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# THE DISPARATE TREATMENT OF NEUROSCIENCE EXPERT TESTIMONY IN CRIMINAL LITIGATION

JAMIE WAGENHEIM\*

Neuroscience has the potential to significantly impact civil and criminal litigation.<sup>1</sup> Attorneys have successfully used neuroscience evidence to demonstrate that a client had an inability to form the requisite intent for a particular crime,<sup>2</sup> that a child's violence resulted from his experiences playing graphic video games,<sup>3</sup> and that brain deficiencies vitiated an assailant's self control.<sup>4</sup> Not all state and federal courts readily accept neuroscience evidence, instead applying their respective state and federal rules of evidence on the admissibility of expert testimony with varying degrees of stringency.<sup>5</sup> Even states applying identical evidentiary standards have taken different approaches to the admissibility of neuroscience evidence.<sup>6</sup> For neuroscience evidence to reach its full potential, the state and federal courts must

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1. See Joshua Greene & Jonathon Cohen, *For the Law, Neuroscience Changes Nothing and Everything*, 359 PHIL. TRANSACTIONS ROYAL SOC.1775, 1775 (2004) (“[N]euroscience will challenge and ultimately reshape our intuitive sense(s) of justice. New neuroscience will affect the way we view the law . . .”).

2. See *New York v. Weinstein*, 591 N.Y.S.2d 715, 717 (Sup. Ct. 1992) (using neuroscience to argue that a brain defect prevented a husband from forming the requisite intent to strangle his wife and throw her out of a window twelve stories above the ground).

3. *Entertainment Software Ass'n v. Blagojevich*, 404 F. Supp. 2d 1051, 1059 (N.D. Ill. 2005) (arguing that graphic video games cause children to behave aggressively).

4. See Jeffrey Rosen, *The Brain on the Stand*, N.Y. TIMES MAG., Mar. 11, 2007, at 49 (describing the popularity of Daniel Martell's litigation consulting business, Forensic Neuroscience, where he has testified in hundreds of civil and criminal cases on neuroscience issues, including the use of brain scans to argue that a neurological impairment prevented litigants from exercising self-control).

5. See Owen D. Jones et al., *Brain Imaging for Legal Thinkers: A Guide for the Perplexed*, 2009 STAN. TECH. L. REV. 5, ¶ 26 (2009), <http://stlr.stanford.edu/pdf/jones-brain-imaging.pdf> (noting that scientific evidence standards differ between states).

6. See *infra* Part II.

apply evidentiary rules uniformly in order to establish a consistent, predictable standard.

Part I of this paper will discuss the Federal Rules of Evidence on expert testimony and the revolutionary Supreme Court case that redefined the Federal Rules, *Daubert v. Merrell Dow Pharmaceuticals*.<sup>7</sup> Part II will examine *Quick v. State*<sup>8</sup> and *U.S. v. Scott*,<sup>9</sup> two recent criminal cases from two different courts applying the *Daubert* standard. Each court applied the evidentiary rules differently in determining whether to admit neuroscience evidence that supported similar exculpatory arguments regarding the requisite intent to commit murder and assault, respectively.<sup>10</sup> Finally, Part III will analyze the *Daubert* ruling's effect on the admissibility of scientific evidence and reasons for the variation in the treatment of similar neuroscience testimony in different courts applying comparable evidentiary standards, particularly in the recent context of the *Quick* and *Scott* rulings.

### I. THE FEDERAL RULES OF EVIDENCE ON EXPERT TESTIMONY

Expert testimony has faced criticism since at least the nineteenth century.<sup>11</sup> Judge Learned Hand, discontent with the increasing frequency of highly credentialed experts offering completely polarized opinions on the stand, questioned, “[H]ow can the jury judge between two statements each founded upon an experience admittedly foreign in kind to their own?”<sup>12</sup>

Fifty years prior to the enactment of the Federal Rules of Evidence, the District of Columbia Court of Appeals established the first uniform federal standard for the admissibility of expert testimony in *Frye v. United States*.<sup>13</sup> In *Frye*, the Court excluded testimony regarding a new systolic blood pressure test designed to detect falsehood because the expert testimony attempted to prematurely introduce an underdeveloped principle.<sup>14</sup> The Court then established what became known as the “*Frye* rule” in holding that “while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.”<sup>15</sup> Courts

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7. 509 U.S. 579 (1993).

8. No. 01-09-01127-CR, 2011 Tex. App. LEXIS 680 (Tex. App. Jan. 27, 2011).

9. No. CR-09-0131-EFS, 2011 WL 1327033 (E.D. Wash. April 7, 2011).

10. See *infra* Part II.

11. Lee Loevinger, *Science as Evidence*, 35 JURIMETRICS J. 153, 154 (1994).

12. Learned Hand, *Expert Testimony, Historical and Practical Considerations Regarding*, 15 HARV. L. REV. 40, 54 (1902).

13. 293 F. 1013, 1014 (D.C. Cir. 1923).

14. *Id.*

15. *Id.*

followed *Frye*, even after the enactment of the Federal Rules, until the Court clarified that the Federal Rules supersede *Frye*.<sup>16</sup>

Rules 702 through 706 of the Federal Rules of Evidence govern expert testimony.<sup>17</sup> Rule 702 concerns Testimony by Experts generally and provides that:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.<sup>18</sup>

Rule 704 governs Opinion on Ultimate Issue, which becomes relevant in criminal cases such as *Quick* and *Scott* when experts seek to testify as to a defendant’s requisite intent to commit a particular crime.<sup>19</sup> Rule 704 provides, “[i]n a criminal case, an expert witness must not state an opinion about whether the defendant did or did not have a mental state or condition that constitutes an element of the crime charged or of a defense. Those matters are for the trier of fact alone.”<sup>20</sup>

The Federal Rules still require that the judge ultimately decides whether or not to admit the expert testimony, a role described as gatekeeping.<sup>21</sup> State courts have their own rules of evidence, but many states have attempted to correlate their rules with the federal rules both linguistically and numerically.<sup>22</sup>

In 1993, the Supreme Court’s ruling in *Daubert* completely restructured how courts approached the admissibility of expert testimony.<sup>23</sup> In *Daubert*, the Court delineated five factors for courts to consider in admitting expert testimony:

- (1) whether the expert’s technique or theory can be or has been tested - that is, whether the expert’s theory can be challenged in some objective sense, or whether it is instead simply a subjective,

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16. *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579, 598 (1993) (“[T]he *Frye* rule did not survive the enactment of the Federal Rules of Evidence.”). Prior to the Court’s ruling in *Daubert*, the courts highly regarded *Frye* as the governing standard, with nearly 1000 cases between 1930 and 1993 directly citing the *Frye* rule. See Loevinger, *supra* note 11, at 157 n. 19.

17. FED. R. EVID. 702–706.

18. *Id.* at 702.

19. *Id.* at 704(b).

20. *Id.*

21. FED. R. EVID. 702 advisory committee’s note.

22. Tennessee, Texas, and Maryland are examples of states that have all adopted evidentiary rules on expert testimony that mirror the Federal Rules. See, e.g., TENN. R. EVID. 7.02 (“Testimony By Experts”); TEX. R. EVID. 702 (“Testimony By Experts”); MD. R. 5-702 (“Testimony By Experts”).

23. See Heather G. Hamilton, Note, *The Movement From Frye to Daubert: Where Do The States Stand*, 38 JURIMETRICS 201, 206 (1998) (describing *Daubert* as the “coup de grace for those courts seeking specific persuasive authority to discard *Frye* altogether”).

conclusory approach that cannot reasonably be assessed for reliability; (2) whether the technique or theory has been subject to peer review and publication; (3) the known or potential rate of error of the technique or theory when applied; (4) the existence and maintenance of standards and controls; and (5) whether the technique or theory has been generally accepted in the scientific community.<sup>24</sup>

Reflecting the multiplicity of advancements in the realm of science and technology since the D.C. Court's 1923 ruling in *Frye*, the Supreme Court's revolutionary ruling in *Daubert* catered to the joint needs of the scientific and legal communities.<sup>25</sup>

While more than just the *Frye* and *Daubert* standards exist for admitting expert testimony, state courts are generally divided over whether to follow *Frye* or *Daubert*.<sup>26</sup> Lawyers seeking to admit neuroscience evidence must navigate through the federal rules and the varying state standards when attempting to introduce expert witness testimony at trial.<sup>27</sup>

## II. RECENT ATTEMPTS TO INTRODUCE NEUROSCIENCE EXPERT TESTIMONY

With the increasingly frequent use of neuroscience evidence in trial,<sup>28</sup> lawyers must analyze the evidentiary standards of the respective federal or state court trying their case. This part will examine two recent cases in which counsel sought to introduce neuroscience evidence in mitigation of their client's intent to commit murder and assault, respectively, and the court's subsequent admission or denial of that evidence. Part A will discuss the 2011 Texas case *Quick v. State*, in which the Texas Court of Appeals affirmed the trial court's decision to exclude neuropsychological evidence on the accused's inability to form the requisite intent for a murder conviction.<sup>29</sup> Part B will discuss the 2011 federal district court case

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24. FED. R. EVID. 702 advisory committee's note (referencing *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993)).

25. See Loevinger, *supra* note 11, at 158–59 (observing that at the time of the *Frye* ruling, 12,000 people answering the 1920 U.S. Census described themselves as a “science, technical, or kindred worker,” while this number jumped to 2.6 million by the 1990 census).

26. Hamilton, *supra* note 23, at 201. Two other recent Supreme Court cases have also had a major impact on evidence admissibility: *General Electric Co. v. Joiner*, 522 U.S. 136 (1997) and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). See David E. Bernstein, *Frye, Frye, Again: The Past, Present, and Future of the General Acceptance Test*, 41 JURIMETRICS 385, 386 (2001) (describing *Daubert*, *Joiner*, and *Kumho* together as “[t]he Supreme Court's expert evidence trilogy”). While *Joiner* and *Kumho* have played an important role in refining the standards for expert admissibility, analysts have typically bifurcated the standards for expert testimony into the *Frye* and *Daubert* camps, grouping *Joiner* and *Kumho* into one standard, sometimes labeled as “*Daubert* and its progeny.” *Id.*

27. See Jones et al., *supra* note 5, ¶26 (noting the different scientific evidentiary standards across jurisdictions).

28. See Jones et al., *supra* note 5, ¶1 (“It has become increasingly common for brain images to be proffered as evidence in civil and criminal litigation.”).

29. *Quick v. State*, No. 01-09-01127-CR, 2011 Tex. App. LEXIS 680 (Tex. App. Jan. 27, 2011).

*U.S. v. Scott*, in which the U.S. District Court for the Eastern District of Washington admitted testimony from two experts who argued that the defendant became temporarily insane due to involuntary intoxication as a defense to his accused crime of assaulting two federal employees.<sup>30</sup>

### A. *The Texas Approach to Neuropsychological Evidence*

#### 1. *The Relevant Texas Evidentiary and Statutory Standards*

Texas Rules of Evidence 702 through 704 govern the admissibility of expert testimony.<sup>31</sup> Rule 702 provides, “[i]f 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>32</sup> Texas Rule 704 (Opinion on Ultimate Issue) is identical to the Federal Rule, but omits Part B of the Federal Rule, which prohibits an expert from testifying as to whether a defendant possessed the requisite mental state for his alleged crime.<sup>33</sup> In *Quick v. State*, the defendant’s chief defense relied on his experts’ opinions as to whether the defendant possessed the requisite mental state for his alleged crime.<sup>34</sup>

Texas follows the *Daubert* rule for the admissibility of expert scientific testimony, as well as the similar reasoning from the 1992 Texas Criminal Court of Appeals case *Kelly v. State*.<sup>35</sup> In following *Daubert* and *Kelly*, the Supreme Court of Texas added supplemental factors to its codified Rule 702 on the admissibility of expert testimony.<sup>36</sup> The Supreme Court of Texas mandated that the proffered evidence relate to the case at bar, and that the scientific testimony has foundation in reliable scientific theory.<sup>37</sup> The Court listed all of the factors delineated by the United States Supreme Court in *Daubert* for future Texas courts to consider when

30. *U.S. v. Scott*, No. CR-09-0131-EFS, 2011 WL 1327033 (E.D. Wash. April 7, 2011).

31. See TEX. R. EVID. 702–704.

32. TEX. R. EVID. 702. The Texas rule is identical—verbatim—to the federal rule, with the exception that the Texas rule omits the three qualifying factors for admissibility included in the federal rule. See FED. R. EVID. 702.

33. Compare TEX. R. EVID. 704, with FED. R. EVID. 704. Part B of the Federal Rule, which the Texas rule omits, states “[i]n a criminal case, an expert witness must not state an opinion about whether the defendant did or did not have a mental state or condition that constitutes an element of the crime charged or of a defense. Those matters are for the trier of fact alone.” *Id.*

34. See *Quick v. State*, 2011 Tex. App. LEXIS 680, \*13–14 (Tex. App. 2011) (affirming the trial court’s decision to exclude the appellant’s experts, who had proffered testimony that appellant’s actions were only reckless and failed to meet the requisite mental state to convict him of murder).

35. 824 S.W.2d 568, 572 (Tex. Crim. App. 1992). *Kelly* delineates seven factors for the admissibility of expert testimony that generally incorporate the factors listed in *Daubert*. *Id.* at 573. In *E.I. du Pont de Nemours & Co. v. Robinson*, the Supreme Court of Texas held: “We are persuaded by the reasoning in *Daubert* and *Kelly*.” 923 S.W.2d 549, 556 (Tex. 1995).

36. *E.I. du Pont*, 923 S.W.2d at 557.

37. *E.I. du Pont*, 923 S.W. 2d at 556.

evaluating the admissibility of expert testimony, and emphasized that courts are not limited to the *Daubert* factors.<sup>38</sup>

Contrary to the Federal Rules, Texas allows a defendant to offer expert testimony regarding his mental state in order to mitigate his conviction from murder to manslaughter.<sup>39</sup> Although not included in Texas Rule of Evidence 704, Texas case law allows a defendant to offer evidence of his mental state at the time of the alleged crime in order to refute the requisite mental state for his accused crime.<sup>40</sup> The expert testimony proffered in *Quick* sought to prove the defendant's diminished executive functioning in his brain prevented him from forming the requisite mental state for murder.<sup>41</sup> To meet the requisite mental state for murder, the accused must have the requisite mental state to "intentionally or knowingly [cause] the death of an individual" and to "intend[] to cause serious bodily injury and commit[] an act clearly dangerous to human life that causes the death of an individual."<sup>42</sup> In *Quick*, the defendant argued that his impaired executive functioning prevented him from forming the requisite mental state at the time of his alleged murder offense.<sup>43</sup>

## 2. Treatment of Expert Neuroscience Testimony in *Quick*

A Texas jury convicted James Irvin Quick of the murder of Michelle Denise Mellton.<sup>44</sup> Quick admitted to the murder in a videotaped custodial statement with detectives.<sup>45</sup> The jury found Quick guilty of murder and the trial court sentenced him to fifteen years in prison.<sup>46</sup> Quick appealed, alleging that the trial court abused its discretion by allowing the State to mention his failure to testify at trial during the prosecution's closing argument and by barring Quick's three psychological and psychiatric experts from testifying regarding his ability to form the requisite intent to commit murder.<sup>47</sup> The Texas Court of Appeals affirmed his conviction and the trial court's denial of his neuroscience experts.<sup>48</sup>

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38. See *id.* at 557 (describing the *Daubert* factors as "non-exclusive").

39. Compare FED. R. EVID. 704, with TEX. R. EVID. 704. See *Quick*, 2011 Tex. App. LEXIS 680, at \*9 (describing the Texas courts' approach to admitting relevant evidence to negate a defendant's requisite *mens rea*, including a defendant's mental health history) (citing *Jackson v. State*, 160 S.W.3d 568, 574 (Tex. Crim. App. 2005)). Although Texas Rule of Evidence 704 has omitted the portion of Federal Rule 704 regarding an expert's ability to opine on a defendant's requisite mental state, *Jackson* allows such evidence on mental state. *Id.*

40. See *Jackson v. State*, 160 S.W.3d 568, 573-74 (Tex. Crim. App. 2005) (allowing evidence of a defendant's mental health to negate the requisite *mens rea*).

41. *Quick*, 2011 Tex. App. LEXIS 680, at \*6-\*7.

42. TEX. PENAL CODE ANN. § 19.02(b)(1)-(2).

43. *Quick*, 2011 Tex. App. LEXIS 680, at \*6-\*7.

44. *Id.* at \*1-\*3.

45. *Id.* at \*2.

46. *Id.* at \*3.

47. *Id.* at \*1, \*6.

48. *Id.* at \*1.

On the expert testimony issue, Quick contended that he could not form the requisite intent for murder due to impaired executive functioning in his brain.<sup>49</sup> The overwhelming evidence against him—including his own confession—precluded any protestations of innocence.<sup>50</sup> Instead, Quick claimed that the testimony of his psychological and psychiatric experts, if believed by the jury, could have led him to receive a lesser sentence for manslaughter rather than the harsher sentence for murder.<sup>51</sup>

Prior to deciding whether to admit the testimony of the three experts proffered by Quick, the trial court conducted an evidentiary hearing on the admissibility of the experts' testimony.<sup>52</sup> Quick sought to present all three experts to testify on his diminished executive functioning and the relationship between his neurological impairment and his inability to form the requisite intent for murder.<sup>53</sup> Through the experts, Quick sought to prove that he acted recklessly, which requires a lesser mental capacity than a murder conviction requires under the Texas penal code.<sup>54</sup> During the hearing, Quick's attorney explained that if the Court admitted the experts' testimony, Drs. Allen and Pollock would testify on the processes by which they discovered Quick possessed diminished executive functioning as a means of establishing a foundation for Dr. Self's testimony.<sup>55</sup> If the Court admitted Dr. Self's

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49. *Quick*, 2011 Tex. App. LEXIS 680, at \*6-\*7.

50. *Id.* at \*2-\*3.

51. *Id.* at \*7. Texas law only requires for a manslaughter conviction that a person "recklessly causes the death of an individual." There is no intent requirement as there is for murder. TEX. PENAL CODE ANN. § 19.04(a). A person intends for an act to occur if the end result "is his conscious objective or desire." TEX. PENAL CODE ANN. § 6.03(a). Further, "[a] person acts knowingly . . . with respect to a result of his conduct when he is aware that his conduct is reasonably certain to cause the result." TEX. PENAL CODE ANN. § 6.03(b).

52. *Quick*, 2011 Tex. App. LEXIS 680, at \*10. The three defense experts were Drs. Thomas Allen, Larry Pollock, and David Self. *Id.*

53. *Id.* at \*10-\*12. Dr. Self, in his report on Quick for the expert witness hearing, defined executive functioning as a:

set of cognitive abilities that control and regulate other abilities and behaviors. Executive functions are necessary for goal-oriented behavior. They include the ability to initiate and stop actions, to monitor and change behavior as needed, and to plan future behavior when faced with novel tasks and situations. Executive functions allow us to anticipate outcomes.

*Id.* at \*12.

54. *Id.* at \*10-\*11; *see also supra* note 54 and accompanying text.

55. *Quick*, 2011 Tex. App. LEXIS 680, at \*10-\*11. Dr. Pollock submitted a report concluding that Quick's "neuropsychological evaluation revealed significant neurocognitive impairments. Deficits were found in . . . executive functioning, [including] visual tracking and speed of auditory processing, [which] . . . cause him to have problems in multitasking, planning and organization, and speed and flexibility of thinking." *Id.* at \*11-\*12. Dr. Allen's medical report similarly concluded that "[w]hile functioning within the normal limits of intelligence [Quick] is showing impairment in executive functioning and working memory. He can be easily confused, especially under stressful circumstances." *Id.* at \*11.



testimony, he would testify that Quick's diminished executive functioning prevented him from forming the requisite intent for murder.<sup>56</sup>

After reviewing the experts' reports, the trial court concluded that the experts failed to prove that Quick could not form the requisite intent for murder.<sup>57</sup> The trial court held that the experts failed to adequately connect Quick's alleged diminished executive functioning to an inability to form the necessary mental state to commit murder, as required by the Texas evidentiary standard.<sup>58</sup> The court found that Dr. Self's description of Quick's uncontrollable, confused mental state at the time of the murder did not meet the state's statutory definition of reckless because Dr. Self failed to demonstrate that Quick understood his actions and the consequences that would result, and knowingly and deliberately ignored this risk.<sup>59</sup> The court also held that Dr. Self failed to prove whether Quick had any knowledge that his actions would cause his victim's death.<sup>60</sup> The court ultimately concluded that the reports submitted by Quick's experts failed to demonstrate that Quick acted only recklessly and lacked the requisite mental state to commit murder.<sup>61</sup> The court therefore overruled Quick's appeal on the issue of the trial court's abuse of discretion in rejecting the testimony of his neuroscience experts and affirmed the trial court's ruling convicting Quick of murder.<sup>62</sup>

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56. *Id.* at \*12. In arguing in his report that Quick could not form the requisite intent for murder, Dr. Self described Quick's "already deficient executive brain function" as "totally overwhelmed," which caused him "to act recklessly with a temporary inability to abort his course of action and chose [sic] from the available alternative courses appropriate to the situation." *Id.* at \*13.

57. *Id.* at \*12–\*13 ("The expert reports fail to show that appellant did not act intentionally or knowingly, nor do they show that appellant acted recklessly."). The expert witness reports for this case are not yet publicly available, so information on how the experts evaluated the defendant and reached their conclusions can only be derived from the scant information contained in the Court's opinion. One can surmise on the experts' research processes based on the available information on how the doctors conduct their personal academic research. Dr. Larry Pollock, a neuropsychologist, typically evaluates his patients through neuropsychological evaluations, mental status examinations, and a general diagnostic battery. *Welcome to Project ReEntry's Website*, PROJECT REENTRY, <http://www.projectreentry.com/index.htm> (last visited April 10, 2012). Dr. Pollock received his Ph.D. in clinical psychology from Syracuse University and has been practicing in his specialty of neuropsychiatry for thirty-five years. *Company Info*, PROJECT REENTRY, <http://www.projectreentry.com/companyinfo.htm> (last visited April 10, 2012). Dr. David Self, a neurobiologist at the University of Texas Southwestern. *David Self, Ph.D., FACULTY PROFILE, SW. MED. CENTER*, <http://www.utsouthwestern.edu/findfac/research/0,2357,48661,00.html> (last visited April 10, 2012). Dr. Self received his Ph.D. in pharmacology from the University of California at Irvine and completed postdoctoral work at Yale University in the Division of Molecular Psychiatry. *Id.* His multiple awards and publications, including Daniel H. Efron Award by the American College of Neuropsychopharmacology, prove his competence in the field of neurobiology. *Id.*

58. *See Quick*, 2011 Tex. App. LEXIS 680, at \*12–\*14; *see also supra* notes 42–43 and accompanying text.

59. *Quick*, 2011 Tex. App. LEXIS 680, at \*12–\*14.

60. *Id.* at \*13.

61. *Id.* at \*13–\*14 (finding that the expert reports failed to prove that Quick only acted recklessly and not with the knowing intention required for a murder conviction).

62. *Id.* at \*14.

*B. The Washington Approach to Neuropsychological Evidence*

*1. The Relevant Evidentiary Standards*

Washington Rules 702 and 704 on Testimony by Experts and Opinion on Ultimate Issue, respectively, are identical to Texas Rules 702 and 704.<sup>63</sup> Washington Rules 702 and 704 are relevant to an issue in *United States v. Scott* regarding the admissibility of expert testimony and the experts' proffered testimony on the ultimate issue of the defendant's requisite mental state.<sup>64</sup> Washington follows the *Frye* rule for the admissibility of expert testimony;<sup>65</sup> however, the United States District Court for the Eastern District of Washington tried the case at bar,<sup>66</sup> and as a result, the Court applied the Federal Rules of Evidence and the *Daubert* standard on expert testimony.<sup>67</sup> Trial courts are not required to adhere to the *Daubert* factors in their entirety.<sup>68</sup> As such, the Ninth Circuit, in *United States v. Hankey*, added its own factors to *Daubert*.<sup>69</sup> According to the Ninth Circuit, in addition to the *Daubert* factors, a trial court may consider:

Whether the opinion is based on scientific, technical, or other specialized knowledge; [w]hether the expert's opinion would assist the trier of fact in understanding the evidence or determining a fact in issue; [w]hether the expert has appropriate qualifications - i.e., some special knowledge, skill, experience, training or education on that subject matter; [w]hether the testimony is relevant and reliable; [w]hether the methodology or technique the expert uses "fits" the conclusions; [and] [w]hether its probative value is substantially outweighed by the risk of unfair prejudice, confusion of issues, or undue consumption of time.<sup>70</sup>

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63. Compare WASH. R. EVID. 702 and 704, with TEXAS R. EVID. 702 and 704. The Washington rule, like the Texas rule, does not include part B of the Federal Rule on Opinion on Ultimate Issue. *Id.*

64. *U.S. v. Scott*, No. CR-09-0131-EFS, 2011 WL 1327033, at \*1 (E.D. Wash. April 7, 2011).

65. See *Reese v. Stroh*, 128 Wash. 2d 300, 306-7 (1995) (favoring *Frye*'s general acceptance test over the recently decided *Daubert* decision); see also Robert D. Leinbach, *Novel Scientific Evidence After Reese v. Stroh: The Washington Supreme Court's Love Affair With Frye*, 71 WASH. L. REV. 1127, 1127 (1996) (describing the firm holding of the Washington Supreme Court in *Reese v. Stroh*, that Washington courts should follow the *Frye* rule in determining whether to admit expert scientific evidence).

66. *Scott*, 2011 WL 1327033, at \*1.

67. *Id.* at \*2. The Court followed the federal *Daubert* standard rather than Washington's preferred *Frye* standard because under the *Erie* Doctrine, federal courts sitting in diversity jurisdiction apply federal procedural law. *Erie Railroad Co. v. Tompkins*, 304 U.S. 64, 78 (1938).

68. *U.S. v. Hankey*, 203 F.3d 1160, 1168 (9th Cir. 2000).

69. *Id.*

70. *Id.*

## 2. *Treatment of Expert Neuroscience Evidence in Scott*

On August 19, 2009, James Douglas Scott was admitted into the Veterans Affairs Medical Center (VAMC) for excessive alcohol consumption with blood alcohol content (BAC) of .38.<sup>71</sup> Scott soon left his bed and refused Nurse Hoffman's attempts to escort him back to his room for IV treatment.<sup>72</sup> In response, Scott head butted Nurse Hoffman in his chest.<sup>73</sup> As Nurse Hoffman struggled to subdue Scott, Nurse Hoffman re-tore his rotator cuff.<sup>74</sup> Later that evening, after returning to his bed, Scott attacked Nurse Best, forcefully grabbing his neck and kicking Nurse Best in his midsection.<sup>75</sup> The nurses eventually restrained Scott by securing him to his bed with four-point restraints, under the orders of Scott's doctor.<sup>76</sup> On January 21, 2011, Scott was found guilty in a Ninth Circuit Federal District Court of two counts of Assault by Inflicting Bodily Injury on Federal Employees.<sup>77</sup> On April 7, 2011, the Court denied Scott's Motion for New Trial and Judgment of Acquittal.<sup>78</sup>

At trial, Scott's attorneys argued a temporary insanity defense to negate his culpability for the alleged assault.<sup>79</sup> As the crime of assault bars voluntarily intoxication as a defense, Scott sought to prove that his Post Traumatic Stress Disorder (PTSD) from his years as an Army Ranger caused him to become involuntarily intoxicated on the night of the alleged incident.<sup>80</sup> Scott argued that his involuntary intoxication rendered it impossible for him to formulate the requisite general intent for an assault conviction.<sup>81</sup>

Scott sought to introduce three defense experts to prove his insanity theory.<sup>82</sup> Scott retained his first expert, Dr. Stanulis, to argue that patients suffering from

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71. *Scott*, 2011 WL 1327033, at \*1.

72. *Id.*

73. *Id.*

74. *Id.*

75. *Id.*

76. *Id.*

77. *Id.*

78. *Id.*

79. *Id.* at \*2. Federal Rule of Criminal Procedure §12(2)(b) governs the requisite notice of expert testimony on the insanity defense. 18 U.S.C. § 17 governs the insanity defense to federal prosecution.

80. *Scott*, 2011 WL 1327033, at \*2. Involuntary intoxication only occurs if the defendant is entirely unable "to resist taking the first sip." *Id.* at \*5. In *United States v. Vela*, the Ninth Circuit held that "[V]oluntary intoxication is not a defense to a general intent crime" and that 18 U.S.C. "§111 [Assaulting, Resisting, or Impeding Certain Officers or Employees] is a general intent crime." 624 F.3d 1148 (9th Cir. 2010).

81. *Scott*, 2011 WL 1327033, at \*2. Symptoms of Post-Traumatic Stress Disorder include "episodes of repeated reliving of the trauma in intrusive memories or 'flashbacks' or dreams, which occur against the persisting background of a sense of 'numbness' and emotional blunting, detachment from other people, unresponsiveness to surroundings, anhedonia, and avoidance of activities and situations reminiscent of the trauma." STEPHEN JOSEPH ET AL., UNDERSTANDING POST-TRAUMATIC STRESS A PSYCHOLOGICAL PERSPECTIVE ON PTSD AND TREATMENT 17 (1997).

82. *Scott*, 2011 WL 1327033, at \*2.

PTSD will unintentionally self-medicate with alcohol to suppress the memory of their traumatic experience.<sup>83</sup> Scott retained Dr. Julien to prove that an individual with a blood alcohol level as high as Scott's on the night of the alleged incident could not have formed the requisite intent to commit assault.<sup>84</sup> Finally, Scott retained Dr. Brown to prove that his experience as an Army Ranger caused him to instinctively and involuntarily attack Nurses Hoffman and Best in reaction to his perception of the nurses as a threat to his safety.<sup>85</sup> The trial court held three *Daubert* hearings on the admissibility of the experts' testimony and ultimately admitted testimony from Drs. Stanulis and Julien and denied testimony from Dr. Brown.<sup>86</sup>

Prior to the *Daubert* evidentiary hearings, Dr. Stanulis provided the trial court with a detailed notice describing his potential testimony and containing his *curriculum vitae*.<sup>87</sup> Dr. Stanulis's qualifications include his private medical practice where he specializes in clinical psychology and neuropsychology.<sup>88</sup> Dr. Stanulis based his opinions in this case on his wide-ranging experience in the field, his personal interviews with Scott, and a thorough review of Scott's medical history.<sup>89</sup> While the court has not made Dr. Stanulis's report publicly available, Scott's counsel stated in a motion to the Court that Dr. Stanulis rendered his opinion through "accepted methodologies and standards."<sup>90</sup> The Court admitted Dr. Stanulis's testimony,<sup>91</sup> over the Government's objections that he did not base his opinions on "sufficient facts or data."<sup>92</sup>

Dr. Mark Mays submitted a report regarding the effect of alcohol upon a patient suffering from PTSD.<sup>93</sup> In his report, Dr. Mays explained that alcohol may have a greater effect on the executive functioning of a person with PTSD than on a

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83. *Id.*

84. *Id.*

85. *Id.*

86. *Id.*

87. Defendant's Memorandum in Response to Gov't's Motion in Limine to Exclude Evidence and Testimony and to Determine the Admissibility of Expert Testimony at 2, 4, United States v. Scott, No. 2.09-CR-00131-EFS (E.D.Wash. July 1, 2010).

88. *Id.*

89. *Id.* at 8 ("[Dr. Stanulis] has served in several prestigious academic and clinical positions as well as working in the Veterans Administration Medical Center in Allen Park, Michigan.").

90. *Id.* at 11.

91. *Scott*, 2011 WL 1327033, at \*2.

92. Memorandum in Support Gov't's Motion in Limine to Exclude Evidence and Testimony and for Evidentiary Hearing to Determine the Admissibility of Expert Testimony at 6-7, United States v. Scott, No. 2.09-CR-00131-EFS (E.D.Wash. June 24, 2010).

93. Defendant's Memorandum in Response to Gov't's Motion in Limine to Exclude Evidence and Testimony and to Determine the Admissibility of Expert Testimony, *supra* note 83, at 3. Dr. Mays did not meet with Scott, so his report reflects his knowledge and research in the field rather than a case study personalized to Scott's situation. *Id.* at 8. The defense did not proffer Dr. Mays as an expert in this case. *Scott*, 2011 WL 1327033, at \*2.

person not afflicted by this condition.<sup>94</sup> Dr. Mays further submitted that this diminished executive functioning can lead to diminished self-control and comprehension, as well as an instinctually aggressive and excessive response to behavior perceived as invading the patient's personal space.<sup>95</sup>

Dr. Julien submitted a report detailing his qualifications, his opinions on the case, and the medical basis for his opinions.<sup>96</sup> Dr. Julien's qualifications include his M.S. and Ph.D. in Pharmacology and his medical degree.<sup>97</sup> He has also published multiple editions of a textbook on psychopharmacology, frequently delivers lectures on the subject, and often serves as a court-qualified expert on the topic.<sup>98</sup> Dr. Julien testified in his affidavit that in addition to the excessive alcohol Scott consumed on the evening of the alleged incident and on the days preceding the alleged incident, Scott ingested prescribed benzodiazepine tranquilizers to relieve stress caused by his PTSD.<sup>99</sup> The combination of the alcohol and the tranquilizer, according to Dr. Julien, prevented Scott from having any memory of the alleged assault, and this inability to form memory related to an inability to form intent, as both resulted from a diminished executive functioning.<sup>100</sup> Dr. Julien concluded that "[i]t is clear here, to a degree of medical certainty, that (with no memory and a BAC of 0.38 grams% (and a BAC likely above 0.30 grams% three hours later) [sic] intentional actions cannot be formulated."<sup>101</sup> Dr. Julien explained that Scott was in a state of "organic dementia" where "the ability to judge consequences of one's actions, and in essence the ability to act with any degree of executive or intellectual functioning is lost."<sup>102</sup> The Court admitted the testimony of Dr. Julien,<sup>103</sup> and overruled the State's objections that Dr. Julien did not base his opinions on "sufficient facts or data."<sup>104</sup>

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94. Affidavit of Mark Mays, PhD, JD at 6, *United States v. Scott*, No. 2.09-CR-00131-EFS (E.D.Wash. Feb. 10, 2010) ("[A]lcohol intoxication may result in an even more profound deterioration and impairment in functioning in a person with post traumatic stress disorder than with a more normally functioning individual.").

95. *Id.* at 6–7 ("[T]here is both a likelihood of an excessive response due to PTSD, and the likelihood of a disinhibited and more unthinking and instinctual response, as might occur with alcohol intoxication.").

96. Affidavit of Dr. Robert M. Julien, MD, PhD at 1–2, *United States v. Scott*, No. 2.09-CR-00131-EFS (E.D.Wash Feb. 10, 2010).

97. *Id.* at 1.

98. *Id.*

99. *Id.* at 1–2. Dr. Julien noted that the tranquilizers taken by Scott "act in a manner identical to that of alcohol." *Id.* at 2.

100. *Id.* at 1–2.

101. *Id.* at 2.

102. *Id.*

103. *United States v. Scott*, No. CR-09-0131-EFS, 2011 WL 1327033, at \*2 (E.D. Wash. April 7, 2011).

104. Memorandum in Support Gov't's Motion in Limine to Exclude Evidence and Testimony and for Evidentiary Hearing to Determine the Admissibility of Expert Testimony, *supra* note 87, at 6.

Dr. Brown also submitted a report detailing his qualifications and opinions on the case.<sup>105</sup> His qualifications included past expert testimony in criminal cases involving veterans; his background as a sociologist; his multiple publications in books and peer-reviewed journals on the Military Total Institution; and his military service during the Vietnam War.<sup>106</sup> Moreover, Dr. Brown specializes in military training processes, the sociological effect of military training on the trainees, and the correlation between PTSD and the commission of criminal offenses.<sup>107</sup> Dr. Brown interviewed Scott four times for an approximate total of fifteen hours, where he relied on more than one thousand pages of material on the transition of servicemen from the military to civilian life and that transition's impact on their future criminality.<sup>108</sup> Dr. Brown concluded that Scott "appears to have been reacting to a perceived threatening situation where he instantaneously reacted in a manner in which he had been trained in the military. His infantry training amplified by airborne and Ranger School training provided the means for an instant response to perceived threats."<sup>109</sup> The State objected to Brown's testimony, arguing that his opinion on Scott's diminished capacity was not relevant to the requisite general intent for Scott's accused assault crime and that Dr. Brown did not base his conclusions on "sufficient facts or data."<sup>110</sup> The Court subsequently rejected Brown's testimony.<sup>111</sup>

Although the Court admitted testimony from two of Scott's experts supporting his insanity defense, a jury still found Scott guilty of assault on both counts.<sup>112</sup> On April 7, 2011, U.S. District Court Judge Edward F. Shea rejected Scott's Motion for New Trial and Judgment of Acquittal.<sup>113</sup>

### III. ANALYSIS OF THE VARIATION IN EVIDENCE ADMISSIBILITY UNDER *DAUBERT*

#### A. *Comparison of the Quick and Scott Evidentiary Rulings*

In both *Quick* and *Scott*, the defendants sought to introduce testimony negating the requisite intent for their convictions resulting from their diminished

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105. Affidavit of William B. Brown, PhD, United States v. Scott, No. 2.09-CR-00131-EFS (E.D.Wash Feb. 9, 2010) (detailing his expert witness foundation).

106. *Id.*

107. *Id.* Dr. Brown describes the Military Total Institution as "the sociological study of individuals who are recruited from a civilian culture and who are bureaucratically and systematically processed through the military institution, largely isolated from civilian contact and influences." *Id.*

108. *Id.*

109. *Id.*

110. Gov't's Argument in Support of Motion in Limine to Exclude Expert Testimony of Dr. William Brown at 2-3, United States v. Scott, No. 2.09-CR-00131-EFS (E.D.Wash. Sept. 29, 2010).

111. United States v. Scott, No. CR-09-0131-EFS, 2011 WL 1327033, at \*2 (E.D. Wash. April 7, 2011).

112. *Id.* at \*1.

113. *Id.*

executive functioning.<sup>114</sup> In *Quick*, the Texas trial court excluded Quick's expert neuroscience witnesses and the Texas Court of Appeals affirmed the trial court's decision.<sup>115</sup> By comparison, in *Scott*, the federal district court allowed testimony from two of the defendant's neuroscience experts, but rejected testimony from the third expert, whose testimony focused on sociological evidence rather than neuroscience evidence.<sup>116</sup> Both Texas and the federal courts follow the *Daubert* standard, and both share an identical evidentiary rule for the admissibility of expert testimony under Texas Rule 702 and Federal Rule 702.<sup>117</sup> Federal Rule 704 and Texas Rule 704 differ in that the federal rule explicitly prohibits experts from testifying on a defendant's mental capacity to commit a crime, while the Texas rule omits this point.<sup>118</sup> Despite their similar evidentiary standards, the Texas trial court and the U.S. District Court of the Eastern District of Washington differed in their admissibility of neuroscience expert testimony in *Quick* and *Scott*.<sup>119</sup>

The Texas Court in *Quick* rejected the neuroscience experts' testimony on the effect of the defendant's diminished executive functioning on his ability to form the requisite intent for murder because the Court found that the submitted experts' reports did not support the testimony they proffered.<sup>120</sup> Dr. Allen determined that Quick's diminished executive functioning caused him to become "easily confused".<sup>121</sup> Dr. Pollock determined that Quick's executive functioning caused him to "have problems in multitasking, planning and organization, and speed and flexibility of thinking;"<sup>122</sup> and Dr. Self determined that Quick's diminished executive functioning caused him to be "momentarily unable to abort his course of action and chose [sic] from the available alternative courses appropriate to the situation."<sup>123</sup> All of these factors would seem to indicate a neurological inability to form the requisite intent for murder, and yet the Court concluded that the proffered testimony did not support such a conclusion.<sup>124</sup> The Court did not focus on any of the *Daubert* factors in reaching its conclusion, nor did it focus upon the reliability of the experts' testimony and the sufficiency of the techniques they used to reach

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114. See *supra* notes 49, 79–81 and accompanying text.

115. See *supra* notes 47–48 and accompanying text.

116. See *supra* notes 85–86 and accompanying text.

117. See *supra* notes 17–25, 31–38 and accompanying text.

118. See *supra* note 33 and accompanying text. Texas case law now allows testimony on a defendant's mental state. See *supra* note 39 and accompanying text.

119. See *supra* Part II.

120. *Quick v. State*, No. 01-09-01127-CR, 2011 Tex. App. LEXIS 680, \*13–14 (Tex. App. Jan. 27, 2011).

121. *Id.* at \*11.

122. *Id.* at \*11–12.

123. *Id.* at \*12.

124. *Id.* at \*13–14 (holding that the expert reports did not support the defendant's proffered neuropsychological defense).

their conclusions.<sup>125</sup> Instead, the Court simply concluded that the experts, despite the depth and breadth of their academic experience in the field, did not support their argument that the defendant could not form the requisite intent to commit murder, without allowing the jury to draw its own inferences from the experts' conclusions.<sup>126</sup>

In *Scott*, the Court admitted two of the defense's neuroscience experts, despite the prosecution's objections that the experts failed to base their opinions on "sufficient facts or data."<sup>127</sup> Contrary to the prosecution's contentions, the defense's experts based their conclusions on the defendant's medical history and the experts' research in the field.<sup>128</sup> Following three *Daubert* evidentiary hearings, the Court established "clear parameters" as to the subjects on which two of the defense's three proffered experts could testify.<sup>129</sup>

Two *Daubert* courts operating under similar evidentiary standards reached different rulings on testimony from highly credentialed experts seeking to prove that a defendant's diminished executive functioning prevented him from forming the requisite intent to commit a particular crime.<sup>130</sup> Such disparate results reflect a complete lack of uniformity in *Daubert*'s application.

### B. *The Judiciary's Confusion Over Daubert's Application*

The divergence in the approaches of the Texas and Federal District Courts on the admissibility of the expert testimony results from the problems that have stemmed from the Court's ruling in *Daubert*. *Daubert* created confusion for the courts in determining whether to admit expert scientific testimony.<sup>131</sup> Some attribute this confusion to the flexible nature of the *Daubert* factors in their allowing judges the option of following either one or all of the factors.<sup>132</sup> Because of *Daubert*'s malleability, judges do not apply the *Daubert* factors uniformly.<sup>133</sup> The lack of uniformity in the application of *Daubert* has led to unpredictability in

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125. *See id.*

126. *Id.*; *see also supra* note 57.

127. *United States v. Scott*, No. CR-09-0131-EFS, 2011 WL 1327033, at \*2 (E.D. Wash. April 7, 2011); *see also supra* notes 91–92, 103–104 and accompanying text.

128. *See supra* notes 87–90, 96–98, 105–108 and accompanying text.

129. *Scott*, 2011 WL 1327033, at \*2–3.

130. *See supra* Part II.

131. Cassandra H. Welch, *Flexible Standards, Deferential Review: Daubert's Legacy of Confusion*, 29 HARV. J.L. & PUB. POL'Y 1085, 1094–95 (1995) (describing the "fundamental tension on admissibility" created by the *Daubert* decision).

132. *Id.* (noting the irony of the inconsistent ruling as a result of *Daubert* when the Supreme Court granted certiorari to *Daubert* in order to remedy perceived inconsistencies).

133. *Id.* at 1096 (concluding that the courts' varying approaches to *Daubert* is "in line with the 'liberal thrust' of the Federal Rules").



the courts' interpretation of its factors because the courts lack comprehensive, mandatory requirements.<sup>134</sup>

*Daubert* grants a high level of deference to the judges in determining when to admit expert testimony, which has given judges the freedom to follow *Daubert* in a manner of their choosing and has contributed to the disparate treatment of neuroscience evidence among the courts.<sup>135</sup> An independent study of four hundred randomly selected state court judges reflects the variance in judges' approaches to *Daubert*.<sup>136</sup> The study sought to measure the disparities in courts' interpretations of *Daubert* by polling the judges on their perception of *Daubert's* role and intended application.<sup>137</sup> The study found that thirty-two percent of the responding judges believed that *Daubert* raised the standards for the admissibility of expert testimony, while twenty-three percent believed that *Daubert* lowered admissibility standards.<sup>138</sup> Thirty-six percent of the responding judges believed that *Daubert* did not change the standard for admissibility, and the remaining eleven percent had not yet determined *Daubert's* impact.<sup>139</sup> The survey also found "little consensus" in the manner in which the judges balanced and combined the *Daubert* factors.<sup>140</sup> The survey demonstrates the confusion *Daubert* has generated among judges;<sup>141</sup> with such documented variation in the perceptions of judges, the divergence in the approaches of the Texas and federal district courts in *Quick* and *Scott* seems to naturally comport with the national trend.<sup>142</sup>

*Daubert's* deference to judges in admitting expert testimony requires the judges to have a comprehension of complex scientific data that may exceed their capabilities.<sup>143</sup> Forcing judges to navigate through complicated, unfamiliar neurological data to determine admissibility only compounds the variation in the application of *Daubert* because many judges have no background or formal training

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134. *Id.*

135. *Id.* (describing the "highly deferential standard of review . . . and the courts' application of varying standards and tests").

136. Sophia I. Gatowski et al., *Asking the Gatekeepers: A National Survey of Judges on Judging Expert Evidence in a Post-Daubert World*, 25 LAW & HUM. BEHAV. 433, 443 (2001).

137. *Id.*

138. *Id.*

139. *Id.*

140. *Id.* at 453.

141. *Id.*

142. More than five years after the Supreme Court decided *Daubert*, forty percent of Texas judges admitted to not having read this pivotal decision, which may also contribute to their confusion over *Daubert's* role. Cynthia S. Kent, *Daubert Readiness of Texas Judiciary: A Study of the Qualifications, Experience, and Capacity of the Members of the Texas Judiciary to Determine the Admissibility of Expert Testimony under the Daubert, Kelly, Robinson, and Havner Tests*, 6 TEX. WESLEYAN L. REV. 1, 16, 18 (1999).

143. Welch, *supra* note 131, at 1096 ("*Daubert* requires judges to have scientific knowledge and to apply that knowledge to the facts of each case.>").

in the field.<sup>144</sup> Lay judges' inexperience with scientific information thwarts their ability to accurately evaluate proffered testimony for *Daubert* compliance.<sup>145</sup> Many judges avoid science because they do not understand science, which may have negative implications for attorneys' attempts at introducing neuroscience evidence.<sup>146</sup>

The neuroscience evidence in *Quick* and *Scott* succumbed to the whims of the gatekeeper judges to determine admissibility. Despite the similarities between the neuroscience evidence from the two cases, what the evidence sought to prove, and the respective evidentiary standards for admissibility, the Texas trial court excluded neuropsychological testimony and the federal district court admitted neuroscience testimony on the intent issue, although the juries ultimately found both defendants guilty.<sup>147</sup> *Daubert* granted judges flexibility in their admissibility of expert testimony;<sup>148</sup> the contrasting approaches of the Texas and Federal District Courts reflect this judicial deference and the diverging opinions generated as a result.<sup>149</sup>

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144. See Bert Black et al., *Science and the Law in the Wake of Daubert: A New Search for Scientific Knowledge*, 72 TEX. L. REV. 715, 716–17 (1993) (analogizing judges' and lawyers' discomfort with science to "a child about to get a tetanus shot. They know it's painful and believe it's necessary, but haven't the foggiest idea how or why it works").

145. Gatowski et al., *supra* note 132, at 452–54.

146. See Erica Beecher-Monas, *Blinded by Science: How Judges Avoid the Science in Scientific Evidence*, 71 TEMP. L. REV. 55, 58 (1998) (postulating that "courts continue to evade the science issues" and that "judges are turning a blind eye to the science involved in the evidence before them"). Moreover, applying novel neuroscience principles to traditional common law offenses that long predated the scientific advancements poses challenges to judges when evaluating the admissibility of evidence. See Brent Garland & Paul W. Glimcher, *Cognitive Neuroscience and the Law*, 16 CURRENT OPINIONS NEUROBIOLOGY 130, 130 (2006) ("These physiological insights will challenge, in turn, legal systems that rest on conceptual bases that are often hundreds of years old."). These challenges result, in part, from the innate differences between science and the law. *Id.* at 131. Science relies on a more meticulous, longer process of truth seeking that may span decades before reaching a definitive answer, whereas the law demands immediate answers and cannot afford to wait for the testing of every possible variable. See *id.* (explaining that "the rules of evidence do not require perfection — only relevance"). Additionally, the litigation system requires definitive answers and denies experts the opportunity to expound upon potential uncertainties and caveats to their theories. Joseph Sanders, *Expert Witness Ethics*, 76 FORDHAM L. REV. 1539, 1559–1560 (2007) (quoting MARK A. CHESLER ET AL., SOCIAL SCIENCE IN COURT: MOBILIZING EXPERTS IN THE SCHOOL DESEGREGATION CASES 115 (1988)). One expert witness in a school desegregation case commented that "[I]t is not the role of the witness to define the case, to call attention to everything that could possibly be said about a subject . . . I guess I accepted the idea that I am serving one side and that resolved potential conflicts." *Id.* at 1560.

147. See *supra* Part II.

148. See *supra* notes 132–134 and accompanying text.

149. Cf. Judith A. Hasko, *Daubert v. Merrell Dow Pharmaceuticals, Inc.: Flexible Judicial Screening of Scientific Expert Evidence under Federal Rule of Evidence 702*, 1995 WIS. L. REV. 479, 495 (1995) (describing the *Daubert* decision as a "[departure] from the Court's general trend toward plain meaning jurisprudence").

#### IV. CONCLUSION

Neuroscience evidence has not yet reached the point where courts can admit expert testimony *carte blanche*, but as a result of *Daubert*'s flexible standards, courts in different districts do not treat similar evidence uniformly.<sup>150</sup> As *Quick v. State* and *United States v. Scott* illustrate, two courts applying similar evidentiary standards to neuropsychological evidence of intent to commit a crime may regard the evidence unequally.<sup>151</sup> As neuroscience evidence advances to the point where it may one day transform criminal litigation, the law should advance along with it by adhering to a definitive set of evidentiary standards beyond the flexible *Daubert* factors in order to restore predictability and fairness to the process of evidence admissibility.

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150. See Rosen, *supra* note 4 (suggesting that neuroscience evidence is not yet ripe enough to “identify the mysterious point at which people should be excused from responsibility for their actions because they are not able, in some sense, to control themselves,” but that the emerging field of *neurolaw* is continuously advancing).

151. See *supra* Part II.