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**Commentary:
A Response to Professor Carlson**

**Struggling to Stop the Flood of
Unreliable Expert Testimony**

David L. Faigman*

Professor Ronald L. Carlson accurately observes that the "dispute over whether litigants may use experts to run unexamined hearsay into the trial record is a microcosm of a larger debate."¹ This larger debate involves the appropriate standard for admitting expert testimony under the Federal Rules of Evidence. Logically, it would seem, if expert hearsay testimony is a microcosm of the larger debate over the general admissibility of expert testimony, the answer to the more narrow question should be consistent with the answer to the larger question of which it is a part. Curiously, Carlson's argument violates this expected symmetry. He advocates a restrictive standard for experts' introduction of otherwise objectionable hearsay statements yet *tolerates* a more liberal standard for expert opinion testimony generally.²

Carlson has identified a crack in the dike, a weakness of traditional concern that the courts well understand, and has put his finger in the hole to try to stop the leak. In truth, however, this weakness is symptomatic of a structural failure in the courts' use of the rules regulating expert testimony.³ The leak

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1. Ronald L. Carlson, *Experts as Hearsay Conduits: Confrontation Abuses in Opinion Testimony*, 76 MINN. L. REV. 859, 859 (1992).

2. I emphasize "tolerates" because Professor Carlson explicitly adopts an active review of expert opinion. My disagreement is not specifically with his standard of review for expert opinion, but rather his use of *different* standards for expert opinion and expert hearsay. See *infra* notes 27-30 and accompanying text.

3. Article VII of the Federal Rules of Evidence regulates the admission of expert testimony in federal courts. Carlson's thesis implicates Rules 702

has become a flood.⁴

The crux of Carlson's argument is that notwithstanding the courts' seeming willingness to admit expert opinion based on unreliable facts, they should be particularly scrupulous in excluding an expert's hearsay testimony when these statements are offered on direct examination. As Carlson explains, "[c]ourts need to apply the fine but nonetheless important line between allowing [expert] reliance on hearsay versus permitting full evidentiary recitation of the hearsay."⁵

Accordingly, Carlson would sooner admit expert opinion based on unreliable hearsay than admit the unreliable hearsay that supports that opinion. I reject the choice. Both are objectionable, and both should be excluded under a unified analysis. If expert opinion rests on unreliable hearsay neither the opinion nor the hearsay should be permitted; if expert opinion rests on reliable hearsay, the opinion and the hearsay should both be permitted to go to the jury.

This Comment is divided into two sections. Part I examines Carlson's argument for restricting expert witnesses' intro-

and 703, with particular emphasis on the latter. See *infra* notes 8-9 and accompanying text.

4. The complete tale of the "Hero of Haarlem," the story of the boy who saved his town from a flood by sticking his finger in the dike, is told by Mary Mapes Dodge as follows:

Many years ago, there lived in Haarlem, one of the principal cities of Holland, a sunny-haired boy of gentle disposition. . . . Trudging stoutly along by the canal, he noticed how the autumn rains had swollen the waters. . . . [Suddenly,] he was startled by the sound of trickling water. Whence did it come? He looked up, and saw a small hole in the dyke through which a tiny stream was flowing. . . . The boy understood the danger at a glance. That little hole, if the water were allowed to trickle through, would soon be a large one, and a terrible inundation would be the result.

Quick as a flash, he saw his duty. . . . His chubby little finger was thrust in, almost before he knew it. . . . "Ah!" he thought, . . . "Haarlem shall not be drowned while I am here!"

This was all very well at first, but the night was falling rapidly. . . . Our little hero began to tremble with cold and dread. . . . A numbness, commencing in the tired little finger, crept over his hand and arm, and soon his whole body was filled with pain. . . .

At daybreak, a clergyman . . . thought he heard groans as he walked along on the top of the dyke. . . .

"In the name of wonder, boy," he exclaimed, "what are you doing there?"

"I am keeping the water from running out," was the simple answer of the little hero. "Tell them to come quick."

MARY MAPES DODGE, HANS BRINKER OR THE SILVER SKATES 93-96 (J. B. Lippencott Co., 1957) (1865).

5. Carlson, *supra* note 1, at 866.

duction of hearsay statements. In the end, I agree with Carlson's conclusion that an expert's introduction of otherwise objectionable hearsay statements on direct examination poses significant dangers for the trial process. I disagree, however, with the logic he uses to avoid these dangers. Moreover, the structure of the Federal Rules of Evidence mandates a different logic than Carlson embraces. Part I seeks to reconcile Carlson's narrow question with the larger question posed by the Rules. Part II offers a tentative solution to the larger question that satisfactorily addresses Carlson's more narrow concerns. Carlson focuses his revision efforts on Rule 703,⁶ and tolerates business as usual under Rule 702.⁷ Part II argues that Rules 702 and 703 must be considered together and that both require mending to stem the surge of unreliable expert testimony.

I. THE LOGIC OF THE RULES

Carlson considers the introduction of hearsay through the direct testimony of experts to be of fundamental concern for Rule 703.⁸ The problem, as he identifies it, is the direct transmission to the jury of information that is otherwise barred by the hearsay rule.⁹ Hearsay is excluded because it is *ordinarily* too unreliable to be presented to juries.¹⁰ The drafters of the Rules simply did not trust juries to appreciate the limited

6. Rule 703, entitled "Bases of Opinion Testimony by Experts," provides:

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.

FED. R. EVID. 703.

7. Rule 702, entitled "Testimony by Experts," provides:

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.

FED. R. EVID. 702.

8. Carlson, *supra* note 1, at 866.

9. *Id.* at 869-70; see also Ronald L. Carlson, *Policing the Bases of Modern Expert Testimony*, 39 VAND. L. REV. 577, 583-86 (1986) [hereinafter Carlson, *Policing*].

10. See Eleanor Swift, *Abolishing the Hearsay Rule*, 75 CAL. L. REV. 495, 497 (1987) (identifying the central premise of the hearsay rule as concern over reliability).

weight hearsay should receive.¹¹ In practice, however, the hearsay rule does not bar most hearsay. The hearsay rule is riddled with exceptions. The Rules provide numerous exceptions for hearsay either because it has certain guarantees of trustworthiness or because the specific circumstances of the case create a need for the evidence. Rule 703, though not a hearsay exception, must be understood within this logical structure.¹²

Although the Rules do not specifically provide an "exception" for hearsay statements reasonably relied upon by expert witnesses, the explicit premise of Rule 703 is that the data are "of a type reasonably relied upon by experts." The basis for Rule 703, therefore, is that the data are trustworthy.¹³

Is it possible that the Rules contemplate that the traditional exceptions to the hearsay rule produce evidence more trustworthy than the hearsay data upon which the Rules permit experts to rely? We should hope not.

Consider the standard exception for excited utterances.¹⁴ All but one of the traditionally identified hearsay dangers—ambiguity, insincerity, poor perception and poor memory¹⁵—are present. The excited utterance exception is premised on the assumption that a statement made shortly after a startling event will not be insincere.¹⁶ Assuming this psychological judgment

11. See JACK B. WEINSTEIN & MARGARET A. BERGER, WEINSTEIN'S EVIDENCE MANUAL § 14.01[2], at 14-15 (1987).

12. See CHARLES T. MCCORMICK ET AL., MCCORMICK ON EVIDENCE § 324.2, at 910 (Edward W. Cleary ed., 3d ed. 1984) ("The effect of Rule 703 has been to create a hearsay exception . . .").

In an earlier article, Carlson likened Rule 703 to Rule 612 which applies to a witness who refreshes her memory from a writing she prepared or which was prepared by another. Carlson, *Policing*, *supra* note 9, at 583. Rule 612 does not permit the writing to be introduced on direct, but provides the cross-examiner the option of admitting the writing in order to test the witness's recollection. As a procedural matter, the analogy to Rule 612 is instructive. In general, however, analogizing Rule 703 to the hearsay exceptions seems more appropriate. The basis of Rule 612 is not the trustworthiness of the writing, since the witness is presumed to be testifying from her own recollected memory. Allowing the cross-examiner to introduce the writing is merely a safeguard. In comparison, the basis for Rule 703 is essentially the same as that for the hearsay exceptions—the reliability of the information.

13. See FED. R. EVID. 703 advisory committee's note.

14. FED. R. EVID. 803(2) ("A statement relating to a startling event or condition made while the declarant was under the stress of excitement caused by the event or condition.").

15. See generally Laurence H. Tribe, *Triangulating Hearsay*, 87 HARV. L. REV. 957, 958-61 (1974) (discussing the traditional hearsay dangers).

16. See FED. R. EVID. 803(2) advisory committee's note ("The theory of Exception (2) is simply that circumstances may produce a condition of excite-

is correct, excited hearsay still suffers from the other dangers and, indeed, might suffer some of these dangers to a greater degree due to the very circumstances creating the excitement.¹⁷ Excited utterances are not completely trustworthy, to be sure, but they are deemed to be reliable enough to be presented to the jury.

Similarly, in theory at least, hearsay statements "reasonably relied upon" by experts also contain indicia of trustworthiness. Rule 703 requires the court to examine, as a threshold matter, the reasonableness of the expert's reliance on the data.¹⁸ This examination necessarily entails consideration of the reliability of the data.¹⁹ In effect, this review substitutes for a similar review that is either implicit in the hearsay exceptions or might be accomplished under the residual exceptions.²⁰ Both the hearsay rule and Rule 703, therefore, exclude certain items of evidence from reaching jurors. The question is whether hearsay and expert testimony pose similar dangers where jurors are concerned.

The principal argument for reviewing expert testimony is the concern over jurors' ability to discount unreliable expert testimony appropriately.²¹ The very same concern arises with

ment which temporarily stills the capacity of reflection and produces utterances free of conscious fabrication.").

17. See ELIZABETH F. LOFTUS, *EYEWITNESS TESTIMONY* 33 (1979) (discussing the increased likelihood of perceptual error under conditions of extreme excitement).

18. See, e.g., *In re "Agent Orange" Prod. Liab. Litig.*, 611 F. Supp. 1223, 1245 (E.D.N.Y. 1985) ("If the underlying data are so lacking in probative force and reliability that no reasonable expert could base an opinion on them, an opinion which rests entirely upon them must be excluded."), *aff'd*, 818 F.2d 187 (2d Cir. 1987), *cert. denied*, 487 U.S. 1234 (1988).

19. See David L. Faigman, *To Have and Have Not: Assessing the Value of Social Science to the Law as Science and Policy*, 38 EMORY L.J. 1005, 1081 (1989) ("The legal relevance of social science research simply cannot be divorced from its scientific credibility.").

20. FED. R. EVID. 803(24) & 804(b)(5). Professor Rice advocates the use of the residual exceptions "[u]ntil the Federal Rules of Evidence incorporate a new hearsay exception to accommodate specifically the new dimensions of the proposed practice under Rule 703." Paul R. Rice, *Inadmissible Evidence as a Basis for Expert Opinion Testimony: A Response to Professor Carlson*, 40 VAND. L. REV. 583, 591 (1987). I disagree with Rice's suggestion. The "problem" of expert hearsay testimony is not in the deficiencies of Rules 803 and 804; rather, it is in Rule 703. I believe Rule 703 can be read to remedy the sometimes unreliable nature of expert hearsay testimony. But if a revision is to be made in the Rules, Rule 703 should be the beneficiary of the change and Rules 803(24) and 804(b)(5) should not be relied upon even in the short term.

21. See John Kaplan, *Of Mabrus and Zorgs—An Essay in Honor of David*

hearsay.²² The prevailing wisdom holds that in both the expert testimony and hearsay contexts jurors cannot fully appreciate the limitations of the evidence, so the court must initially review its trustworthiness.²³ Carlson, however, exhibits an apparent faith that jurors are better able to appreciate the dangers of expert opinion than the dangers of hearsay. This faith seems to spur his desire to bar expert hearsay testimony on direct examination while, at the same time, permit expert opinion based on the same unreliable data.

Whether jurors have better facility with hearsay in comparison to expert opinion is an empirical question that has not been studied in great depth.²⁴ My intuition leads me to reach the opposite conclusion than did Carlson. In light of the extraordinary complexity of most scientific evidence, with its primarily statistical foundation and elaborate research designs, I have little faith that jurors can critically assess this testimony. In comparison, although hearsay presents significant dangers, the limitations of hearsay are well within the average juror's experience. As between expert opinion and hearsay, the former is likely to seem more incomprehensible to the average juror.

The logic of the Federal Rules suggests that Rule 703 be interpreted consistently with the hearsay exceptions. Therefore, expert testimony should be permitted on direct examination if it satisfies the reliability requirements of Rule 703. What these requirements are, however, has been the subject of much de-

Louisell, 66 CAL. L. REV. 987, 990-91 (1978); John W. Strong, *Questions Affecting the Admissibility of Scientific Evidence*, 1970 U. ILL. L.F. 1, 12-13.

22. See MCCORMICK ET AL., *supra* note 12, § 244.

23. See Paul C. Giannelli, *The Admissibility of Novel Scientific Evidence: Frye v. United States, a Half-Century Later*, 80 COLUM. L. REV. 1197, 1247 n.379 (1980) (novel scientific evidence and hearsay contexts); Edward J. Imwinkelried, *Judge Versus Jury: Who Should Decide Questions of Preliminary Facts Conditioning The Admissibility of Scientific Evidence?*, 25 WM. & MARY L. REV. 577, 580 (1984) (expert testimony context).

24. Early research on jurors' capacity to handle hearsay is reported in this volume. See Richard F. Rakos & Stephan Landsman, *Researching the Hearsay Rule: Emerging Findings, General Issues, and Future Directions*, 76 MINN. L. REV. 655, 656-64 (1992). For general ruminations on the subject of jurors' ability to understand scientific evidence, see Edward J. Imwinkelried, *The Standard for Admitting Scientific Evidence: A Critique from the Perspective of Juror Psychology*, 28 VILL. L. REV. 554, 566-71 (1983) (concluding that jurors can usually understand scientific evidence). *But see* United States v. Addison, 498 F.2d 741, 744 (D.C. Cir. 1974) (stating that scientific evidence may "assume a posture of mystic infallibility in the eyes of a jury of laymen"). To my knowledge, no researcher has yet compared hearsay and expert testimony in one study.

bate. Carlson characterizes this debate as posing a choice between passive and active review of expert testimony.²⁵

In the hearsay context, of course, a similar debate exists.²⁶ The Federal Rules ostensibly embrace an active review of hearsay. In order to be consistent, the Rules should be interpreted to require at least as active a review of expert testimony as is implicitly contained in the hearsay exceptions. Indeed, if the dangers associated with scientific evidence are greater than those accompanying hearsay, the former should receive greater scrutiny.

Carlson expressly favors an active review of expert testimony,²⁷ yet distinguishes between expert hearsay testimony and expert opinion testimony.²⁸ The genesis for his desire to draw a particularly bright line against expert hearsay testimony is his realization that courts do not seem willing (or capable) of actively reviewing expert testimony generally.²⁹ Instead, courts simply review the qualifications of the expert and, if sufficiently impressed, permit her to testify with little or no oversight.³⁰ Carlson seeks to halt the trickle of unreliable information when a flood of such information stands ready to inundate the law.

II. RELIABLE AND UNRELIABLE DATA, A.K.A. HEARSAY

Perhaps the most troubling issue confronting courts today involves the management of scientific evidence. Scientific evidence is pervasive in the courts: The criminal courts are filled with experts on DNA-typing, sundry syndromes, and psychiatric diagnoses in wide variety, while the civil courts are inundated with experts on the effects of agent orange, bendectin, and other allegedly toxic substances. Despite its pervasiveness, courts approach expert scientific evidence inconsistently and with trepidation. Most courts simply abdicate their responsibility to review the data substantively, focusing on the qualifications of the expert and leaving to the jury the task of assessing the evidence. Carlson's attempt to hold back the flood is admi-

25. Carlson, *supra* note 1, at 859-60.

26. See Christopher B. Mueller, *Post-Modern Hearsay Reform: The Importance of Complexity*, 76 MINN. L. REV. 367 (1992).

27. Carlson, *supra* note 1, at 859.

28. *Id.* at 867-68

29. *Id.* at 859-60

30. *Id.* See generally Giannelli, *supra* note 23, at 1237-38 (discussing dangers of scientific expert testimony).

rable, but he needs help—and, “[T]ell them to come quick.”³¹

The expert testimony provisions of the Federal Rules served as a necessary reform of the unmanageable³² “general acceptance” provision of the *Frye* test.³³ In particular, Rules 702 and 703 liberalized the approach to experts by requiring merely that the testimony “assist the trier of fact to understand the evidence or to determine a fact in issue.”³⁴ The Rules also permit experts to rely on otherwise inadmissible data provided it is of a type reasonably relied upon by experts in the pertinent field.³⁵ But Rules 702 and 703 were not mandates to open the floodgates to all self-proclaimed experts. The problem is that these Rules do not provide courts with sufficient guidance regarding their responsibility for evaluating scientific evidence.

Carlson offers courts specific recommendations regarding expert hearsay testimony but tolerates business as usual when it comes to expert opinion testimony. Here I fundamentally disagree with Carlson’s perspective. Where he sees reliable data and unreliable hearsay, I see reliable and unreliable data. Most data upon which experts rely could be characterized as “hearsay” or are so loaded with the traditional hearsay dangers that they should be so characterized.³⁶ The scientific method, when correctly employed, reduces these dangers. The fact that reasonable experts rely on these data gives courts the confidence to rely on them too.³⁷ The threshold inquiry under Rule

31. DODGE, *supra* note 4, at 126.

32. See Paul C. Giannelli, *General Acceptance of Scientific Tests—Frye and Beyond*, in SCIENTIFIC AND EXPERT EVIDENCE 11, 20-30 (Edward J. Imwinkelried ed., 2d ed. 1981) (noting problems of selective application, vagueness, and delay associated with the *Frye* test). See generally, Mark McCormick, *Scientific Evidence: Defining a New Approach to Admissibility*, 67 IOWA L. REV. 879, 886-902 (1982) (discussing federal and state courts’ treatment of the *Frye* standard after adoption of the Federal Rules of Evidence).

33. In *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923), the United States Court of Appeals for the D.C. Circuit held that the scientific content of an expert’s testimony had to have achieved general acceptance within the relevant scientific community in order to be admissible. *Id.* at 1014.

34. FED. R. EVID. 702. See also *supra* note 7 (providing the text of the rule).

35. FED. R. EVID. 703. See also *supra* note 6 (providing the text of the rule).

36. See Ronald M. Dick, *Hearsay Evidence in Expert Opinions*, 8 J. POLICE SCI. & ADMIN. 378, 382 (1980). See generally Faigman, *supra* note 19, at 1084-85 (exploring the essential identity between scientific testimony and hearsay).

37. The advisory committee’s note to Rule 703 makes this point:

Thus a physician in his own practice bases his diagnosis on information from numerous sources and of considerable variety, including

703 must question more than the expert's qualifications; the inquiry must question whether the data are of a type upon which experts could reasonably rely.

Once again the analogy to the hearsay exceptions proves helpful. In order to find a particular hearsay exception applicable, the court must determine as a preliminary matter that certain prerequisite facts are present. For example, before admitting hearsay under the exception for dying declarations, the court must find, among other things, that the statement was made under a belief of impending death.³⁸ Moreover, *the court* must find this fact to be true by a preponderance of the evidence.³⁹ Rule 703 should require a similar finding. Courts should not allow the introduction of expert testimony, or the data upon which the expert purportedly relied, unless it finds as a preliminary fact that the opinion and data are accurate. This standard would require the court to review with particularity specific statements or evidence the expert relates to the jury, as well as any conclusions the expert offers. Therefore, hearsay statements offered as the bases for an expert's opinion would have to contain sufficient indicia of reliability. The standard of reliability should be at least as stringent, if not more stringent, as that now required for an exception to the hearsay rule.

As presently interpreted, Rules 702 and 703 do not appear to require judges to determine the accuracy of expert testimony as a preliminary fact.⁴⁰ Although perhaps the rules could be construed to mandate such a preliminary showing, amending Rules 702 and 703 would better achieve the desired result of a uniform treatment of expert testimony.⁴¹ Carlson also recom-

statements by patients and relatives, reports and opinions from nurses, technicians and other doctors, hospital records, and X-rays. . . .

The physician makes life-and-death decisions in reliance upon them.

FED. R. EVID. 703 advisory committee's note.

38. FED. R. EVID. 804(2).

39. See MCCORMICK ET AL., *supra* note 12, § 53, at 136 n.8 (discussing notion that on preliminary questions of fact, judge should be empowered to hear all relevant evidence).

40. See Imwinkelried, *supra* note 23, at 598-606. Professor Imwinkelried argues that the judge should admit scientific evidence only after finding, as a preliminary fact, the evidence to be valid. He notes, however, that the Federal Rules do not currently provide judges with this authority, and accordingly calls for amendment of the applicable rules. *Id.* at 616.

41. The Proposed Amendment to Rule 702 requires judges to make the preliminary factual finding concerning whether the expert's opinion is "reasonably reliable" and will "substantially assist" the trier of fact in accordance with Rule 104(a). FED. R. EVID. 702 (proposed), 137 F.R.D. 156, 156 (1991). I

mends a rule revision, and advocates a rule along the lines of the recently amended Minnesota Rule 703.⁴² Minnesota Rule 703, though an improvement, suffers the same limitations as Carlson's proposal by drawing the problem too narrowly. The crack in the structure of the Rules crosses the foundation of both Rules 702 and 703. Moreover, expert testimony cannot be neatly stored in the categories of the Federal Rules. Revision of Rule 703 alone cannot avoid the calamity.

Behind Carlson's advocacy of the Minnesota Rule is his acceptance of the Imwinkelried "major/minor premise distinction."⁴³ Imwinkelried distinguishes between the general research and theories of science (the major premise) and the case-specific information that informs the expert's particular opinion (the minor premise).⁴⁴ According to Imwinkelried, Rule 702 relates to the major premise, and Rule 703 relates to the minor premise.⁴⁵ Imwinkelried, as does Carlson, would prefer that courts scrutinize the minor premise under Rule 703, but he would have them defer to the expert's better judgment about the accuracy of the major premise under Rule 702.⁴⁶ Although Imwinkelried's distinction is instructive, it does not support treating the two kinds of "data" differently for evidentiary purposes.

First, as a general matter, the stated purpose of deferring to an expert's major premise is her expertise with the complex subject matter, a complexity that renders effective oversight more difficult.⁴⁷ This argument, however, supports the opposite result. Litigants use experts to assist the trial process resolve factual and legal disputes. The ultimate decision maker, therefore, is either the judge or jury—not the expert. In order

fully agree with the basis for the proposed change: "[W]hile testimony from experts may be desirable if not crucial in many cases, excesses cannot be doubted and should be curtailed." FED. R. EVID. 702 (proposed) advisory committee's note, 137 F.R.D. at 156-57. I am not confident, however, that the proposed revisions will resolve the problem of expert testimony. As currently formulated or proposed, the Rules provide courts with no guidance on what principles they should apply when evaluating expert testimony. See Faigman, *supra* note 19, at 1079-90 (arguing for the adoption of a scientific standard by which to evaluate scientific evidence).

42. Carlson, *supra* note 1, at 873 & n.73

43. See *id.* at 870 & n.59; Edward J. Imwinkelried, *The "Bases" of Expert Testimony: The Syllogistic Structure of Scientific Testimony*, 67 N.C. L. REV. 1, 24-25 (1988).

44. Imwinkelried, *supra* note 43, at 2-3.

45. *Id.* at 5.

46. *Id.* at 8-11.

47. *Id.* at 9-10.

to render an informed decision, the judge or jury must evaluate all of the evidence introduced, including scientific evidence. To the extent that jurors' competence to evaluate scientific evidence is doubted, judges should scrutinize the evidence more closely, not less closely.

Second, the underlying assumption that the major premise is more complex and resistant to effective court review is often not true. In the area of DNA-typing, for example, the general theory that all individuals have unique and identifiable DNA "fingerprints" is relatively easy to understand.⁴⁸ In comparison, the forensic application of this technology is extremely complex and involves an appreciation of concepts such as restriction fragment length polymorphisms, genome mutation, band shifting, and polymerase chain reaction, to name just a few.⁴⁹ In general, inherent differences between the general theory of the major premise and the particular case facts of the minor premise do not support different standards of review.

In many scientific contexts, the "data" of the major premise and the minor premise look quite alike. For example, an expert who testifies that the defendant suffers from battered woman syndrome relies on the same kind of data for both the major premise and the minor premise. The major premise, that research supports a recognizable set of behavior patterns described by the syndrome, is based on interviews with women who have lived (or are living) through violent relationships. The scientific validity of the general theory depends on the strength of the interview techniques employed in the research.⁵⁰ The minor premise depends on similar techniques. An expert reaches the conclusion that a woman suffers from the syndrome on the basis of personal interviews. The "data" of the major premise and the minor premise are the same.⁵¹

48. For a discussion of the methods, advantages, and drawbacks of DNA identification, see Dan L. Burk, *DNA Identification: Possibilities and Pitfalls Revisited*, 31 JURIMETRICS 53 (1991).

49. See *id.* at 56-66.

50. See generally David L. Faigman, Note, *The Battered Woman Syndrome and Self-Defense: A Legal and Empirical Dissent*, 72 VA. L. REV. 619, 636-43 (1986) (relating interview techniques to validity of cycle theory of battered woman syndrome).

51. This identity does *not* mean that the accuracy of the conclusions derived from the data can be evaluated in precisely the same fashion. The soundness of the general theory depends on the methodology used to collect the data; the accuracy of the particular fact that the woman suffers from the "syndrome" depends on the clinical interview used by the expert. In some instances, threats to accuracy are the same in both contexts. For example, in both the research and the clinical interview settings the use of leading ques-

In a wide variety of cases the legal relevance of the minor premise invariably constitutes an essential component of the major premise. For example, an expert testifying at a capital sentencing hearing that she believes the defendant is "dangerous" and "will probably kill again" bases this opinion on the specific observation that the defendant manifests certain characteristics generally believed to be associated with future dangerousness. The validity of the expert's opinion depends on *both* the major premise that the research demonstrates a relationship between specific characteristics and dangerousness and the minor premise that the defendant exhibits these characteristics. The Rules should not recognize the reliability of one premise but not the other.

Finally, the minor premise itself often contains the relevant scientific data that must be brought before the trier of fact. Consider the classic case of *Zippo Manufacturing Co. v. Rogers Imports, Inc.*,⁵² in which Zippo introduced a survey indicating consumer confusion about its cigarette lighter and the lighter manufactured by Rogers. The court offered several alternative bases for admitting the survey responses which Rogers argued were hearsay. The court observed that the survey responses probably were not hearsay and that, if they were hearsay, they fell within the state of mind exception.⁵³ Instead of relying on a hearsay analysis, however, the court evaluated the scientific trustworthiness of the researchers' survey techniques and found them to be sufficiently reliable.⁵⁴ In effect, the survey methodology constituted the major premise and the responses constituted the minor premise. To distinguish these premises for the purposes of determining admissibility would be unhelpful and, in all likelihood, impossible.

Although the major/minor premise distinction provides an expedient way to evaluate scientific evidence, it is not a distinction upon which rules of evidence should be based. As long as jurors have the responsibility for assessing scientific evidence, their task requires an understanding of both major premises

tions would threaten the validity of the findings. But very often the threats to validity in the two settings differ. For example, questions of randomization obviously have no application to the clinical interview setting. Differences in evaluating accuracy in the general theory versus the particular diagnosis, however, do not mean that one assessment is any more difficult than the other.

52. 216 F. Supp. 670 (S.D.N.Y. 1963).

53. *Id.* at 683.

54. *Id.* at 683-84.

and minor premises.⁵⁵ The weight jurors attribute to scientific evidence depends on this understanding. Moreover, no sound evidentiary reason supports greater deference to an expert's major premise than to her minor premise. If courts doubt jurors' ability to evaluate the premises of scientific evidence, courts should make a preliminary assessment to determine whether these premises are more-likely-than-not valid. This assessment will insulate the jury from the hazards of "junk science."

CONCLUSION

Professor Carlson brings an important and troubling weakness in the Federal Rules of Evidence to the attention of the legal community. The practice of using experts as hearsay conduits undermines the operation of the Rules by admitting through experts evidence prohibited by the hearsay rule. But this phenomenon is only a small part of a more profound structural weakness in the Rules. Experts are conduits not only for hearsay but for a wide variety of unreliable and inaccurate information. The Rules, and judicial practice, do not currently provide an effective check on the testimony of experts.

Courts must scrutinize expert testimony more substantively. Carlson's proposed revision to Rule 703 contributes to this goal. Perhaps Carlson's proposal, along with the proposed revision of Rule 702, if adopted, will lead courts to assume greater responsibility for evaluating expert testimony. But Carlson's proposal and the proposed revision do not go far enough. These provisions fail to give courts sufficient guidance regarding the principles upon which they should test expert testimony. The question remains what to do about the surge of unreliable testimony.

55. Professors John Monahan and Laurens Walker also distinguish major and minor premises, but for somewhat different purposes. See Laurens Walker & John Monahan, *Social Frameworks: A New Use of Social Science in Law*, 73 VA. L. REV. 559 (1987). In a nutshell, they argue that social science sometimes rests on both facts that transcend the dispute (i.e., major premise facts) and facts particular to the dispute (i.e., minor premise facts). *Id.* at 568-71. They propose that facts of general import should be decided by the judge in her lawmaking capacity and conveyed to the jury through instructions. Facts particular to the dispute would still be decided by the trier of fact. *Id.* at 592-98.

