

Contents lists available at SciVerse ScienceDirect

International Journal of Law and Psychiatry



"Certainty" and expert mental health opinions in legal proceedings

Eric Y. Drogin*, Michael Lamport Commons, Thomas Gordon Gutheil, Donald J. Meyer, Donna M. Norris

Program in Psychiatry and the Law, Department of Psychiatry, Beth Israel Deaconess Medical Center, Harvard Medical School, United States

ARTICLE INFO

Available online 28 September 2012

Keywords: Certainty Courtroom testimony Expert opinion

ABSTRACT

This pilot study addresses the legal and scientific ramifications of the "certainty" expressed by mental health professionals when functioning as expert witnesses in criminal and civil proceedings. The sporadic attention paid to "certainty" in the professional literature has typically taken the form of general policy oriented analyses as opposed to empirical, data-driven investigations. In the current study, 25 doctoral and master's level mental health professionals were provided with 53 different statements. Some statements addressed "certainty" itself in the typical fashion (e.g., "Reasonable Degree of Scientific Certainty," "Reasonable Degree of Medical Certainty," and "Reasonable Degree of Psychological Certainty"). Other statements were confined to specifically legal standards of proof (e.g., "Beyond a Reasonable Doubt," "Preponderance of the Evidence," and "Clear and Convincing"). Additional statements included those that bore at least some direct forensic relevance (e.g., "Based upon All the Data at My Disposal," "In My Medical Opinion," and "In My Clinical Judgment"), as well as those of a non-forensic nature (e.g., "I Would Bet My Life Savings," "On My Word of Honor," and "I Am Personally Convinced"). Ratings were provided on one form as if the participant had uttered the statement, and on another form as if another expert witness had uttered the statement. Overall, participants did not tend to identify traditional legal terms as expressing the highest level of "certainty," and respondents tended to ascribe more "certainty" to the same terms when uttered by themselves as opposed to when uttered by other expert witnesses. Those providing forensic testimony will do well to accommodate the court's traditional requirements while developing and preparing to justify their own notions of just what "certainty" denotes in this context.

© 2012 Elsevier Ltd. All rights reserved.

1. Introduction

The role of the expert witness is essential to the conduct of criminal and civil proceedings—far less for what the doctors can verify and predict than for what the lawyers cannot. The legal system waits with bated breath for the pronouncements of the mental health expert, not out of any sense of infatuation with psychiatry or the topics it addresses, but rather because there is simply no other way to get to the bottom of murky, conflicted, and often controversial issues that no lay witness can hope to resolve. Experienced trial attorneys strive to make the best of this situation, inured to the knowledge that they will never be able to shrug off the yoke of scientific expertise with its twin burdens of expense and preparation.

In exchange for the compensation, deference, and influence afforded the forensic witness, it is not unreasonable for the court to compel some

E-mail address: edrogin@bidmc.harvard.edu (E.Y. Drogin).

form of reassurance that the testimony in question meets a recognized professional standard. Yes, counsel must demonstrate on direct examination that the proffer of an expert opinion rests upon a properly laid evidentiary foundation, and that opinion must also withstand the crucible of cross examination—indelibly characterized by Wigmore (1923) as "the greatest legal engine ever invented for the discovery of truth" (vol. 5, Section 1367). Still, what will address the court's abiding concern that the goods so thoroughly pawed over by each side were initially delivered with the relevant discipline's seal of approval?

It is possible, of course, for judges to enable both the prosecution and the defense to parade a secondary line of scholars and practitioners across the stand, in order to buttress or impugn the legitimacy of the primary expert's representations. The court can also avail itself of its own experts pursuant to the Federal Rules of Evidence or state-level equivalents, but in each case must correspondingly "advise the parties of any findings the expert makes" and expose the expert to cross-examination "by any party" (Fed. R. Evid. 706, 2011). Such time-consuming and financially costly measures tax the patience of the bench and are beyond the reach of most legal proceedings.

The legal system's default solution has traditionally been to require forensic clinicians to certify that their opinions are expressed with a "reasonable degree" (or, on occasion, "probability") of "certainty" in the pertinent field of endeavor; for example, a "reasonable degree of

^{*} We thank members of the Program for their critical review. Queries about research methodology should be addressed to Dr. Commons at commons@tiac.net.

^{*} Corresponding author at: 350 Lincoln Street, Suite 2400, Hingham, MA 02043, United States.

psychiatric certainty," a "reasonable degree of psychological certainty," or—more generally—a "reasonable degree of medical certainty" or a "reasonable degree of scientific certainty" (Drogin & Gutheil, 2011, pp. 536–538).

A "virtual mantra" (Poythress, 2004, p. 228) has been recited, the wisdom of the helping professions has been enshrined, and the court is free to receive the doctor's statements with confidence, but what—if anything—do the expert mental health witnesses really mean to convey by these assertions of "certainty"?

2. Legal scholars weigh in

One might predict that legal scholars would be the ones to grasp this dilemma most firmly by the horns, demanding in a steady procession of learned treatises an explanation of how mental health experts could skate by with such vague and perfunctory language. Although there are a handful of references on point, a recent search of the WESTLAW database revealed that "medical certainty," for example, had been the direct focus of only two law review articles (Craig, 1999; Lewin, 1998). Another pair of law review articles focused on "scientific certainty"—one regarding genetic testing in toxic injury litigation (Poulter, 2001) and the other regarding fisheries management (Kutil, 2011).

One exception to the relatively minimal coverage of this topic has been the work of law professor David Faigman—also possessed of a master's degree in social psychology. Faigman (2006) asserted in one article that "in practice, this opinion is usually stated as follows: 'Within a reasonable degree of medical/psychological certainty, it is my opinion that X caused [a particular case of] Y.' This expression has no empirical meaning and is simply a mantra repeated by experts for purposes of legal decision makers who similarly have no idea what it means" (p. 1224).

More recently, Faigman (2010) has also maintained—in the course of further decrying the notion of a "certainty" declaration—that "case-specific conclusions, in fact, appear to be based on an admixture of knowledge of the subject, experience over the years, commitment to the client or cause, intuition, and blind faith. Science it is not" (pp. 1134–1135).

The Lewin (1998) and Craig (1999) articles provide additionally useful commentary. Lewin offered a fascinating and gratifyingly substantial—approximately 140-page—review of the legal history of "medical certainty," from its first documented origins "in Chicago, Illinois, sometime between 1915 and 1930" (p. 381) through its "exponential growth" during the 1960s, when "the phrase had appeared in published opinions from all but two American states" (p. 456), to the extent that "the phrase ... continues to influence the outcome of litigation, and its incorporation into dozens of statutes will assure its importance to American law into the next century" (p. 498).

Overall, Lewin (1998) observed that "in those jurisdictions that attributed legal significance to the phrase, the incorporation of the phrase into legal doctrine resulted from the judiciary's uncritical acceptance of attorney usage without conscious consideration of its meaning" (p. 396). How confusing has it been for the courts to sort through all of the different flavors of "reasonableness" at the appellate level? The following excerpt from Craig's (1999) article provides some insight in this regard (with internal references omitted):

A court cannot assume that "reasonable medical certainty" imposes a higher standard than "reasonable medical probability," although that is the usual assumption. The District of Columbia Court of Appeals' definition of "reasonable medical certainty" illustrates the problem: "reasonable medical certainty ... reflects an objectively well-founded conviction that the likelihood of one cause is greater than the other; it does not mean the expert is 'personally certain' of the cause or that the cause is discernible to a certainty." The Fifth Circuit has equated "reasonable medical certainty" and "reasonable medical probability" by holding simultaneously that plaintiff must prove causation to a

reasonable medical certainty "but need only establish by a fair preponderance of the evidence the reasonable medical probability" of causation. Similarly, the Tenth Circuit has interpreted Colorado law to equate the two standards ... Finally, not all jurisdictions that purport to use the same standard—"reasonable medical certainty," for example—actually agree on what that standard means or impose the same evidentiary burden. (p. 76)

3. The experts' perspective

Some four and a half decades ago, Robitscher (1966) observed that "having taken a minimum three-year residence in their specialty, following four years of medicine, psychiatrists would prefer the court to accept their word about whether a person is insane, competent or incompetent" (p. 29). A pioneering psycholegal scholar, Robitscher would have been the first to acknowledge the shortcomings of the "what part of 'doctor' don't you understand?" model of forensic practice, and indeed emphasized at the end of this career that courts had found "reasonable medical certainty" more difficult to substantiate in psychiatry than in other branches of medicine (Robitscher, 1982).

In 1984, commenting on "The Troubled Role of Psychiatrists in Court," Clements and Ciccone (1984) called for "a realistic look at the social and legal role of the expert" (p. 135) in light of "an inaccurate understanding of what experts do and a massive cultural lag concerning what they can be expected to do" (p. 136). This combination of clinical frustration and professional activism was typical of the period, and it neatly presaged the beginnings of a formal inquiry into the appropriateness of "certainty" representations to the courts. Rappeport (1985) fired the first literary salvo:

Reasonable medical certainty. What is that? I am afraid to report that after having attempted to study the subject for many, many hours, I have discovered that the status of reasonable medical certainty is quite uncertain. In fact, I can make the statement that I am certain that reasonable medical certainty is an uncertain legal concept ... What about testimony that something could, might be, possibly was, seems connected to, may be related, could have, might have, etc. Is such testimony within reasonable medical certainty? (p. 5)

Only months later, Diamond (1985) emphasized the fundamental lack of fit between legal and scientific notions of "certainty":

Reasonable medical certainty, in my opinion, should express the psychiatrist's highest level of confidence in the validity and reliability of [his or her] opinion. This level of confidence must, necessarily, be formulated within the matrix of clinical experience and scientific knowledge. It cannot be directly translated into the legal scale of levels of proof. It is the obligation of the trier of fact, rather than the expert witness, to make that translation in its decision of the ultimate issue, the verdict. (p. 123)

These principled and insightful assertions are excellent examples of why, as Ellard (1993–1994) once opined, "the psychiatrist is an unsatisfactory witness and should remain one" (p. 81). Of course, this does not mean that expert mental health witnesses can merely abandon a concept so deeply embedded in legal procedure—a readiness to address it should remain a part of the doctor's "checklist for testifying in court" (Appelbaum & Gutheil, 2007, pp. 308–309), given that forensic psychiatrists and others must remain cognizant of what the courts will expect of them (Gutheil, 2000), however "vexatious" it may be that "the law gives us few guidelines or definitions" (Modlin, 1989, p. 415).

Brodsky (1991) has suggested that since "most expert witnesses have not thought through their judgments in these legally derived criteria" it would be prudent to reply, when the issue arises, that "it is my best professional judgment that is always my criterion for my

Table 1Percentages of "certainty" available for participant endorsement.

| 0 | 1 | 2 | 4 | 7 | 11 | 23 | 30 | 40 | 49.9 | 50 | 50.1 | 60 | 70 | 77 | 84 | 89 | 93 | 96 | 98 | 99 | 100 |
|---|---|---|---|---|----|----|----|----|------|----|------|----|----|----|----|----|----|----|----|----|-----|

clinical conclusions" (p. 15). This comports with the advice of noted legal expert Paul Gianelli (2010) that when possible "experts could avoid the term altogether and testify how confident they are in their opinion" (p. 40)—bearing in mind that whenever it comes to experimenting with witness comportment in legal settings "resistance to altering a tradition may well arise" (Commons, Gutheil, & Hilliard, 2010, p. 304). According to Miller (2006), "if there is no accepted legal definition, experts should adopt one of their own," or perhaps "ask the attorney who raised the question to define it" (p. 286). Any such advice must be filtered, of course, through the witness's sense of the tolerance and flexibility of the judge and attorneys in a given case.

Despite the availability of such reflections and advice from both sides of the legal-scientific divide, we are unaware of any empirical investigations, until now, of how mental health professionals construe the notion of "certainty" when functioning as expert witnesses in criminal and civil proceedings.

4. Participants

There were a total of 25 participants in this pilot study. Of these participants 11 (44%) were male and 14 (56%) were women. Reported ages ranged from 34 to 72 years (M=52.86, S.D.=11.43). All participants were mental health professionals practicing at either the doctoral or master's degree level.

5. Survey instrument

53 questionnaire items (see Appendix A) were developed on the basis of each author's individual experience as a testifying or consulting expert in civil and criminal cases. In every case, items were constructed as representations, in some fashion, of the degree of "certainty" with which forensic testimonial assertions might be made.

Some items addressed "certainty" itself in the typical and literal fashion (e.g., "Reasonable Degree of Scientific Certainty," "Reasonable Degree of Medical Certainty," and "Reasonable Degree of Psychological Certainty"). Other items were confined to specifically legal standards of proof (e.g., "Beyond a Reasonable Doubt," "Preponderance of the Evidence," and "Clear and Convincing"). Additional items included those that bore at least some direct forensic relevance (e.g., "Based upon All the Data at My Disposal," "In My Medical Opinion," and "In My Clinical Judgment"), as well as those of a non-forensic nature (e.g., "I Would Bet My Life Savings," "On My Word of Honor," and "I Am Personally Convinced"). At subsequent weekly meetings of the Program in Psychiatry and the Law, members suggested modifications to the existing questions and proposed additional questions.

Each participant completed two forms of the survey instrument. On Form A, participants were instructed as follows (with original emphasis):

Please rate each one of the following phrases for the **degree of certainty** that it would reflect, **if uttered by you as a professional in a court of law**, by circling just one of the available numbers. By way of example, 0% would correspond to "totally uncertain"; 100% would correspond to "completely certain." For each item, please circle the number closest to your estimate. **Please do not circle between numbers for any item**, and again **please do not circle more than one number for any item**.

Form B of the survey instrument bore the same introductory wording, except that in this instance participants were asked to rate each phrase as if it had been "uttered by another professional in a court of law." For each item in both forms, a span of potential percentages of "certainty" was provided (see Table 1).

6. Procedure

Requests for participation were circulated on various professional discussion lists for forensic practitioners, including "Forensic Specialty" (forensicspecialty@yahoogroups.com), "Program in Psychiatry and the Law" (pipatl@yahoogroups.com), and "Psylaw" (psylaw-l@listserv.unl.edu). Results were obtained via Survey Monkey (surveymonkey.com), an online questionnaire service.

7. Analysis

To determine the level of "certainty" ascribed to each questionnaire item, we employed a Rasch analysis. This method was initially conceived for the purposes of large-scale achievement testing (Rasch, 1980), and has since been applied in a wide range of research settings (Commons et al., 2008), including those addressing topics in psychiatry and the law (Dattilio, Commons, Adams, Gutheil, & Sadoff, 2006).

Rasch scaling converts raw scores into equal interval linear scales, using logistic regression to minimize errors in person scores and item scores (Wright & Stone, 1979) and thus enabling the development of an objective measure of survey item data as well as of participant characteristics (Andrich, 1988).

8. Results

We hypothesized that participants would associate the highest levels of "certainty," whether uttered by themselves or others, first (1) to statements referencing "certainty" itself; and then (2) to statements

Table 2 Items ascribed the highest level of "certainty" when uttered by participants.

| | Form A Mean | Form A SD | Form B Mean | Form B SD | Diff | Form A Rasch | Form B Rasch | Diff |
|--|----------------|--------------|----------------|--------------|------|-----------------|-----------------|------|
| 49. I'd Stake My Life On It | 6.63 | 0.576 | 5.36 | 2.177 | 1.27 | -3.14 | -0.81 | 2.33 |
| 22. I Would Bet My Life Savings | 6.54 | 0.658 | 5.28 | 1.948 | 1.26 | -2.86 | -0.67 | 2.19 |
| 23. As Sure as I've Ever Been of Anything | 6.42 | 0.830 | 5.75 | 0.944 | 0.67 | -2.50 | -1.44 | 1.06 |
| 03. Would Stake My Professional Reputation | 6.42 | 0.654 | 5.76 | 0.926 | 0.66 | -2.47 | -1.50 | 0.97 |
| 14. I Hereby Swear or Affirm | 6.32 | 0.900 | 5.56 | 1.635 | 0.76 | -2.25 | -1.15 | 1.10 |
| 26. On My Word of Honor | 6.30 | 0.703 | 4.80 | 2.121 | 1.50 | -2.19 | 0.12 | 2.31 |
| 04. Positively | 6.20 | 0.816 | 5.28 | 1.021 | 0.92 | -1.96 | -0.67 | 1.29 |
| 48. Beyond a Shadow of a Doubt | 6.13 | 0.797 | 5.74 | 0.964 | 0.39 | -1.80 | -1.42 | 0.38 |
| 41. Unquestionably | 6.08 | 1.038 | 5.48 | 1.295 | 0.60 | -1.70 | -1.01 | 0.69 |

Table 3Items ascribed the lowest level of "certainty" when uttered by participants.

| | Form A Mean | Form A SD | Form B Mean | Form B SD | Diff | Form A Rasch | Form B Rasch | Diff |
|-----------------------|----------------|--------------|----------------|--------------|------|-----------------|-----------------|------|
| 09. Perhaps | 3.70 | 0.470 | 3.28 | 1.173 | 0.42 | 2.64 | 1.86 | 0.78 |
| 50. I Think So | 4.12 | 0.666 | 3.46 | 1.414 | 0.66 | 2.24 | 1.66 | 0.58 |
| 05. I Suppose | 4.16 | 0.624 | 3.63 | 0.770 | 0.54 | 2.19 | 1.54 | 0.65 |
| 47. My Gut Feeling | 4.17 | 1.294 | 3.92 | 1.288 | 0.25 | 2.18 | 1.26 | 0.92 |
| 38. My Best Guess | 4.23 | 0.528 | 3.63 | 1.245 | 0.60 | 2.11 | 1.68 | 0.43 |
| 34. Arguably | 4.28 | 0.792 | 3.71 | 1.122 | 0.57 | 2.05 | 1.45 | 0.60 |

(A mean of 4 is equivalent to 50% "certainty"; a mean of 3 is equivalent to 16% "certainty.")

that referenced the most stringent legal standards of proof (i.e., "beyond a reasonable doubt").

Surprisingly, we learned that this was not the case. As described in Table 2, experts depicted themselves as being the most "certain" (98% "certainty" or higher) regarding a combination of items that reflected personal well-being ("I'd Stake My Life on It"), financial security ("I Would Bet My Life Savings"), comparison to "certainty" on previous occasions ("As Sure As I've Ever Been of Anything"), and one's own standing as a forensic clinician ("Would Stake My Professional Reputation"). Only one item in this range ("Beyond a Shadow of a Doubt") bore an arguably direct resemblance to a corresponding legal standard of proof.

Items characterized as expressing the least degree of "certainty" (between 16% and 50%) when uttered by participants themselves were of a more transparently and thus predictably uninspiring nature. As described in Table 3, experts placed the least emphasis on such items as "Perhaps," "I Think So," "I Suppose," "My Gut Feeling," "My Best Guess," and "Arguably."

When it came to identifying the "certainty" ascribed to statements proffered by persons other than the participants, not one of these was rated at the 98% or higher level. As described in Table 4, four of the items rated highest in this range (higher than 84%, but lower than 98%) for this context were also included among the items rated highest when proffered by participants themselves ("Would Stake My Professional Reputation," "As Sure As I've Even Been of Anything," "Beyond a Shadow of a Doubt," and "Unquestionably"), followed by "Beyond a Reasonable Doubt"—the only formal legal standard of proof amongst these items—"Firmly Convinced of This Person's Guilt," and "Firmly Convinced of this Person's Innocence" (in a statistical dead heat between the three).

Items characterized as expressing the least degree of "certainty" (between 16% and 50%) when uttered by persons other than the participants themselves were precisely the same as the ones rated lowest when proffered by participants themselves (see Table 5), only in slightly different order: "Perhaps," "I Think So," "I Suppose," "My Best Guess," "Arguably," and "My Gut Feeling."

The items reflecting the greatest degree of difference in "certainty" when uttered by participants as opposed to when uttered by others are described in Table 6. In almost every instance, Rasch scores for the

Table 5Items ascribed the lowest level of "certainty" when uttered by persons other than participants.

| | Form A Mean | Form A SD | Form B Mean | Form B SD | Diff | Form A Rasch | Form B Rasch | Diff |
|-------------------------------|----------------|----------------|----------------|----------------|--------------|-----------------|-----------------|--------------|
| 09. Perhaps 50. I Think So | 3.70 4.12 | 0.470 0.666 | 3.28 3.46 | 1.173 1.414 | 0.42 0.66 | 2.64 2.24 | 1.86 1.66 | 0.78 0.58 |
| 05. I Suppose 38. My Best | 4.16 4.23 | 0.624 0.528 | 3.63 3.63 | 0.770 1.245 | 0.54 0.60 | 2.19 2.11 | 1.54 1.68 | 0.65 0.43 |
| Guess 34. Arguably | 4.28 | 0.792 | 3.71 | 1.122 | 0.57 | 2.05 | 1.45 | 0.60 |
| 47. My Gut Feeling | 4.17 | 1.294 | 3.92 | 1.288 | 0.25 | 2.18 | 1.26 | 0.92 |

(A mean of 4 is equivalent to 50% "certainty"; a mean of 3 is equivalent to 16% "certainty.")

former were higher than Rasch scores for the latter. The actual ratings for items referencing "certainty" itself, and for items referencing legal standards of proof, are described in Table 7.

9. Conclusions and recommendations

Presented with a substantial array of options for expressing "certainty" in their own testimonial pronouncements, participants in this pilot study tended to gravitate toward those reflecting themes of personal well-being, financial security, comparison to certainty on previous occasions, and one's own standing as a forensic clinician, at the expense of traditional, literal expressions of "certainty" *per se* as well as at the expense of recapitulations of a formal legal standard.

This was generally true of the "certainty" ascribed to statements by other mental health experts as well, although in such instances a somewhat increased confidence in allusions to a formal legal standard was detected. For items on which perceived differences in "certainty" were the greatest when these were to be uttered by participants as opposed to others, a higher level of confidence was typically afforded statements proffered by participants.

These results appear to reflect the long-standing ambivalence in both the legal and scientific literature regarding rote, formulaic recitations of the traditional "certainty" language commonly employed in civil and criminal cases. Called upon to convey the highest level of confidence in their testimonial assertions and those of their colleagues, participants were clearly looking elsewhere.

Such outcomes suggest—pending replication on a larger scale—that the time has come to explore the construction of expressions of "certainty" or its equivalents that mental health experts will endorse in a more meaningful and consistent fashion. Surely the court would prefer forensic clinicians to certify the professional quality of their forensic offerings with true conviction as opposed to dimly understood and essentially *pro forma* incantations. This having been asserted, we cannot recommend strongly enough that experts bear a particular court's receptiveness to innovation in mind, standing prepared to explain in

Table 4Items ascribed the highest level of "certainty" when uttered by persons other than participants.

| | Form A Mean | Form A SD | Form B Mean | Form B SD | Diff | Form A Rasch | Form B Rasch | Diff |
|---|----------------|--------------|----------------|--------------|------|-----------------|-----------------|------|
| 03. Would Stake My Professional Reputation | 6.42 | 0.654 | 5.76 | 0.926 | 0.66 | -2.47 | -1.50 | 0.97 |
| 23. As Sure as I've Ever Been of Anything | 6.42 | 0.830 | 5.75 | 0.944 | 0.67 | -2.50 | -1.44 | 1.06 |
| 48. Beyond a Shadow of a Doubt | 6.13 | 0.797 | 5.74 | 0.964 | 0.39 | -1.80 | -1.42 | 0.38 |
| 41. Unquestionably | 6.08 | 1.038 | 5.48 | 1.295 | 0.60 | -1.70 | -1.01 | 0.69 |
| 01. Beyond a Reasonable Doubt | 5.80 | 0.645 | 5.40 | 0.645 | 0.40 | -1.10 | -0.88 | 0.22 |
| 52. Firmly Convinced of This Person's Guilt | 5.61 | 0.722 | 5.40 | 0.957 | 0.21 | -0.73 | -0.88 | 0.15 |
| 06. Firmly Convinced of This Person's Innocence | 5.84 | 0.688 | 5.40 | 0.957 | 0.44 | -1.19 | -0.88 | 0.31 |

 Table 6

 Items reflecting the greatest difference in rasch scores when uttered by participants as opposed to persons other than participants.

| | Form A Mean | Form A SD | Form B Mean | Form B SD | Diff | Form A Rasch | Form B Rasch | Diff |
|---|----------------|--------------|----------------|--------------|------|-----------------|-----------------|------|
| 49. I'd Stake My Life On It | 6.63 | 0.576 | 5.36 | 2.177 | 1.27 | -3.14 | -0.81 | 2.33 |
| 26. On My Word of Honor | 6.30 | 0.703 | 4.80 | 2.121 | 1.50 | -2.19 | 0.12 | 2.31 |
| 22. I Would Bet My Life Savings | 6.54 | 0.658 | 5.28 | 1.948 | 1.26 | -2.86 | -0.67 | 2.19 |
| 04. Positively | 6.20 | 0.816 | 5.28 | 1.021 | 0.92 | -1.96 | -0.67 | 1.29 |
| 11. Unless You Can Convince Me Otherwise | 4.68 | 1.314 | 4.76 | 1.535 | 0.08 | 1.35 | 0.19 | 1.16 |
| 14. I Hereby Swear or Affirm | 6.32 | 0.900 | 5.56 | 1.635 | 0.76 | -2.25 | -1.15 | 1.10 |
| 23. As Sure as I've Ever Been of Anything | 6.42 | 0.830 | 5.75 | 0.944 | 0.67 | -2.50 | -1.44 | 1.06 |
| 02. Substantial Weight of the Evidence | 4.88 | 0.536 | 4.96 | 0.455 | 0.08 | 0.91 | -0.13 | 1.04 |

Table 7Items reflecting "certainty" itself and legal standards of proof.

| | Form A Mean | Form A SD | Form B Mean | Form B SD | Diff | Form A Rasch | Form B Rasch | Diff |
|--|----------------|--------------|----------------|--------------|------|-----------------|-----------------|------|
| 01. Beyond a Reasonable Doubt | 5.80 | 0.645 | 5.40 | 0.645 | 0.40 | -1.10 | -0.88 | 0.22 |
| 08. Clear and Convincing Evidence | 5.36 | 0.700 | 5.24 | 0.723 | 0.12 | -0.17 | -0.60 | 0.43 |
| 30. Reasonable Degree of Scientific Certainty | 5.17 | 0.576 | 4.92 | 0.493 | 0.25 | 0.19 | -0.06 | 0.25 |
| 17. Reasonable Degree of Professional Certainty | 5.12 | 0.440 | 4.88 | 0.526 | 0.24 | 0.37 | 0.00 | 0.37 |
| 46. Preponderance of the Evidence | 5.08 | 0.654 | 4.96 | 0.735 | 0.12 | 0.45 | -0.13 | 0.58 |
| 13. Reasonable Degree of Psychological Certainty | 5.08 | 0.400 | 4.84 | 0.688 | 0.24 | 0.46 | 0.06 | 0.40 |
| 23. Reasonable Degree of Medical Certainty | 4.92 | 0.572 | 4.80 | 0.707 | 0.12 | 0.82 | 0.12 | 0.70 |

concise terms just what experts themselves mean by any usage—offered or compelled—of requisite legal terminology.

Appendix A

Questionnaire Items

- 1. "Beyond a Reasonable Doubt" ...
- 2. "Substantial Weight of the Evidence" ...
- 3. "Would Stake My Professional Reputation" ...
- 4. "Positively" ...
- 5. "I Suppose" ...
- 6. "Firmly Convinced of This Person's Innocence" ...
- 7. "As God Is My Witness" ...
- 8. "Clear and Convincing Evidence" ...
- 9. "Perhaps" ...
- 10. "Reasonable Degree of Medical Certainty" ...
- 11. "Unless You Can Convince Me Otherwise" ...
- 12. "Firmly Convinced" ...
- 13. "Reasonable Degree of Psychological Certainty" ...
- 14. "I Hereby Swear or Affirm" ...
- 15. "Substantial Weight of the Evidence" ...
- 16. "In My Clinical Judgment" ...
- 17. "Reasonable Degree of Professional Certainty" ...
- 18. "The Only Reasonable Conclusion" ...
- 19. "Based Upon Sound Clinical Procedures" ...
- 20. "Any Expert Would Reach the Same Conclusion" ...
- 21. "Based Upon a Thorough Review of the Data and Relevant Literature" ...
- 22. "I Would Bet My Life Savings" ...
- 23. "As Sure As I've Ever Been of Anything" ...
- 24. "In My Medical Opinion" ...
- 25. "I Am Reasonably Sure" ...
- 26. "On My Word of Honor" ...
- 27. "The Only Supportable Conclusion" ...
- 28. "To the Extent I Can Determine" ...
- 29. "Based Upon Sound Forensic Procedures" ...
- 30. "Reasonable Degree of Scientific Certainty" ...
- 31. "In My Professional Judgment" ...
- 32. "Firmly Convinced" ...

- 33. "Based Upon My Several Years of Experience" ...
- 34. "Arguably" ...
- 35. "Probable Cause to Conclude" ...
- 36. "Based Upon All the Data at My Disposal" ...
- 37. "Compelling Evidence" ...
- 38. "My Best Guess" ...
- 39. "Absent Any New Data to the Contrary" ...
- 40. "I Am Personally Convinced" ...
- 41. "Unquestionably" ...
- 42. "Morally Certain" ...
- 43. "In My Professional Opinion" ...
- 44. "On Balance, I Believe" ...
- 45. "Mathematically Certain" ...
- 46. "Preponderance of the Evidence" ...
- 47. "My Gut Feeling" ...
- 48. "Beyond a Shadow of a Doubt" ...
- 49. "I'd Stake My Life On It" ...
- 50. "I Think So" ...
- 51. "Diagnostically Sound" ...
- 52. "Firmly Convinced of This Person's Guilt" ...
- 53. "There Is a Real Possibility" ...

References

Andrich, D. (1988). Rasch models for measurement. Thousand Oaks, CA: Sage.

Appelbaum, P. S., & Gutheil, T. G. (2007). Clinical handbook of psychiatry and the law (4th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

Brodsky, S. L. (1991). Testifying in court: Guidelines and maxims for the expert witness. Washington, DC: American Psychological Association.

Clements, C. D., & Ciccone, J. R. (1984). Ethics and expert witnesses: The troubled role of psychiatrists in court. The Bulletin of the American Academy of Psychiatry and the Law, 12, 127–136.

Commons, M. L., Goodheart, E. A., Pekker, A., Dawson, T. L., Draney, K., & Adams, K. M. (2008). Using Rasch scaled stage scores to validate orders of hierarchical complexity of balance beam task sequences. *Journal of Applied Measurement*, 9, 182–189.

Commons, M. L., Gutheil, T. G., & Hilliard, J. T. (2010). On humanizing the expert witness: A proposed narrative approach to expert witness qualification. *The Journal of the American Academy of Psychiatry and the Law*, 38, 302–304.

Craig, R. K. (1999). When Daubert gets Erie: Medical certainty and medical expert testimony in federal court. *Denver University Law Review*, 77, 69–117.

Dattilio, F. M., Commons, M. L., Adams, K. M., Gutheil, T. G., & Sadoff, R. L. (2006). Pilot Rasch scaling of lawyers' perceptions of expert bias. The Journal of the American Academy of Psychiatry and the Law, 34, 482–491.

- Diamond, B. L. (1985). Reasonable medical certainty, diagnostic thresholds, and definitions of mental illness in the legal context. The Bulletin of the American Academy of Psychiatry and the Law, 13, 121–128.
- Drogin, E. Y., & Gutheil, T. G. (2011). Guardianship. In E. Y. Drogin, F. M. Dattilio, R. L. Sadoff, & T. G. Gutheil (Eds.), Handbook of forensic assessment: Psychological and psychiatric perspectives (pp. 521-542). Hoboken, NJ: Wilev.
- Ellard, J. (1993–1994). Why the psychiatrist is an unsatisfactory witness and should remain one. International Journal of Mental Health, 22, 81–89.
- Faigman, D. L. (2006). Judges as "amateur scientists". Boston University Law Review, 86, 1207-1224.
- Faigman, D. L. (2010). A preliminary exploration of the problem of reasoning from general scientific data to individualized legal decision-making. Brooklyn Law Review, 75. 1115-1136.
- Fed. R. Evid. 706 (2011).
- Gianelli, P. C. (Spring). "Reasonable scientific certainty": A phrase in search of a meaning, Criminal Justice, 40-41.
- Gutheil, T. G. (2000). The presentation of forensic psychiatric evidence in court. *Israel* Journal of Psychiatry and Related Sciences, 37, 137–144. Kutil, S. M. (2011). Scientific certainty thresholds in fisheries management: A response
- to a changing climate. Environmental Law, 41, 233-275.
- Lewin, J. L. (1998). The genesis and evolution of legal uncertainty about "reasonable medical certainty." Maryland Law Review, 57, 380-504.

- Miller, R. D. (2006). Reasonable medical certainty: A rose by any other name, Journal of Psychiatry and Law, 34, 273-289.
- Modlin, H. C. (1989). Forensic pitfalls. The Bulletin of the American Academy of Psychiatry and the Law. 17, 415-419.
- Poulter, S. R. (2001). Genetic testing in toxic injury litigation: The path to scientific certainty. *Jurimetrics*. 41, 211–238.
- Poythress, N. G. (2004). "Reasonable medical certainty": Can we meet Daubert standards in insanity cases? The Journal of the American Academy of Psychiatry and the Law 32 228-230
- Rappeport, J. R. (1985). Reasonable medical certainty. The Bulletin of the American Academy of Psychiatry and the Law, 13, 5-15.
- Rasch, G. (1980). Probabilistic models for some intelligence and attainment tests. Chicago, IL: University of Chicago Press.
- Robitscher, J. G. (1966). Pursuit of agreement: Psychiatry and the law. Philadelphia, PA: J. B. Lippincott Co.
- Robitscher, J. B. (1982). Commitment and the courts: The Addington case. Journal of Psychiatric Treatment and Evaluation, 4, 57-61.
- Wigmore, J. H. (1923). Treatise on the Anglo-American system of evidence in trials at common law. New York, NY: Little, Brown & Co.
- Wright, B. D., & Stone, M. H. (1979). Best test design. Chicago, IL: Mesa Press.