference to the conventional assumptions of the jury system. Apparently under Huber's model, all questions of expertise and science would, in essence, be decided by the judge. The scope of our common law method of juridical fact-finding by lay members of the community would be significantly reduced. We also now see more clearly certain difficulties with this proposal. First, Huber's definition of expertise is highly ambiguous. Does it, for example, extend to expert police work? If not, why not? Further, it assumes remarkable consensus across the range of experts and science. In the examples that he gives, he may be right, but that hardly establishes the crucial proposition of the extent of consensus across the subject matters that may prove relevant at trial. The argument also assumes that judges are better equipped than jurors to make determinations of scientific consensus, or presumably to decide when scientific consensus need not be given deference. This is a popular myth these days, but we know of no good reason to adopt it uncritically.[48]

Huber's proposal rests on other myths as well. The argument seems to assume that there will be a single judicial determination of the admissibility of certain forms of evidence, which is supposedly better than "a thousand juries scattered across the country grappling with" some question. This is surely false. At a minimum, each jurisdiction, such as the fifty states, will have to make judicial determinations of the admissibility of certain kinds of evidence, which will lead inevitably to some inconsistency. More importantly, the argument makes the common erroneous assumption that questions of admissibility are abstract ones, but they are not. Admissibility is conditioned by the facts of the case being tried. To be sure, there are cases that purport to say that some evidence, the results of lie detectors perhaps, is not admissible, but what those cases mean is that the evidence is not admissible in the case before the court under present conditions. In some other case, the facts may be different, and may vary across several dimensions. Not only might the historical facts of the dispute differ in such a way as to affect admissibility, but so too

[48] The myth seems to rest in large part from confusing the most able of the very able of the federal bench with "the judiciary" generally. Most judges, including most judges of state supreme courts, hearing most cases that Huber is concerned with, do not rise to this level. The myth also must rest on the remarkable belief that jurors cannot easily enough be convinced of the existence of scientific consensus.

might the facts justifying the use of the evidence change. A more effective presentation of the utility of the evidence might be made, and science, expertise, or technology might advance in such a way as to support the admissibility of the evidence. This more complex, and much more realistic, portrayal of the admissibility decision might still be seen to support Huber's argument for deference, but at a minimum we see that the proponents of deference have much more work to do. That work will be facilitated, we suggest, by keeping clearly in mind what in fact is the key variable here: to what extent, or under what conditions, do we expect jurors to defer to rather than to be educated by experts?

Professor Richard Epstein's analysis of the problems of expert testimony parallel in various respects those of Huber.[49] For example, he endorses Huber's views about increasing the stringency of judicial oversight.[50] He goes further, though, by arguing that another substantial problem with experts is bias: parties buy expert testimony. He then suggests a few very interesting reforms that might offset the detrimental effects of this bias. In particular, he suggests the elimination of contingency fees[51] and the adoption of a system in which all the party does is designate the expert. Upon designation, the expert becomes an independent actor.

These are both interesting and possibly helpful suggestions, and they may at first glance appear not to suffer from the inattention to the distinction between deference and education. On second glance, though, they do. The crucial variable in deciding between deference and education is the appraisal of the cognitive abilities of fact finders. A concern about the effect of witness bias, particularly in the setting of expert testimony, is merely another way to ask, or actually to avoid, that same question of cognitive competence. Bias is a "problem" if, but only if,[52] the fact finder will not accurately perceive the bias and adequately account for it. Again, there is a myth today that jurors are unable to do either, and again we have no idea what the support for the myth is. The relationship between an expert and the party calling that expert is open for cross-examination. If an expert is on a contingent fee, the jury will know of it.[53] Thus, Epstein must think that the typical juror, or at least too

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49 Richard Epstein, *A New Regime for Expert Witnesses*, 26 VAL. U. L. REV. 757 (1992).

50 *Id.* at 759.

51 Epstein, in so suggesting, merely joins the A.B.A.'s various model rules and codes of professional conduct. *See* MODEL CODE OF PROFESSIONAL RESPONSIBILITY DR 7-109(C) (1980) ("A lawyer shall not pay . . . a witness contingent upon the content of his testimony or the outcome of the case. But a lawyer may advance . . . [a] reasonable fee for the professional services of an expert witness."); MODEL RULES OF PROFESSIONAL CONDUCT Rule 3.4 cmt. 3 (1983) ("[I]t is not improper to pay a witness's expenses or to compensate an expert witness on terms permitted by law. The common law rule in most jurisdictions is that it is improper to pay . . . an expert witness a contingent fee.").

52 We put aside pure questions of cost.

53 The jury will rarely know of it because it will rarely be the case. *See supra* note 51.

many jurors, will not be skeptical of an expert who admits to having a financial stake in the case. Similarly, Epstein's argument entails that jurors are incapable of perceiving or understanding the more subtle biasing effects that result from ongoing expert/party (lawyer) relationships. Apparently, no or not enough skepticism about expert testimony would result even if a juror hears that a certain medical expert only testifies for plaintiffs, or has testified for this lawyer or law firm fifty previous times, or has rehearsed his answers with counsel.

If any of these fears is true, it would be evidence of remarkable and disqualifying stupidity. But stupidity on this scale also ought to be demonstrable. As we have said, however, we know of no evidence for it. There are surely idiosyncratic cases, but most jury decisions are not idiosyncratic. More to the point, we suspect that the arguments of these tort theorists confuse cause and coincidence. In some cases in which "junk science" has been presented, apparently idiosyncratic results have obtained. But an idiosyncratic result by no means demonstrates that the cause of the decision was the "junk science." After all, there are also "idiosyncratic" decisions in cases involving no expert testimony at all. This might be further evidence of juror stupidity, but it might instead suggest that other factors are operating. And of course, there are also idiosyncratic judicial decisions. Indeed, many of the cases involving expertise that draw the ire of critics such as Huber and Epstein are upheld on appeal by representatives of the judicial class whose power the critics wish to expand. To be sure, rendering and upholding verdicts are different acts with different implications. Nonetheless, the point emphasizes our main thesis: the debates over expert testimony are truly debates over the cognitive competence of jurors, in particular over the extent to which jurors should be required to defer to expert testimony rather than be educated by it.

The legal system is constantly running up against new bodies of knowledge, and necessarily so. Social conditions change constantly, creating new knowledge and new problems. Expert testimony merely serves as an obvious example of this more general dynamic.[54] The presentation of new knowledge is thus a standard problem for the legal system, although no formula for accommodating it has yet been constructed, as we hope we have shown here. At times, fact finders are educated about that new knowledge, while at other times deference is requested or de-

[54] For example, the standards governing admissibility of expert testimony bear an interesting relationship to the area of presumptions, where again fact finders are sometimes asked to defer and are sometimes educated by instructions in presumptive form. *See generally* Ronald J. Allen, *Presumptions in Civil Actions Reconsidered*, 66 IOWA L. REV. 843 (1981). As this comparison of expert testimony to presumptions suggests, the distinction between deference and education cuts across a wide variety of issues. It is, for example, at the heart of the dispute over the legislature's ability to require certain instructions at trial concerning facts. Must the trial court or jury defer to the legislature's determination, or is the essence of the judicial role to be constantly open to an educational process?

manded, and probably all too often the new knowledge is denied any role at all at trial. Those are the choices that are available. Our point here has been that they should be faced directly, which in our judgment the current controversies over expert testimony have so far failed to do.