

**DAUBERT, PROBABILITIES AND POSSIBILITIES, AND THE  
OHIO SOLUTION: A SENSIBLE APPROACH TO  
RELEVANCE UNDER RULE 702 IN CIVIL AND CRIMINAL  
APPLICATIONS**

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## I. INTRODUCTION

At trial, the following litigants proffer these expert opinions:

- in a civil case, a plaintiff offers an expert toxicologist who states it is possible the plaintiff's exposure to a chemical caused the injuries; and
- in a criminal case, the prosecution offers an expert in fingerprint analysis who states the fingerprint of the defendant could not be ruled out as a match to a partial print at the scene of the crime charged.

The two opinions' admissibility depends on a wide variety of factors, including the qualifications of the witness and the reliability of the scientific principles the expert uses to provide his or her analysis. However, in assessing relevance under the Federal Rule of Evidence 702<sup>1</sup> test in use in federal courts since *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,<sup>2</sup> and in many state courts, judges must use varying standards for admission, so the admissibility of the two examples could depend on the jurisdiction in which the evidence is offered.

If the expert opinions described above were offered in the State of Mississippi, both would be excluded as inadequate under the relevance prong of Rule 702. If offered in the State of Colorado, both opinions would be admissible as relevant under Rule 702. Admissibility in federal courts using the *Daubert* analysis could depend on the appellate circuit or on the substance alleged to be harmful in the civil case.

Since the state and federal courts evaluate expert opinions using similar, if not identical, Rule 702 language, the wide divergence of Rule 702 relevance analysis injects uncertainty into the process and could significantly affect the outcome of cases based on the jurisdiction in which they are tried.

A different "split" approach guides Rule 702 relevance analysis in Ohio. The split approach permits expert opinions stated to a possibility in criminal cases but requires opinions stated to a probability for civil cases; this analysis, unlike the Colorado or Mississippi approach, would admit the second proffered opinion described above, while excluding the first proffered opinion from jury consideration. The split approach

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1. FED. R. EVID. 702 (1975).

2. *Daubert v. Merrell Dow Pharms., Inc.*, 951 F.2d 1128 (9th Cir. 1991).

offers significant advantages over the all-or-nothing jurisdictions' interpretations of Rule 702, and therefore, the Ohio model offers a sensible approach for courts in other jurisdictions to follow.

Probability for expert opinions is the correct standard for civil cases based on the preponderance of the evidence burden of proof. Among other effects, the probability requirement reduces jury speculation, avoids absurdity, appropriately adopts legal relevance as the standard for admission, and avoids negative effects on the out-of-courtroom practices of professionals. Expert opinions explaining possibilities, while inappropriate for civil case consideration, have Rule 702 relevance and are useful in criminal cases based upon the beyond a reasonable doubt burden of proof.

Based on an evaluation of federal and state cases, Rule 702, and the purposes of expert testimony, the Ohio example of split relevancy standards for expert opinions offered in criminal and civil cases is an appropriate, reasonable, and sensible approach to Rule 702 relevance.

## II. FEDERAL RULE OF EVIDENCE 702 AND THE *DAUBERT* DECISION

Courts initially evaluated the admissibility of expert testimony under common law standards. In 1923, the Court of Appeals for the District of Columbia established a uniform standard for admissibility of expert testimony in *Frye v. United States*.<sup>3</sup> In the *Frye* case, the court stated that scientific information will be admissible when it is well recognized and "sufficiently established to have gained general acceptance in the particular field in which it belongs."<sup>4</sup>

After more than sixty years of preeminence, the *Frye* general acceptance test remained as the standard method for determining expert evidentiary admission.<sup>5</sup> Judicial analysis of expert admissibility would begin to change only well after the adoption of the Federal Rules of Evidence.

### A. *Federal Rule of Evidence 702 is Adopted but Frye Remains the Test in Federal Courts*

Initially drafted and approved by Order of the U.S. Supreme Court in 1972, the Federal Rules of Evidence did not take effect until 1975.<sup>6</sup>

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3. *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).

4. *Id.* at 1014.

5. ERIC GREEN & CHARLES NESSON, PROBLEMS, CASES, AND MATERIALS ON EVIDENCE 649 (1983).

6. Pub. L. No. 93-12, 87 Stat. 9 (1973) (suspending implementation); Pub. L. No. 93-595, 88

The Federal Rules adopted in 1975 included evidentiary rules for expert testimony. Among the new rules was Federal Rule of Evidence 702, which, in its initial form, stated:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.<sup>7</sup>

In 1972, the Rules Advisory Committee described two major considerations under the Federal Rules for determining whether an expert should testify. These considerations contrast with the *Frye* test, which involved a unipolar analysis of the general acceptance of the proposed expert testimony to determine reliability.

First, an expert is appropriate when the expert testimony would assist the trier of fact in his or her analysis. The Rules Advisory Committee explained:

There is no more certain test for determining when experts may be used than the common sense inquiry whether the untrained layman would be qualified to determine intelligently and to the best possible degree the particular issue without enlightenment from those having a specialized understanding of the subject involved in the dispute.<sup>8</sup>

Second, the committee answered the question of who is an expert, stating that “the fields of knowledge which may be drawn upon are not limited merely to the ‘scientific’ and ‘technical’ but extend to all ‘specialized’ knowledge.”<sup>9</sup> The committee continued, “[t]hus within the scope of the rule are not only experts in the strictest sense of the word, e.g., physicians, physicists, and architects, but also the large group

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Stat. 1926, § 3 (1975) (enacting the rules).

7. FED. R. EVID. 702 (1975). Since the *Daubert* decision, the rule was amended to state: If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

FED. R. EVID. 702 (2001) (amendments effective December 1, 2000).

8. FED. R. EVID. 702 advisory committee notes to 1972 proposed rules (citing Mason Ladd, *Expert Testimony*, 5 VAND. L. REV. 414, 418 (1952)).

9. *Id.*

sometimes called ‘skilled’ witnesses, such as bankers or landowners testifying to land values.”<sup>10</sup>

By applying the committee notes from 1972, courts could have had guidelines on whether an expert should testify. However, federal courts after 1975 had little or no guidance on the interrelationship of Federal Rule of Evidence 702 and the *Frye* test in determining the admissibility of expert testimony. In the *United States v. Abel* decision from 1984, the U.S. Supreme Court determined that the common law predating the Federal Rules continued to determine evidentiary admissibility after the 1975 enactment of the rules.<sup>11</sup> By so ruling, the Supreme Court limited the roles of Federal Rule of Evidence 702 and the Advisory Committee Notes for another decade, and ensured *Frye* remained preeminent.

Into the 1990s, federal courts generally continued to use the *Frye* general acceptance test to determine whether expert testimony would be admissible.<sup>12</sup>

#### B. *Daubert in 1993 Determines Federal Rule of Evidence 702 Replaced Frye*

The test for expert admissibility in federal courts dramatically changed with the 1993 U.S. Supreme Court decision in *Daubert v. Merrell-Dow Pharmaceuticals, Inc.*<sup>13</sup>

In the *Daubert* decision, the Supreme Court rejected the *Frye* general acceptance test by determining that the adoption of the Federal Rules of Evidence in 1975 superseded federal common law on evidentiary issues.<sup>14</sup> Relying on the liberal admissibility standard of the Federal Rules of Evidence and the adoption of a specific rule on the admissibility of expert testimony, Justice Blackmun wrote for a unanimous court that the austere rule of general acceptance from *Frye* is

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10. *Id.*

11. *United States v. Abel*, 469 U.S. 45, 49 (1984) (issue of impeachment by bias) (citing E. CLEARY, MCCORMICK ON EVIDENCE § 40, at 85 (3d ed. 1984); 3 LOUISELL & MUELLER, FEDERAL EVIDENCE § 341, at 470 (1979); 3 JACK B. WEINSTEIN & MARGARET A. BERGER, WEINSTEIN’S EVIDENCE, para. 607[03] (1981)).

12. *See, e.g.*, *Daubert v. Merrell Dow Pharms., Inc.*, 951 F.2d 1128, 1129-30 (9th Cir. 1991); *Christopherson v. Allied-Signal Corp.*, 939 F.2d 1106, 1110 (5th Cir. 1991), *cert. denied*, 503 U.S. 912 (1992); *United States v. Solomon*, 753 F.2d 1522, 1526 (9th Cir. 1985). *See also* *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 585 (1993). *But see* *United States v. Williams*, 583 F.2d 1194, 1197-98 (2d Cir. 1978), *cert. denied*, 439 U.S. 1117 (1979).

13. 509 U.S. at 587.

14. *Id.*

“absent from, and incompatible with, the Federal Rules of Evidence, [and] should not be applied in federal trials.”<sup>15</sup>

With the admissibility of expert testimony to be determined by Federal Rule of Evidence 702, federal judges must act as evidentiary gatekeepers to ensure expert testimony is both relevant to the issues in the case and has a reliable basis in the knowledge and experience of the specialty discipline.<sup>16</sup>

*Daubert* described relevance to the case as determined by the “fit” of the expert testimony to the case.<sup>17</sup> The Court acknowledged that “[f]it is not always obvious, and scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes.”<sup>18</sup> The Court continued: “Rule 702’s ‘helpfulness’ standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility.”<sup>19</sup>

For the reliability analysis, the Supreme Court stated the general role of a court would be to assess preliminarily “whether the reasoning or methodology underlying the testimony is scientifically valid and of whether the reasoning or methodology properly can be applied to the facts in issue.”<sup>20</sup> While many factors bear on this analysis, the Court suggested specific factors for the district courts to consider, including: scientific methodology or testing, publication and peer-review, the known or potential rate of error, the existence of standards and controls, and the general acceptance of the methodology within the relevant scientific community.<sup>21</sup> These factors may be considered by the trial judge at a preliminary Federal Rule of Evidence 104(a) hearing to assess the admissibility of the evidence, and reliability should be shown to a preponderance of the evidence.<sup>22</sup>

Even if expert evidence is admissible under the relevance and reliability test, a court may exclude it if it fails a Rule 403 analysis, i.e., when the probative value is substantially outweighed by the danger of

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15. *Id.* at 589.

16. *Id.*

17. *Id.* at 591.

18. *Id.* at 591 (citing James E. Starrs, Frye v. United States *Restructured and Revitalized: A Proposal to Amend Federal Evidence Rule 702*, 26 JURIMETRICS J. 249, 258 (1986)).

19. *Id.* at 591-92.

20. *Id.* at 592-93.

21. *Id.* at 593-94. See also FED. R. EVID. 702 advisory committee notes to the 2000 Amendments, ¶ 2.

22. *Id.* at 592 & n.10 (citing *Bourjaily v. United States*, 483 U.S. 171, 175-76 (1987)).

unfair prejudice.<sup>23</sup>

The Court emphasized that the Rule 702 inquiry is “a flexible one. Its overarching subject is the scientific validity - and thus the evidentiary relevance and reliability - of the principles that underlie a proposed submission. The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate.”<sup>24</sup>

With the establishment of the Rule 702 standard for the admissibility of evidence, *Daubert* required that courts make a determination of both relevance and reliability of expert testimony prior to submission of an expert opinion to the jury.

### C. *Post-Daubert Supreme Court Decisions – Joiner and Kuhmo*

While the *Daubert* decision offered a dramatic shift in the analysis for admissibility of expert testimony in federal court, it failed to provide details on the procedural and substantive burdens involved in a court’s determination on the reliability and relevance of proposed evidence. Additional Supreme Court decisions began to evaluate these closely related *Daubert* issues.

In 1997, the Supreme Court issued the decision in *General Electric Co. v. Joiner*.<sup>25</sup> In *Joiner*, the Court noted that *Daubert* established the Federal Rules of Evidence as the standard for review of expert testimony.<sup>26</sup> In doing so, the *Daubert* decision made the judge the “gatekeeper” for screening evidence prior to submission to the jury.<sup>27</sup> The *Joiner* decision then determined that “abuse of discretion is the proper standard of a review of a district court’s evidentiary rulings.”<sup>28</sup>

Once the *Joiner* Court established the abuse of discretion standard, the Court then applied the standard to the expert testimony in the case. The Court determined the experts’ opinions were relevant to the case by finding one expert testified that “it was more likely than not” that the Plaintiff’s cigarette smoking and PCB exposure caused his cancer, and the other expert stated the cancer was “caused by or contributed to in a

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23. *Id.* at 595 (citing Jack B. Weinstein, *Rule 702 of the Federal Rules of Evidence is Sound; It Should Not Be Amended*, 138 F. R. D. 631, 632 (1991)).

24. *Id.* at 594-95 (citations omitted).

25. 522 U.S. 136 (1997).

26. *Id.* at 142.

27. *Id.*

28. *Id.* at 141-42, 146 (quoting *Old Chief v. United States*, 519 U.S. 172, 174 n.1 (1997); *United States v. Abel*, 469 U.S. 45, 54 (1984); *Spring Co. v. Edgar*, 99 U.S. 645, 658 (1879) (“[T]he appellate court will not reverse in such a case, unless the ruling is manifestly erroneous.”)).

significant degree by the materials with which he worked.”<sup>29</sup> However, the Court found the opinions unreliable due to lack of proper support from several epidemiological studies.<sup>30</sup> A court may properly determine an expert opinion is unreliable if there is simply “too great an analytical gap between the data and the opinion proffered.”<sup>31</sup> This is because “nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by the *ipse dixit* of the expert.”<sup>32</sup>

The Supreme Court’s ruling in *Kuhmo Tire Co. v. Carmichael*<sup>33</sup> in 1999 further delineated the process for a district court’s determination of admissibility under Rule 702 and *Daubert*. The *Kuhmo* Court first found that the gatekeeping function of the court applies to not just scientific information, but to any scientific, technical, or other specialized knowledge testimony under Rule 702.<sup>34</sup> The Court then affirmed that district courts must make preliminary assessments of the relevance and reliability per *Daubert*, and that district courts must be granted latitude in deciding how to assess reliability of proposed expert testimony.<sup>35</sup> In addition, the Court noted that the witness must initially be qualified to provide the expert opinions, which then must be vetted for reliability and relevance under *Daubert*.<sup>36</sup>

Following *Daubert*, the *Joiner* and *Kuhmo* decisions clarified both the process of reviewing Rule 702 expert evidence in a preliminary Rule 104(a) hearing, and the substantive requirements for reliability and relevance of expert opinions.

#### D. Admissibility Under Rule 702 After *Daubert*, *Joiner* and *Kuhmo* – *Relevance and Reliability*

Through the *Daubert*, *Joiner* and *Kuhmo* decisions, the Supreme Court established the prerequisites to admissibility of expert opinions

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29. *Id.* at 143.

30. *Id.* at 144-45.

31. *Id.* at 146 (citing *Turpin v. Merrell Dow Pharms., Inc.*, 959 F.2d 1349, 1360 (6th Cir.), *cert. denied*, 506 U.S. 826 (1992)).

32. *Id.* (emphasis in original).

33. *Kuhmo Tire Co., Ltd., v. Carmichael*, 526 U.S. 137 (1999).

34. *Id.* at 147-49.

35. *Id.* at 149 (discussing relevance and reliability under *Daubert*); *Id.* at 152 (discussing latitude in making reliability determinations); *Id.* at 158 (noting discretion under FED. R. EVID. 702 to determine reliability on specific facts of the case).

36. *Id.* at 152 (discussing evaluation of qualifications of the witness done at the trial court level, including education of the witness, experience in the field, and experience as an expert in litigation).

under Rule 702. To make preliminary determinations of admissibility, a court may decide to hold a hearing under Rule 104.<sup>37</sup> The court may choose not to hold a hearing when the reliability of the expert's methods is properly taken for granted.<sup>38</sup>

If the court holds a Rule 104 hearing, the court must evaluate the reliability of the methods employed by the expert. The Supreme Court in *Daubert* provided a detailed but not exhaustive list of factors to consider for the reliability determination, and later, in *Kuhmo* reemphasized a judge's ability to consider any information.<sup>39</sup>

For the relevance prong of the analysis, the *Daubert* court emphasized the "fit" of the opinions to the case.<sup>40</sup> While noting Rule 702 demands that the testimony relate to a fact at issue so that the testimony aids the jury in resolving a factual dispute, the Court did not provide guidance as it did with reliability on the specific inquiry or analysis needed to establish relevance under Rule 702.<sup>41</sup> The Court merely stated that it is confident that federal judges can do the appropriate review.<sup>42</sup>

The relevance prong was poorly defined in the initial Supreme Court cases, therefore the U.S. appellate courts have further reviewed and defined expert opinion relevance under Rule 702. Federal appellate courts have not been uniform in assigning a substantive burden requirement for a litigant to establish the Rule 702 relevance of expert testimony.

### III. RELEVANCE AND RULE 702 – PROBABILITIES VS. POSSIBILITIES AND THE STRENGTH OF OPINION ISSUE

Appellate courts addressing Rule 702 relevance have adopted a variety of approaches to the issue. Many federal appellate decisions require expert testimony to rise to the level of probability before being

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37. *Id.*; *General Electric Co. v. Joiner*, 522 U.S. 136, 142 (1997); *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 592 & n.10 (1993).

38. *Kuhmo*, 526 U.S. at 152 (1999).

39. *Id.* at 149-53 (factors in *Daubert* not definitive); *Daubert*, 509 U.S. at 593-94; *supra* text accompanying note 21. As part of the reliability prong in *Kuhmo*, the court discussed the issue of qualifications of the expert as well. *Kuhmo*, 526 U.S. at 153; *supra* text accompanying note 36. Courts would later occasionally classify the qualifications prong of the test as a true third assessment, rather than a subsection of reliability. *See In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 741 (3d Cir. 1994).

40. *Daubert*, 509 U.S. at 591; *supra* notes 17-19 and accompanying text.

41. *Id.* (citing *United States v. Downing*, 753 F.2d 1224, 1242 (3d Cir. 1985)).

42. *Id.* at 593.

admitted at trial.<sup>43</sup> On the other hand, several courts of appeal have used a more lenient standard and permitted experts to present opinions rising only to the level of possibility.<sup>44</sup>

On the state court level, different state appellate courts have adopted the two varying federal approaches: some states permit experts to express opinions to a possibility under Rule 702, while others insist on probabilities prior to finding Rule 702 relevance.<sup>45</sup> Even modified-*Frye* jurisdictions have split on the issue.<sup>46</sup> Rejecting the strict interpretations, Ohio has adopted a more flexible split approach, requiring the standard of expert opinions to a probability for civil cases while permitting opinions to the level of a possibility in criminal cases.<sup>47</sup>

In contrast to the uniformity and clarity in the *Daubert* opinion and its progeny regarding the Rule 702 reliability analysis and factors for reliability consideration prior to admission, the case law on Rule 702 relevance analysis shows a divergence and disagreement on relevance under Rule 702, and provides an opportunity to adopt a uniform approach.<sup>48</sup>

#### A. *Federal Law - Probabilities and Possibilities*

Following the *Daubert* opinion, federal appellate courts have inconsistently applied the substantive burden requirement for establishing Rule 702 relevance. Soon after *Daubert*, the U.S. Courts of Appeal in the Third Circuit and Ninth Circuit addressed the interplay of the substantive burden in a lawsuit and Rule 702 relevance, requiring expert testimony to rise to the level of probabilities. In federal courts, this substantive burden initially gained widespread acceptance, but has since been questioned as recent federal appellate court decisions admit expert testimony rising only to the level of possibilities.

##### 1. *Daubert* and *Paoli* – Early Opinions and the Probability Standard

After the U.S. Supreme Court issued its opinion in *Daubert* in 1993, the Court remanded the case back to the Court of Appeals for the

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43. See *infra* Part III.A.1.

44. See *infra* Part III.A.2.

45. See *infra* Parts III.B.1 (probabilities needed), III.B.2 (possibilities permitted).

46. See *infra* Parts III.B.1. (California), III.B.2 (Illinois).

47. See *infra* Part III.C.

48. See *infra* Part IV.

Ninth Circuit for determination of the motion for summary judgment.<sup>49</sup> In accepting the remand, the Ninth Circuit rejected the argument that remand directly to the District Court was necessary, finding that “the interests of justice and judicial economy will best be served by deciding those issues that are properly before us and, in the process, offering guidance in the application of the *Daubert* standard in this circuit.”<sup>50</sup>

The *Daubert II* court analyzed the proposed expert testimony under the new Rule 702 analysis from *Daubert*, reviewing reliability and relevance.<sup>51</sup> In addressing the reliability prong, the *Daubert II* court acknowledged the “uncomfortable position” the judiciary occupied in making determinations on cutting-edge science.<sup>52</sup> By analyzing the reliability factors highlighted by Justice Brennan in *Daubert*, the appellate court first weighed the expert toxicology opinion evidence in the case and found the reliability of the opinions would have needed to be addressed in the district court through the submission of additional evidence.<sup>53</sup>

The court then shifted to address the substantive burden required to show the relevance of expert testimony under Rule 702 and *Daubert*. The court started by finding that the standard in California for pharmaceutical torts requires evidence that the medicine ingested caused the alleged injuries of birth defects to a preponderance of the evidence.<sup>54</sup> Since the alleged birth defects also occur naturally, the plaintiffs in *Daubert II* had the burden to show that the medication manufactured by the defendant caused a doubling of the risk of birth defects.<sup>55</sup> When doubling was shown, the plaintiffs could state that the medication then “more likely than not [is] the source of their injury.”<sup>56</sup>

To succeed in the litigation, the plaintiffs must present epidemiological studies to prove the higher relative risk of birth defects between mothers taking the medication compared to those who did

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49. *Daubert v. Merrell Dow Pharms., Inc. (Daubert II)*, 43 F. 3d 1311, 1313 (9th Cir. 1995).

50. *Id.* at 1315.

51. *Id.*

52. *Id.* The court also states that “[m]indful of our position in the hierarchy of the federal judiciary, we take a deep breath and proceed with this heady task.” *Id.* at 1316.

53. *Id.* at 1320 (reliability need not be presented to the district court, however, based on the second prong of the test). *See also infra* note 63 and accompanying text.

54. *Id.* (citing *Jones v. Ortho Pharms. Corp.*, 209 Cal. Rptr. 456 (Cal. App. 1985)). In this case, the alleged injuries are birth defects allegedly caused by ingestion of Bendectin. *Id.*

55. *Id.*

56. *Id.*

not.<sup>57</sup> Epidemiological risk must exceed “2.0” to satisfy the substantive burden of a preponderance of the evidence standard.<sup>58</sup>

Epidemiological evidence that fails to show an epidemiological risk of “2.0” or higher is not helpful to the case and would only serve to confuse the jury if offered to prove causation.<sup>59</sup> The *Daubert II* plaintiffs’ experts’ strongest opinions stated that the medication “could possibly” have caused plaintiffs’ injuries.<sup>60</sup> These opinions, based on epidemiological studies, show the medication could possibly cause the plaintiffs’ injuries rather than prove the medication probably caused the injuries.<sup>61</sup> The plaintiffs’ causation evidence, therefore, failed to be relevant to the issues in the case, to be determined under the preponderance of the evidence standard.<sup>62</sup> As a result, the expert opinions were deemed inadmissible under Rule 702, and the court in *Daubert II* granted summary judgment.<sup>63</sup>

Shortly after the original *Daubert* opinion, the U.S. Court of Appeals for the Third Circuit addressed Rule 702 relevance in *In re Paoli R.R. Yard PCB Litigation*.<sup>64</sup> Decided before the *Daubert II* case was decided by the Ninth Circuit but after the initial *Daubert* opinion, *Paoli* discussed the *Daubert* standard and the interplay of the substantive burden of proof in civil cases with the relevance prong of Rule 702 analysis.

In *Paoli*, the court first reviewed the *Daubert* factors for expert admissibility: reliability and relevance. The court then stated for relevance to be established under *Daubert* and Rule 702, the scientific research must connect to the “particular disputed factual issues in the case.”<sup>65</sup>

In assessing the *Daubert* fit of the expert testimony to the factual issues in the case, the *Paoli* court then noted the interplay of the Pennsylvania requirement for expert testimony to be to a “reasonable

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57. *Id.* at 1321.

58. *Id.* (citing *DeLuca v. Merrell Dow Pharms., Inc.*, 911 F.2d 941, 958 (3d Cir. 1990)). For a greater discussion of the epidemiological risk assessment of “2.0,” see Peter White, *A Relative Risk 2.0: The Ninth Circuit Revisits Daubert’s Epidemiological Standard in In re Hanford Nuclear Reservation Litigation*, 13 SOUTHEASTERN ENVTL. L. J. 33 (2004), and *infra* text accompanying notes 73-79.

59. *Id.*

60. *Id.* at 1322 (citing *Daubert v. Merrell Dow Pharms., Inc.*, 727 F.Supp. 570, 576 (S.D. Cal. 1989) (the district court decision in the *Daubert* opinion line) (emphasis in original)).

61. *Id.*

62. *Id.*

63. *Id.*

64. 35 F.3d 717 (3d Cir. 1994).

65. *Id.* at 743 (citing *United States v. Downing*, 753 F.2d 1224, 1237 (3d Cir. 1985)).

degree of medical certainty” and the substantive burden of proof.<sup>66</sup> The court first found that the issues of burden of proof and admissibility often overlap, and that in a prior decision the Third Circuit held that expert opinions on “possibilities” or even “strong possibilities” were inadequate for Rule 702 admissibility.<sup>67</sup>

The *Paoli* court agreed with prior precedent that the combined effect of the substantive burden of proof and Rule 702 requirements for expert testimony require that the experts express their opinions to a “reasonable degree of medical certainty.”<sup>68</sup> As a result, the court determined that summary judgment is appropriate when experts cannot state to a reasonable degree of medical probability that the illnesses of the plaintiffs were caused by the chemicals in question.<sup>69</sup> Therefore, to the extent that experts would testify to “possibilities” or even “strong possibilities,” the testimony is not relevant to the case under the combined effect of the civil burden of proof and Rule 702.<sup>70</sup>

Following the *Daubert II* and *Paoli* decisions, other federal courts adopted their reasoning on issues of Rule 702 relevance for expert opinion testimony.<sup>71</sup> For example, in *In re Breast Implant Litigation*, the U.S. District Court for the District of Colorado stated that a plaintiff’s causation expert testimony was “no more than a suggestion or possibility of a causal relationship, which is insufficient for a causation opinion under Colorado law, the Federal Rules of Evidence, and *Daubert*.”<sup>72</sup>

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66. *Id.* at 750-51.

67. *Id.* at 751 (citing *Schulz v. Celotex Corp.*, 942 F.2d 204, 208 (3d Cir. 1991)).

68. *Id.*

69. *Id.* at 752.

70. *Id.* at 751 (citing *Schulz*, 942 F.2d at 208). For application of this rule in the case to the proposed plaintiff’s experts, see *id.* at 766 (chemicals “only a possible cause” of pregnancy injuries, so inadequate to survive summary judgment) and *id.* at 767 n.34 (the opinion that chemicals “could” have caused the illness is insufficient to survive summary judgment).

71. For examples of appellate court decisions, see, for example, *Allison v. McGhan Med. Corp.*, 184 F.3d 1300, 1320 (11th Cir. 1999) (exclusion of expert testimony is appropriate under Rule 702 when the expert opinion fails to rise to the level of medical probability); *Schudel v. Gen. Elec. Co.*, 120 F.3d 991, 996 (9th Cir. 1997), *abrogated on other grounds*, *Weisgram v. Marley Co.*, 528 U.S. 440, 456 (2000). For additional similar opinions, see *Norris v. Baxter Healthcare Corp.*, 397 F.3d 878, 884 n.4 (10th Cir. 2005) (citing *Daubert II*, 43 F.3d 1311, 1315 (9th Cir. 1995)) (determining that expert testimony is analyzed to see if it “logically advances a material aspect of the case”); *Wills v. Amerada Hess Corp.*, 379 F.3d 32, 47 n. 9 (2d Cir. 2003) (citing *Daubert II*, 43 F.3d at 1321) (determining how the burden of proof affects the relevance and, therefore, Rule 702 admissibility of expert testimony); *Heller v. Shaw Industries, Inc.*, 167 F.3d 146, 153 n.4 (3d Cir. 1999) (citing *Paoli*, 35 F.3d at 750-52).

72. *In re Breast Implant Litig.*, 11 F.Supp. 2d 1217, 1237 (D. Colo. 1998). For U.S. District Court cases with similar reasoning, see *Cano v. Everest Minerals Corp.*, 362 F.Supp. 2d 814, 822 (W.D. Tex. 2005); *Anderson v. Bristol Myers Squibb Co.*, No. H-95-003, 1998 U.S. Dist. LEXIS

With the Rule 702 relevance or “fit” analysis of the appeals court decisions in *Paoli* and *Daubert II*, opinions of experts will be admitted as relevant only when to a probability and will be excluded when expert opinions are solely to a possibility. The initial appearance of consensus on the issue faded after newer analysis by additional federal courts.

## 2. Newer Opinions and the Erosion of the Stricter Relevance Standard

Since the *Daubert II* and *Paoli* case decisions, decisions by other courts of appeal addressing Rule 702 relevance have not required probabilities for expert testimony but have instead permitted experts to testify to possibilities under Rule 702.

In 2002, the Ninth Circuit revisited the use of epidemiological evidence in mass tort litigation from *Daubert II* in *In re Hanford Nuclear Reservation Litigation*.<sup>73</sup> In the case, the district court insisted that the plaintiff show epidemiological evidence to the level of “2.0,” as mandated by the decision in *Daubert II*, in order to show that the exposure “more likely than not” caused the plaintiffs’ injuries.<sup>74</sup> The district court had rejected the expert testimony for lack of Rule 702 relevance when experts testified the exposure was only “capable of causing a disease.”<sup>75</sup>

On appeal, the Ninth Circuit readdressed the *Daubert II* Rule 702 relevance issue, and found that epidemiological proof of causation requires a factor of “2.0” to meet the “more likely than not” standard.<sup>76</sup> Even if “2.0” is required to show probability, the court decided the district court erred when, relying on *Daubert II*, it required epidemiological proof to rise to the level of “2.0.”<sup>77</sup> The court stated

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23259, at \*10-11 (S.D. Tex. April 17, 1998); *Lowery v. United States*, No. 95-T-1614-N, 1996 U.S. Dist. LEXIS 22840, at \*6 (M.D. Ala. October 16, 1996); *Wilson v. Merrell Dow Pharms., Inc.*, No. 82-CV-710-H, 1996 U.S. Dist. LEXIS 13568, at \*16-17 (N.D. Okla. May 28, 1996).

73. *In re Hanford Nuclear Reservation Litig.*, 292 F.3d 1124 (9th Cir. 2002).

74. *Id.* at 1131-32.

75. *Id.* at 1132 (citing *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 579 (1993)).

76. *Id.* at 1137 (citing FEDERAL JUDICIAL CENTER, REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 167-169 (1st ed. 1994)).

77. *Id.* (citing *In re Three Mile Island Lit.*, 193 F.3d 613, 727 n.179 (3d Cir. 1999)), amended by 199 F.3d 158 (3d Cir. 2000)). For a discussion critical of the standard that the epidemiological proof of “2.0” is equivalent to a preponderance of the evidence standard, see White, *supra* note 58, at 49 (citing Jan Beyea & Daniel Berger, *Scientific Misconceptions Among Daubert Gatekeepers: The Need for Reform of Expert Review Procedures*, 64 J. LAW & CONTEMP. PROBS. 327, 352-55 (2001)).

that “the validity of a claim should not depend on whether a plaintiff was exposed to a fraction of a rem lower than the ‘doubling dose.’”<sup>78</sup>

As a result of the *Hanford* rejection of the *Daubert II* model for epidemiological relevance, expert testimony that admittedly did not rise to the level of the “more likely than not” standard would be permitted at trial as relevant under Rule 702. The change represents a profound shift from the strict *Daubert II* approach and permits experts to provide opinions that rise only to the level of possibilities.<sup>79</sup>

Similar to *Hanford*, the Third Circuit in *United States v. Ford* addressed Rule 702 relevance of expert opinions and testimony to possibilities.<sup>80</sup> In evaluating expert testimony regarding shoe print identification, the court determined that the standard for Rule 702 relevancy is “not that high.”<sup>81</sup> The court further decided that the issue in the case was whether the impressions of the shoe print was probative of the Defendant’s participation in the robbery, and “expert testimony that aids the jury to make such comparisons is admissible.”<sup>82</sup> Based on this analysis, the court concluded that “[a]n expert opinion that expresses a *possibility* that a crime scene impression may have been made by shoes worn by the defendant, and otherwise comports with the *Daubert* analysis, is clearly relevant to the question of whether the defendant was present at the scene of the crime.”<sup>83</sup>

The *Ford* court rejected the *Paoli* and *Daubert II* approach by stating that its analysis of Rule 702 relevance is an exhortation to “tread carefully when evaluating proffered expert testimony,” but that the relevance of the expert opinions presented was not debatable in this criminal prosecution.<sup>84</sup> Based on *Ford*, in some cases and circumstances, expert testimony regarding possibilities will pass relevance examination under Rule 702.

District court cases mirror the *Hanford* and *Ford* decisions in rejecting a Rule 702 relevance requirement for expert opinions to be stated to a probability, by accepting experts’ opinions on possibilities. Even in the U.S. District Court for the District of Colorado, where *In re*

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78. *In re Hanford*, 292 F.3d at 1137.

79. The *Hanford* decision and reasoning was also dispositive in *In re Berg Lit.*, 293 F.3d 1127, 1129-30 (9th Cir. 2002), decided the same day by the Ninth Circuit.

80. *United States v. Ford*, 481 F.3d 215 (3d Cir. 2007).

81. *Id.* at 219 (citing *Lauria v. Nat’l R.R. Passenger Corp.*, 145 F.3d 593, 600 (3d Cir. 1998)).

82. *Id.* at 220 (citations omitted).

83. *Id.* at 221 (emphasis added).

84. *Id.* at 220 n.6. Criminal prosecution as compared to civil litigation is addressed, *infra* section IV. The issue of possibilities as relevant in criminal prosecution is also seen in *United States v. Sullivan*, 246 F.Supp. 2d 700, 704 (E.D. Ky. 2003).

*Breast Implant Litigation* strongly affirmed the language that expert opinions to possibilities should be inadmissible under Rule 702, the bulwark of probability no longer held firm. In 2004, Judge Blackburn issued his ruling in *Kaiser-Hill Co. v. MacTec*.<sup>85</sup> In the *Kaiser-Hill* decision, the court rejected an objection to expert opinions stated in the form of “might” or “may,” since “[t]here is no requirement that an expert state an opinion to any particular degree of certainty.”<sup>86</sup>

Following the opinions in *Hanford*, *Ford*, and *Kaiser-Hill*, federal court review of Rule 702 relevance is unclear on the requirement of the substantive level of certainty for expert opinion admissibility.<sup>87</sup> Forming equally divergent viewpoints, state courts have also debated and split on the issue of the substantive burden of relevance under Rule 702.

### B. State Appellate Decisions on Rule 702 Relevance

In addressing Rule 702 admissibility, various states have struggled with the substantive relevance burdens established by *Daubert*-type expert opinion analysis. The State of Mississippi requires expert opinions to rise to the level of probabilities before being relevant and appropriate for jury consideration, consistent with the first post-*Daubert* federal appellate decisions. Adopting the opposite approach and consistent with more recent federal appellate decisions, Colorado adopted a lenient policy for establishing Rule 702 relevance by allowing opinions on possibilities to be admissible. Even when applying modified *Frye* analysis using relevance as a consideration, jurisdictions have split on the issue of probabilities and possibilities, with California prohibiting and Illinois permitting expert testimony rising to the level of possibilities.

#### 1. Mississippi and Relevance under Rule 702- Expert Opinions to

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85. *Kaiser-Hill Co. v. MacTec, Inc.*, No. 04-cv-02509-REB-CBS, 2004 U.S. Dist. LEXIS 29922 (D. Colo. August 11, 2004).

86. *Id.* at \*11 (citing *Bitler v. A.O. Smith Corp.*, 400 F.3d 1227, 1236 n. 2 (10th Cir. 2004), *cert. denied*, 126 S.Ct. 395 (2005)). See also *Gallegos v. Swift & Co.*, No. 04-cv-01295-LTB-CBS, 2006 U.S. Dist. LEXIS 63492, at \*12 (D. Colo. Sept. 6, 2006).

87. For U.S. District Court cases adopting the reasoning of, or with reasoning similar to, *Hanford* and *Ford*, see *In re Meridia Products Liab. Litig.*, 328 F.Supp. 2d 791, 801 n.4 (N.D. Ohio 2004); *In re Silicone Gel Breast Implants Product Liab. Litig.*, 318 F.Supp. 2d 879, 893 (C.D. Cal. 2004) (applying to general causation, so as not to defy *Daubert II*); *Sullivan*, 246 F.Supp. 2d at 704. Regarding the issue of criminal cases and arguments over accuracy of expert matching, such as in *Sullivan*, see *United States v. Bonds*, 12 F.3d 540, 564 (6th Cir. 1993).

### Probabilities Only in Both Civil and Criminal Cases

The Mississippi Supreme Court has concluded since *Daubert* that expert opinions rising only to the level of possibilities are insufficient to be relevant under Rule 702. In 2007, the prohibition was extended to civil cases where expert opinions on medicine not rising to a probability were also excluded.

In the 1996 decision *Catchings v. State*, the Mississippi Supreme Court addressed Rule 702 relevance in the context of criminal prosecution.<sup>88</sup> In the case, the treating physician of the crime victim had been permitted to testify to the cause of death over an objection.<sup>89</sup> On appeal after conviction, the defense claimed error in the admission of the opinion on relevance grounds under Rule 702.<sup>90</sup>

In deciding the issue, the Mississippi Supreme Court recognized two facts to assist their analysis: that the Federal Rules do not conflict with the Mississippi Rules so that Federal law on the Rule 702 issue is helpful for analysis,<sup>91</sup> and that “[w]ithin the medical discipline, the traditional standard for ‘factfinding’ is a ‘reasonable medical certainty.’”<sup>92</sup> With those principles in mind, the court noted exclusion of expert testimony for relevance is appropriate in cases where the “expert testimony is speculative, [with experts] using such language as ‘possibility.’”<sup>93</sup>

Therefore, the Court quotes federal case law for the proposition that “the intent of the law is that if a physician cannot form an opinion with sufficient certainty so as to make a medical judgment, neither can a jury use that information to reach a decision.”<sup>94</sup> Since physicians make medical judgments to a “reasonable medical certainty,” expert opinion should also rise to the same standard to be admissible at trial.<sup>95</sup> While making this judgment, the court does caution that the particular phrase used should not necessarily be dispositive, but the test for proper admissibility is whether the expert’s opinion was to a reasonable medical

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88. *Catchings v. State*, 684 So. 2d 591 (Miss. 1996).

89. *Id.* at 596.

90. *Id.*

91. *Id.* at 597 (citing *Hopkins v. State*, 639 So. 2d 1247, 1250 (Miss. 1993)). Mississippi adopted the FED. R. EVID. effective January 1, 1986. *West v. State*, 553 So. 2d 8, 34 (Miss. 1989).

92. *Id.* at 596 (citing *Bethany v. Stubbs*, 393 So. 2d 1351, 1354 (Miss. 1981)). The court notes that while the *Bethany* case predated the adoption of MISS. R. EVID. 702 in 1986, the standard has not changed. *Id.*

93. *Id.* at 597 (citing *Schulz v. Celotex Corp.*, 942 F.2d 204, 208 (3d Cir. 1991)).

94. *Id.* (citing *Schulz*, 942 F.2d at 208).

95. *Id.*

certainty.<sup>96</sup>

Following *Catchings*, in 2007 the Mississippi Court of Appeals addressed a Rule 702 relevance issue in the civil case of *Kidd v. McRae's Stores Partnership*.<sup>97</sup> In that case, the claimant appealed the trial court's decision to limit the testimony of claimant's expert on the issue of future medical expenses, when the expert did not testify that future surgeries would be needed "to a reasonable degree of medical probability."<sup>98</sup>

In deciding the issue, the Mississippi Court of Appeals reiterated that relevance under Rule 702 is based on the expert testimony assisting the trier of fact to understand the evidence.<sup>99</sup> Then, relying on *Catchings*, the court found that an expert opinion not to a "reasonable degree of medical certainty," or, that is not stated in a way to make the opinion probable, is inadmissible as not relevant under Rule 702.<sup>100</sup>

Under Mississippi Rule of Evidence 702, as interpreted for the civil and criminal cases *Catchings* and *Kidd*, if a physician cannot form an opinion to a reasonable degree of medical certainty, then the jury cannot use the information to determine their verdict.<sup>101</sup>

Similar case precedent is seen in a variety of states since *Daubert*, with courts evaluating relevance under a Rule 702 standard preferring expert opinions rising to a probability. For example, the North Carolina Supreme Court in *Pruitt v. Powers* determined that experts discussing causation "should be confined to certain consequences or probable consequences, and should not be permitted to testify as to possible consequences."<sup>102</sup> Similarly, the Supreme Court of Wyoming addressed the issue of Rule 702 relevance in *Hoy v. DRM, Inc.*<sup>103</sup> In its decision, the court determined that expert testimony that asked the jury to determine causation based on possibilities, not probabilities, was "plainly . . . not helpful to a jury" and, therefore, not admissible under

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96. *Id.* In this case, medical certainty was found due to the extent the physician in question treated the victim for seven weeks after the crime, and the extent of his treatment and involvement in the care of the patient. *Id.* at 598. Of course, this is a fact-specific inquiry that is easily avoided by the incantation of the "reasonable medical certainty" standard at trial. In general, opinions not stated to a reasonable degree of medical certainty are not admissible. See also *West v. State*, 553 So. 2d 8 (Miss. 1989).

97. 951 So. 2d 622 (Miss. App. 2007).

98. *Id.* at 623.

99. *Id.* at 626.

100. *Id.* (citing *Catchings v. State*, 684 So. 2d 591, 597 (Miss. 1996)).

101. *Id.*

102. *Pruitt v. Powers*, 495 S.E.2d 743, 746 (N.C. 1998) (citing *Fisher v. Rogers*, 112 S.E.2d 76, 79 (N.C. 1960)).

103. *Hoy v. DRM, Inc.*, 114 P.3d 1268 (Wyo. 2005).

the “fitness” prong of the *Daubert* test.<sup>104</sup> To permit the jury to hear expert opinion evidence in terms of possibilities is simply “asking a jury to speculate,” so such testimony is not admissible.<sup>105</sup> Similar case decisions come from other states, including Kentucky, South Carolina, Tennessee, and Texas.<sup>106</sup>

Courts analyzing relevance of expert testimony and the strength of opinion do not focus uniquely on Rule 702 or *Daubert* issues. Some states have continued to use a modified *Frye* analysis after *Daubert* to find that expert opinions must rise to the level of probabilities prior to admissibility.<sup>107</sup>

In evaluating relevance of expert testimony, many states require that the opinion rise to the level of probability to be relevant under Rule 702 and admissible at trial, as the federal courts did in *Daubert II* and *Paoli*.

## 2. Colorado Model Under 702 - Expert Opinions to Possibilities Admissible in Both Civil and Criminal Cases

In contrast to the states that determine expert opinions are only relevant under Rule 702 when they rise to the level of probabilities,

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104. *Id.* at 1284.

105. *Id.*

106. *See, e.g.,* Baylis v. Lourdes Hosp., Inc., 805 S.W.2d 122, 124 (Ky. 1991) (“[E]vidence of causation must be in terms of probability rather than possibility. . . .”); Billups v. Leliuga, 398 S.E.2d 75, 77 (S.C. 1990) (citing *Armstrong v. Weiland*, 225 S.E.2d 851 (S.C. 1976) (when opinions of experts are relied upon for causation, “the expert must . . . state that . . . the injuries most probably resulted from the negligence of the defendant”)); *State v. Young*, No. 01C01-9605-CC-00208, 1998 Tenn. Crim. App. LEXIS 566, at \*61-62 (Tenn. Crim. App. May 22, 1998) (citations omitted) (“Medical testimony indicating that a certain thing is ‘possible’ generally will not satisfy the requirement of Rule 702 that an expert witness’ testimony ‘substantially assist the trier of fact.’”); *Primm v. Wickes Lumber Co.*, 845 S.W.2d 768, 771 (Tenn. App. 1992) (quoting *Lindsey v. Miami Dev. Corp.*, 689 S.W.2d 856, 862 (Tenn. 1985) (“A doctor’s testimony that a certain thing is *possible* is no evidence at all,” and “the mere possibility of a causal relationship, without more, is insufficient to qualify as an admissible expert opinion,” but noting that TENN. R. EVID. 702 is slightly different than Federal Rule of Evidence 702)); *Merrell Dow Pharms., Inc. v. Havner*, 953 S.W.2d 706, 717 (Tex. 1997) (adopting the epidemiological test for causation requiring a “2.0” risk to satisfy the more likely than not burden of proof, to help decide a fact at issue under Rule 702).

107. California uses the modified *Frye* standard. *People v. Leahy*, 882 P.2d 321, 325 (Cal.). As for the issue of possibilities and recovery, see, for example, *Simmons v. West Covina Med. Clinic*, 212 Cal. App. 3d 696, 705-06 (1989) (rejecting “lost chance” theory of recovery, deciding that it allows recovery when an adverse result “might possibly” have been avoided) and *Dumas v. Cooney*, 235 Cal. App. 3d 1593, 1605-06 (Cal. Ct. App. 1991) (noting that lost chance theory of recovery, allowing recovery on possibilities, would radically alter the meaning of causation). *See also* *Williams v. Wraxall*, 33 Cal. App. 4th 120, 133 (Cal. Ct. App. 1995) (citing *Dumas*, 235 Cal. App. 3d at 1608-10; *Simmons*, 212 Cal. App. 3d at 705-6). For the opposing viewpoint from a *Frye* state, see cases cited *infra* note 126.

Colorado recently adopted an approach that expert opinions rising to the level of possibilities are relevant and admissible in both civil and criminal cases.

Colorado adopted the Rules of Evidence effective January 1, 1980.<sup>108</sup> Both before and after the adoption of the Rules of Evidence, Colorado courts of appeal ruled that expert testimony must rise to the level of probabilities before being admissible at trial.<sup>109</sup> In 2001, the Colorado Supreme Court ruled that Rule 702 had replaced *Frye* as the standard for expert opinion admissibility in Colorado.<sup>110</sup>

In *People v. Ramirez*, the Colorado Supreme Court evaluated the issue of Rule 702 relevance and the certainty of opinion required for expert admissibility.<sup>111</sup> In *Ramirez*, the court faced an appeal of a criminal conviction, when at trial the court had permitted an expert witness, a pediatric nurse practitioner, to testify to opinions she agreed were not to a level of probability.<sup>112</sup> On appeal, the court reversed the conviction, relying on prior cases requiring opinions to a probability prior to being admissible at trial.<sup>113</sup>

After accepting *certiorari*, the Colorado Supreme Court reversed.<sup>114</sup> The court held that cases decided prior to the adoption of the Rules of Evidence in 1979 were superseded by the Rule 702 standard, and that as a result, the cases after 1979 that relied on those older decisions were also overruled.<sup>115</sup>

Instead, the court held the correct standard for admissibility of expert opinions is Colorado Rule of Evidence 702, which requires analysis as to whether the evidence is both reliable and relevant.<sup>116</sup> Relevance is determined by examining whether evidence is useful to the fact-finder in understanding other evidence or to determine a fact at issue.<sup>117</sup> Usefulness to the jury hinges on whether there is a logical

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108. *People v. Ramirez*, 155 P.3d 371, 375 (Colo. 2007).

109. See *Songer v. Bowman*, 804 P.2d 261, 265 (Colo. App. 1990), *aff'd*, 820 P.2d 1110 (Colo. 1991); *Thirsk v. Ethicon, Inc.*, 687 P.2d 1315, 1318 (Colo. App. 1983); *Daugaard v. People*, 488 P.2d 1101, 1103-4 (Colo. 1971); *Houser v. Eckhardt*, 450 P.2d 664, 668 (Colo. 1969).

110. *People v. Shreck*, 22 P.3d 68, 77 (Colo. 2001).

111. *Ramirez*, 155 P.3d at 375.

112. *Id.* at 374.

113. *Id.* For cases in Colorado previously holding expert opinions must rise to the level of probability, see cases cited *supra* note 109.

114. *Ramirez*, 155 P.3d at 382.

115. *Id.* at 375. The cases prior to 1979 include *Houser v. Eckhard*, 450 P.2d 664, 668 (Colo. 1969) and *Daugaard v. State*, 488 P.2d 1101, 1103-4.(Colo. 1971). The post-1979 cases are *Songer*, 804 P.2d at 265; and *Thirsk*, 687 P.2d at 1318, which rely on pre-1979 case law.

116. *Id.* at 378 (citing *People v. Shreck*, 22 P.3d 68, 77 (Colo. 2001)).

117. *Id.* at 379 (citing *Masters v. People*, 58 P.3d 979, 989 (Colo. 2002); *People v. Shreck*, 22

relationship between the testimony and the factual issues in the case.<sup>118</sup> The court also notes that, as a part of the reliability analysis, the expert need not provide an opinion to a certainty.<sup>119</sup>

Therefore, since opinions need not be stated to a certainty, a less than certain opinion is not speculative or inadmissible under the Rule 702 reliability analysis.<sup>120</sup> The Supreme Court then determined that once reliability is established, evidence rising only to the level of possibilities is admissible as relevant under Rule 702 because it is helpful to the jury.<sup>121</sup> The testimony from the expert, even if stated only to a possibility, could help the jury weigh ambiguous evidence and could explain the victim's statements, so the evidence has a logical relationship to the issues in the case.<sup>122</sup> As a result, the expert testimony is useful to the jury and, therefore, relevant under Rule 702 analysis, even when rising only to the level of possibilities.<sup>123</sup>

Based on the decision in *Ramirez*, expert opinions in Colorado rising to the level of possibilities will be admissible under Rule 702 as relevant in both civil and criminal cases.<sup>124</sup>

Colorado's approach to Rule 702 relevance, permitting opinions on possibilities, is also seen in a state with a modified *Frye* approach. Illinois continues to adhere to a *Frye*-based standard.<sup>125</sup> Even under the Illinois *Frye* standard, an expert may testify to possibilities at trial.<sup>126</sup>

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P.3d 68, 77 (Colo. 2001)).

118. *Id.* (citing *People v. Martinez*, 74 P.3d 316, 323 (Colo. 2003) (citing *In re Paoli R.R. Yard PCB Lit.*, 35 F.3d 717, 743, 745 & n.13)).

119. *Id.* (citing *Martinez*, 74 P.3d at 322).

120. *Id.* at 381.

121. *Id.*

122. *Id.* at 382.

123. *Id.*

124. *Ramirez*, of course, is binding precedent and it specifically overrules the interpretation of expert opinion admissibility in civil case law as well, so it applies to both civil and criminal cases. COLO. R. EVID. 702 applies to both civil and criminal cases. COLO. R. EVID. 1101(b)

125. *Donaldson v. Cent. Ill. Pub. Service Co.*, 767 N.E.2d 314, 324 (Ill. 2002) (citations omitted); *People v. Basler*, 740 N.E.2d 1, 4 (Ill. 2000); *People v. Miller*, 670 N.E.2d 721, 731 (Ill. 1996). For more on this topic, see C.E. Petit, *Illinois Overview*, <http://www.daubertontheweb.com/Illinois.htm>.

126. *Williams v. Manchester*, 864 N.E.2d 963, 996 (Ill. App. Ct. 2007) (Cahill, J., dissenting) (citing *Wojcik v. City of Chicago*, 702 N.E.2d 303, 314 (Ill. App. Ct. 1998)); *Matuszak v. Cerniak*, 805 N.E.2d 681, 685 (Ill. App. Ct. 2004) (citing *Baird v. Adeli*, 573 N.E.2d 279 (Ill. App. Ct. 1991)); *Mikus v. Norfolk and W. Ry. Co.*, 726 N.E.2d 95, 108 (Ill. App. Ct. 2000) (citing *Wojcik*, 702 N.E.2d at 314); *Wojcik*, 702 N.E.2d at 314 ("A physician may testify to what might or could have caused an injury despite any objection that the testimony is inconclusive."); *Dupree v. County of Cook*, 677 N.E.2d 1303, 1309 (Ill. App. Ct. 1997) ("[An expert] can testify in terms of possibilities or probabilities as long as the opinion is based on a reasonable degree of medical certainty.") (citing *Baird*, 573 N.E.2d at 279); *Baird*, 573 N.E.2d at 290. For the opposing

While many states require expert testimony to rise to probabilities to be relevant under Rule 702, in the *Daubert II* and *Paoli* model, Colorado recently found the opposite. It now permits expert testimony rising to possibilities as relevant under Rule 702, similar to *Hanford* and *Ford*.

C. *The Ohio Split Approach to Rule 702 Relevance*

In contrast to the Mississippi or Colorado approaches, Ohio has a split analysis of Rule 702 that requires expert opinions to rise to the level of probability in civil cases, under the preponderance of the evidence standard, but permits possibilities in criminal cases, under the beyond a reasonable doubt standard.

Ohio first adopted the Rules of Evidence effective July 1, 1980.<sup>127</sup> The Supreme Court of Ohio addressed the threshold for relevance of expert testimony and the level of certainty of the expert opinion in *Shumaker v. Oliver B. Cannon & Sons, Inc.*<sup>128</sup>

In *Shumaker*, the Ohio Supreme Court addressed both the substantive burden in civil litigation and the interrelationship of an expert's certainty and admissibility. On the first issue, the court reiterated that in civil litigation the burden is to prove elements of negligence by a preponderance of the evidence.<sup>129</sup> On the second issue, the *Shumaker* court determined that expert testimony must be excluded as speculative if the expert cannot state the opinion to a probability.<sup>130</sup> The basis of the probability requirement is: "[p]roof of possibility is not sufficient to establish a fact; probability is necessary" and "[p]robable is more than 50% of actual."<sup>131</sup> Since the plaintiff's expert in *Shumaker* testified that the chemical exposure could have caused plaintiff's injury, the opinion should have been excluded and admission of the testimony was erroneous.<sup>132</sup>

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viewpoint from a different *Frye* state, see cases cited *supra* note 107.

127. *State v. Nemeth*, 694 N.E.2d 1332, 1339 (Ohio 1998). While maintaining a *Frye* standard until after *Daubert*, Ohio has since accepted Rule 702 as the correct approach to admissibility of expert testimony. *Id.*; *Miller v. Bike Athletic Co.*, 687 N.E.2d 735, 741 (Ohio 1998). For more on this topic, see Daniel S. Fridman & J. Scott Janoe, *The State of Judicial Gatekeeping in Ohio*, <http://cyber.law.harvard.edu/daubert/oh.htm>.

128. *Shumaker v. Oliver B. Cannon & Sons, Inc.*, 504 N.E.2d 44 (Ohio 1986).

129. *Id.* at 46 (citing *Cooper v. Sisters of Charity*, 272 N.E.2d 97, 103 (Ohio 1971)).

130. *Id.*

131. *Id.* at 46 n.3 (citing *Cooper*, 272 N.E.2d at 103; *Drew v. Indus. Comm.*, 26 N.E.2d 793 (Ohio 1940); *Kuhn v. Banker*, 13 N.E.2d 242, 245 (Ohio 1938)).

132. *Id.* at 47. While the FED. R. EVID. had been adopted by Ohio at the time, it should be noted that the court did not cite them in this area, relying instead on case precedent.

The Ohio Supreme Court again addressed the issue of expert relevance and admissibility from *Shumaker* in its 1993 opinion in *State v. D'Ambrosio*.<sup>133</sup> Following a conviction for murder, the defendant appealed on a number of issues including the admission of expert testimony by a prosecution expert, the Cuyahoga County Coroner, Dr. Elizabeth Balraj.<sup>134</sup> Dr. Balraj testified that it was “physically possible that all the wounds could have been made by” the knife in evidence.<sup>135</sup> Defendant appealed on the issue, arguing that the expert’s opinion to a possibility was purely speculative and therefore inadmissible under Ohio law.

On appeal, the Ohio Supreme Court disagreed. Citing *Shumaker*, the Court stated that prior opinions held that expert testimony to possibilities rather than probabilities is inadmissible.<sup>136</sup> However, the court then stated: “we believe that the better practice, especially in criminal cases, is to let experts testify in terms of possibility.”<sup>137</sup> Because Rule 702 allows expert opinion to the extent it helps the trier of fact to understand an issue or determine a fact at issue, expert opinions to a possibility may be admitted.<sup>138</sup> Since Dr. Balraj’s testimony helped to explain that the victim’s wounds could have been caused by the knife in evidence, despite contrary appearances, the testimony helped the jury understand the evidence in the case.<sup>139</sup> As a result, the trial court properly admitted the opinion of the coroner in *D'Ambrosio* under Rule 702.<sup>140</sup>

However, in making that determination, the Ohio Supreme Court in *D'Ambrosio* made a choice to separate the level of expert certainty required for Rule 702 admissibility in civil and criminal cases. The dichotomy remains in Ohio law today.

Criminal cases in Ohio continue to adhere to the *D'Ambrosio* standard permitting expert opinion testimony on possibilities as relevant under Rule 702. In *State v. Allen*, the Ohio Supreme Court determined that the admission of a prosecution expert’s opinion that blood possibly “could have been on the objects” in evidence at some time was properly

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133. *State v. D'Ambrosio*, 616 N.E.2d 909 (Ohio 1993).

134. *Id.* at 915.

135. *Id.*

136. *Id.* (citing *Shumaker v. Oliver B. Cannon & Sons, Inc.* 504 N.E.2d 44, 44 (Ohio 1986)).

137. *Id.* (citing PAUL C. GIANELLI, OHIO EVIDENCE MANUAL 98 § 702.05 (1998); LOUIS A. JACOBS, OHIO EVIDENCE 168 § 702-03 (1989)).

138. *Id.*

139. *Id.*

140. *Id.*

admitted.<sup>141</sup> In *State v. Emerick*, a court of appeals ruled that a prosecution expert's testimony that the victim's death was caused by either exposure, suffocation, or a combination of the two was admissible at trial.<sup>142</sup> Finally, in *State v. Jones* from 2000, the Ohio Supreme Court faced an objection to expert testimony because the experts' opinions lacked the appropriate degree of scientific certainty.<sup>143</sup> Citing *D'Ambrosio*, the court held that there was no abuse of discretion in admitting the opinions, and found no error.<sup>144</sup>

At the same time, Ohio courts require expert opinions in civil cases to rise to the level of probabilities before being admitted under Rule 702. In *Kerpelis v. Pfizer, Inc.*, an Ohio appellate court held that, when presenting evidence of products liability, a claimant must establish a causal connection by competent expert testimony, "and the proof in such case must establish a probability and not a mere possibility of such causal connection."<sup>145</sup> In *Squires v. Luckey Farmers, Inc.*, an Ohio appellate court determined that causation expert evidence must be shown by probability, and that opinions to a lesser degree of certainty must be excluded as speculative.<sup>146</sup> In *Donegal Mutual Insurance Co. v. White Consolidated Industries, Inc.*, an Ohio appellate court stated flatly that in civil cases "[p]roof of causation must be by probability."<sup>147</sup>

Based on case law following *Shumaker* and *D'Ambrosio*, Ohio has set a precedent for a bifurcated Rule 702 test for relevance based on whether the case is civil or criminal. This approach takes into account the varying burdens of proof in the two types of cases, and the usefulness to the jury standard.<sup>148</sup>

In 2006, the Ohio approach became law by statute for courts in the State of Georgia. Pursuant to the Georgia Code, opinions of experts in criminal cases on "any question of science, skill, trade, or like questions

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141. *State v. Allen*, 653 N.E.2d 675, 685 (Ohio 1995) (citing *D'Ambrosio*, 616 N.E.2d at 915; *State v. Bayliss*, 357 N.E.2d 1035, 1058-59, *vacated on other grounds*, 438 U.S. 911 (1978)).

142. *State v. Emerick*, 670 N.E.2d 1060, 1062-63 (Ohio App. 1995) (citing *D'Ambrosio*, 616 N.E.2d at 915). The court also rejected the defense claim that the *D'Ambrosio* position on expert opinions to possibilities was merely dicta. *Id.* at 1063 n.2.

143. *State v. Jones*, 739 N.E.2d 300 (Ohio 2000).

144. *Id.* at 315.

145. *Kerpelis v. Pfizer, Inc.*, No. 01-CV-1310, 2004 Ohio App. LEXIS 2700, (Ohio Ct. App. June 7, 2004) (citing *Stacey v. Carnegie-III. Steel Corp.*, 101 N.E.2d 897, 899 (Ohio 1951); OHIO R. EVID. 702).

146. *Squires v. Luckey Farmers, Inc.*, No. 01-CVC-320, 2004 Ohio App. LEXIS 4462, at \*9 (citing *Shumaker v. Cannon & Sons, Inc.*, 504 N.E.2d 44, 46 n.3 (Ohio 1986)).

147. *Donegal Mut. Ins. v. White Consol. Indus.*, 852 N.E.2d 215, 221 (Ohio 2006) (citing *Shumaker*, 504 N.E.2d at 44).

148. *See infra* section IV.

shall always be admissible.”<sup>149</sup> Meanwhile, the Georgia Code precludes admissibility of expert opinions in civil cases until the court determines those opinions are based on sufficient facts and data, based on reliable principles, and the principles have been applied reliably to the facts of the case.<sup>150</sup> Further, the code specifically mentions that it is the intent of the legislature that:

the courts of the State of Georgia not be viewed as open to expert evidence that would not be admissible in other states. Therefore, in interpreting and applying this code section, the courts of this state may draw from the opinions of the United States Supreme Court in [*Daubert*, *Joiner*, and *Kuhmo*]; and other cases in federal courts applying the standards announced by the United States Supreme Court in these cases.<sup>151</sup>

Based on the statutes, Georgia also applies a split-standard for expert relevance, allowing testimony on all scientific issues in criminal cases and requiring a heightened showing, consistent with *Daubert*, before expert opinions are admissible in civil trials. Further, the statute specifically mentions a restrictive view on expert opinion admissibility in civil cases.<sup>152</sup>

Based on case law or by statute, Ohio and Georgia have a split approach to Rule 702 admissibility of expert opinions, based on whether the case is civil or criminal, demonstrating a new and sensible analysis of Rule 702 relevance.

#### IV. OHIO REPRESENTS A SENSIBLE APPROACH TO THE RELEVANCE ISSUE

The split approach from Ohio offers considerable advantages for both the civil cases, under the expert opinion probabilities requirement, and the criminal cases, allowing expert opinions on possibilities. The Ohio solution offers a practical resolution of the federal and state court disputes on the level of certainty required for an expert opinion before it is admissible as reliable under Rule 702.

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149. GA. CODE ANN. § 24-9-67 (2006).

150. *Id.* § 24-9-67.1(a).

151. *Id.* § 24-9-67.1(f).

152. *See id.*

A. *In Civil Cases, Rule 702 Relevance Should Require Expert Opinions to a Probability*

Under Rule 702, an expert's opinion may only be admitted to assist the trier of fact to understand the evidence or determine a fact at issue. For civil cases, expert opinions should rise to the level of probabilities before being relevant for the jury's consideration under the Rule 702 standard. This standard appropriately takes into account the burden of proof, prevents the invitation of speculation by the jury, avoids absurdity, and takes into account other appropriate concerns regarding the role of experts in civil litigation.

1. Requiring Probabilities in Civil Cases Appropriately Takes into Account the Preponderance of the Evidence Burden of Proof

Admission of expert opinion to a probability is based on deference to the preponderance of the evidence burden of proof in civil cases. The first federal appellate decisions on Rule 702 relevance relied heavily on the connection to the burden of proof in requiring expert testimony to a level of probability.<sup>153</sup> State decisions since then echo this concern.<sup>154</sup>

In *Paoli*, the Third Circuit recognized that relevance of expert opinions is measured by the ability of the scientific research or test to address the particular factual disputes in the case.<sup>155</sup> Since the substantive standard for civil torts is preponderance of the evidence, the court concluded that the admission of expert testimony necessarily must reflect that burden of proof.<sup>156</sup> Therefore, when the burden of proof is the preponderance of the evidence, expert opinions to a possibility or even "strong possibility" do not assist the trier of fact, and are therefore inadmissible as not helpful to the jury under Rule 702.<sup>157</sup>

The Ninth Circuit opinion in *Daubert II* mirrors the *Paoli* concern with the issue of the substantive burden shaping the relevance of expert testimony under Rule 702. In *Daubert II*, the court recognized that the burden of proof required the plaintiffs to prove the medication more

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153. *Daubert II*, 43 F.3d 1311, 1320 (9th Cir. 1995); *In re Paoli R.R. Yard PCB Litigation*, 35 F.3d 717, 750 (3d Cir. 1994).

154. *See supra* text accompanying notes 101-106.

155. *Paoli*, 35 F.3d at 743. (citing *United States v. Downing*, 753 F.2d 1224, 1237 (3d Cir. 1985)).

156. *Id.* at 750-51.

157. *Id.*

likely than not caused their injuries.<sup>158</sup> To do so, the court reasoned that the relative risk must exceed “2.0” for the risk to have been more than doubled, making the injuries more likely than not caused by the medication.<sup>159</sup> Based on this civil standard of preponderance of the evidence, the court determined that evidence of possibilities tends to *disprove* legal causation since it is inadequate for the jury to make a positive finding.<sup>160</sup> Therefore, the *Daubert II* court held that the evidence should speak “clearly and directly” to an issue in dispute in the case,<sup>161</sup> and only opinions stated to probabilities do so in a civil case with the preponderance of the evidence standard.

Similar logic underscores multiple other federal and state civil cases evaluating expert opinions. In *Porter v. Whitehall Labs., Inc.*, a federal district court evaluated expert opinions in light of the Indiana standard requiring a preponderance of the evidence in civil cases.<sup>162</sup> The court stated that “testimony as to mere possibilities will not alone suffice to place a fact in issue.”<sup>163</sup> Expert opinions relating a “hypothetical or inferential causal relation between a drug and a disease is not probative and cannot provide the basis for a reasonable finding of fact.”<sup>164</sup> Therefore, the court held that opinions of the plaintiff’s experts in the case did not rise to the level at which they would assist the jury in their determinations as required under Rule 702 and should be excluded.<sup>165</sup>

The Texas Supreme Court in *Merrell Dow Pharmaceuticals v. Haven* stated that Rule 702, in requiring courts to determine if expert opinion will assist the jury to determine a fact at issue, offers “substantive guidelines in determining if the expert testimony is some evidence of probative value.”<sup>166</sup> Therefore, relying on the epidemiological analysis of *Daubert II* and similar cases, the court affirmed that only evidence to a risk of “2.0” is relevant to the case for a finding of causation to a preponderance of the evidence.<sup>167</sup>

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158. *Daubert II*, 43 F.3d at 1320 (citing *Jones v. Ortho Pharms. Corp.*, 163 Cal. App. 3d 396, 403 (Cal. App. 1985)).

159. *Id.* at 1321 (citing *DeLuca v. Merrell Dow Pharms., Inc.*, 911 F.2d 941, 958 (3d Cir. 1990)).

160. *Id.* at 1321 (emphasis added).

161. *Id.* at 1321 n.17.

162. *Porter v. Whitehall Lab. Inc.*, 791 F.Supp. 1335 (S.D. Ind. 1992).

163. *Id.* at 1346 (citing *Noblesville Casting Div. of TRW v. Prince*, 438 N.E.2d 722, 731 (Ind. 1982); *Watson v. Med. Emergency Serv. Corp.*, 532 N.E.2d 1191, 1195 (Ind. Ct. App. 1989)).

164. *Id.* at 1345.

165. *Id.* at 1352.

166. *Merrell Dow Pharms., Inc. v. Havner*, 953 S.W.2d 706, 712 (Tex. 1997).

167. *Id.* at 717 (citations omitted).

The Wyoming Supreme Court mirrored this restrictive analysis in *Hoy v. DRM*.<sup>168</sup> After determining that the plaintiff's experts' opinions were stated only to a possibility, the court held that the lack of probability in the opinions "prevents their opinions from being 'helpful' to the jury as contemplated by [Rule] 702."<sup>169</sup> The opinions fail to assist a jury to make a determination to a preponderance of the evidence, and as such, fail to be relevant to the issues in the case under Rule 702.<sup>170</sup>

Together, these cases from both federal and state courts indicate the interrelationship of the preponderance of the evidence standard and Rule 702 relevance, and uphold the requirement that expert testimony to probabilities is required to merit Rule 702 relevance in civil cases.<sup>171</sup> Rule 702 opinion testimony to a probability of the evidence takes into account the civil standard of proof. This standard appropriately requires litigants to obtain experts who can testify that the jury should find, more likely than not, that their analysis is correct. Anything less invites speculation.

## 2. Expert Opinions to Probabilities for Rule 702 Relevance Prevent Speculation

Case decisions in *Daubert II*, *Paoli*, *Porter*, *Havner*, and *Hoy* show the requirement that Rule 702 opinions must rise to probabilities to assist the jury. These cases and other appellate decisions also demonstrate one major danger of permitting possibility opinions in civil cases – inviting speculation.

The *Daubert II* court first addressed the issue of speculation and how it relates to Rule 702 relevance and probabilities. The court cautioned that expert opinions to a probability should speak "clearly and directly" to an issue in the case, but also that the court must be careful not to permit lesser testimony that can mislead the jury.<sup>172</sup> The jury can be misled by possibilities evidence because it is an insufficient basis on which to rest a finding to a preponderance of the evidence.

The *Hoy* decision by the Wyoming Supreme Court specifically addressed the speculation issue first addressed in *Daubert II*. In *Hoy*, the expert testified to causation in the form of possibilities.<sup>173</sup> The court

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168. *Hoy v. DRM, Inc.*, 114 P.3d 1268, 1284 (Wyo. 2005).

169. *Id.* at 1284.

170. *Id.*

171. To the extent that several other courts permit possibilities, such as *Hanford*, *Ramirez*, or the Illinois cases, they are evaluated *infra* section IV(A)(2).

172. *Daubert II*, 43 F.3d 1311, 1321 n.17 (9th Cir. 1995).

173. *Hoy*, 114 P.3d at 1284.

determined that, under Rule 702, the experts' opinions on possibilities were not helpful to a fact at issue since they were not an appropriate basis for a jury to make a finding to a preponderance of the evidence.<sup>174</sup> However, the court also noted that, since the experts lacked a basis to ask the jury to make a finding to a preponderance of the evidence, the possibilities opinions were "merely asking [the] jury to speculate," because the analytical gap between the legally inadequate opinions and a finding of causation was too great.<sup>175</sup>

Similarly, in the *Cockrell v. LeMaire* case from the North Carolina Court of Appeals, the court stated that expert opinion evidence must rise to the level of probabilities and cannot address possibilities. Otherwise, "the expert is merely speculating, [and] he is in no better position than the jury to form an opinion and his speculations should be excluded."<sup>176</sup>

In contrast, the cases permitting expert testimony to a lesser degree of certainty than probabilities - *Hanford*, *Ramirez*, and the Illinois cases<sup>177</sup> - invite speculation.

In *Hanford*, the court permitted the experts to testify to causation that does not meet the "2.0" relative risk established in *Daubert II*.<sup>178</sup> Relying on prior radiation exposure case law, the court determined that any exposure could cause the injuries, so no requirement for a doubling dose would be required.<sup>179</sup> Based on this determination, a plaintiff in the lawsuit exposed merely to a background level of radiation, less than the "2.0" level of relative risk, may present expert evidence that his or her cancer was caused by the defendants and invite the jury to speculate that the causation has been established as more likely than not. Opening the door for the jury to make a finding on inadequate evidence, less than a "2.0" risk level, is an invitation to speculation.<sup>180</sup>

The Colorado Supreme Court decision in *Ramirez* also invites speculation since, in overruling prior civil cases requiring evidence to rise to the level of probabilities, the court expressly permits experts in civil cases to provide Rule 702 opinions not rising to the level of the burden of proof.<sup>181</sup> While the court states that evidence that is reliable

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174. *Id.*; *supra* text accompanying note 169.

175. *Id.* at 1284.

176. *Cockrell v. LeMaire*, No. COA03-327, 2004 N.C. App. LEXIS 142, at \*3 (N.C. App. January 20, 2004) (citing *State v. Bowen*, 139 N.C. App. 18, 31-32 (N.C. App. 2000)).

177. *See supra* note 126 and accompanying text.

178. *In re Hanford Nuclear Reservation Litig.*, 292 F.3d 1134, 1137 (9th Cir. 2002).

179. *Id.* (citing *In re Three Mile Island Litig.*, 193 F.3d 613, 727 n.179 (3d Cir. 1999)).

180. *But see supra* notes 58, 77 and accompanying text.

181. *People v. Ramirez*, 155 P.3d 371, 379-80 (Colo. 2007). *See also supra* text accompanying notes 111-120.

under *Daubert*-like analysis is not speculative and, therefore, is appropriate for the jury's consideration, the analysis more appropriately applies to criminal cases alone and fails to establish that the same reasoning on usefulness applies in the civil context.<sup>182</sup>

While evaluated under a modified-*Frye* analysis, Illinois case law also shows the dangers of permitting testimony on possibilities in civil cases. In *Wojcik*, the court permitted an expert physician to testify to opinions to the level of possibility, stating that “[a] physician may testify to what might or could have caused an injury despite any objection that the testimony is inconclusive.”<sup>183</sup> The court, therefore, leaves the jury to decide whether the totality of the evidence meets the burden of proof. The court's analysis leads to difficulty in a Rule 702 context because, as a matter of law, courts admit expert opinions solely to assist the trier of fact in an area of specialization outside of common knowledge.<sup>184</sup>

When possibilities opinions enter into evidence, expert testimony is presented to the jury on issues for which the jury must make complex determinations of sufficiency and credibility. These technical or scientific issues address areas in which the jury has little or no prior knowledge to independently evaluate the experts. The situation created by admitting possibilities, therefore, invites the jury to speculate on issues outside their knowledge and to make necessarily uninformed decisions.

Cases addressing the relevancy prong of Rule 702 and denying expert opinions on possibilities reject the invitation to speculation by requiring probabilities from experts, based on the civil burden of proof.

### 3. Opinions to a Probability Avoid the Absurdity of Experts Testifying on Issues to a Possibility and, as a Member of the Jury, Voting Otherwise

In addition to accounting for the burden of proof and rejecting an invitation for speculation, the Ohio requirement in civil cases for opinion testimony to rise to probabilities before Rule 702 relevance is established also avoids absurdity.

One canon of judicial interpretation is to avoid interpreting a statute

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182. *Id.* For an analysis of why *Ramirez* is correct in the criminal context only, see *infra* section IV.B.

183. *Wojcik v. City of Chicago*, 702 N.E.2d 303, 314 (Ill. App. Ct. 1998).

184. FED. R. EVID. 702 and advisory committee notes to 1972 proposed rules (citing Ladd, *supra* note 8, at 418).

or rule in a manner that creates an absurd result.<sup>185</sup> Permitting an expert to testify to an opinion held only to a possibility results in an absurd situation: the expert testifies on an issue, on behalf of her client, when the expert would not be able to make a finding on that issue in the client's favor. In other words, the expert testifies when he or she could not vote on the issue in the manner he or she is advocating. Rule 702 interpretation cannot result in this absurd situation.

This absurdity is touched upon in the Mississippi case *Catchings v. State*. In the case, the court noted that, within the medical community, the standard for fact-finding is a "reasonable medical certainty."<sup>186</sup> As a result, "if a physician cannot form an opinion with sufficient certainty so as to make a medical judgment, neither can a jury use that information to reach a decision."<sup>187</sup> The *Catchings* court requires a medical certainty or probability prior to admissibility, and in doing so, avoids the absurdity issue raised by opinions on possibilities.

In addition to the *Catchings* analysis, the U.S. Supreme Court in *Kuhmo* cautions that the overriding concern of *Daubert's* gatekeeping function is to ensure that an expert "employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field."<sup>188</sup> In that context, the expert testifying to an opinion to a possibility, if asked and applying the same intellectual rigor to the field, must confess that he or she could not make a finding on that issue to a probability, as the jury is being asked to do.<sup>189</sup>

To avoid the pitfalls of the expert in a civil case testifying to possibilities, the better practice is for courts to deny Rule 702 relevance to possibility opinions in civil cases, consistent with the Ohio example. By applying the Ohio interpretation of Rule 702, courts avoid absurdity, consistent with black letter rules of judicial interpretation, preserve the expert's credibility when cross-examined, and apply the same level of intellectual rigor in the courtroom as in the laboratory.

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185. *Demarest v. Manspeaker*, 498 U.S. 184, 190-91 (1992) (interpreting statute); *Perry v. Commerce Loan Co.*, 383 U.S. 392, 400 (1966) (interpreting statute); *Fallen v. United States*, 378 U.S. 139, 144 (1964) (interpreting federal rules of criminal procedure). See generally John F. Manning, *The Absurdity Doctrine*, 116 HARV. L. REV. 2387, 2393-2431 (2003) (discussing the absurdity rule in American law).

186. *Catchings v. State*, 684 So. 2d 591, 596 (Miss. 1996) (citing *Bethany v. Stubbs*, 393 So. 2d 1351, 1354 (Miss. 1981)).

187. *Id.* at 597 (citing *Schulz v. Celotex Corp.*, 942 F.2d 204, 208 (3d. Cir. 1991)).

188. *Kuhmo Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999).

189. See FED. R. EVID. 704 (opinion on ultimate issue).

#### 4. Other Concerns

Ohio case law admitting only probability opinions in civil cases includes considerations of the civil burden of proof and the goals of resisting jury speculation, and avoiding absurdity. In addition to these concerns, the Ohio rule also has several other results that positively affect the aims and role of the judicial process.

##### a. Differences Between Legal Relevance and Practical Relevance

First, the Ohio rule requiring probabilities opinions in civil cases takes into account a major distinction between *legal* relevance and *practical* relevance. A possibility opinion may, as a practical effect, persuade the jury to vote in favor of the expert's opinion. However, it legally should not do so when only to the level of possibility since it, as a matter of law, is an insufficient basis for a verdict.

The concern of practical versus legal relevance is addressed in *Porter v. Whitehall Industries*, when the court states “[a]n opinion tending to sway the jurors is not equivalent to an opinion tending to prove a fact. When evidence would merely affect a lay person's ‘irrational’ opinion about a fact rather than providing reliable proof of that fact, the evidence is neither probative nor admissible.”<sup>190</sup> Therefore, to avoid the irrational effects of practical relevance, the better approach is to deny admissibility to possibilities opinions as not legally relevant.

##### b. Negative Effect of Possibilities on the Outside-the-Courtroom Practices of Professionals

A second concern in favor of the Ohio rule is the effect of the Rule 702 standard on the practices of professionals outside the courtroom when they must defend against possibilities opinions in negligence cases. In the context of medical malpractice litigation, the California Court of Appeals addressed this concern in *Simmons*. In *Simmons*, the court rejected the invitation to permit recovery on evidence rising only to possibilities, relying on three major practical effects on physicians.<sup>191</sup> The court therefore determined that, because of these effects, permitting recovery based on possibilities would be contrary to logic, precedent,

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190. *Porter v. Whitehall Labs., Inc.*, 791 F.Supp. 1335, 1345 n.9 (S.D. Ind. 1992).

191. *Simmons v. West Covina Med. Clinic*, 212 Cal. App. 3d 705, 706 (Cal. App. 1989).

and public policy.<sup>192</sup>

One effect of permitting recovery on possibilities is to “encourage costly and unreasonable over-testing and over-treatment for defensive purposes. Physicians would find it necessary to place the requirements of the legal system before the needs and finances of the patient.”<sup>193</sup> The concern of courtroom standards for evidence therefore can have direct and negative effects on patient care in a health care context, and the Ohio rule restricts this concern, as the court did in *Simmons*.

The second effect of permitting recovery on possibilities is that “the physicians’ increased exposure to liability would adversely impact already high medical malpractice premiums, resulting in an upward spiral of consumer costs.”<sup>194</sup> While written in 1989, the opinion correctly anticipated the effect insurance rate and consumer cost difficulties would have on the practical ability of health care providers to practice.<sup>195</sup> To limit this effect, a court should limit physicians’ exposure to inadequate lawsuits by applying the Ohio relevance rule and denying admissibility to expert opinions rising only to a possibility.

The effect of expert opinions to possibilities does not solely affect health care providers, as discussed in *Simmons*. Rather, the concern extends to other professionals, including those practicing law. The California Court of Appeals addressed this concern in *Dumas v. Cooney*, where the court cautioned that recovery from professionals for possibilities would extend beyond the *Simmons* situation with physicians, and allow a disgruntled litigant to sue his or her own attorney for a negative verdict.<sup>196</sup> Such results are to be avoided for the same reasons as stated in *Simmons*, as violating sound logic, legal precedent, and public policy.<sup>197</sup>

Finally, the *Simmons* court theorized that the uncertainty created by allowing recovery based on possibility opinions would “open the

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192. *Id.* at 705.

193. *Id.* at 705-06.

194. *Id.* at 706.

195. See, e.g., Alastair MacLennan, M.D., Karin B. Nelson, M.D., Gary Hankins, M.D., & Michael Speer, M.D., *Who Will Deliver Our Grandchildren? Implications of Cerebral Palsy Litigation*, 294 JAMA 1688 (2005); Richard E. Anderson, M.D., *Defending the Practice of Medicine*, 164 ARCH. INTERN. MED. 1173 (2004); Robert G. Brooks, M.D., Nir Menachemi, Ph.D., Cathy Hughes, M.S.W., & Art Clawson, M.S., *Impact Of The Medical Professional Liability Insurance On Access To Care In Florida*, 164 ARCH. INTERN. MED. 2217 (2004); Patrick J. Hope, *Reforming the Medical Professional Liability Insurance System*, 114 AM. J. MED. 622 (2003).

196. *Dumas v. Cooney*, 235 Cal. App. 3d 1593, 1609 (Cal. App. 1991).

197. *Id.* at 1607 (citing *Simmons v. West Covina Med. Clinic*, 212 Cal. App. 3d 705, 705-06 (Cal. App. 1989)).

proverbial floodgates of our overburdened judicial system.”<sup>198</sup> While unrelated to the defendant’s liability, this practical effect deals with the administration of justice and the ability of the justice system to handle large numbers of suits effectively. The Ohio interpretation preventing this result, then, is consistent with the judicial interpretation of both the Rules of Civil Procedure and the Rules of Evidence: “to secure the just, speedy, and inexpensive determination of every action.”<sup>199</sup>

The effect of admission of possibilities opinions dictates use of the Ohio rule in civil liability cases in order to prevent defensive practices by health care or other professionals, to limit growth of skyrocketing insurance premiums, and to prevent overburdening the legal system.

### c. Special Role of Experts in Lawsuits Mandates Caution

The special and persuasive role of experts in litigation is an additional practical reason to limit the admissibility of possibilities opinion evidence. Because experts testify necessarily on areas in which the jury lacks knowledge, the jury lacks the ability to evaluate the testimony critically.<sup>200</sup> Because the lack of knowledge can be misleading to a lay jury, the courts should use an abundance of caution prior to admitting weak expert opinions into trial.<sup>201</sup>

The *Daubert II* court recognized this concern, stating that since the expert role in the case is one so potentially “powerful and . . . misleading,” the courts should exclude opinions with the potential to mislead the jury unless clearly related to the issues in the case.<sup>202</sup> An expert opinion to the level of possibilities lacks legal relevance, but can be powerful and misleading due to the practical effect of persuasive expert opinions. Because of this result, expert opinions to a possibility should be excluded per *Daubert II*, as they are under the Ohio relevance test.

Analysis of the interrelationship of the burden of proof and Rule 702 relevance, the discouraging of speculation, the role of absurdity in judicial interpretation of Rule 702, and the other effects of the Ohio rule leads to the conclusion that in civil litigation an expert opinion should only be relevant and admissible under Rule 702 if it rises to the level of

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198. *Simmons*, 212 Cal. App. 3d at 706.

199. FED. R. CIV. P. 1. *See also* FED. R. EVID. 102.

200. *See supra* section IV.A.3 and text accompanying notes 188-189.

201. *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 595 (1993) (citing Weinstein, *supra* note 23, at 632.

202. *Daubert II*, 43 F.3d 1311, 1321 n.17 (9th Cir. 1995).

probabilities.

*B. In Criminal Cases, the Correct Rule 702 Relevance Standard is Expert Opinions to a Possibility*

In contrast to civil litigation, expert opinions stated as possibilities should be admitted in criminal cases for jury consideration under Rule 702. The criminal cases permitting expert admissibility on possibilities, *Ford*, *Ramirez*, and *D'Ambrosio*, contrast with other cases that strictly hold to the probability standard, and show the practicality of the Ohio Rule 702 relevance rule. The Ohio rule appropriately accounts for the different burden of proof in criminal cases, and avoids the absurdity issue that results from admitting possibilities in civil cases.

1. The Admission of Expert Opinions to Possibilities Takes into Account the Criminal Burden of Proof, as Demonstrated in Cases Examining Rule 702 Expert Testimony in the Criminal Context

The *Daubert* opinion cautioned that relevance under Rule 702 required “a valid scientific connection to the pertinent inquiry as a precondition to admissibility.”<sup>203</sup> Part of this analysis is to determine whether the expert testimony is sufficiently tied to the facts to aid the jury in the resolution of a factual dispute.<sup>204</sup> “Expert testimony which does not relate to any issue in the case is not relevant and, ergo, not helpful.”<sup>205</sup>

Consistent with the Ohio case law, the relevance standard under Rule 702 should require expert opinions in civil litigation to rise to probabilities prior to being admitted.<sup>206</sup> This result appropriately takes into account the burden of proof, declines to invite speculation, avoids absurdity, and has significant beneficial practical effects.

However, Rule 702 relevance is appropriately modified in the criminal case law based on the criminal burden of proof. Expert opinions to possibilities can assist a jury in a criminal case in evaluating the evidence and resolving a factual dispute, so the opinions retain their relevance for admission under Rule 702.

Cases evaluating the relevance of expert testimony in criminal

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203. *Daubert*, 509 U.S. at 592.

204. *Id.* at 591 (quoting *United States v. Downing*, 753 F.2d 1224, 1242 (3d. Circ. 1985)). *See also Daubert II*, 43 F.3d at 1315 (citing *Daubert*, 509 U.S. at 591-92).

205. *Id.* at 591 (citing WEINSTEIN & BERGER, *supra* note 11, at 702-718).

206. *See supra* section IV(A).

cases recognize the affect of the burden of proof in criminal cases on Rule 702 relevance. In *United States v. Ford*, the Third Circuit's evaluation of the testimony of a shoeprint identification expert began with the *Daubert* standard that relevance requires the evidence to assist the trier of fact.<sup>207</sup> Although the expert testified only that the shoes the defendant wore "could not be ruled out" as a source of the shoeprint at the crime scene, the testimony remained relevant because the testimony is probative of whether the defendant participated in the crime.<sup>208</sup> The *Ford* court reiterated that the standard for relevancy, in this context, "is not that high."<sup>209</sup>

Unlike the civil litigation context, where the shoe imprint testimony would not be helpful to the jury to decide liability until it became probable that the shoe was the defendant's, the expert testimony in *Ford* does help the jury in their overall analysis of whether the defendant participated in the robbery by tying the shoes he wore when apprehended to the shoes in the robbery. The Third Circuit decided this is "clearly relevant" to the issues, and should be admitted even if only in terms of possibility.<sup>210</sup>

The Colorado Supreme Court similarly evaluated expert testimony under Rule 702 in its decision in *Ramirez*.<sup>211</sup> The court first determined that Rule 702 requires relevance and reliability prior to admissibility.<sup>212</sup> When determining relevance, the issue is one of usefulness to the jury.<sup>213</sup> Usefulness is based on "whether there is a logical relationship between the proffered testimony and the factual issues in the case."<sup>214</sup> The court then evaluated the expert testimony of the pediatric nurse practitioner, who testified that the physical findings of her evaluation of the victim were "suspicious."<sup>215</sup> Since the criminal case hinged on whether the victim had been assaulted, and the opinion contradicted the emergency department physician who had examined the victim and

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207. *United States v. Ford*, 481 F.3d 215, 219 (3d Cir. 2007) (citing *Daubert*, 509 U.S. at 591).

208. *Id.* at 220-21 (citing *United States v. Ross*, 263 F.3d 844, 846 (8th Cir. 2001); *United States v. Ferri*, 778 F.2d 985, 988 (3d Cir. 1985); *United States v. Rose*, 731 F.2d 1337, 1346-47 (8th Cir. 1984)). Participation in the crime, of course, is established under the beyond the reasonable doubt standard.

209. *Id.* at 219 (citing *Lauria v. Nat'l R.R. Passenger Corp.*, 145 F.3d 593, 600 (3d Cir. 1998) (quoting *In re Paoli R.R. Yard PCB Litig.* 35 F.3d 717, 745 (3d Cir. 1994))).

210. *Id.* at 220-21.

211. *People v. Ramirez*, 155 P.3d 371, 378 (Colo. 2007).

212. *Id.* at 378 (citing *People v. Shreck*, 22 P.3d 68, 77 (Colo. 2001)).

213. *Id.* at 379 (citing *Shreck*, 22 P.3d at 77).

214. *Id.* (citing *People v. Martinez*, 74 P.3d 316, 323 (Colo. 2003)).

215. *Id.* at 381.

stated the exam was normal, the nurse's testimony had a "direct logical relation" to the factual issues in the case.<sup>216</sup> Otherwise, the jury would be left with the misleading impression that the health care providers who examined the victim agreed that the examination was normal.

Expert testimony to a possibility is also appropriately admitted as relevant under Rule 702 by the Ohio Supreme Court in *D'Ambrosio*.<sup>217</sup> Similar to the nurse in *Ramirez*, the coroner in *D'Ambrosio* testified that the victim's wounds "could have been made by" the weapon in evidence at trial.<sup>218</sup> The testimony by the coroner demonstrates to the jury "that, despite contrary appearances, the size of the wound was consistent with the size and shape of [the knife in evidence]." <sup>219</sup> Because of the helpfulness to the jury in understanding the evidence at trial, the testimony had Rule 702 relevance.<sup>220</sup> Otherwise, the jury would be left with a misleading impression that the knife was unable to make the wounds on the victim.

Similar to *Ford*, the *Ramirez* and *D'Ambrosio* decisions demonstrate that expert testimony that fails to rise to the level of probability can, in criminal cases, be appropriately considered by the jury. The Ohio solution to Rule 702 relevance permits this possibility evidence for criminal cases based on the varying jury determination to be made under the beyond a reasonable doubt standard.

The *Ford*, *Ramirez*, and *D'Ambrosio* decisions stand in contrast to the criminal opinions that required expert opinions stated to a probability: *Catchings* and *State v. Young*.<sup>221</sup> In *Catchings*, the court determined that any testimony that failed to rise to the level of reasonable medical certainty would not be admissible.<sup>222</sup> The testimony in *Catchings* was from a physician who, after the defendant struck the victim with a sawhorse, treated the victim for seven weeks prior to his death.<sup>223</sup> The expert failed to state his opinions to a reasonable medical certainty, so ordinarily the testimony would be inadmissible.<sup>224</sup>

In *Catchings*, the court did admit the testimony in the end.<sup>225</sup> The

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216. *Id.* at 382 (citing *Martinez*, 74 P.3d at 323).

217. *State v. D'Ambrosio*, 616 N.E.2d 909, 915 (Ohio 1993).

218. *Id.*

219. *Id.*

220. *Id.*

221. *Catchings v. State*, 684 So. 2d 591 (Miss. 1996); *State v. Young*, No. 01C01-9605-CC-00208, 1998 Tenn. Crim. App. LEXIS 566, at \*61-62 (Tenn. Crim. App. May 22, 1998).

222. *Catchings*, 684 So. 2d at 597.

223. *Id.* at 597-98.

224. *Id.*

225. *Id.*

court determined that, while he had not stated so, the physician's opinion "evidences the certainty required for admission."<sup>226</sup> In doing so, the court reached the correct result consistent with the basic principles of Rule 702 relevance. Instead of making a finding that the testimony was to a probability when it did not contain that certainty, the court could have applied the "split standard" for Rule 702 relevance from Ohio, consistent with the underlying purposes of Rule 702 opinions as stated since *Daubert*. Since the issue of the physician's opinion on death related to a fact at issue in the case, whether or not the defendant caused the victim's death and is guilty, the Ohio approach permits the evidence without the court requiring a retrospective approach to the testimony and a *post hoc* finding of probability.

A similar result is seen in *State v. Young* from the Tennessee Court of Criminal Appeals. In that case, the medical examiner testified to the results of his examination of the victim but, as in *Catchings*, failed to testify to a "reasonable medical certainty."<sup>227</sup> While the court determined that Tennessee law requires testimony to a reasonable medical certainty to be relevant under Rule 702, the court evaluated the specific language used by this medical examiner and, like *Catchings*, determined that the "doctor's responses were clear and unequivocal."<sup>228</sup> Therefore, his testimony was "not so speculative that it was not of substantial assistance to the jury."<sup>229</sup> Just as in *Catchings*, the *Young* decision shows that, in lieu of verbal gymnastics to ensure an opinion is deemed to be to a probability, the better approach is to permit testimony to a possibility. This approach is consistent with the basic principle of Rule 702 admissibility since *Daubert*: to help the jury evaluate a fact at issue and the evidence in the case.

The Ohio approach permits expert testimony in criminal cases under a Rule 702 standard admitting possibilities, which allows testimony on issues useful to the jury by appropriately adjusting the relevance standard for the criminal law burden of proof. Criminal cases taking a dogmatic approach to expert testimony often reach the same result. However, courts applying the dogmatic approach must stretch

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226. *Id.*

227. *State v. Young*, No. 01C01-9605-CC-00208, 1998 Tenn. Crim. App. LEXIS 566, at \*62 (Tenn. Crim. App. May 22, 1998).

228. *Id.* at \*64.

229. *Id.* at \*65. The Court does find harmless error in the admission of some medical examiner testimony that was "indefinite and vague" and "invited speculation," but those responses of the medical examiner are so indefinite as to time that they could have been inadmissible under the possibilities standard under the Ohio rule. *Id.* at \*65-66.

their analysis of the expert opinions in order to find that they are to a probability, and therefore admissible. An adjustment of the relevance standard reaches the same result through the application of pre-existing rules and considerations. The Ohio evaluation of Rule 702 relevance adjusts for the varying burden of proof by admitting evidence at criminal trials that is appropriate to the issues in those trials even though the same evidence would not be admissible in civil cases.

## 2. Absurdity Issue for Civil Cases Not Present for Criminal Cases

Permitting expert testimony rising to the level of possibilities in criminal cases, under the Ohio approach to Rule 702, does not invite absurdity as in civil cases.<sup>230</sup>

In the context of civil cases to a preponderance of the evidence, the admission of possibilities testimony permits an expert to opine on an issue on which he or she could not make a finding in favor of his or her client as a member of the jury.<sup>231</sup> By permitting this result, the civil courts' dogmatic approach results in an absurdity.<sup>232</sup>

However, in the criminal law context, expert testimony to a possibility does not result in an absurdity. For example, in *Ford*, the prosecution expert testifying on the shoe print comparison to a possibility could, as a theoretical jury member, vote for conviction. The same is true for the nurse in *Ramirez*, the coroner in *D'Ambrosio*, the physician in *Catchings*, and the medical examiner in *Young*.

As a result, the split-relevancy approach to Rule 702 excludes possibilities in civil cases because of the absurdity of the result, but permits expert opinions to a possibility in criminal cases when the absurdity no longer is an issue due to the varying standard of proof.

Expert opinions to the level of possibilities can, in the criminal context, help the jury evaluate the evidence and determine facts while avoiding the misleading impressions of the events that could result if the opinions are not admitted. Analysis of the interrelationship of the criminal burden of proof and Rule 702 relevance, by examining the criminal case law, leads to the conclusion that, in criminal law, an expert opinion should be admissible when only rising to the level of possibilities.

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230. See *supra* section IV.A.3.

231. *Id.*

232. *Id.*; see also *supra* note 181 and accompanying text.

## V. CONCLUSION

The 1993 Supreme Court decision in *Daubert* determined that Rule 702 provided the appropriate test for the admissibility of expert testimony, and that expert testimony should be deemed both reliable and relevant prior to admission at trial.

Since 1993, federal and state courts have evaluated the issue of Rule 702 relevance with different results. Federal appellate decisions shortly after *Daubert*, such as *Daubert II* and *Paoli*, determined that expert opinions should only be admitted as relevant under Rule 702 when they rise to the level of probabilities. Multiple federal district courts since *Daubert II* and *Paoli* adopted this approach.

More recently, federal appellate decisions in cases such as *Hanford* and *Ford* admitted expert testimony stated as possibilities. The 2004 decision of Judge Blackburn in *Kaiser-Hill* denied that Rule 702 requires expert opinions to any particular level of certainty.

State courts also have varying approaches to the issue. Some states, like Mississippi in the *Catchings* and *Kidd* cases, require expert testimony to rise to the level of medical probability prior to admission in both the civil and criminal context. On the other hand, other states like Colorado permit expert testimony of possibilities in both civil and criminal cases. In contrast to both the Mississippi and Colorado examples, the state of Ohio adopted a split approach for Rule 702 relevance in *D'Ambrosio*: permitting expert testimony of possibilities in the criminal context but insisting expert opinions rise to the level of probabilities to be relevant in civil cases.

The Ohio example in *D'Ambrosio* offers a sensible approach to the Rule 702 relevance issue. Requiring expert testimony to probabilities in civil cases appropriately takes into account the preponderance of the evidence standard. In addition, the standard avoids an invitation to jury speculation and absurdity of an expert's position vis-à-vis their client's claims, both of which would result from admitting expert opinions to possibilities. Finally, the requirement of expert opinions to probabilities in civil cases has several other beneficial effects: it takes into account the difference between practical relevance to sway a jury and legal relevance to make a finding; it reduces out-of-the-courtroom practice changes for professionals seeking to avoid exposure to liability based on possibilities; and it mandates caution for the judicial process based on the special persuasive effect of experts to a lay jury.

The Ohio example for Rule 702 relevance also appropriately permits expert opinions rising to the level of possibilities in criminal

cases. This approach permits expert opinions that assist the jury in evaluating the evidence, making a determination on a fact at issue, and avoiding misleading impressions of evidence by permitting greater leeway in their level of certainty. In analyzing the cases permitting expert testimony to possibilities, such as *Ford*, *Ramirez* and *D'Ambrosio*, the possibility expert opinions that were admitted appropriately assisted the jury to resolve the issues in those cases, and, therefore, maintained relevance under Rule 702.

The Ohio split approach is a sensible way to analyze Rule 702 expert opinion relevance, taking into account the burdens of proof in civil and criminal cases and balancing the effects on litigants. It should be adopted by other jurisdictions as a practical and bright-line approach to determine Rule 702 relevance and, therefore, admissibility of expert opinions with varying levels of certainty.