

## **Preliminary Thoughts on a Functional Taxonomy of Expertise for the Post-*Kumho* World**

*D. Michael Risinger\**

### INTRODUCTION

Everyone is familiar with the tale of the elephant and the three blind men,<sup>1</sup> each of whom felt a separate part of the animal, and each of whom therefore came to wildly differing conclusions on the fundamental nature of elephants. Less familiar is a corollary tale. In a certain kingdom was a cave containing a treasure, guarded by a beast of fierce repute. The king wished to know the nature of the beast, and dispatched three of his subjects to invade the pitch darkness of the cave and report. The first returned and declared that he had felt the head of the beast, and it was toothed and maned like a lion. The second reported that he had felt the sides of the beast, and that it was winged and feathered like an eagle. The third reported that the legs of the beast were long and hooved like a horse. A fearsome portrait of the beast was drawn up, and all were thereafter afraid to approach the cave. Of course, in reality, the cave contained a lion, an eagle, and a horse.

I have felt for some time that the notion of expertise as currently approached is in much the same position as the idea of judicial notice before Kenneth Culp Davis.<sup>2</sup> There are more beasts in

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\* Professor of Law, Seton Hall University School of Law. B.A., Yale University; J.D. Harvard Law School. An earlier version of this essay appeared in Volume Three of *MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY* (West 1999) by David L. Faigman, David H. Kaye, Michael J. Saks, and Joseph Sanders. Material from that version is used with permission.

<sup>1</sup> While the fable tells of six blind men, three will suffice for my purposes. For a telling of the original see John Godfrey Saxe, *The Blind Men and the Elephant*, in *THE POETICAL WORKS OF JOHN GODFREY SAXE* 111 (1892).

<sup>2</sup> See, e.g., Kenneth Culp Davis, *Judicial Notice*, 55 *COLUM. L. REV.* 945 (1955); Kenneth Culp Davis, *An Approach to the Problems of Evidence in the Administrative Process*, 55 *HARV. L. REV.* 364 (1942). Davis examined contexts where casual use of “judicial notice” as an umbrella term by courts obscured important functional subcategories. It is almost unnecessary to observe that these works have been very influential. See, e.g., *FED. R. EVID.* 201 advisory committee note.

that cave than we have come to understand, and we have handled them poorly by applying rules to each beast that are appropriate only to the proper handling of another. We cannot really develop a system of satisfactory principles of control until we gain a better idea of how many beasts are in the cave, and how they are similar to and different from each other. This essay hopes to begin that quest.

Another, less allegorical, way of saying this is that many of the problems that the law has had in handling expertise in the courtroom have sprung from a failure to examine the concept of expertise in appropriate taxonomic detail. Witnesses perform many functions which might be described as expert witness functions. There has been surprisingly little effort to examine this variety of functions in any organized way.<sup>3</sup> The only classification commonly attempted is to distinguish between scientific and non-scientific expertise, and that attempt has not been wholly coherent or successful.<sup>4</sup>

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<sup>3</sup> Perhaps Professor Wigmore bears some responsibility for this. He was clearly a believer in the maxim, *cuicumque in arte sua perito credendum est* ("every man is to be trusted in his own art"), and was quite willing to accept fairly uncritically most claims of expertise by apparently respectable people. D. Michael Risinger, Mark P. Denbeaux & Michael J. Saks, *Exorcism of Ignorance as a Proxy for Rational Knowledge: The Lessons of Handwriting Identification "Expertise,"* 137 U. PA. L. REV. 731, 767-69 n.172 (1989). He further believed that any doubtful cases would be dependably disposed of properly by the average judge in the exercise of a discretion he thought should be unreviewable. 2 JOHN HENRY WIGMORE, WIGMORE ON EVIDENCE § 561 (3d ed. 1940). Wigmore treats "expertise" (a term which he himself avoided, without explanation, in the text of his great treatise) as a subheading in the general discussion of the requirement that all witnesses have "experiential capacity" which he defined as "the skill to acquire accurate conceptions." *Id.* § 555, at 749. This he further breaks down into two types: that possessed by "every person of ordinary fortunes in life" and that "special and peculiar experience." *Id.* He then asserts that this "special and peculiar experience" can be derived from two sources or a combination thereof: "occupational experience" and "systematic training," which he generally terms "scientific experience." *Id.* (emphasis in original). Beyond this he simply does not go, saying only that "the question in each instance is whether the particular witness is fitted as to the matter at hand." *Id.* The latter phrase is in some ways an ironic prefiguration of the holding in *Kumho Tire v. Carmichael*, 526 U.S. 137 (1999), ironic because *Kumho Tire* prescribes extensive particularized reliability analysis and Wigmore prescribed virtually none. See generally D. Michael Risinger, *Defining the "Task at Hand": Non-Science Forensic Science after Kumho Tire v. Carmichael*, 57 WASH. & LEE L. REV. 767 (2000) [hereinafter Risinger, *Defining the "Task at Hand"*]. Some cogent observations on varieties of expertise may be found in John William Strong, *Language and Logic in Expert Testimony: Limiting Expert Testimony by Restrictions of Function, Reliability and Form*, 71 OR. L. REV. 349 (1992).

<sup>4</sup> Some attempt to distinguish between "scientific" and "nonscientific" expertise became necessary with the rise of the "Frye test" for the admissibility of novel scientific evidence, *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923), and of

At the outset, we must keep clearly in mind that expertise, whatever it is, is important in the courtroom only as it is manifested in particular testimony. While a witness may in common parlance be declared an “expert,” this does not render everything the witness utters from the witness stand a product of expertise. Any specific statement by the witness may be no more than “fact” testimony, which might be given by any human who had perceived the conditions being testified to. In addition, two different assertions by a single “expert” witness may manifest different functional categories of expert testimony, while a third may be beyond the expert competence of the particular witness for any number of reasons.<sup>5</sup> While a variety of expert competencies may inhere in the mind of a given witness, they are only made functionally available through particular testimonial assertions. Any taxonomy must therefore concentrate on examining the function of specific kinds of testimonial assertions claimed to reflect expertise. Only then can the problem of what ought to establish witness competency to perform a particular function be helpfully addressed.

#### I. NON-EXPERT TESTIMONY—THE FACT WITNESS FUNCTION

To begin our examination of expertise, we may profitably examine what is generally conceded *not* to involve expertise: the “fact witness” function. When one human takes the witness stand and testifies to another group of humans in the jury box concerning his or her particular perceptions in the past which are relevant to some material fact issue under the substantive law applicable to the case, that person is performing the fact witness function. We

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course has come even more to the fore as the result of the decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). Professor Imwinkelried perceptively noted early on that the real problem might be fashioning dependability criteria for *nonscientific* expertise, but without any detailed analysis of its characteristics. See generally Edward J. Imwinkelried, *The Next Step after Daubert: Developing a Similar Epistemological Approach to Ensuring the Reliability of Nonscientific Expert Testimony*, 15 CARDOZO L. REV. 2271 (1994). Much recent scholarship attempts to contrast scientific expertise with expertise based largely on experience. The contrast is generally drawn in ways that are less than satisfactory both analytically, see note 22 *infra*, and in regard to recommended tests of admissibility, which often have little to do with the actual reliability of asserted “experiential” expertise. Risinger, *Defining the “Task at Hand,” supra* note 2, at nn.14-15.

<sup>5</sup> This circumstance also makes the practical control of expert witnesses sometimes quite difficult, as each individual sentence may shift with the facility of Proteus from a statement within the scope of both an acceptable expertise (and one actually possessed by the witness) to a statement beyond the witness’s capacities or indeed the bounds of any existing expertise.

assume that the only general difference between the witness and a juror is not a difference in the capacity to process and derive meaning from information, but merely a space-time difference: the witness was someplace the juror was not, and therefore perceived things directly that the juror could not perceive because the juror was not there. It is the fact witness function to recount perceptions as concretely as is practical. It is the function of the jury to evaluate the dependability and meaning of those asserted perceptions, when viewed with other available competing information.

Fact testimony occurs whenever the only assumed advantage of the witness over the juror is this space-time advantage. However, the addition of certain other advantages to the witness does not seem to change the nature of the testimony to something usefully called an exercise of expertise. Suppose the witness can be proven to have abnormally keen hearing, so that her assertion that she heard some relevant conversation from a surprising distance moves from absurd to credible. Now the witness has a basic perceptual capacity advantage over the juror, but that would not seem to make her testimony expert testimony in any sense either common or useful. The testimony is still testimony that the juror can understand by reference to the juror's own basic capacities of perception: "The witness heard the statement from fifty feet away in the same way I would have from five feet away." It seems expertise must involve something beyond this.

## II. SUMMARIZATIONAL EXPERTISE—THE EXPERT AS EDUCATOR<sup>6</sup>

The simplest variety of testimony commonly referred to as involving expertise appears functionally to be very close to ordinary fact testimony. To illustrate, consider a case under the Uniform Commercial Code in which the proper construction of a contract turns on industry practice in the wholesale shoe business. A witness is called who has been in the wholesale shoe business for thirty-five years. He will universally be declared an expert, and his testimony will generally be characterized as "expert testimony." However, to

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<sup>6</sup> I have generally used the term "summarizational" to emphasize the information processing function of such testimony. On the uncommon occasions when such testimony is explicitly dealt with in the literature, however, the witnesses are usually referred to as "educational" experts, and that is likely to remain the common term. See generally Ronald J. Allen & Joseph S. Miller, *The Expert as Educator: Enhancing the Rationality of Verdicts in Child Sex Abuse Prosecutions*, in 1 PSYCHOL. PUB. POL'Y & L. 323 (1995); Ronald J. Allen & Joseph S. Miller, *The Common Law Theory of Experts: Deference or Education?*, 87 NW. U. L. REV. 1131 (1993).

the extent he merely recounts the contours of practice in the shoe industry as he knows them to be from his experience, how does his testimony differ from that of the ordinary fact witness? He is not necessarily possessed of any relevant skills or talents beyond the members of the jury. There is no reason to believe that if any of them had been where he has been and perceived what he has perceived, that they would not in the ordinary course know what he knows. He seems to have nothing more than a space-time advantage over the jurors, no different than a fact witness.

There is an important difference, however, in the desired testimonial function of the ordinary fact witness and that of the shoe man. We want the ordinary fact witness to traffic in empirical specifics. In addition, we want those specifics expressed in the most concrete fashion practicable. When the fact witness begins to express herself in more inferential terms, summarizing a number of specific percepts with an umbrella inference such as the word "drunk" or the word "angry," fights start to break out in the courtroom over the propriety of the terms in which the witness is testifying. We need not tarry at length over the unhelpful terms in which those battles are often waged.<sup>7</sup> Suffice it to say that the general principles which should guide the judge in controlling the manner of expression of fact witnesses are reasonably agreed upon: (1) No inferences beyond the capacity of the witness; (2) Even if inferentially conclusory testimony is within ordinary capacity to accurately render, require more concrete testimony and leave the inference to the jury unless; (a) the inference is based upon subliminal percepts not fairly reproduced in testimony; or (b) unless trying to explain to the witness what is desired will confuse the witness and result in a net loss of dependable relevant information.<sup>8</sup>

In the case of the shoe man, such an approach would defeat the whole purpose of his testimony. He is there to give precisely the kind of summary we would *not* want from the ordinary fact witness,

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<sup>7</sup> These fights generally are said to concern "lay opinion." See FED. R. EVID. 701. Few terms in the law of proof are so common and so indeterminate and unhelpful as the term "opinion." I have endeavored to use the term sparingly, and then only within explicit or implied quotation marks. For one problematical case appearing to declare (almost) globally that investigating police officers may always testify conclusorily as *lay witnesses* about the point of impact at an automobile collision scene, even when they might appear to be able to reproduce concretely all the information which went into such conclusion, see *State v. LaBrutto*, 114 N.J. 187, 553 A.2d 335 (1989).

<sup>8</sup> See generally MICHAEL H. GRAHAM ET AL., FEDERAL PRACTICE AND PROCEDURE § 6637 at 228-34 (1992).

in order to educate the jury about the practices of the shoe industry as efficiently as possible consistent with giving accurate information. This summary is derived from a data base of many particular and concrete observations over a long period of time. Much of this is now beyond specific recall, but we assume that, as a person who remained long in business,<sup>9</sup> his resultant impressions and conclusions are in general accurately weighted conclusions based on the totality of his experience. If we were to require him to testify in more concrete terms, his testimony would become a series of anecdotes which would not necessarily represent a proper sample of his whole experience.<sup>10</sup> We want him to perform what can profitably be labeled the "summarizational function," and because ordinary fact witnesses are debarred from it, the price of admission for the shoe man is to label him something other than a fact witness. Traditionally, there is only one other label available, so he is declared an expert, which is taken to authorize the summarizational form of his testimony.

To this point, our model of the summarizational expert has been our shoe man, and there has been an assumption that most or all of the knowledge which goes into his summary testimony is knowledge derived from his direct personal experience. This may be the case in a given situation, and it is this direct personal experience summarizational expert function which is conceptually closest to the fact witness function. But in reality, a real shoe man might derive much of his information about the workings of the industry from secondary sources, such as industry meetings, networks of friends, and so forth. He may also have read industry publications of various sorts. In this case the shoe man's testimony will be a summary result not only of his direct personal experience, but of these secondary hearsay sources as well. We could hardly do otherwise and allow him to testify at all, because he himself could not say with confidence which parts of his knowledge were based on personal experience and which on secondary information. But we assume that his first-hand experience has enabled him in various ways to evaluate and internalize the secondary information, with

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<sup>9</sup> His ability to remain long in business in this competitive field is the main circumstance that warrants a belief in the general accuracy of his summary of the relevant contours and usages of the shoe business. For a few further observations on the necessity of developing a legal theory of warrants, see *infra* note 57 and accompanying text.

<sup>10</sup> Though of course we might properly allow him to illustrate a general point with an anecdote which he asserts is in fact typical.

reasonable reliability inhering in the resultant summary. Our tolerance for this hearsay element, and our reliance on the witness as filter of it, is a second way in which a summarizational expert differs from the ordinary fact witness.

So far we have dealt with direct experience summarizational experts and direct and secondary experience summarizational experts.<sup>11</sup> Do we allow summarizational experts whose testimony summarizes secondary sources exclusively? We do, sometimes. Such persons are most commonly academics whose function is to educate the jury to the relevant results of academic research. The belief is that so educating the jury may provide them with information to support conclusions about the *other* evidence in the case that one would not expect the jury to have derived from common experience, or indeed might even be counter-intuitive from common experience. A good example would be the testimony of a cognitive psychologist such as Elizabeth Loftus on the weaknesses of eyewitness identification as shown by the published research in that area.<sup>12</sup> Note that when such an expert testifies, she is not normally asked about her own evaluation of the accuracy of the

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<sup>11</sup> I am well aware that I am verging on the "autoptic proferance" problem. When Wigmore was attempting to classify various offers of physical evidence, he labeled the offering of a physical object which was a relic of the event under investigation an "autoptic proferance" (autoptic from a Greek word actually meaning "with his own eye," emphasizing that the jury would actually be able to see the object rather than hear testimony concerning it, and proferance, a longer and less common synonym for "proffer"). 1 JOHN HENRY WIGMORE, WIGMORE ON EVIDENCE § 24 (3d ed. 1940). The concept was ill-defined, the words obscure and the phrase awkward and ugly. Needless to say, it was not incorporated into the working vocabulary either of lawyers or scholars, and worse, became something of a joke, as the gleeful observations of the court in *Morse v. State*, 72 S.E. 534 (Ga. Ct. App. 1911) demonstrate. I have racked my brain for alternatives to such cumbersome phrases as "direct experience summarizational witness" and others in the text, but I have failed. And since I believe each of these cleavages may bear importantly on the proper construction of dependability standards, I have done the best I could and then left them as they stand.

<sup>12</sup> Loftus's qualifications and activities in this regard are well known. See, e.g., ELIZABETH F. LOFTUS, EYEWITNESS TESTIMONY (1979); Gary L. Wells, *The Scientific Status of Research on Eyewitness Identification*, in 1 MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY § 11-2.0 (David. L. Faigman et al. eds., 1997 & Supp. 2000) (discussing, *inter alia*, the contributions of Professor Loftus) [hereinafter MODERN SCIENTIFIC EVIDENCE]. Some of her courtroom experiences are recounted in ELIZABETH F. LOFTUS, WITNESS FOR THE DEFENSE (1991). Of course, Loftus is not in fact always summarizing secondary sources alone, since she herself may have personally undertaken some of the relevant studies, but nevertheless, there may be cases where none of her personal studies are directly relevant, and only enter in as experiences qualifying here to summarize the relevant literature with sufficient accuracy.

identification in the case *sub judice*. If she were, and if that were allowed, it would represent another expert function. For now, we limit ourselves to a consideration of the summarizational function.

Up to this point we have considered only witnesses who were in possession of all their relevant knowledge prior to any involvement in the litigation in which they are called to testify. Do we allow summarizational witnesses to supplement their pre-existing knowledge with new information which they seek out only for the purposes of giving testimony? The answer to this would seem to be yes, although the dangers of such specially developed information seem obvious. Notionally, the summarizational expert is not supposed to be involved in an adversarial exercise, but merely recounting knowledge for the side which it coincidentally helps in the litigation. While there is nothing *logically* dictating that, for example, issue-directed research into the literature by an academic will be skewed in its results by identification with the side employing the expert, human beings might commonly be expected to so respond. Suffice it to say for now that some summarizational experts testify to present knowledge specially acquired for the purposes of litigation.

While a witness might undertake supplementary direct personal experience after involvement in litigation, the practicalities of arranging for such life experiences during the pendency of the litigation practically rule this out in many classes of cases. However, the long delays of modern litigation sometimes allow a technical witness to add to the corpus of research being summarized in ways specifically designed to meet the needs of the individual case, and this has become quite common in some areas such as obscenity and trademark infringement cases.<sup>13</sup> In addition, while in theory a secondary source summarizational expert might acquire all secondary source information to be summarized after litigation

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<sup>13</sup> See generally the materials collected in chapter three of John Monahan and Laurens Walker, *Social Science in Law: Cases and Materials* (4th ed. 1998). Courts are increasingly sensitive to the dangers of litigation-driven research, and whether research relied upon by an expert was "conducted independent of litigation" is one consideration in evaluating its dependability. *E.g.*, *Daubert v. Merrell Dow Pharm., Inc.*, 43 F.3d 1311, 1317 (9th Cir. 1995) *on remand from Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993). See also 2 MODERN SCIENTIFIC EVIDENCE, *supra* note 12, § 28-1.3.5. This caution is understandable in regard to tort causation issues, perhaps, but it must be kept in mind that empirical issues such as the likelihood of specific product confusion are unlikely to be addressed in any context except litigation.



begins, practical considerations rule out the employment of a person as an expert who is not at least partially qualified by education or experience to find and evaluate such information prior to their involvement in the litigation.<sup>14</sup>

As a result of the foregoing, we can identify two sources of knowledge for summarizational expert testimony: direct personal experience and secondary source information. In addition, we can identify two important time variables for when secondary source information might be acquired: pre involvement in the litigation and post involvement.

A. *Everyday vs. Academic Summarization Expertise*

At this point it is necessary to expand on a distinction inchoate in the above discussion, the difference between the shoe man and Elizabeth Loftus. The shoe man is summarizing the salient aspects of professional experiences which, even if not necessarily within the talents and inclinations of the average juror to accomplish, are certainly relatively easy to understand, and therefore to evaluate, in ways closely related to the evaluation of normal fact testimony. However, Professor Loftus is summarizing the net conclusions resulting from evaluation of many empirical studies by many researchers of varying competence. Her testimony is in essence a social science literature review and requires not only much specialized learning, but in all likelihood, analytical and mathematical talents and skills greater than those of the average juror. Her testimony is therefore more difficult for the average juror to evaluate dependably. We may think of the shoe man and Professor Loftus as defining two poles on a continuum of ease of juror evaluation; however, as summarizational witnesses tend to cluster toward the ends of the continuum, we may profitably speak of "everyday" summarizational experts and "academic" or

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<sup>14</sup> An exception to this, which explicitly involves the summarizational function but does not necessarily involve anything comfortably called expertise, is the summarization of voluminous materials pursuant to such rules as Federal Rule of Evidence 1006. Virtually every witness called to perform this function will have obtained the information summarized only after the controversy being tried has arisen. Many such witnesses will require special skills, such as accounting skills, to produce the summary, and thus they will be exercising an expert function. But other such witnesses may require no capacities beyond those assumed to be present in the ordinary juror, and their testimony is merely a way of sparing each juror the tedium of generating the information themselves. It requires no special knowledge or skill to take voluminous phone records and count the number of times the defendant called a particular phone number, and to enter the total on a chart.

“technical” summarizational experts.

I have no quarrel with labeling the everyday summarizational witness an expert, at least in part because the term, both in law and ordinary understanding, is so broad and so ill defined that it is difficult to criticize its application to almost anything beyond rendition of concrete percepts. However, it should be recognized that such summarizational witnesses are the lowest order of expertise. This is especially true when what is being summarized is experience and information of a type requiring little unusual learning to understand. In the case of such an every-day summarizational expertise, it seems there is little the law ought to require beyond the facial relevance of their claimed experience. The main danger with such a witness is only that once they have obtained the imprimatur of the label “expert,” they will be allowed to go beyond their summarizational competence, or that the low standards of scrutiny appropriate to them will be generalized to other, less appropriate, contexts.<sup>15</sup>

Technical summarizational expertise presents more difficult problems of control. Indeed, witnesses who frankly perform this

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<sup>15</sup> Sometimes allowing the everyday witness to go from summarization to specific conclusion (translation) is perfectly justified. In the civil case involving our shoe man, it might be reasonable to conclude that he is better able than the jury, not only to give information about the workings of the industry, but also to accurately apply that information to the particular circumstances of the case at hand, and that the jury would be rationally aided in its own decision by hearing what he had to say, especially since they are likely to hear a contrary conclusion from an expert for the other side. However, in a criminal trial, with liberty at stake, different standards of proof, and a different trial dynamic, it behooves the system to take greater precautions against the jury too easily surrendering responsibility for the conclusion by merely adopting the conclusory testimony of the witness. This has been something of a problem in the case of law enforcement officers called to testify from their experience and study concerning the general way criminal schemes and enterprises operate, and/or the usual meaning of criminal slang and code words. Such “M.O./argot” witnesses are often investigators in the case being tried, which creates a significant problem of jury confusion, and their testimony may easily cross the line from generalized statements about behavior to conclusory statements about a particular instance (e.g., “users generally can’t afford to hold more than a few grams for personal use, so amounts above that are generally intended for sale” to “ounces are intended for sale” to “this was a sale amount”). See, e.g., *United States v. Bruck*, 152 F.3d 40, 47 (1st Cir. 1997) (finding no error in permitting conclusory testimony of federal agent that based on “certain indicators,” a fire was deliberately set for economic reasons); *United States v. Sepulveda*, 15 F.3d 1161, 1183-84 (1st Cir. 1993) (affirming district court’s decision to strike police officer’s particularized statements as to the structure and operation of a drug ring where officer could not specify source of his knowledge regarding drug ring at issue). See generally D. Michael Risinger, *Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock*, 64 ALB. L. REV. 99, 133-37 (2000) [hereinafter Risinger, *Navigating Expert Reliability*].

function, and this function alone, are a relatively recent development,<sup>16</sup> and have been met with some skepticism and resistance by courts, generally for all the wrong reasons. Because these witnesses are frankly educational, and because they do not perform this function in the context of defending “opinions,” or conclusions about particular adjudicative facts in the case *sub judice*, courts have often been perplexed on whether such a novelty should be allowed at all.<sup>17</sup> However, in theory, the jury-education function

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<sup>16</sup> See generally Laurens Walker & John Monahan, *Social Frameworks: A New Use of Social Science in Law*, 73 VA. L. REV. 483 (1987). Walker and Monahan’s “Social Framework” facts are generally synonymous with what otherwise might be called “jury notice facts,” generalized notions about the way the world works usually derived from life experience, without which a jury could not reason from the formal evidence to conclusions about the more particularized “adjudicative facts,” properly so called. John H. Mansfield, *Jury Notice*, 74 GEO. L.J. 395 (1985). See also Strong, *supra* note 2, at 350-53. Walker and Monahan would attempt to end-run any problems concerning the presentation of evidence about such facts through experts, by requiring that the judge present such “social-framework” facts to the jury by instruction after reviewing the relevant information, an approach which seems unworkable to me in all but the clearest and most recurrent contexts. For an example of such an analysis, see *State v. Cromedy*, 158 N.J. 112, 727 A.2d 457 (1999), where, after extensive discussion of the risks and benefits of such a course, it was found to be error to fail to give a cautionary instruction on the dangers of cross-racial identification in the particular circumstances of that case, though it was not error to refuse to allow expert testimony.

<sup>17</sup> See, e.g., *Lewis v. State*, 572 So. 2d 908, 911 (Fla. 1990) (criticizing the proposed expert’s intention to offer only “general comments” about eyewitness identification, rather than testifying about the “reliability of any specific witness”). Decisions disallowing such testimony are often based, not on the dependability of the testimony, but on its “usurping the function of the jury” or “not being helpful to the jury,” as if what we mean by due process of law is the right to be tried by twelve ordinary people who not only believe some important “major premise” general social facts which are contrary to the implications of substantial research, but who are required to be kept ignorant of that research, at least unless it is presented by someone who is willing to go beyond the bounds of their expertise and hazard an opinion about the particular details of the individual case. For more on the “usurpation” argument, see generally the materials on *Florida v. Zamora*, set out in John Monahan and Laurens Walker, *Social Science in Law: Cases and Materials* (4th ed. 1998), at pages 485-94. Also, compare *United States v. Holloway*, 971 F.2d 675 (11th Cir. 1992) (adopting *per se* rejection of such testimony), with *United States v. Hines*, 55 F. Supp. 2d 62 (D. Mass. 1999) (admitting such evidence). In addition, see *Cromedy*, 158 N.J. 112, 727 A.2d 457 (1999), where the court held it error not to have given a cautionary instruction on the dangers of cross-racial identification, but at the same time held that expert testimony on the same subject was not admissible because, as the result of a “widely held commonsense view that members of one race have greater difficulty in accurately identifying members of a different race”, expert testimony on this issue would not assist a jury.” *Cromedy*, 158 N.J. at 132, 727 A.2d at 167-68 (quoting *United States v. Telfaire*, 469 F.2d 552, 559 (D.C. Cir. 1972)). Go figure. See generally 1 MODERN SCIENTIFIC EVIDENCE, *supra* note 12, § 11.1.1.

General resistance to such “educational” testimony in the federal courts would be especially hard to account for, since the second paragraph of the Advisory

should actually be *preferred* to the “opinion” giving function, because it empowers the jury to draw their own conclusions more accurately instead of relying on the conclusions of others. Therefore, the frankly limited function of such a witness should be no impediment to testimony. However, because such witnesses traffic in providing information—often unexpected or counterintuitive information—which is relevant to the jury’s ultimate fact reconstruction function, and moreover, because they claim to be summarizing valid, empirically based knowledge from an established discipline, it seems reasonable that the same standards of threshold control properly applicable to such testimony in the more traditional “opinion” function should be applied to such academic summarizational witnesses.

### *B. Translational Expertise*

At further remove from the fact witness is the “translational” expert, represented most clearly by the language translator.<sup>18</sup> In order to understand what is going on in the case of such expertise,

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Committee Note to Federal Rule of Evidence 702 generally embraces it. However, it is important to note that judicial hostility to “educational” testimony is neither uniform nor even-handed, since prosecution “syndrome” witnesses are routinely allowed to testify on that basis. Risinger, *Navigating Expert Reliability*, *supra* note 14, at 123. This has prompted one commentator (me) to observe:

Witnesses on the weaknesses of eyewitness identification are testifying to educate the jury on why the jurors’ everyday assumptions about the strengths and weaknesses of eyewitness identification may be wrong, and are generally testifying concerning the findings of a substantial body of controlled research including a large number of experimental studies. Witnesses on the existence and characteristics of “syndromes” are offered to educate the jury on why their everyday assumptions on the strengths and weaknesses of sex crime complainants’ testimony may be wrong, and they are generally testifying to the results of studies that are heavily rooted in anecdotal data and non-reproducible clinical judgments. Yet the proffer by criminal defendants of the epistemically stronger “education” is often rejected, but the prosecution by the prosecution of the weaker “education” rarely, if ever, is rejected. Something is wrong with this picture.

*Id.* at 137 (footnotes omitted).

<sup>18</sup> The fact that language translators are mentioned explicitly only in the general section on witnesses, Article 6 of the Federal Rules of Evidence (specifically Rule 604), that procedurally they appear unusual because their testimony is interspersed with that of another witness, and that the term “expert” is not universally applied to them as a matter of routine, should not obscure the fact that they not only perform an expert function, but are in many ways the ideal example of the most central expert function: the translation function which lies behind most so-called expert “opinion.”

one must adjust one's notion of relevance to take into account a common, but all-too-often overlooked, phenomenon: Sources of information can be brought before the trier-of-fact that undoubtedly contain information relevant to material issues in the case, but the information is encoded in the source in a way that we cannot assume it is intelligibly or usefully available to the average person on the jury. Is such information relevant? In one sense it is, but in the most important sense it is not. Here we may profit by an analogy to the distinction between potential and kinetic energy. It seems appropriate to say that the source being offered has potential relevance, but does not possess kinetic (or working or useable) relevance.<sup>19</sup> Once the distinction is drawn, it is clear that the only kind of relevance which is of use to a rational fact finding process is such working or useable relevance. Even when a source undoubtedly contains information of extremely important potential relevance, if that information cannot be rendered rationally available to the trier-of-fact, its potential relevance ought not to justify its presentation to the trier-of-fact.

Suppose a woman of intelligence and perspicuity was standing on a street corner when a murder occurred in front of her. She saw it, she heard it, and she can remember what she saw and heard. Unfortunately she speaks only Urdu. She comes before the trier-of-fact and, inferring what is desired of her, she tells in Urdu all that she remembers of the event. The sounds in the air of the courtroom contain a great deal of precisely encoded information of great potential relevance to an accurate determination of the material facts of the case. The sounds are potentially relevant. However, we must assume that none of the jurors can speak Urdu. Thus they cannot derive accurately (or at all) the meaning encoded in the sounds. Without some mechanism to allow the jurors to reach a dependable conclusion about the information encoded in the sounds, it would seem to make little sense to allow the woman to testify. What is needed is at least one person bilingual in both Urdu and English. Such a person knows a system whereby the meaning of the sounds in the courtroom may be dependably converted to a form understandable by the jury.

There are two ways such a person might put the jurors in a position to understand the message encoded in the sounds in the courtroom: She could translate directly, or she could teach the jurors

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<sup>19</sup> This notion is explored at length in D. Michael Risinger, *Johnny Lynn Old Chief, John Henry Wigmore and "Legitimate Moral Force": Keeping the Courtroom Safe for Heartstrings and Gore*, 49 HASTINGS L.J. 403, 431-40 (1998).

Urdu and allow them to translate for themselves. As previously indicated, the latter course ought to be viewed as preferable, all things being equal. Then the jurors would be in the same position relative to the evidence and to each other as they are in relation to evidence in English. Of course, all things are rarely equal. In the case of a language skill, it is obvious that the translational system cannot be taught to jurors within the time constraints of any process that must be time efficient enough for dispute resolution. In addition, language is subject to a great range of inherent aptitudes, at least in adults, and even were time available, the newly taught language would be learned by jurors in wildly different degrees. Hence, in the case of a language translator, the expert will normally testify to the expert's own inferences concerning the correspondence in meaning between the Urdu sounds and the English sounds. That is, the expert will give her translation, and the potential system-teaching, or educational, function will rarely play a role (such an educational function may emerge as much more important in other translational expert contexts, however, as the reasons for the "opinion" of the witness emerge on direct or cross examination).

What should we call the translator's direct translation testimony? It is common to speak of experts testifying in terms of opinions. Yet it sounds odd to refer to the language translator's testimony as an "opinion" in any but the most general and unhelpful sense, a sense so broad that a fact witness's testimony could be equally characterized as the fact witness's "opinion." The language translator's testimony viewed in this way looks very like fact testimony in some ways. In a sense we all translate our perceptions into language. However, the translator from Urdu to English is applying a translational system unknown to the jurors, and therein lies the expertise, whether its expression can constructively be called "opinion" or not.<sup>20</sup>

The language translator is merely the most archetypal and easily understood model of the translational function. There are a large variety of asserted translational systems and skills in the world which may be at least facially relevant in legal proceedings. Indeed, the bulk of expert witnesses are called upon to perform some form of translational function, and such testimony is best examined and classified by the characteristics of the translation process involved in each. First, however, it is necessary to consider the general

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<sup>20</sup> For a case that treats a language translator *both ways*, see *United States v. Gomez*, 67 F.3d 1515, 1525 (10th Cir. 1999).

characteristics of what I have called a translational system.

In its most general sense, a translational system exists when there is an assertion that *A* means or indicates *B*. In this most general sense there is no necessary requirement that either *A* or *B* be factual. Interpreting dreams or animal entrails to determine whether the gods love someone is a kind of translational system, in the general sense. However, it is not the kind which the law allows into the courtroom (at least knowingly). The kind of translational system which yields the sort of conclusions we might consider in litigation must normally<sup>21</sup> traffic in facts both as raw material and as results. Generally, there is some sort of taxonomic system which defines and organizes the factual conditions asserted to have meaning, and there is a set of process rules or principles which yield a resultant translation from the factual conditions found to exist. This resultant must also be factual. Hereafter we will generally restrict our discussion to translational systems having these characteristics, either formally or by implication.

The first great distinction in examining such translational systems is the distinction between subjective systems and objective systems. Subjective translational systems depend in large part on human judgment calls. In addition, such asserted translational systems may not be empirically available to any but the asserted translator, though in principle their results may be empirically checkable. Subjective translational systems are "clinical,"<sup>22</sup> depending upon the experience and often the claimed inherent special talent of the practitioner for their accuracy. Identification of wine by taste is perhaps the best example.<sup>23</sup> Objective systems do not depend upon human judgment calls in their operation, and are empirically available to all, or at least a substantial proportion, of humans after appropriate study. Note that this does not mean that such a system necessarily yields perfectly exact results. What is

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<sup>21</sup> The "normally" is used here as a hedge against the observations made below concerning "normative" expertise. See *infra* notes 33-38 and accompanying text.

<sup>22</sup> To my mind, the word "clinical" is much more apposite than the terms "experiential" or "experience-based" for describing expertise of this sort, since even the hardest of scientific expertise is based on experience. "Clinical" alerts one both to the kinds of experience, and the kinds of interpretive or "translational" claims, that are involved.

<sup>23</sup> Other well-known images include Judge McKenna's harbor pilots in *United States v. Starzeczyzel*, 880 F. Supp. 1028, 1029 (S.D.N.Y. 1995), Judge Guy's beekeepers in *Berry v. City of Detroit*, 25 F.3d 1342, 1349-50 (6th Cir. 1994), and Justice Breyer's "perfume tester," in *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 151 (1999).

usually derived from such a system is a probability statement, though sometimes the probability is so high that it is practically certain. Blood group analysis translates the potentially relevant information of blood bearing on its source, such that *exclusion* of a source may be near perfect in probability terms, but *establishment* of a source may be merely somewhat more probable than not, or even less. DNA analysis properly done may raise the probability of the establishment of source so high as to be more dependable than virtually any other information we count as “fact” in most aspects of life, including litigation. Most highly objective translational systems are also highly instrumented, that is, they depend on instruments of various kinds to perform the perception and classification of the stimulus data and the translation of the data into its non-obvious meanings.<sup>24</sup>

Pure objectivity and pure subjectivity of translational systems are polar extremes on a continuum. In the real world many asserted systems have elements of both, though one or the other is often so predominant that appropriate classification can be made on that basis, as long as the implications of the other element are kept firmly in mind. For the present, we will begin by examining subjective, or largely clinical, translational systems.

Subjective translational systems range from personal to highly normed<sup>25</sup> group systems. In personal systems the only guarantee of dependability is “black-box” testing of the individual translator. In highly normed group systems, black-box testing of a sample of the

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<sup>24</sup> Notice that little has been said in the text about the concept of “science.” This is not because I believe the notion of science is irrelevant to the taxonomy of expertise, or because I have no notions concerning its proper parameters. See D. Michael Risinger, Mark P. Denbeaux, & Michael J. Saks, *Brave New Post-Daubert World: A Reply to Professor Moenssens*, 29 SETON HALL L. REV. 405, 433-40 (1998) [hereinafter Risinger, et al., *Post-Daubert World*]. However, this essay deals with ideas which cut across the science/non-science border (although any “scientific” enterprise aspires to well-defined and objective or highly normed translational systems), and in addition, it is here an advantage to clear exposition not to get involved in the “science/non-science” debate.

<sup>25</sup> In this article the word “norm” appears in two different contexts, with two different meanings—an unfortunate byproduct of combining observations concerning two different contexts in which the word is used. At this point the word “norm” is used as a verb to indicate the process of inducing predictability of agreement, or reduction in predicted disagreement, between two persons making the same clinical judgment about the same phenomenon. The process of “norming” is attempted in many contexts, from clinical medicine to getting graduate assistants to respond to an essay with the same grade. It is tied therefore to the notion of “reliability” in testing theory, which denotes consistency of result, not necessarily accuracy of result.



group may suffice, when coupled with sufficient evidence of the success of the norming process. Therein lies the rub.

The hallmark of a purely personal subjective translational system is the assertion that a person can observe a stimulus, and that the stimulus assertedly means something, but the translator cannot describe how the conclusion of meaning is reached, and cannot demonstrate that the same translational system is shared with anyone else, even if others claim to have the same skill. Water dowsing might be an example. In principle, we might devise proficiency tests for the asserted skill which would have to be administered to each practitioner to determine if the asserted skill was in fact present for that person. In practice, we seem to be so skeptical of any such purely personal claims that most traffickers in subjective translation claim to be members of a group of practitioners who share a common and therefore more or less teachable and learnable approach. The desirable endpoint of such a process would be a group of people who had: (1) a sufficiently empirically unmistakable common taxonomy that they would always perceive and classify in the same way the stimulus to be translated; and (2) a set of translational rules that they would be able to define and would always agree on, and which would yield results which were definite. This would result in a perfectly normed group translational system. Were such an endpoint actually achieved, it would be questionable whether the result would properly be referred to as a subjective process. The human agent would have become as dependable and understandable as a thermometer is in translating heat energy to a visual and quantified analogue. In practice, of course, this is rarely approached very closely, and how far away from this ideal a system falls is a good indicator of its general likely dependability.

As already noted, most translational expertise offered for admission in court is assertedly the product of a normed group translational process. This is true whether or not the process claims (rightly or wrongly) to be "scientific," as virtually all sciences relevant to legal issues retain an identifiable element of subjective judgment somewhere in their application to the circumstances of a particular case, to a greater or lesser degree.

Most normed group subjective translational systems, whether they claim to be scientific or not, are distinctly imperfect. By this I do not mean simply that they fail to generate translated meaning of perfect accuracy, but that they are systemically imperfect in a relatively small number of definable ways. The first problem

normally encountered is an imperfection in their underlying descriptive or taxonomic system, such that the categories in the system are not based on data empirically unmistakable by all properly trained (and therefore normed) practitioners. Instead, individual classifications are the product of judgment calls by each individual practitioner, or worse, the resultant product of a number of such judgment calls weighed together by an unquantified and subjective combinative rule, a “weighing” or a “balancing,” with no empirically unmistakable weights available. The success of the norming process at the descriptive level is measured by how much agreement there is among practitioners in giving the same classification to the same observed phenomenon. High levels of agreement result in “reliable”<sup>26</sup> taxonomies. The less agreement among practitioners, the less reliable the system. Three instructive examples might be drawn from the biological taxonomic system for animals, the *Diagnostic and Statistical Manual of Mental Disorders* (DSM),<sup>27</sup> and the criteria for sufficiency of comparable real property sales for valuation purposes. The biological taxonomy tends to be highly (though not perfectly) reliable among properly trained and credentialed practitioners; The DSM less so, perhaps much less so in regard to some conditions. Finally, as to land valuation, formal studies on taxonomic reliability do not exist, but anecdotally, it seems to be quite uncommon for two practitioners to agree on a common set of most comparable recent sales.

It would be tempting to say that low taxonomic reliability

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<sup>26</sup> At some point someone took two everyday synonyms, “reliability” and “validity,” and turned them into terms of art in the area of measurement in science: “Reliability” refers to consistency of result (and might better have been called consistency, but it appears to be too late now), while “validity” refers to the actual output accuracy of a process. See generally 1 MODERN SCIENTIFIC EVIDENCE, *supra* note 12, §§ 2.3, 3-2.1.1, & 3-2.1.2. To make matters worse, in *Daubert*, the Court rather perversely (and intentionally) used the term “evidentiary reliability” to mean “scientific validity.” *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 590 n.9 (1993). This virtually guarantees confusion and miscommunication. In this essay I have tried to use the terms “reliability” and “validity” in their technical sense, and when a broader term of legal standard seemed appropriate, I have used “dependability.” However, in other writings, especially when dealing with the *Daubert* and *Kumho Tire* cases, I have partially caved in to the Supreme Court and used the terms reliability and dependability interchangeably. See, e.g., Risinger, *Defining the “Task at Hand”*, *supra* note 3.

<sup>27</sup> Published by the American Psychiatric Association and now in its fourth incarnation (or fifth, depending on how one counts an intermediate revision known as “III-R”) generally referred to as the “DSM-IV.” Its problems are well known, if controversial. See generally PAULA J. CAPLAN, *THEY SAY YOU’RE CRAZY* (1995); STUART A. KIRK & HERB KUTCHINS, *SELLING THE DSM: THE RHETORIC OF SCIENCE IN PSYCHIATRY* (1992).

necessarily results in undependable and invalid translation, and that high reliability results in highly valid translation. However, things are not quite so simple. All low taxonomic reliability does is move the practitioner back to the status of an individual subjective translator. Any given individual *might* be a good translator for reasons that defy definition, but it would take some sort of individually administered proficiency test to establish that. Nor, as should be obvious, does the highly reliable norming of a taxonomy guarantee accurate translation. Many astrology systems are both detailed and highly normed descriptively.<sup>28</sup>

Which brings us to our next point of imperfection, the translational system itself. A translational system is a system of formulas, rules, algorithms, or principles (or simply subjective responses) whose purpose and effect is to begin with the taxonomic data of a given situation and convert that to a statement concerning some other non-obvious, assertedly factual, state. Like the underlying taxonomy, a translational system may be implicit, explicit, or partially explicit. To the extent it is explicit, a translational system may be highly objective and determinate, utilizing quantifiable aspects of the data present and mathematically describable relationships, or it may be more subjective and indeterminate, ranging from attempts to formally describe and combine parameters of incommensurate factors through such tools as “fuzzy logic,”<sup>29</sup> to the use of human beings as instruments to the same end. In cases of the latter type, which are very common, the translational process reiterates the “more or less normed group”

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<sup>28</sup> Astrology is a subject matter which the Supreme Court in *Kumho Tire* held up as an archetype of asserted expertise which “lacks reliability.” 526 U.S. at 151. At least one commentator has, (in passing, but with apparent seriousness), taken the Supreme Court to task for this exercise in judicial notice of legislative fact. See Stuart Minor Benjamin, *Stepping in the Same River Twice: Rapidly Changing Facts and the Appellate Process*, 78 TEX. L. REV. 269, 373 (1999). However, the predictive validity of astrology is hardly a subject which has not been examined by the methods of normal science. For example, Eysenck and Nias reviewed hundreds of studies of the accuracy of astrological predictions, and concluded that there is no replicated and statistically significant evidence that astrologers can predict the future. HANS J. EYSENCK & DAVID K. B. NIAS, *ASTROLOGY: SCIENCE OR SUPERSTITION?* (1982).

<sup>29</sup> The term “fuzzy logic” was coined by American computer scientist Lofti Zadeh, to describe “a type of logic used in computers and other electronic devices for processing imprecise or variable data; in place of the traditional binary values, fuzzy logic employs a range of values for greater flexibility.” WEBSTER’S NEW WORLD DICTIONARY 549 (3d ed. 1988). “Fuzzy logic deals in degrees of truth, instead of an absolute distinction between true and false.” CONCISE OXFORD DICTIONARY OF LINGUISTICS 140 (P.H. Matthews ed., 1997); see also DANIEL MCNEILL & PAUL FREIBERGER, *FUZZY LOGIC* (1993).

problems already discussed in relation to taxonomies. What I mean by this is that the translation is dependant on subjective judgments of unquantified and often incommensurate variables.<sup>30</sup> The claim is usually that some process of common education results in the properly trained practitioner coming to more or less the same translation that any other properly trained practitioner would arrive at. This claim is testable (though often not tested), and to the extent that testing reveals it to be true, the translational system may be said to be reliable. If an asserted normed group translational expertise is not reliable, then once again, the only way to discover reliable (not yet to mention *accurate*) individual practitioners (if any) would be some regime of individual proficiency testing.

Finally, reliability does not establish accuracy, but merely highly objective or highly normed agreement. A highly normed group of numerologists might be very reliable in their predictions but yet be only randomly accurate. An unreliable process cannot be accurate in any but a subset of cases, but a highly reliable process may be wrong most of the time in all cases. Thus, some reason to believe that a translational process is not only reliable but accurate is necessary before we should consider evidence based on it.<sup>31</sup> This becomes a special problem in regard to any claimed expertise that does not have common, non-courtroom, real-world applications, coupled with unambiguous feedback in practice on the accuracy of conclusions. Plumbers, auto mechanics and harbor pilots know if their judgments were correct in practice; on the other hand, clinical psychologists, or practitioners of purely forensic specialties (like handwriting identification, for example), often do not.<sup>32</sup>

### C. Normative Expertise<sup>33</sup>

At first blush this might seem an empty set, if we accept an unsophisticated version of the standard model of functions in the litigation system: Juries decide facts; the judge rules on the law; the value judgments appropriate to the outcome are reflected in the law.

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<sup>30</sup> That is, variables with no common system of comparative values.

<sup>31</sup> How much and what kind of information might provide a warrant for the conclusion of sufficient dependability to be admitted in various circumstances is tentatively addressed *infra* note 57 and accompanying text.

<sup>32</sup> See D. Michael Risinger & Michael J. Saks, *Science and Nonscience in the Courts: Daubert Meets Handwriting Identification Expertise*, 82 IOWA L. REV. 21, 33-34 (1996). See also Randolph N. Jonakait, *The Assessment of Expertise: Transcending Construction*, 37 SANTA CLARA L. REV. 301, 344-45 (1997).

<sup>33</sup> The term "normative" is used here in the sense of something reflecting a value judgment. See *supra* note 21.

Witnesses testify only to things relevant to the jury's function.<sup>34</sup> Thus, no expert should be allowed to testify on issues of right or wrong, good or bad. If a witness should happen to testify in such terms, it merely represents an isolated failure of control in a particular case.

However, such a model hardly reflects the reality of practice, and hardly accounts for many common aspects of the jury function and the distribution of authority between the judge and jury. In particular, it fails to recognize the official delegation of a normative, or value-judgment function to the jury in many contexts, often under the unhelpful (and inaccurate) label "mixed questions of law and fact" (which would better be called "mixed questions of fact and value").

As to many issues in many contexts, the law delegates to the jury as representatives of the community the authority to make particularized value judgments subject only to the most general constraining principles. The jury becomes, in effect, a legislature for the particular case. Some of these issues are terrifically common and centrally important. Take for example, negligence. Even if all the factual issues of a case are removed from doubt, even if we had a full sense hologram of the entire episode which gave rise to the controversy, coupled with a helmet which would allow us to follow the changing states of mind of all the actors from second to second, there would still be a critically important function for the jury: to say whether or not the behavior of the defendant was or was not "careful enough."

In general, we do not allow testimony by persons claiming to be experts on the normative aspects of such questions, at least explicitly. The function of such an expert would be to say, "I have thought a lot about how much risk it is right for one person to impose upon another under such circumstances, and in my judgment, this defendant didn't (or did) act properly." It is not that such arguments should never be heard by the jury. On the contrary, one of the functions of counsel in closing is to make such arguments (though not in so personalized a manner). Rather, it is that in general we recognize no one whose opinions on such matters is entitled to be considered more "expert" than anyone else's, including most especially the jurors. In general. But there are sometimes exceptions.

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<sup>34</sup> For a good summary of the "standard model," see WILLIAM TWINING, *THEORIES OF EVIDENCE: BENTHAM & WIGMORE* 12-18 (1985).

Occasionally these anomalies are explicit: For decades some obscenity trials have featured the spectacle of “experts” being called on the issue of “serious literary, artistic, political or scientific value” under the third prong of the test for obscenity created in *Miller v. California*.<sup>35</sup> In these cases the jury is regularly treated to academics with literature credentials testifying to aesthetic merit or artistic worth. The results have not necessarily been bad for the First Amendment, but they have been corrosive to the maintenance of any tenable categorical limitation excluding “normative experts.” A similar circumstance obtains in regard to expert testimony on applicable conduct standards for professional malpractice in many jurisdictions—the danger arises when the witness strays from testifying about the empirical question of what professionals do to the normative question of what the witness *should* do.

Examples of explicit authorization for normative expertise are uncommon. Examples of normative expert testimony being given by witnesses called arguably for some other more factual function are not uncommon. One familiar example is testimony by members of various psychological disciplines offered as relevant to insanity, diminished capacity, child custody, or similar issues. For instance, it is widely accepted that the term “insane” as a legal term is a normative label dealing with responsibility and blameworthiness. Yet various practitioners of the psychological disciplines are regularly called to give expert testimony in regard to the issue of insanity.

The normal account for this is that these disciplines can give factual knowledge which the jury would reasonably want to take into account in making the normative decision. If it were an empirical fact, for example, that 999 out of 1,000 persons with one blue eye and one brown eye reported such an overwhelming drive to possess chocolate that they would seize it whenever it was physically within reach, that might arguably be something properly considered in determining the criminal responsibility of such a person charged with stealing chocolate. While the exact relation between the “is” and the “ought” is by no means conclusively established, some connection is generally conceded *ex necessitate*, and providing accurate factual information to inform the normative judgment is not a violation of any prohibition on normative expertise.

The problem with this position is twofold. First, such experts

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<sup>35</sup> 413 U.S. 15, 24 (1973).

are generally not very carefully restricted to this role.<sup>36</sup> Second, on a more fundamental level, the entire enterprise of abnormal psychology and the “disease model” of abnormal behavior is profoundly normative at its root. Albert Einstein and Jeffrey Dahmer were equally abnormal in an empirical or statistical sense, but only one is counted as having a “disease.” “Disease” is a profoundly normative word, a circumstance which can be perhaps ignored in regard to physical conditions which cause death, pain or impairment of physical function, but which becomes more important to recognize in regard to behavioral categorizations.

At any rate, all of this is well known, and it is not my intention to expand upon it sufficiently to do it the justice it would demand as a main topic of consideration. Perhaps another day. My purpose in raising it is to make the following point: Whatever justifications may exist for a relaxed threshold of admissibility concerning asserted expertise on issues where there is a normative component in the “factfinder’s” official function, it would be wrong to carry over any such casual attitude to elemental issues of concrete empirical fact, properly so called. This would seem to be especially true when such expertise is offered by the prosecution in a criminal case, given the high standard of proof involved. That is to say, to give one blunt example, forensic pathology ought properly to be held to higher standards of dependability than forensic psychology. Forensic psychology generally has relevance only to such normatively charged issues as responsibility and *mens rea* (broadly defined), but forensic pathology deals with the most concrete kind of “who, what, when, and where” *actus reus*/identity fact issues. As to the latter, if the promise of proof beyond a reasonable doubt has any core application, it is to those kind of specific brute fact details of the crime and the identity of the defendant as its perpetrator. Hence, the necessity of specially careful evaluation of dependability in regard to forensic pathology, and the inappropriateness of importing and applying to it loose standards appropriate, perhaps, in the normative issue context.

But perhaps the distinction I have drawn between the realms of forensic pathology and forensic psychology is simply no longer true. Part of the growing concern for dependability in expertise can be traced to the mutation of forensic psychology beginning a couple of decades ago from a beast that confined itself to ultimately normative

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<sup>36</sup> On how far the normative component of such testimony normally reaches, see John Monahan & David Wexler, *A Definite Maybe: Proof and Probability in Civil Commitment*, 2 L. & HUM. BEHAV. 37, 40 (1978).

issues such as sanity and capacity, to one that also attacked important “real fact” criminal guilt-or-innocence issues such as identity or the existence of the *actus reus*, generally through the medium of so called “syndrome” evidence.<sup>37</sup> In their new area of operation, the old standards of dependability just aren’t good enough.<sup>38</sup>

*D. Expertise on the Law, and on Inference*

It is beyond the need for citation that, in American jurisprudence, the determination of the content of the law applicable to a case is a solely judicial function.<sup>39</sup> No respectable taxonomy of expertise generated on theoretical principles would include a category for anything like an expert witness on “what the law is.”<sup>40</sup> That said, the line between “law” and “fact” is not always clear to judges,<sup>41</sup> and it is not unheard of for people to be sworn as witnesses whose testimony is, in whole or in part, testimony concerning the proper construction of the law.<sup>42</sup> The appropriate role for such a “witness” is at most as an *amicus curiae*, and if the judge feels colloquy would be helpful to the judge’s decision, this could as well be accomplished by oral argument. Perhaps in a bench trial this confusion of roles is of minor import, since the judge in the process of decision can treat such a witness as functionally an *amicus*, but this confusion leads not uncommonly to such persons being allowed to testify before juries.<sup>43</sup> For example, experts on “legal ethics”

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<sup>37</sup> A history of the development of “syndrome evidence” and its shift from state-of-mind to brute fact uses in criminal prosecutions is given in Risinger, *Navigating Expert Reliability* *supra* note 14, at 113-19.

<sup>38</sup> For an analysis of the cases dealing with syndrome evidence, see Risinger, *Navigating Expert Reliability*, *supra* note 14, at 119-23; for more on the cases, and the dependability problems of this kind of evidence in general, see chapters 7 through 10 of *MODERN SCIENTIFIC EVIDENCE*, *supra* note 12.

<sup>39</sup> See generally Benjamin J. Vernia, Annotation, *Admissibility of Expert Testimony Regarding Questions of Domestic Law*, 66 A.L.R.5th 135 (1999). *But see* Note, *Expert Legal Testimony*, 97 HARV. L. REV. 797 (1984) (arguing against a blanket prohibition of such testimony).

<sup>40</sup> The sole exception might be the *sui generis* situation of a choice of law issue where the rule of decision is dependant on the construction of foreign law for which no normal authoritative sources of determination exist. See, e.g., RUSSELL J. WEINTRAUB, COMMENTARY ON THE CONFLICT OF LAWS § 3.7 (4th ed. 2001).

<sup>41</sup> Charles M. Liebson, *Legal Malpractice Cases: Special Problems in Identifying Issues of Law and Fact and in the Use of Expert Testimony*, 75 KY. L.J. 1, 20 (1986-87).

<sup>42</sup> Vernia, *supra* note 38 (attempting a complete collection of all cases of admissibility and inadmissibility that might be characterized as testimony on the content of the law in all contexts, including jury trials).

<sup>43</sup> *Id.*



regularly testify in professional malpractice cases.<sup>44</sup> If there is a danger, already noted, that a normal “professional standard of care” witness in a malpractice case may stray from testifying about the empirical question of what lawyers do, to the normative question of what the witness believes lawyers should do, the problem of an “expert on legal ethics” is even worse. Of necessity, the role of such a witness must frankly be either to testify to the legal obligations created by ethical codes and precedents, or to the witness’s own notions of what those obligations ought to be. Either form of testimony in front of a jury improperly presents legal constructions as the subjects of expertise equal or superior to that of the judge, and often judges, having allowed such testimony, may be tempted to leave the choice of construction to the jury.<sup>45</sup>

A related and compounded problem is presented by the “law content expert” who is not only allowed to function as an expert on the content of the law in front of the jury, but also to give the appearance of a translational expert by opining on why, in the particular case, this or that party was or was not in compliance with the law. For instance, I know someone who regularly is called upon to testify in front of juries about the fiduciary duties of corporate boards, and then to opine about whether this particular board did, or did not, violate such duties. He is aware of the theoretical problems of this testimony, but he believes it proper for him to give such testimony as long as judges allow it (we all like to be philosopher kings if allowed), and he likes the fees. The conclusory part of his testimony is nothing more than a closing argument from the witness stand, (though in his case always a sincerely believed closing argument) and as such grossly compounds the role confusion already identified, and simply ought not to be allowed.<sup>46</sup>

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<sup>44</sup> See, e.g., *Cohen v. Radio-Elects. Officer’s Union*, 146 N.J. 140, 679 A.2d 1188 (1996).

<sup>45</sup> See, e.g., *People v. Lyons*, 285 N.W.2d 788, 794 (Mich. Ct. App. 1979) (“Allowing witnesses to testify as to questions of law invites jury confusion and the possibility that the jury will accept as law the witness’s conclusion rather than the trial judge’s instructions.”).

<sup>46</sup> As Judge Learned Hand observed in *Nichols v. Universal Pictures Corp.*, “[a]rgument is argument whether in the box or at the bar, and its proper place is the last.” 45 F.2d 119, 123 (2d Cir. 1930).

## III. THE TAXONOMY APPLIED—TWO ILLUSTRATIONS

A. *An Instructive Special Case*

Lest the reader form the impression that all I do is repeat *ad nauseam* “more dependability, more dependability,” I would like to recount a situation in which expertise of quite low dependability functions quite satisfactorily to accomplish the proper purposes of the law. Earlier I used land valuation as an example of imperfectly normed subjective translational system. There are many legal contexts, mainly in civil controversies, where the market value of land, or some similar non-fungible good, is an important element of a remedial formula. The very nature of the concept “market value” in such a case is fraught with conceptual problems. With its notional “willing buyer” and “willing seller” operating under conditions often not existing in the real world, it is a purely abstract concept not theoretically determined by any particular actual sale, even of the very land in question, since the exact amount of a particular sale might have been influenced by idiosyncratic factors not reflected in the abstract notion of market value. Thus, market value is not a “fact,” even a predictive fact, in the same sense that, say, the result of a future election is a fact. Nevertheless, market value is constructed from empirically factual knowledge. No one believes that the notion of market value is totally unrelated to sales that have been made in markets. Rather, the assumption is that comparable sales fairly close in time to the relevant time suggest a probable range of likely sale prices for a particular item in question. However, no one can say for sure what the exact market value of a non-fungible item like land is, and, as previously noted, those who study the process of predicting likely future sale value do not dependably agree on what constitutes comparable sales. As a result, the law finds itself in a bind. If the existence of a remedy is made to turn on market value, and if this inherent imprecision and indeterminacy is unacceptably vague, then the plaintiff (and I am restricting my discussion to civil cases here) will suffer a failure of proof in every case. What to do? Allow each side to call its own “expert,” knowing that each expert will cheat as far in favor of their own employer as they judge the “straight-face”<sup>47</sup> test will allow.<sup>48</sup>

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<sup>47</sup> The test of whether you can say something with a straight face. Also sometimes called the “giggle test”: Can one make the assertion without giggling?

<sup>48</sup> For a recent recognition of the litigation realities in the preparation of expert witnesses for trial, see *TV-3, Inc. v. Royal Ins. Co. of Am.*, 193 F.R.D. 490 (S.D. Miss. 2000).

The penalty for cheating too far is that the jury is likely to swing toward the number offered by the other expert. Each expert's number then will define the limits of a range. Any number within the range is an acceptable remedy—truly this is a case without a determinate single right answer.<sup>49</sup> Where in the range the damages are fixed is left to the jury's judgment,

based on its own evaluation of the persuasiveness of each expert. In this case, very undependable expertise is used to forge a satisfactory result.<sup>50</sup>

*B. A Less Instructive Special Case*

Another difficult special issue is causation in tort. A complete consideration of causation is (blessedly) beyond the scope of this essay. However, expert testimony concerning causation in products liability and toxic tort cases has become a subject of particular controversy, and indeed was the issue that precipitated *Daubert* itself, and *Daubert's* enhanced concern for dependability of

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<sup>49</sup> This arrangement has much in common with "final offer" arbitration, also known as "baseball arbitration," except that in that case the decision maker is not allowed to pick an intermediate number. See, e.g., *S. Pac. Transp. Co. v. ICC*, 69 F.3d 583, 585-86 (D.C. Cir. 1995); *In re Hopewell Int'l Ins. Ltd.*, 238 B.R. 25, 40-41 (Bankr. S.D.N.Y. 1999)

<sup>50</sup> It is clear that, even after *Daubert*, valuation experts have been subject to very weak reliability scrutiny. Alan Ratliff, *Kicking the Tires after Kumho: The Bottom Line on Admitting Financial Expert Testimony*, 37 HOUS. L. REV. 432, 434 (2000). While *Kumho Tire* could change this in some areas, especially those involving high levels of complexity, such as the valuation of large going concerns, at least as to real estate valuation in breach of sale contract and condemnation cases, the traditional laxity is probably a good thing, as the text suggests. This is not to say that there are not, or should not be, limits to the threshold tolerance of a particular expert's ability to suppress his giggle response. For instance, in *Blue Dane Simmental Corp. v. Am. Simmental Ass'n*, 178 F.3d 1035 (8th Cir. 1999), somebody named Risinger (no relation), with the approval of the defendant registry association, had introduced nineteen cattle which could not be affirmatively established as genetically pure, including two that were shown to be "3%" genetically impure, into the American Simmental cattle breeding population, which numbered in excess of 138,000 animals. *Id.* at 1039. Plaintiffs claimed that this injured the value of their own cattle. *Id.* They showed that, after the registry of the Risinger cattle, the average price of such cattle dropped on both the American market, and on the Canadian market, but the price dropped substantially more on the American market. *Id.* at 1040. Without considering a number of variables normally considered in livestock valuation, plaintiff's damages expert attributed the entire difference in price between the two markets to the impurity of the American herd resulting from the Risinger cattle. *Id.* at 1041. Not surprisingly, the district court found that this went too far, and refused to let the expert testify pursuant to Federal Rule of Evidence 702, and the Eight Circuit affirmed. *Id.* at 1040-41.

expertise, at least “scientific” expertise.<sup>51</sup> Undoubtedly, “causality expertise” presents a special problem resulting from a number of factors: On the one hand, there is no shortage of credentialed scientists in the world who will confuse hypothesis with fact, and testify (and sincerely at that), to the actual existence of causal relations or substantially enhanced risks on weak or no evidence.<sup>52</sup> On the other hand, these cases are civil cases subject to a “preponderance of the evidence” standard of proof, a standard lower than would usually be required to establish the validity of a relationship in normal science practice. Finally, as every first-year law student learns, legal causation entails normative risk allocation judgments which are part of the jury function. What to do in the face of these colliding considerations? Perhaps the best thing would be to allow the experts to testify on a dependability standard more consistent with the civil standard of proof than one might otherwise think was necessary,<sup>53</sup> but treat the expert as a summarizational

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<sup>51</sup> *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. at 579, 582-84. There are those of us who see a special irony in this, since it took a risk to the pocketbook of corporate America to finally focus the Court’s attention on dependability issues which the Court showed little interest in when what was at stake was the execution of a criminal defendant in *Barefoot v. Estelle*, 463 U.S. 880 (1983).

<sup>52</sup> This is not only *not* shocking, it may in fact be a byproduct of the normal practice of healthy science as a community enterprise, which may require a certain admixture of individuals irrationally committed to their own hypotheses. Risinger et al., *Post-Daubert World*, *supra* note 24, at 438.

<sup>53</sup> I am aware that tying the level of certainty required for admission to the standard of proof applicable to the material issues to which the expert’s testimony is directed will strike some as inappropriate. They will argue that admissibility should be judged by the same standard in every case, leaving differences in standard of proof to be protected by a sufficiency of evidence decision once the record is closed. The problem with that approach in regard to expert testimony is substantial, however. It forces us to select a unitary standard of dependability which either lets in too much of dubious dependability on behalf of the prosecution in criminal cases, or which excludes too much of adequate dependability for the purposes of tort law. The result of the latter situation would be too many failures of proof in tort, based on the easiest insufficiency judgment to make, a record without evidence on some essential issue like causation. On the other hand, the result of a lower uniform standard would be the admission of too much of low dependability in criminal cases, under circumstances where the sufficiency check is likely to prove largely illusory. If such expert testimony provides all or most of the evidence on a particular issue such as identity of the perpetrator or existence of the *actus reus* (a not uncommon situation where forensic expertise is offered by the prosecution), how likely is a judge to rule that the stuff he just said was dependable enough to be admitted is not dependable enough to support a finding? Not likely enough in my judgment to depend on sufficiency alone to control the ill effects of such expertise on accuracy of result in criminal cases. This would seem an especial concern in a world where the current reality appears to be that civil plaintiffs are often held to a *higher* standard of expert dependability than prosecutors in criminal

expert. This would foreclose the expert from testifying to the conclusion of causation, thus requiring the presentation to be more in terms of educating the jury through a review of the affirmative evidence in the research literature, and less a matter of the witness's assertion of a conclusory "opinion."

*C. Legal Standards of Dependability—A Few Recommendations*

The Supreme Court's decision in *Daubert v. Merrell Dow* was revolutionary—perhaps more revolutionary than the Justices who fashioned it perceived. Like many revolutionary writings, the *Daubert* opinion was in some ways naïve and incoherent, but it is becoming clear from this remove that it has set in motion a process which is transforming the rules of the expert game in litigation. That process is still working itself out, and, as in most periods of profound change, there have been both counter-revolutionary currents<sup>54</sup> and excesses of misplaced zeal.<sup>55</sup> But the decision in *Kumho Tire v. Carmichael* has reinforced the trans-substantive and systematic nature of the process, and fashioned an approach to threshold dependability which will insure that the process of change continues, hopefully in fruitful directions. *Kumho Tire* stands for two important principles: First, that the gatekeeping requirement of minimum threshold dependability pursuant to Federal Rule of Evidence 702 applies to *all* proffered expert testimony, not just to the explicit products of science. And second, that this threshold judgment must be made in regard to the particular "task at hand", not globally in regard to the average dependability of a broadly defined discipline or area of expertise, which might be dependable when applied in other contexts, but not to the "task at hand." This process of particularized "task at hand" analysis regarding the

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cases. See generally Risinger, *Navigating Expert Reliability*, *supra* note 15.

<sup>54</sup> The most obvious ploy was the widespread attempt to claim that *Daubert* only applied to "scientific" evidence, and therefore to maintain the pre-*Daubert* status quo as to everything else. Clearly *Kumho Tire* has explicitly made this approach impossible. *Kumho Tire v. Carmichael*, 526 U.S. 137, 141 (1999). Another instinct may be seen in the almost mystical nostalgia for the days when virtually anything was admissible, seen in some quite respectable academics. I will not name names.

<sup>55</sup> Perhaps best represented by the impossibly high standards of dependability imposed by some courts in some tort cases. See generally Lucinda M. Finley, *Guarding the Gate to the Courthouse: How Trial Judges Are Using Their Evidentiary Screening Role to Remake Tort Causation Rules*, 49 DEPAUL L. REV. 335 (1999). Defendants challenging such plaintiff proffered expertise have been most successful under *Daubert*. Risinger, *Navigating Expert Reliability*, *supra* note 14, at 108, 110-12, 147.

dependability of all proffered expertise will characterize the next stage in the development of the new expert control jurisprudence. But it must be remembered that while *Kumho Tire* requires the judge to apply a proper standard of threshold dependability to all proffered expertise, at least upon an appropriately serious objection,<sup>56</sup> it does not say that exactly the same threshold standard is applicable to every kind of expert evidence in every kind of case. Rather, it appears more consistent with the opinion's emphasis on flexibility to conclude that proffered evidence must be shown to be sufficiently reliable for the task at hand, given the jury's role and capacities, and the nature of the case. Thus, I take it to be not only consistent with *Kumho Tire*, but implied by it, that evidence reliable enough in one legal context pursuant to rule 702 may not be reliable enough in another. Consider the land valuation issue previously discussed. In the normal civil case, as previously argued, a fairly lax threshold standard of dependability would appear to be appropriate, given the jury's presumed ability to understand the issues involved, and the balance of the opposing parties and their experts in the "baseball arbitration" dynamic of the case. However, were the same issue of the value of the same land to arise in a criminal fraud prosecution, where, let us say, the difference between a felony and a misdemeanor turned on the value of the property being above or below a certain exact amount, I believe that the judge is obliged to apply a more stringent threshold standard to the methodology of the prosecution's valuation expert. While the jury might be warranted in relying on, or being influenced by, the expert's testimony in the circumstances of the civil case, it might not be so warranted in the criminal case.

So what I believe we will see over the next decade, (when we look back on it) is the working out of a task-at-hand warrant analysis, which asks the question: "what indices of dependability ought to be present to render this asserted expertise sufficiently dependable on this particular issue, in this kind of case, so that a jury would be warranted in relying on, or being influenced by it?"

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<sup>56</sup> *Kumho Tire* leaves open the issue of the "price of admission" burden on the opponent of expertise, distinguishing between "ordinary" cases, where sufficient dependability "is properly taken for granted," and "less usual [and] more complex cases where cause for questioning the expert's reliability arises." 526 U.S. at 152-53. Clearly what is envisioned is something more weighty than a conclusory or pro forma objection, and one criticism that might be leveled at the criminal defense bar as a group may be that in the press of time, they have not properly come to grips with what is necessary for an effective *Daubert/Kumho* challenge. Risinger, *Navigating Expert Reliability*, *supra* note 14, at 137-45.

Some recent scholarship has already headed generally in this direction,<sup>57</sup> and it is in the working out of this “task at hand” warrant analysis that I believe a new taxonomy of expertise will not only be helpful, but essential.

So what variables have we seen from our preliminary taxonomic exercise that affect the dependability we should demand of tendered expertise, and what statements does it seem tentatively appropriate to make about them?<sup>58</sup> The following is a non-exclusive and incomplete list:

- “Everyday” summarizational expertise is easily understood by the jury and its dependability can be left to their evaluation, though care must be taken so that such a witness is not allowed to wander into translational expertise.
- Dependability of technical summarizational expertise should be judged by standards applicable to translational expertise in the same context.
- Translational expertise with a high clinical subjectivity component should be approached cautiously, especially

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<sup>57</sup> See, e.g., Scott Brewer, *Scientific Expert Testimony and Intellectual Due Process*, 107 YALE L.J. 1535 (1998); Note, *Navigating Uncertainty: Gatekeeping in the Absence of Hard Science*, 113 HARV. L. REV. 1467 (2000). The theory of warrants for assertion or belief is associated with the Pragmatists, most particularly, John Dewey, (though Professor Brewer displays a partiality for C.S. Peirce). H.S. Thayer, *Pragmatism*, in 6 ENCYCLOPEDIA OF PHILOSOPHY (Paul Edwards ed., 1967). The conclusion of Professor Brewer’s article (after a fascinating 149 pages) that ordinarily non-scientist judges and juries can never be warranted in evaluating (choosing between) the claims of disagreeing scientists seems a bit extreme to me. The Harvard note bites off a smaller piece, but persuasively argues that in at least a class of cases involving issues of “strong scientific uncertainty” (where many experimental scientists claim no answer to a legally pertinent question has been dependably derived, and clinicians claim an answer can be properly inferred), there are warrant guidelines for choosing between “generic toxic tort” rules and “slip and fall” rules. Note, *supra* at 1470-71. Another useful approach to the warrant problem, *sub nom* the “better evidence principle” will be found in David L. Faigman, et al., *How Good is Good Enough?: Expert Evidence Under Daubert and Kumho*, 50 CASE W. RES. L. REV. 645 (2000).

<sup>58</sup> Lists of “factors” for judges to consider abound. *Daubert* itself had one, and so does the Advisory Committee note to revised Rule 702. I have endeavored to include only observations that have grown out of the taxonomic exercise in this article, not every important consideration in the evaluation of threshold dependability. For instance, I believe one of the most pervasive phenomena undermining dependability of forensic expertise is the presence of expectancy effects, and that this must be taken into consideration in any approach to threshold dependability. See, e.g., D. Michael Risinger & Michael J. Saks, *Science and Nonscience in the Courts: Daubert Meets Handwriting Identification Expertise*, 82 IOWA L. REV. 21, 64-65 (1996). However, this important issue did not arise in the body of the essay, and is therefore not on the list, and is held for another day.

where real world practice does not provide unambiguous feedback concerning the correctness of the conclusions reached. Generally there ought to be strong external evidence of dependability in such cases, through well designed tests showing individual proficiency, or at least group error rates, in regard to the particular task at hand.

- Translational expertise offered on normative issues can perhaps be safely allowed on a lower standard of certifiable dependability than should be required of “brute fact” or “pure fact” issues such as *actus reus* and identity, in the same litigation context. The same is true in regard to magnitude judgment or theoretical “no one right answer” issues such as market value.
- All things being equal, the higher the standard of proof applicable to the issue upon which the expertise is offered, the higher the required threshold dependability should be.
- High standards should apply to pure fact issues, and extremely high standards to prosecution expertise bearing on pure fact issues in criminal cases, such as identity or the existence of the *actus reus*.
- Courts should be careful, especially in jury cases, to prevent an expert from testifying to a construction of the law. Further, the court should prevent expert “opinion” which might be fair forensic argument, but should clearly be presented only as such by counsel in closing.
- Courts should be careful not to apply to expertise in general, standards of dependability appropriate only to a limited context.

I make no claim that this list is complete, nor indeed that any given statement may not properly be subject to substantial qualification on further reflection and analysis. Nor do I assert that the taxonomic exercise upon which it is based is yet close to being completely worked out. However, I do believe that we cannot finally come to grips with the problems of expert testimony and its control in the courtroom except in the light of some such attempt to identify the varying functions and contexts of what we globally label “expertise.”