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# THE MYTH OF THE DOUBLE-EDGED SWORD: AN EMPIRICAL STUDY OF NEUROSCIENCE EVIDENCE IN CRIMINAL CASES

DEBORAH W. DENNO \*

**Abstract:** This Article presents the results of my unique study of 800 criminal cases addressing neuroscience evidence over the past two decades (1992–2012). Many legal scholars have theorized about the impact of neuroscience evidence on the criminal law, but this is the first empirical study of its kind to systematically investigate how courts assess the mitigating and aggravating strength of such evidence. My analysis reveals that neuroscience evidence is usually offered to mitigate punishments in the way that traditional criminal law has always allowed, especially in the penalty phase of death penalty trials. This finding controverts the popular image of neuroscience evidence as a double-edged sword—one that will either get defendants off the hook alto-

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\* Arthur A. McGivney Professor of Law, Fordham University School of Law. This Article is the first in a series of publications based on my four-year project studying the intersection between neuroscience and the criminal law. I am most grateful to the following individuals for their contributions: George Conk, John Cording, Nestor Davidson, Michael Flomenhaft, Marianna Gebhardt, Daniel Goddin, Clare Huntington, Sonia Katyal, Ellen Koenig, Bruce Kreter, Michael Martin, Julie Salwen, David Tarras, Seth Tarras, Steve Thel, and Benjamin Zipursky. For insightful comments on earlier versions of this Article, I thank the participants in presentations given at the Annual Meeting of the American Society of Criminology, Cornell Law School, Florida State University College of Law, Fordham University School of Law, the International Society for the Reform of Criminal Law, Loyola University Chicago (School of Law and the Department of Criminal Justice and Criminology), New York University School of Law (Hoffinger Criminal Justice Colloquium, Center for Research in Crime and Justice), Pace University School of Law, Southern Methodist University Dedman School of Law, SUNY Buffalo Law School (Buffalo Criminal Law Center), University of Richmond School of Law (Emroch Faculty Colloquy Series), Rutgers-Camden University School of Law (Rutgers Institute for Law and Philosophy), University of San Diego School of Law (Institute for Law and Philosophy), Syracuse University College of Law, the University of Texas School of Law, and Yale Law School. I give special thanks to a superb set of research assistants who worked at varying times during the course of this project: Maurice Aaron Neishlos, Adam Nicolais, John-Christopher Record, Faina Savich, Madhundra Sivakumar, Ariel Sodomsky, Erica Valencia-Graham, and Katherine Yi. Fordham Law School's library staff, particularly Alissa Black-Dorward, provided continuously exceptional research support during the entire project. With characteristic talent, Madhundra Sivakumar and Robert Yasharian created the Article's charts. I am indebted to five sources for research funding without which this project could not have existed: Fordham Law School, the Proteus Action League, Atlantic Philanthropies, the Reynolds Family, and the Arthur and Charlotte Zitrin Foundation. Terence Lenamon graciously provided helpful information on the Grady Nelson case. Members of the *Boston College Law Review* gave outstanding editorial assistance. Any mistakes or misjudgments are my own.

gether or unfairly brand them as posing a future danger to society. To the contrary, my study indicates that neuroscience evidence is typically introduced for a well-established legal purpose—to provide fact-finders with more complete, reliable, and precise information when determining a defendant's fate. My study also shows that courts accept neuroscience evidence for this purpose, and in fact expect attorneys to raise this evidence when possible on behalf of their clients. This expectation is so entrenched that courts are willing to grant defendants their “ineffective assistance of counsel” claims when attorneys fail to pursue this mitigating evidence. Meanwhile, my study also reveals that the potential future danger posed by defendants is rarely a facet of cases involving neuroscience evidence—again contradicting the myth of the double-edged sword. The cases that do address future danger, however, offer fascinating insight into the complex legal issues raised by neuroscience evidence. As courts continue to embrace neuroscience tools and techniques, the empirical data collected in my study provide a foundation for discussions regarding the use of neuroscience evidence in criminal cases. The findings presented in this Article will ensure that those discussions are grounded in fact rather than hyperbole.

## INTRODUCTION

*A little explanation can go a long way . . . the difference between life and death.*<sup>1</sup>

In 2010, shortly after escaping from prison, John McCluskey killed a retired couple in order to steal their camping trailer.<sup>2</sup> The crime was horrific: McCluskey and two accomplices shot the defenseless couple inside their trailer and then set their truck ablaze with their bodies inside.<sup>3</sup> Yet a jury rejected the death penalty, instead sentencing McCluskey to life in prison without the possibility of parole.<sup>4</sup> The jury's life-over-death choice was seemingly influenced by the defense's introduction of brain scans indicating substantial damage to McCluskey's frontal lobe.<sup>5</sup> According to legal analysts, the jury viewed McCluskey's brain abnormalities as a mitigating factor that decreased his level of culpability and ability to plan or intend such a

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<sup>1</sup> Caro v. Woodford, 280 F.3d 1247, 1249 (9th Cir. 2002).

<sup>2</sup> See Third Superseding Indictment at 3, United States v. McCluskey, 893 F. Supp. 2d 1117 (2012) (No. 10-cr-02734), 2012 WL 6704922, at \*3; Transcript of Record at 4558, *McCluskey*, 893 F. Supp. 2d at 1117 (transcript of trial on the merits).

<sup>3</sup> See Transcript of Record, *supra* note 2, at 4558 (transcript of trial on the merits). McCluskey was convicted in federal court of carjacking and two murders. See *id.* at 12031 (transcript of punishment phase).

<sup>4</sup> See *id.* at 13049 (transcript of punishment phase).

<sup>5</sup> Motion to Rebut Defendant's Mental Health Expert Testimony at 3–4, *McCluskey*, 893 F. Supp. 2d at 1117; Ruben C. Gur, Ph.D., Neurobehavioral Assessment of Mr. McCluskey (Oct. 2, 2013) (report submitted to Michael Burt, Attorney at Law) (on file with Author).

crime, rather than as an aggravating factor that heightened his future danger to society.<sup>6</sup>

Courtroom battles over mitigating and aggravating evidence are a common aspect of capital cases, but the unprecedented use of neuroscience evidence in these battles has led to some striking outcomes.<sup>7</sup> In 2010, for example, a judge ruled brain mapping evidence admissible for the first time, noting its “ability to provide vital information on brain injury and impairment.”<sup>8</sup> The defendant, Grady Nelson, was convicted in Miami of first degree murder after stabbing his wife sixty times, and then also stabbing his step-children.<sup>9</sup> Despite Nelson’s appalling crimes, the jury declined a death sentence,<sup>10</sup> with some jurors noting in post-verdict interviews that neuroscience evidence of Nelson’s mental incapacity dissuaded them from issuing a death sentence.<sup>11</sup>

The rising acceptance of neuroscience evidence has fueled heated debate regarding its impact on the criminal justice system.<sup>12</sup> The criminal law has focused on the human mind and mental states since the seventeenth century, yet the field of neuroscience is relatively young.<sup>13</sup> The first use of the term

<sup>6</sup> See Scott Sandlin, *McCluskey Gets Life in Prison for Killing Couple*, ALBUQUERQUE J. (Dec. 12, 2013), <http://www.abqjournal.com/318501/news/mccluskey-gets-life-in-prison-for-killing-couple.html>, archived at <http://perma.cc/M2BD-ZHEG>; Greg Miller, *Did Brain Scans Just Save a Convicted Murderer from the Death Penalty?*, WIRED (Dec. 12, 2013), <http://www.wired.com/wiredscience/2013/12/murder-law-brain/>, archived at <http://perma.cc/W249-CBPV>.

<sup>7</sup> See generally Michael J. Saks, *The Impact of Neuroimages in the Sentencing Phase of Capital Trials*, 11 J. EMPIRICAL LEGAL STUD. 105 (2014) (discussing the effect of supplementing neuroscience evidence with neuroscience imaging in the courtroom); O. Carter Snead, *Neuroimaging and the “Complexity” of Capital Punishment*, 82 N.Y.U. L. REV. 1265 (2008) (discussing and critiquing then-current and aspirational uses of neuroscience in capital cases).

<sup>8</sup> *Judge Okays QEEG Evidence for Grady Nelson*, PRWEB (Oct. 30, 2010) [hereinafter *Judge Okays QEEG Evidence*] (citations and internal quotations omitted), <http://www.prweb.com/releases/GradyNelsonTrial/QEEGBrainMapping/prweb4718954.html>, archived at <https://perma.cc/X2U3-QNWE?type=image>; see Francis Shen, *The Law and Neuroscience Bibliography: Navigating the Emerging Field of Neurolaw*, 38 INT’L J. LEGAL INFO. 352, 352 (2010). The particular brain mapping evidence in the Nelson case was quantitative electroencephalography (QEEG), “[t]he computerized analysis that separates the EEG recorded on the scalp into wave frequency components.” OWEN D. JONES ET AL., LAW AND NEUROSCIENCE 764 (2014).

<sup>9</sup> *State v. Nelson*, No. F05-846 (11th Fla. Cir. Ct. Dec. 2, 2010), archived at <https://perma.cc/7XA5-2JXG?type=pdf>; *Judge Okays QEEG Evidence*, *supra* note 8; Miller, *supra* note 6. For more information, see generally Transcript of Opening Statement, *Nelson*, No. F05-846, archived at <https://perma.cc/6TZZ-NZHA?type=pdf>.

<sup>10</sup> Transcript of Defense Closing Argument, *Nelson*, No. F05-846, archived at <https://perma.cc/M4ZU-ZGXM?type=pdf>; Press Release, S. Fla. Reception Cntr. (Mar. 3, 2015), archived at <https://perma.cc/TP7N-TG8W?type=pdf>; see also Miller, *supra* note 6.

<sup>11</sup> Miller, *supra* note 6.

<sup>12</sup> See generally Joshua Greene & Jonathan Cohen, *For the Law, Neuroscience Changes Nothing and Everything*, 359 PHIL. TRANSACTIONS ROYAL SOC’Y: BIOLOGICAL SCI. 1775 (2004) (discussing the key debates regarding the criminal law and neuroscience).

<sup>13</sup> See Deborah W. Denno, *Criminal Law in a Post-Freudian World*, 2005 U. ILL. L. REV. 602, 609–13 [hereinafter Denno, *Post-Freudian World*] (discussing the evolution of mens rea); Deborah W. Denno, *Crime and Consciousness: Science and Involuntary Acts*, 87 MINN. L. REV. 269, 269–314 (2002) [hereinafter Denno, *Consciousness*] (analyzing the historical development of

*neuroscience* did not even occur until 1963.<sup>14</sup> The term is defined in varying ways, but the definition provided by the American Association for the Advancement of Science is representative: neuroscience is “the branch of life sciences that studies the brain and nervous systems [including] . . . brain processes such as sensation, perception, learning, memory, and movement.”<sup>15</sup> Recent neuroscience research focuses on an even newer discipline—that of *cognitive neuroscience*, which combines cognitive science, psychology, and neuroscience to examine the mechanisms of the mind, such as motor function, language, higher cognitive functions, emotions, and consciousness.<sup>16</sup>

Key criminal law concepts of culpability depend on the internal workings of individuals’ minds. Revelations about a defendant’s level of intentionality or consciousness are just some examples of areas where new discoveries could improve the criminal justice system.<sup>17</sup> Yet, neuroscience evidence can be portrayed as a potential “double-edged sword: it may diminish [a defendant’s] blameworthiness for his crime even as it indicates that there is a probability that he will be dangerous in the future.”<sup>18</sup> This Article refers to this misconception as the “myth of the double-edged sword.” Specifically, much of the debate surrounding the intersection of neuroscience and the criminal law centers on the mistaken assumption that neuroscience evidence will abdicate violent criminals of all responsibility for their crimes—especially those like McCluskey and Nelson.<sup>19</sup> In contrast, others fear that

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conscious and unconscious thought processes as they pertain to the law); *Definition of Neuroscience*, MERRIAM-WEBSTER ONLINE DICTIONARY, <http://www.merriam-webster.com/dictionary/neuroscience>, archived at <http://perma.cc/3WTL-5B7J> (last visited Mar. 11, 2015) (providing that the “[f]irst [k]nown [u]se” of the term “Neuroscience” did not occur until 1963).

<sup>14</sup> See MERRIAM-WEBSTER ONLINE DICTIONARY, *supra* note 13; *Definition of Neuroscience*, OXFORD ENGLISH DICTIONARY ONLINE, <http://www.oed.com/view/Entry/235290?redirectedFrom=neuroscience#eid>, archived at <http://perma.cc/ZRY7-AS33> (last visited Mar. 11, 2015) (identifying the first known use of the term “neuroscience as a 1963 research program bulletin title”).

<sup>15</sup> BRENT GARLAND, *NEUROSCIENCE AND THE LAW: BRAIN, MIND, AND THE SCALES OF JUSTICE* 206 (2004).

<sup>16</sup> JAMIE WARD, *THE STUDENT’S GUIDE TO COGNITIVE NEUROSCIENCE* 4 (2d ed. 2010).

<sup>17</sup> See Denno, *Post-Freudian World*, *supra* note 13, at 640–44 (discussing state of mind, or mens rea, as it is used to define criminal conduct by the Model Penal Code).

<sup>18</sup> *Penry v. Lynaugh*, 492 U.S. 302, 324 (1989); see also Owen D. Jones & Francis X. Shen, *Law and Neuroscience in the United States*, in *INTERNATIONAL NEUROLAW: A COMPARATIVE ANALYSIS* 349, 362 (T.M. Spranger ed., 2012) (“Using neuroscience evidence in capital sentencing . . . introduces a double-edged sword problem that multiple commentators have recognized. . . . That is, a brain too broken may be simply too dangerous to have at large, even if it is somehow less culpable.”); Snead, *supra* note 7, at 1338 (Snead cautions against the use of neuroscience evidence in death penalty cases, despite its mitigating potential, because aspects of the capital sentencing process “—most notably, the aggravating factor of future dangerousness—are no friend to the capital defendant. In fact, they are often the gravest threat to his life.”).

<sup>19</sup> For some extreme views on the use and impact of the neuroscience evidence introduced in cases including those of John McCluskey and Grady Nelson, see Eric Markowitz, *The New Murder Defense: My Brain Made Me Do It*, *VOCATIV* (Nov. 13, 2013, 2:24 PM), <http://www.vocativ.com/culture/science/new-murder-defense-brain-made/>, archived at <http://perma.cc/V5FU-NDHP>

such evidence could bolster predictions of defendants' purported future danger to society, thereby unfairly generating longer prison terms or even the death penalty.<sup>20</sup> Meanwhile, media accounts of some particularly controversial cases have alarmed the public with inaccurate narratives of how courts use neuroscience evidence and how neuroscience fits into the framework of the criminal justice system.<sup>21</sup> The complexity of these legal issues will only expand as the science progresses and becomes increasingly common in courtrooms.<sup>22</sup>

Numerous scholars have offered insightful assessments of the legal issues that arise at the intersection of law and neuroscience.<sup>23</sup> The bulk of

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(focusing on John McCluskey and arguing that neuroscience is infiltrating the criminal law to the advantage of criminals far beyond what our current understanding of neuroscience should permit); Priya Shetty, *Law and Order: Blame It on the Brain*, BBC (July 11, 2012), <http://www.bbc.com/future/story/20120710-blame-it-on-the-brain>, archived at <https://perma.cc/SV7C-RE99?type=pdf> (focusing on Grady Nelson and discussing a group of scientists and doctors who feel that at least some neuroscience evidence is simply not well enough understood to be used conclusively in courtrooms today).

<sup>20</sup> See Nicholas Mackintosh, *Guilty Minds*, NEW SCIENTIST, Dec. 17, 2011, at 26–27 (“Rather than such evidence serving to reduce a criminal’s sentence, one could argue that it might be used to increase it, or at least influence decisions about release or parole.”); Peter McKnight, *The Ethical Minefield of Using Neuroscience to Prevent Crime (Part 2 of 3): Is It Moral to Make Changes to a Person’s Brain If It Benefits Both the Offender and Society?*, VANCOUVER SUN, Dec. 10, 2012, <http://www.vancouversun.com/health/ethical+minefield+using+neuroscience+prevent+crime+Part/7674188/story.html>, archived at <https://perma.cc/9SSV-L97N?type=pdf> (“[N]euroscience could indeed lead to defendants being found less blameworthy. But such evidence could also backfire, for judges could conclude that the neuroscience shows the defendant is constitutively, irremediably dangerous, and hence must be locked away for a longer period of time to protect the public.”).

<sup>21</sup> See Kate Kelland, *Insight—Neuroscience in Court: My Brain Made Me Do It*, REUTERS, Aug. 29, 2012, available at <http://www.reuters.com/article/2012/08/29/us-neuroscience-crime-idUSBRE87S07020120829>, archived at <http://perma.cc/C4X2-42C5> (examining a number of extreme cases where neuroscience evidence has been used, branding neuroscience as the “my brain made me do it” defense, and citing a number of sources arguing that neuroscience is being misapplied and far overextended in courts of law).

<sup>22</sup> See generally Owen D. Jones et al., *Law and Neuroscience*, 33 J. NEUROSCIENCE 17624 (2013) (discussing the growth of neuroscience and the ways the criminal justice system can handle it).

<sup>23</sup> There is currently a multilayered debate among scholars regarding the impact cognitive neuroscience will have on the law. Theoretically speaking, some scholars believe that cognitive neuroscience will challenge our traditional notions of free will, which, in turn, will dramatically alter the way society views criminal punishment. See Greene & Cohen, *supra* note 12, at 1784 (explaining that “free will as we ordinarily understand it is an illusion generated by our cognitive architecture,” and since “retributivist notions of criminal responsibility ultimately depend on this illusion,” they will give way to a criminal justice system based solely on consequentialism). But see Stephen J. Morse, *Avoiding Irrational Neurolaw Exuberance: A Plea for Neuromodesty*, 62 MERCER L. REV. 837, 855 (2011) (arguing that “[g]iven how little we know about the brain-mind and brain-action connections, to claim that we should radically change our picture of ourselves, legal doctrines, and practices based on neuroscience is a form of neuroarrogance”); Amanda C. Pustilnik, *Violence on the Brain: A Critique of Neuroscience in Criminal Law*, 44 WAKE FOREST L. REV. 183, 237 (2009) (“[The] claim that the criminal law can understand violence principally as emerging from localized brain dysfunction in people who are neurobiologically distinct is simpler than possible.”). Similarly, there is an ongoing debate regarding the specific practical applications

the academic writing, however, has been confined to small-scale empirical studies or to a handful of unusual cases, whether real or theoretical.<sup>24</sup> This focus by scholars on the outliers and unlikely cases tends to distort the dialogue on neuroscience with misconceptions about the actual impact of neuroscience on the law.<sup>25</sup> Until now, there has been no comprehensive nationwide account of how neuroscience is actually used to evaluate a defendant's mental state within a universe of criminal cases.<sup>26</sup> With this Article, I seek to fill that void. I have conducted an unprecedented empirical study ("Neuroscience Study" or "Study") of all criminal cases (totaling 800 cases) that addressed neuroscience evidence over the course of two decades (1992–2012). The Neuroscience Study provides, for the first time, extensive and systematic empirical data that show how neuroscience evidence is used in courtrooms. These data enable us to look beyond assumptions and misconceptions, particularly the myth of the double-edged sword.

In presenting the results of the Neuroscience Study, I do not engage in debates over the appropriate use of neuroscience evidence. That important topic has been discussed in-depth elsewhere.<sup>27</sup> Instead, the Neuroscience Study reveals the marked degree to which such evidence has been integrated into the criminal justice system in ways that have never before been documented or analyzed. The Study also uncovers a criminal justice system that is surprisingly willing to accept and comprehend both the strengths and

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of neuroscience evidence. For example, many scholars advocate the use of neuroscience evidence by death penalty defendants to bolster their mitigation claims during sentencing. See John H. Blume & Emily C. Paavola, *Life, Death, and Neuroimaging: The Advantages and Disadvantages of the Defense's Use of Neuroimages in Capital Cases—Lessons from the Front*, 62 MERCER L. REV. 909, 914 (2011) (explaining that neuroimaging "can make the difference between life and death" in a defendant's mitigation presentation); Adam Lamparello, *Neuroscience, Brain Damage, and the Criminal Defendant: Who Does It Help and Where in the Criminal Proceeding Is It Most Relevant?*, 39 RUTGERS L. REC. 161, 178 (2012) (arguing that neuroscience evidence of traumatic brain injuries is "substantially relevant and probative" during the sentencing phase of a capital trial, and that demonstrated injuries to the defendant's frontal lobe and amygdala should warrant a term of life in prison instead of the death penalty). But see Jones & Shen, *supra* note 18, at 362 (discussing the "double-edged sword problem"); Snead, *supra* note 7, at 1338 (emphasizing the "threat" of the future dangerousness aggravator to capital defendants). For a parallel discussion regarding the controversy surrounding the use of behavioral genetics in criminal law, see Deborah W. Denno, *Courts' Increasing Consideration of Behavioral Genetics Evidence in Criminal Cases: Results of a Longitudinal Study*, 2011 MICH. ST. L. REV. 967, 1008–27.

<sup>24</sup> For the most thorough and recent overview of this research, see generally JONES ET AL., *supra* note 8.

<sup>25</sup> For an example of such distortion, see Markowitz, *supra* note 19; see also Shetty, *supra* note 19 (addressing previous scholarly attention to extreme views on the use and impact of neuroscience evidence).

<sup>26</sup> In separate articles, Neal Feigenson and Carter Snead come the closest to offering such published and systematic accounts. See Neal Feigenson, *Brain Imaging and Courtroom Evidence: On the Admissibility and Persuasiveness of fMRI*, 2 INT'L J.L. CONTEXT 233, 233–55 (2006); Snead, *supra* note 7.

<sup>27</sup> See generally JONES ET AL., *supra* note 8.

limitations of neuroscience evidence in ways that clearly discredit the myth of the double-edged sword. Rather than simply furthering current theoretical debates, this Study suggests that the substance of such debates should change. Indeed, the results of the Neuroscience Study spur a straightforward, yet perhaps unexpected, conclusion: the key question we should be asking is not *whether* neuroscience evidence should be used in the criminal justice system, but rather *how* and *why*.

In an effort to begin answering this how-and-why question, Part I of this Article describes the Neuroscience Study and some of its most fundamental findings.<sup>28</sup> Neuroscience evidence is typically raised in cases where defendants are facing a severe sentence, such as the death penalty, a life sentence, or a substantial prison sentence.<sup>29</sup> Yet contrary to the myth of the double-edged sword, the Study reveals that such evidence is most commonly introduced for an important yet relatively conventional purpose: as part of an effort to mitigate a defendant's sentence.<sup>30</sup> Indeed, this Study uncovers a criminal justice system that is willing to embrace innovative methods of assessing defendants' mental capabilities, and expects its attorneys to do the same.

Part II of this Article focuses on this latter point—courts' expectations of attorneys.<sup>31</sup> Part II explains how the standards articulated by the U.S. Supreme Court in *Strickland v. Washington*<sup>32</sup> are applied in the context of neuroscience evidence and presents one of the Neuroscience Study's most striking findings: many courts not only expect attorneys to investigate and use available neuroscience evidence when it is appropriate, but also penalize attorneys who neglect this obligation. In an effort to better discern the parameters of courts' requirements, Part II concludes by examining a number of cases in which courts found attorneys' approaches to available neuroscience evidence to be ineffective.

Part III tests one the most widely held myths of the double-edged sword—that prosecutors will use neuroscience evidence to fuel arguments that a defendant is a future danger and therefore deserves death or extensive incarceration. The Neuroscience Study's findings are clear: neuroscience evidence is only rarely used to argue a defendant's future dangerousness.<sup>33</sup> Yet the topic itself is more nuanced, and Part III concludes by warning attorneys of the contradictions that neuroscience evidence can bring.

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<sup>28</sup> See *infra* notes 34–68 and accompanying text.

<sup>29</sup> See *infra* Chart 1. For the reader's convenience, the charts discussed in this Article are archived at <https://perma.cc/7QV8-L8F8?type=pdf>.

<sup>30</sup> See *infra* Charts 6–7.

<sup>31</sup> See *infra* notes 70–274 and accompanying text.

<sup>32</sup> 466 U.S. 668, 687 (1984) (establishing the standards for evaluating attorneys' performances on behalf of their clients).

<sup>33</sup> See *infra* notes 276–448 and accompanying text (discussing future dangerousness).



## I. THE NEUROSCIENCE STUDY: 1992–2012

Science and law have long intersected, but neuroscience is a relatively new concept to many.<sup>34</sup> In collecting data for the Neuroscience Study, I defined “neuroscience evidence” as incorporating two broad groups of tests:<sup>35</sup> “imaging tests,” which are generated by computer images of a human brain—such as those tests listed in Chart 4<sup>36</sup>—and “non-imaging tests,” which are based on tests administered by a medical professional to an individual for the purpose of gaining insight into how that person’s brain operates—such as those tests listed in Chart 5.<sup>37</sup> The 800 criminal law cases addressing neuroscience evidence from January 1, 1992 to December 31, 2012<sup>38</sup> were collected employing the Westlaw and Lexis legal databases.<sup>39</sup> I used information from these cases to code and analyze over 100 key factors

<sup>34</sup> See MERRIAM-WEBSTER ONLINE DICTIONARY, *supra* note 13; OXFORD ENGLISH DICTIONARY ONLINE, *supra* note 14 (noting that the term “neuroscience” only surfaced in the 1960s).

<sup>35</sup> See Ellen G. Koenig, *A Fair Trial: When the Constitution Requires Attorneys to Investigate Their Clients’ Brains*, 41 FORDHAM URB. L.J. 177, 194–95 (2013) (dividing neuroscience evidence into “brain scans” and “neuroscience evaluations”). Functional brain scans (EEG, PET, SPECT, fMRI) “are computer images of a person’s brain that show how his brain works by tracking how blood flows through the brain.” *Id.* at 195. Structural, or organic brain scans (MRI, CT), “show what the brain’s structure looks like.” *Id.* at 197.

<sup>36</sup> See *infra* Chart 4.

<sup>37</sup> See *infra* Chart 5.

<sup>38</sup> All statistics and case distributions discussed in this Article are available from the Author in an extensive statistical appendix. See Neuroscience Study Stat. App. (on file with Author) [hereinafter “Stat. App.”]; see also DEBORAH W. DENNO, CHANGING LAW’S MIND: HOW NEUROSCIENCE CAN HELP US PUNISH CRIMINALS MORE FAIRLY AND EFFECTIVELY (2016).

<sup>39</sup> The case selection techniques employed for the Neuroscience Study were comparable to those used in my prior studies of behavioral genetics evidence in criminal cases. See Denno, *supra* note 23, at 1035–47. For this Article’s Study, searches for decisions were conducted using Westlaw and Lexis, applying parameters that included the following cases: published opinions, unpublished opinions, opinions that are slated to be published, and opinions in which the state of publication is, at the time of this Article’s writing, unclear. In order to make the content of this Article’s search consistent across all cases, the search looked only at opinions. The search did not look at the briefs for those opinions because case briefs are not available for all cases in either the Westlaw or Lexis databases. As mentioned, the search incorporated judicial decisions released between January 1, 1992, and December 31, 2012. In order to collect the relevant opinions and to make the search consistent with the Author’s past studies, the search was limited to decisions in which courts reference permutations of the following terms: “neuro or brain,” “MRI,” “fMRI,” “PET scan,” “CAT scan,” “CT scan,” “SPECT,” “EEG,” “BEAM,” or “brain fingerprinting.” Some of the searches also contained the terms “ineffective” or “effective” (where those terms appeared within three words of the word “assistance”), and also title assignments used by experts, such as “Dr.” To be included in this Article’s study, a court must have announced a disposition in a case where a party either introduced or sought to introduce neuroscience evidence at any point in the proceeding (e.g., innocence-or-guilt phase, penalty phase, post-conviction hearing, evidentiary hearing, etc.). Cases in which neuroscience evidence was introduced post-trial were included in the Study only if the court took action on the basis of that evidence. Such action could consist of granting an evidentiary hearing, finding ineffective assistance of counsel for counsel’s failure to pursue the evidence, or finding prior court error for failure to admit the evidence. The Author also required that the court have considered the neuroscience evidence as part of its rationale for a particular holding.

relevant to the criminal justice system.<sup>40</sup> Although some cases that discuss neuroscience evidence do not find their way into the Westlaw and Lexis databases (for example, because they have never been reported), those that do can be retrieved by anyone who would like to verify or replicate my methods. This selection strategy also provides relative consistency and accountability across the twenty years this Study examines.

The Neuroscience Study's 800 cases are documented in separate Appendixes on file with the Author.<sup>41</sup> The cases fall into three categories: 247 cases (30.88%) concern neuroscience evidence as it pertains to the victim, primarily to prove the extent of a victim's brain injury;<sup>42</sup> 514 cases (64.25%) concern neuroscience evidence as it pertains to the defendant; and thirty-nine cases (4.88%) concern neuroscience evidence as it pertains to both the defendant and the victim because the brains of one or more individuals in both the "victim" and "defendant" categories were examined.<sup>43</sup> The focus of this Article is on the cases in the latter two categories—"defendant" and "both victim and defendant"—which comprise 553 cases or 69.13% of the total data set of 800 cases. This Article refers to these two categories generically as "Defendant Cases."

### *A. Crimes and Punishments*

The vast majority of the Neuroscience Study's Defendant Cases involve defendants convicted of murder.<sup>44</sup> As Chart 1 shows,<sup>45</sup> two-thirds of

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<sup>40</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38. The Author supervised the coding of all data. Data were coded with the assistance of three J.D. graduates of Fordham Law School with a strong interest in law and neuroscience. These coders were Daniel Goddin, J.D., Jeremy Gold, J.D., and Ellen Koenig, J.D. These coders worked together and spot-checked each other at key points in time during the Neuroscience Study, thereby ensuring inter-rater reliability and consistency. The coding efforts of these three were then checked again for validity and reliability by four additional coders, all current J.D. candidates at Fordham Law School. These coders were Aaron Neishlos, Madhundra Sivakumar, David Tarras, and Katherine Yi.

<sup>41</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>42</sup> These victim cases follow a pattern that is distinct from other types of cases because neuroscience evidence is used to prove the extent of a victim's injury and it is mostly introduced by the State. In a typical victim injury case, a prosecutor introduces into court a CAT scan of the brain of a baby who has been shaken, or of an adult who has suffered a gunshot wound to the head. This neuroscience evidence, which almost always comes in the form of brain imaging, is used to prove either the perpetrator's intent (to abuse, injure, or kill) and thus his guilt, or it is used for the purposes of requesting a harsher sentence based on the severity of the injury inflicted upon the victim. See *State v. McDowell*, 715 S.E.2d 602, 604 (N.C. Ct. App. 2011) ("Dr. Riemer identified forty-five gunshot wounds to Mr. Howell's body, including a sufficient number of entrance and exit wounds in Mr. Howell's head that his entire brain was destroyed."); see also Stat. App., *supra* note 38; DENNO, *supra* note 38 (listing and examining all victim cases).

<sup>43</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>44</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38. The 553 defendants were convicted of the following crimes (only the most serious crime conviction per defendant is listed): 366 murder convictions that resulted in a death sentence; ninety-five murder convictions that did

the Defendant Cases (366 cases or 66.18%) began as capital cases in which the defendant was eligible for the death penalty even if that sentence was later reduced. Defendants in the remaining cases (187 cases or 33.82%) faced disproportionately severe sentences.<sup>46</sup> Among these non-death penalty cases, less than half (80 cases or 42.78%) were given a sentence of life either with or without the possibility of parole. The other 107 cases were mostly allotted prison sentences of substantial length. In sum, my analysis indicates that neuroscience evidence is typically used in cases where defendants face the death penalty, a life sentence, or a substantial prison sentence.

The Neuroscience Study also reveals that neuroscience evidence is employed at different stages of cases. In a capital case, neuroscience may be incorporated during the guilt-or-innocence phase and/or the penalty phase.<sup>47</sup> The guilt-or-innocence phase requires the State to prove beyond a reasonable doubt that a defendant committed an alleged crime; this phase invites the use of defenses that suggest a defendant was not fully responsible.<sup>48</sup> In the penalty phase, the jury has found the defendant guilty of the capital crime and is determining whether to sentence the defendant to death.<sup>49</sup> The great majority of death penalty states require that the jury consider both evidence of aggravation from the State and evidence of mitigation from the defense.<sup>50</sup> In this Study, the concept of mitigation is not exclusive to death penalty cases, but that is by far the most common context in which the term is used.<sup>51</sup> In most jurisdictions, aggravating factors must outweigh mitigating factors for a defendant to be sentenced to death.<sup>52</sup>

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not result in a death sentence; one negligent homicide; five attempted murder or conspiracy to commit murder; six sexual assaults; thirteen robbery, burglary, theft or home invasion; seventeen assault or battery; four child abuse; seven fraud or conspiracy to commit fraud; one arson; seventeen drug trafficking or drug possession; one criminal possession of a weapon; one distribution of child pornography; one filing false public records and perjury; one escape; five driving under the influence or leaving the scene; one criminal mistreatment; one bribery; two racketeering or making threats; one illegal gambling; and seven unknown charges. *Id.*

<sup>45</sup> See *infra* Chart 1.

<sup>46</sup> Chart 1 shows the most serious sentence for which a defendant was eligible. For example, if a defendant was sentenced for seventeen years-to-life, Chart 1 categorizes that defendant as having a life sentence. For some cases, an opinion was adjudicated without the use of a sentence. In other cases, the defendant had yet to be sentenced at the time of the opinion's publication. See *id.*

<sup>47</sup> See Blume & Paavola, *supra* note 23, at 914 (discussing the two phases of capital cases generally and the application of neuroimaging as mitigation).

<sup>48</sup> See *id.*

<sup>49</sup> *Id.* at 914–15.

<sup>50</sup> *Id.* (“Unlike the decision the jurors made during the guilt-or-innocence phase of the proceedings . . . this decision is not . . . a determination of fact, for example, did the defendant do it, but a moral and normative choice—does he deserve to die?” (internal quotations omitted)).

<sup>51</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38. In the Neuroscience Study there were about a dozen cases that used the term “mitigation” to apply to the goals of certain

Mitigating factors usually include information about a capital defendant's background and life prior to his crime, whereas aggravating factors include the circumstances surrounding a crime and a defendant's prior criminal record.<sup>53</sup> Death penalty jurisdictions vary with respect to the types of mitigating and aggravating circumstances that they permit fact-finders to consider; but the U.S. Supreme Court has made clear that defendants can present mitigating evidence relevant to "any aspect of [the] defendant's character or record and any of the circumstances of the offense that the defendant proffers as a basis for a sentence less than death."<sup>54</sup> This highly open-ended standard allows for a full range of mitigating factors to be introduced; most attorneys weave these facts into a compelling "story" that can be critical to determining a defendant's fate.<sup>55</sup>

The Neuroscience Study is the first empirical study to systematically investigate how courts assess the mitigating and aggravating strength of neuroscience evidence. My analysis reveals that neuroscience evidence is usually offered to mitigate punishments in the way that traditional criminal law has always allowed, especially in the penalty phases of death penalty trials. This finding is noteworthy because it controverts the popular image of neuroscience evidence as a double-edged sword—one that will either get defendants off the hook altogether or unfairly brand them as posing a future danger to society. To the contrary, the Neuroscience Study indicates that neuroscience evidence is typically introduced for well-established legal

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defenses such as extreme mental or emotional disturbance or insanity. See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>52</sup> James R. Acker & Charles S. Lanier, *Matters of Life or Death: The Sentencing Provisions in Capital Punishment Statutes*, 31 CRIM. L. BULL. 19, 33–52 (1995) (discussing state law sentencing formulas generally). But see *Kansas v. Marsh*, 548 U.S. 163, 173, 181 (2006) (upholding a Kansas death penalty statute that allowed jurors to impose the death penalty when aggravating circumstances and mitigating circumstances were equally distributed). In all circumstances it should be noted that if a defendant challenges a death sentence, a reviewing court must reweigh the aggravating evidence against the totality of available mitigating evidence. See *Wiggins v. Smith*, 539 U.S. 510, 534 (2003). For an insightful discussion of mitigating and aggravating factors and how they interplay, see O. Carter Snead, *Memory and Punishment*, 64 VAND. L. REV. 1195, 1248–51 (2011).

<sup>53</sup> See *Malone v. State*, 168 P.3d 185, 223 (Okla. Crim. App. 2007).

<sup>54</sup> *Marsh*, 548 U.S. at 174 (quoting *Lockett v. Ohio*, 438 U.S. 586, 604 (1978)) (internal quotations omitted). The *Marsh* Court explained that state courts are allowed significant license to determine "the manner in which aggravating and mitigating circumstances" should be weighed so long as those courts had rationally narrowed the class of "death-eligible defendants" and permitted juries to consider a defendant's "record, personal characteristics, and the circumstances of his crime" in rendering a sentence. *Id.*

<sup>55</sup> Blume & Paavola, *supra* note 23, at 914–15. As one court noted, "mitigation evidence can, quite literally, make the difference between life and death in a capital case." *Marquez-Burrola v. State*, 157 P.3d 749, 764 (Okla. Crim. App. 2007).

purposes—to provide fact-finders with more complete, reliable, and precise information when determining a defendant's fate.<sup>56</sup>

### *B. A Range of Innovative Tests*

Mitigation is by no means the exclusive purpose for which neuroscience evidence is introduced. Indeed, the push for mitigation is commonly accompanied by a complex range of defense strategies, with a full menu of legal doctrines explicated by neuroscience evidence.<sup>57</sup> Neuroscience evidence is primarily used for mitigation, however, in both death penalty and non-death penalty cases. Accordingly, this Section will discuss some of the kinds of mitigating neuroscience evidence available to attorneys.

As Chart 2 shows,<sup>58</sup> the most prevalent mental and behavioral disorders ascribed to defendants by way of neuroscience evidence include disorders of adult personality and behavior, mental and behavioral disorders due to psychoactive substance abuse, schizophrenia, schizotypal and delusional disorder, and organic mental disorders.<sup>59</sup> Diagnoses are most commonly issued by expert medical professionals, although sources such as self-report and hospital records may also be employed.<sup>60</sup> Notably, although Chart 2 presents information on the prevalence of *confirmed* diagnoses, many cases involved expert testimony regarding the *possible* existence of these and other mental and behavioral disorders. For example, Chart 3 shows that one-half of the cases (271 cases or 49.01%) featured testimony by an expert medical professional explaining that the defendant suffered brain damage,<sup>61</sup> which in this study could have been from any one of a number of sources, such as childhood beatings, car accidents, or severe alcoholism.<sup>62</sup>

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<sup>56</sup> See Jones et al., *supra* note 22, at 17624 (noting the seven ways that “neuroscientific evidence might aid law”).

<sup>57</sup> See *infra* notes 70–448 and accompanying text; see also Stat. App., *supra* note 38; DENNO, *supra* note 38.

<sup>58</sup> See *infra* Chart 2.

<sup>59</sup> For ease of presentation, the diagnoses in Chart 2 are classified using the International Classification of Diseases, 10th Revision, Clinical Modification (“ICD-10”), in particular, the ICD-10 V: Mental Health and Behavioral Disorders. The ICD-10 is recognized and ratified by all 193 countries of the World Health Organization. See WORLD HEALTH ORG., ICD-10 CLASSIFICATION OF MENTAL AND BEHAVIOURAL DISORDERS: CLINICAL DESCRIPTIONS AND GUIDELINES (2010). This Study’s coder reviewed each opinion to determine specific neurological diagnoses ascribed to each defendant. Only expert testimony was considered for the purposes of the coding process. The experts at the very least held a doctorate in their respective fields. The diagnosing experts covered numerous professions ranging from medical doctors to forensic psychologists, neurosurgeons, and pharmacists. See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>60</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>61</sup> For detailed glossaries defining and explaining the purposes of many of these tests, see JONES ET AL., *supra* note 8, at 755–67; GARLAND, *supra* note 15, at 201–09.

<sup>62</sup> See Stat. App., *supra* note 38; DENNO, *supra* note 38.

Neuroscience evidence supporting the confirmed diagnoses include a swath of tests encompassing both imaging and non-imaging techniques. Charts 4<sup>63</sup> and 5<sup>64</sup> list the most commonly used tests. At least one type of brain imaging test was discussed in nearly two-thirds of the Defendant Cases (350 cases or 63.29%).<sup>65</sup> Although the diagnoses and tests listed in Charts 2–5<sup>66</sup> overlap within cases, the array of factors represented in each of these charts illustrates the criminal justice system's reliance on and acceptance of neuroscience evidence for mitigation purposes. Moreover, the results portrayed in these charts make clear that the criminal justice system comfortably incorporates even very recent technology for assessing defendants' mental capabilities. For example, Chart 4<sup>67</sup> indicates that brain imaging tests known as QEEG scans were referenced or used in fifteen cases, despite being first introduced in a courtroom only five years ago in the 2010 Grady Nelson case.<sup>68</sup>

In sum, the Neuroscience Study reveals a modern criminal justice system that is open to employing a wide range of neuroscience evidence. As a result, attorneys currently prosecuting and defending criminal cases must educate themselves about medical and neurological conditions and tests that a past generation of lawyers confronted rarely, if at all. Part II will discuss one of the most striking findings of the Neuroscience Study, which is that courts not only expect attorneys to investigate and use available neuroscience evidence in their cases when it is appropriate, but they penalize attorneys who neglect this obligation.<sup>69</sup>

## II. NEUROSCIENCE AND INEFFECTIVE ASSISTANCE OF COUNSEL

The U.S. Supreme Court has stated that an attorney's performance is determined by a standard of "prevailing professional norms,"<sup>70</sup> which, for capital cases, entails a "thorough investigation"<sup>71</sup> of "all reasonably available mitigating evidence"<sup>72</sup> relevant to a defendant's history and circumstances.<sup>73</sup> The Court has stressed repeatedly that a key part of this mitiga-

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<sup>63</sup> See *infra* Chart 4.

<sup>64</sup> See *infra* Chart 5.

<sup>65</sup> See *infra* Chart 4; Stat. App., *supra* note 38; DENNO, *supra* note 38.

<sup>66</sup> See *infra* Charts 2–5.

<sup>67</sup> See *infra* Chart 4.

<sup>68</sup> See Nelson, No. F05-846; Shen, *supra* note 8, at 352; Judge Okays QEEG Evidence, *supra* note 8.

<sup>69</sup> See *infra* notes 70–274 and accompanying text.

<sup>70</sup> Strickland v. Washington, 466 U.S. 668, 688 (1984).

<sup>71</sup> Porter v. McCollum, 558 U.S. 30, 39 (2009) (quoting Williams v. Taylor, 529 U.S. 362, 396 (2000)).

<sup>72</sup> Wiggins v. Smith, 539 U.S. 510, 524 (2003) (emphasis and internal quotations omitted).

<sup>73</sup> Porter, 558 U.S. at 39.

tion inquiry requires attorneys to investigate defendants' cognitive and intellectual deficiencies because such evidence has a particularly pronounced impact on mitigation, especially in death penalty cases.<sup>74</sup>

According to the Court, an attorney's failure to conduct such an investigation hinders the attorney's ability to make reasonable strategic decisions about how and when to present evidence that may benefit his or her client.<sup>75</sup> Furthermore, those attorneys open themselves up to defendants' appeals claiming prejudicially deficient counsel in violation of the Sixth Amendment, known as an "ineffective assistance of counsel" or *Strickland* claim.<sup>76</sup>

In 1984, in *Strickland v. Washington*,<sup>77</sup> the U.S. Supreme Court established a two-pronged test to assess the validity of ineffective assistance of counsel challenges. First, counsel's performance must actually be "deficient," and second, this deficient performance must have "prejudiced" the defendant.<sup>78</sup> To be "prejudiced," the legal counsel must not only be of poor quality, but must also be the "but for" cause of the resulting conviction.<sup>79</sup> In the Neuroscience Study, defendant-petitioners who satisfied this *Strickland* test were typically afforded relief in the form of a new penalty phase,<sup>80</sup> reversal of their

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<sup>74</sup> These deficiencies cover a broad span. See *Sears v. Upton*, 561 U.S. 945, 946 (2010) (frontal lobe damage); *Porter*, 558 U.S. at 36 (brain damage and cognitive defects in reading, writing, and memory); *Rompilla v. Beard*, 545 U.S. 374, 392 (2005) (organic brain damage and significant cognitive impairments); *Tennard v. Dretke*, 542 U.S. 274, 287 (2004) (impaired intellectual functioning); *Wiggins*, 539 U.S. at 535 (diminished mental capacities); *Williams*, 529 U.S. at 396 (borderline mental retardation). The American Bar Association Guidelines also advise attorneys to conduct an investigation into a defendant's neurological history as part of a death penalty defendant's mitigation claim. Specifically, the comment to Guideline 4.1 states: "Counsel must compile extensive historical data, as well as obtain a thorough physical and neurological examination. Diagnostic studies, neuropsychological testing, appropriate brain scans, blood tests or genetic studies, and consultation with additional mental health specialists may also be necessary." ABA, *Guidelines for the Appointment and Performance of Defense Counsel in Death Penalty Cases*, 31 HOFSTRA L. REV. 913, 956 (2003). Indeed, scholars have suggested that the ABA's guidelines provide more protection for defendants than the *Strickland* test. See Koenig, *supra* note 35, at 204 ("[U]nder the ABA Guidelines approach, neuroscience evidence should be a real part of counsel's reasonable investigation, and, specifically in capital cases, defense counsel may be ineffective for failing to comply with this duty.").

<sup>75</sup> See *Sears*, 561 U.S. at 954 ("We rejected any suggestion that a decision to focus on one potentially reasonable trial strategy . . . [can be] 'justified by a tactical decision' when 'counsel did not fulfill their obligation to conduct a thorough investigation of the defendant's background.'" (quoting *Williams*, 529 U.S. at 364)).

<sup>76</sup> See *Strickland*, 466 U.S. at 687–92 (establishing and discussing the *Strickland* test for ineffective assistance of counsel).

<sup>77</sup> *Id.* at 687.

<sup>78</sup> *Id.*

<sup>79</sup> See *id.*

<sup>80</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

conviction for a new trial,<sup>81</sup> or a remand with instructions to hold a new evidentiary hearing.<sup>82</sup>

As commentators have long noted, however, the *Strickland* standard “is notoriously difficult for defendants to meet” and the percentage of successful claims is small.<sup>83</sup> Whether a defendant’s lawyer is “asleep, drunk, unprepared, or unknowledgeable,” courts still shy away from granting such claims.<sup>84</sup> One scholar pithily stated that any “lawyer with a pulse will be deemed effective.”<sup>85</sup> Overwhelmingly, courts presume that attorneys are adequate and, even if defendants can surmount this presumption with a show of an attorney’s “deficiency,” defendants can still fall short of meeting the prejudice prong.<sup>86</sup>

Yet *Strickland* claims are particularly significant when neuroscience evidence is at issue, given the U.S. Supreme Court’s emphasis on the mitigating value of neuroscience evidence in criminal cases.<sup>87</sup> Indeed, the Neuroscience Study reveals a remarkable finding: among the *Strickland* claims recorded in the Study’s 553 Defendant Cases, nearly all of the successful claims were based on an attorney’s failure to appropriately investigate, gather, or understand neuroscience evidence.<sup>88</sup> The next Section explains this finding in more detail.

### A. The Marked Success of *Strickland* Claims

Among the Neuroscience Study’s 553 Defendant Cases, most of the defendants raised multiple *Strickland* claims. These claims ranged from an attorney’s mishandling of neuroscience evidence to a broad array of non-neuroscience issues such as an attorney’s errors during the jury selection process, a conflict of interest with multiple clients, or a failure to communicate with a client.<sup>89</sup> Chart 6<sup>90</sup> breaks down the number and success rate of

<sup>81</sup> See, e.g., *State v. Hales*, 152 P.3d 321, 325 (Utah 2007) (remanding for a new trial).

<sup>82</sup> See, e.g., *People v. Jacobazzi*, 966 N.E.2d 1, 32 (Ill. App. Ct. 2009) (remanding for a further evidentiary hearing).

<sup>83</sup> Carissa Byrne Hessick, *Ineffective Assistance at Sentencing*, 50 B.C. L. REV. 1069, 1074 (2009); see also Nancy J. King, *Enforcing Effective Assistance After Martinez*, 122 YALE L.J. 2428, 2431 (2013) (noting that prior to the U.S. Supreme Court’s decision in *Martinez v. Ryan*, 132 S. Ct. 1309 (2012), “less than 1% of noncapital habeas petitions were granted for any claim” and that *Martinez* will be unlikely to alter this outcome).

<sup>84</sup> Stephanos Bibas, *The Psychology of Hindsight and After-the-Fact Review of Ineffective Assistance of Counsel*, 2004 UTAH L. REV. 1, 1.

<sup>85</sup> Marc L. Miller, *Wise Masters*, 51 STAN. L. REV. 1751, 1786 (1999).

<sup>86</sup> See generally Hessick, *supra* note 83 (discussing *Strickland* claims generally and observing historical criticisms of the prejudice prong as overly difficult to satisfy).

<sup>87</sup> See *supra* note 74 and accompanying text.

<sup>88</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>89</sup> In the Neuroscience Study, it was unusual for a defendant-petitioner to bring only one ineffective assistance of counsel claim in a given case. Some of the individual opinions in the Study’s data set featured dozens of ineffective assistance of counsel claims with some being centered on



these *Strickland* claims in three ways: all 553 cases, only death penalty cases (366), and only non-death penalty cases (187). As the chart shows, over one-half (293 cases or 52.98%) of the 553 defendants raised a *Strickland* claim during litigation.<sup>91</sup> Of those 293 cases, over one-quarter (81 cases or 27.65%) included a successful *Strickland* claim, meaning that the defendants successfully proved that they met the two prongs of the *Strickland* test. A clear majority of the cases (254 or 86.69%) featured at least one *Strickland* claim based specifically on an issue related to neuroscience evidence. In turn, 75 of those 254 cases (or 29.53%) included a *Strickland* claim that was granted, and all but one of those 75 cases were specifically based on the attorney's mishandling or omission of neuroscience evidence (74 cases or 98.67%).<sup>92</sup> In sum, nearly all successful *Strickland* claims were based on an attorney's failure to appropriately investigate, gather, or understand neuroscience evidence—as opposed to any one of a number of other types of ineffective assistance of counsel claims that the Neuroscience Study recorded.<sup>93</sup>

The next Section will provide more detail regarding the bases for these seventy-four claims.<sup>94</sup> Courts typically found multiple and often interrelated reasons for granting the claims, so the categories discussed in the next Section are not mutually exclusive. They are, however, enlightening for understanding attorney strategy.<sup>95</sup>

### B. How Counsel Damage Their Cases

Results from the Neuroscience Study show that *Strickland* claims are most frequently raised in death penalty cases, presumably because the stakes are so high for the defendant.<sup>96</sup> Yet as Chart 6 indicates,<sup>97</sup> when it comes to neuroscience-related *Strickland* claims, there is little distinction in

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neuroscience evidence (failure to procure a brain imaging scan, failure to plead a diminished capacity defense, etc.) and some focused on non-neuroscience evidence (such as the improper handling of the jury selection process, failure to object to improper jury instructions, etc.).

<sup>90</sup> See *infra* Chart 6.

<sup>91</sup> See *infra* Chart 6.

<sup>92</sup> See *infra* Chart 6.

<sup>93</sup> See *infra* Chart 6; Stat. App., *supra* note 38; DENNO, *supra* note 38.

<sup>94</sup> See *infra* notes 96–119 and accompanying text.

<sup>95</sup> The Neuroscience Study statistics presented refer only to a court opinion's reference to a stated theme or trend, and not the court relying solely on that stated theme or trend.

<sup>96</sup> See *infra* Chart 6. As Chart 6 shows, in the Neuroscience Study over two-thirds (255 cases or 69.67%) of the 366 capital murder defendants raised a *Strickland* claim during litigation. In sharp contrast, only one-fifth (38 cases or 20.32%) of the 187 non-capital murder defendants raised a *Strickland* claim. Of the 255 capital murder cases that raised a *Strickland* claim, over one-quarter (72 cases or 28.24%) included a *Strickland* claim that was granted relative to a somewhat smaller percentage of the thirty-eight non-capital murder cases (9 cases or 23.68%). *Id.*

<sup>97</sup> See *infra* Chart 6.

proportional frequency between death penalty and non-death penalty cases.<sup>98</sup> The overwhelming impact of neuroscience evidence in the grant of a *Strickland* claim is virtually the same for both types of cases.<sup>99</sup> Among the seventy-four cases that successfully raised neuroscience-related *Strickland* claims, each of the sixty-six death penalty cases resulted in the petitioner's death sentence being vacated.<sup>100</sup> In each of the eight non-death penalty cases, habeas relief (reversal of judgment) was granted.<sup>101</sup>

In half of the seventy-four cases, the court determined that defense counsel "actively" rather than "passively" damaged their clients' cases.<sup>102</sup> I use the term "actively" to designate an attorney's deliberate decision to engage in or refrain from a certain action that prejudiced a client. Conversely I use the term "passively" to designate an attorney's objectively unreasonable failure to take a certain course of action that prejudiced a client. The most common examples of active damage by attorneys included the following scenarios: eliciting damaging testimony from defense witnesses;<sup>103</sup> offering evidence/testimony for the purpose of mitigation that actually served as aggravating evidence;<sup>104</sup> choosing not to ask for a continuance to investigate mitigation evidence;<sup>105</sup> erroneously presenting the wrong defense or withdrawing a favorable defense based on the evidence in their possession;<sup>106</sup>

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<sup>98</sup> Altogether, 221 of the 255 cases in the death penalty group (86.67%) featured at least one *Strickland* claim that was based specifically on the quality of counsel's handling of neuroscience evidence; similarly thirty-three of the thirty-eight cases in the non-death penalty group (86.84%) featured one such neuroscience *Strickland* claim. While these percentages are similar, grants of *Strickland* claims vary. For the death penalty group, sixty-seven of the 221 cases included a *Strickland* claim that was granted (30.32%); yet, for the non-death penalty group, eight of the thirty-three cases (24.24%) included a *Strickland* claim that was granted. That said, the proportion of those successful claims based specifically on the mishandling of neuroscience evidence is virtually identical for both groups. For death penalty defendants, sixty-six of the sixty-seven successful claims (or 98.51%) were based specifically on a mishandling of neuroscience evidence whereas, for non-death penalty defendants, all eight of the eight successful claims were based specifically on a mishandling of neuroscience evidence. *See id.*

<sup>99</sup> *See id.*

<sup>100</sup> Stat. App., *supra* note 38; DENNO, *supra* note 38.

<sup>101</sup> *See* Stat. App., *supra* note 38; *see also* DENNO, *supra* note 38. In some cases, the reversal of judgment took one of the following forms: affirmed a lower court's grant of habeas relief and remand, vacated the death sentence to hold an evidentiary hearing regarding the merits of the ineffective assistance of counsel claim; granted a Certificate of Appealability for the same purpose; or remanded the lower court's denial of habeas relief and remand. *See* Stat. App., *supra* note 38; *see also* DENNO, *supra* note 38.

<sup>102</sup> *See* Stat. App., *supra* note 38; *see also* DENNO, *supra* note 38.

<sup>103</sup> *See* Waters v. Zant, 979 F.2d 1473, 1482–94 (11th Cir. 1992), *vacated*, 11 F.3d 139 (11th Cir. 1993).

<sup>104</sup> *See* Simmons v. State, 105 So. 3d 475, 507–08 (Fla. 2012).

<sup>105</sup> *See* Jackson v. Calderon, 211 F.3d 1148, 1156–61 (9th Cir. 2000); *see also* State v. Coney, 845 So. 2d 120, 131–32 (Fla. 2003).

<sup>106</sup> *See* Laird v. Horn, 159 F. Supp. 2d 58, 112–13 (E.D. Pa. 2001); State v. Johnson, 794 A.2d 654, 665–68 (Md. Ct. Spec. App. 2002).

advising the client to waive a mitigation presentation;<sup>107</sup> choosing not to present mitigation at the penalty phase that counsel erroneously believed would damage the “humanizing” evidence; or making damaging statements of their own.<sup>108</sup>

Most (sixty-nine cases or 93.24%) of the seventy-four cases involving a successful neuroscience-related *Strickland* claim were based on trial counsel’s *failure to adequately present a case in mitigation* (“FTPM”).<sup>109</sup> This is a very broad category involving several overlapping sub-categories of deficient performance.<sup>110</sup> Nearly one third of the sixty-nine cases contained both an FTPM claim and an additional similar yet separate *Strickland* claim.<sup>111</sup> These additional claims included the following deficiencies: counsel’s failure to adequately investigate and present a mental health defense; counsel’s failure to consult a necessary mental health expert; and, in two cases, counsel’s failure to adequately understand or be familiar with the American Bar Association guidelines for attorney representation in capital murder cases.<sup>112</sup>

<sup>107</sup> See *Lynch v. Sec’y, Dep’t of Corr.*, 897 F. Supp. 2d 1277, 1290–91, 1306–09 (M.D. Fla. 2012), *aff’d in part, rev’d in part*, No. 12-15188, 2015 WL 108623 (11th Cir. Jan. 8, 2015).

<sup>108</sup> See *Smith v. Stewart*, 241 F.3d 1191, 1193 (9th Cir. 2001), *rev’d*, 536 U.S. 856 (2002).

<sup>109</sup> Stat. App., *supra* note 38; DENNO, *supra* note 38. The legal standard for *failure to adequately present a case in mitigation* derives from *Strickland*: “[t]he right to present, and to have the sentencer consider, any and all mitigating evidence means little if defense counsel fails to look for mitigating evidence or fails to present a case in mitigation at the capital sentencing hearing. Accordingly, counsel’s general duty to investigate takes on supreme importance . . . .” *Strickland*, 466 U.S. at 706 (Marshall, J., dissenting) (citation and internal quotations omitted).

<sup>110</sup> Deficient performance in this category often included a failure to sufficiently investigate/present evidence and/or testimony of the following: psychological impairment, neurologic (functional and organic) impairment, social history containing mental dysfunction cues (including potentially favorable family and friend testimony), mental health history (including prior medical records, evaluations, and history of drug and/or alcohol abuse), and several other related pieces of neuroscience evidence. Stat. App., *supra* note 38; DENNO, *supra* note 38.

<sup>111</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>112</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38. Examples of these mental health defenses include a diminished capacity defense, insanity defense, or a defense based on defendant’s mental retardation or incompetency to stand trial. Notably, among the six successful *Strickland* cases in which an FTPM claim was not offered and/or accepted, the *Strickland* claims primarily involved counsel’s failure to adequately investigate and present a mental health defense. One case involved counsel’s failure to investigate diminished capacity, a failure to contest the issue of competency, and ineffective counseling regarding the client’s previous plea agreement. *Hoffman v. Arave*, 455 F.3d 926, 932–42 (9th Cir. 2006), *vacated in part*, 552 U.S. 117 (2008). Two cases involved counsel’s failure to provide adequate assistance during the client’s competency determination. *Hummel v. Rosemeyer*, 564 F.3d 290, 301–02 (3d Cir. 2009); *Deere v. Cullen*, 713 F. Supp. 2d 1011, 1028–41 (C.D. Cal. 2010). In one case, counsel was found constitutionally deficient for unreasonably withdrawing an insanity defense without conducting sufficient investigation, and failing to present an intoxication defense based on available, favorable evidence. *Johnson*, 794 A.2d at 667–68. One case involved counsel severely prejudicing a client by failing to request a diminished capacity defense. *Pirtle v. Morgan*, 313 F.3d 1160, 1162 (9th Cir. 2002). Lastly, one case involved counsel’s failure to call a readily available and willing medical expert (forensic psychiatrist) whose testimony would be the centerpiece of a diminished capacity defense

In an overlapping subset of FTMP cases, including one non-death penalty case,<sup>113</sup> a number of courts addressed the failure of counsel to explain the role of mitigating circumstances and evidence to clients before those clients waived the right to present a case in mitigation.<sup>114</sup> One of these cases involved an attorney advising a client to waive the right to a jury trial before sufficiently articulating the role of mitigating circumstances in a jury's determination of capital punishment.<sup>115</sup> Another similar case concerned counsel's failure to fully clarify the definition and role of "mitigating circumstances" to the jury, resulting in prejudice to the client.<sup>116</sup>

In more than half of the FTMP cases, courts expressly noted that counsel were actually *aware* of the mitigating neuroscience evidence, but failed to adequately investigate that evidence.<sup>117</sup> In the remaining cases, counsel were either not aware that the mitigating neuroscience evidence existed, or were aware of the evidence but did not recognize that it was mitigating.<sup>118</sup>

Predictably, most defense counsel offered the court excuses for their deficient and prejudicial performance.<sup>119</sup> The next Section will discuss the excuses that were provided in the seventy-four cases involving a successful neuroscience-related *Strickland* claim.<sup>120</sup> Counsel often offered multiple excuses within the same case, so the categories presented in the next Section are not mutually exclusive. They are nonetheless useful for providing a general sense of courts' priorities when assessing *Strickland* claims.

### C. Why Counsel Omit or Mishandle Neuroscience

In nearly one third of the seventy-four cases involving successful neuroscience-related *Strickland* claims, counsel claimed to have had a reasonable trial strategy or tactic.<sup>121</sup> Typically, counsel's sole defense was that they were following a course of conduct during trial that they thought would succeed, and when it did not succeed, they were unprepared for the sentencing phase.<sup>122</sup> For example, in *Miller v. Dretke*,<sup>123</sup> counsel claimed he "did not prepare much for the punishment phase" because he believed his client

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based on mental dysfunction and mental impairment at the time of crime. *State v. Johnson*, 968 S.W.2d 686, 695–96 (Mo. 1998).

<sup>113</sup> See *King v. Kemna*, 226 F.3d 981, 985–86 (8th Cir. 2000), *vacated on reh'g en banc*, 266 F.3d 816 (8th Cir. 2001).

<sup>114</sup> Stat. App., *supra* note 38; DENNO, *supra* note 38.

<sup>115</sup> *Lynch*, 897 F. Supp. 2d at 1306.

<sup>116</sup> *Waters*, 979 F.2d at 1493.

<sup>117</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>118</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>119</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>120</sup> See *infra* notes 121–150 and accompanying text.

<sup>121</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>122</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>123</sup> 420 F.3d 356, 359 (5th Cir. 2005).

would accept the plea bargain of probation.<sup>124</sup> Yet counsel admitted that he could have acquired her doctors' letters before the trial's punishment phase began, as well as interviewed the doctors before the trial and offered their testimony as mitigation evidence.<sup>125</sup> Likewise, in *Pirtle v. Morgan*,<sup>126</sup> trial counsel's inexplicable decision to choose an intoxication instruction over a diminished capacity instruction to explain his client's lack of premeditation left the jury "without any guidance as to the significance of the defense testimony."<sup>127</sup> The court in *Smith v. Mullin*<sup>128</sup> aptly depicted trial counsel's flaws in just one sentence: "Astoundingly, [trial counsel] admitted at the evidentiary hearing that he was unaware Mr. Smith's 'mental state or mental illness could be introduced as mitigation in the second stage' of trial."<sup>129</sup> The court proceeded to find that Mr. Smith's attorney therefore "made no attempt to explain how this kind and considerate person could commit such a horrendous crime, although mental health evidence providing such an explanation was at his fingertips."<sup>130</sup>

In another category of excuses, counsel acknowledged ignorance in the mishandling of evidence or in communications with experts or clients.<sup>131</sup> These circumstances included counsel inappropriately accepting a client's own portrayal of his mental status, relying on unqualified or insufficient numbers of experts to make decisions regarding a client's defense, or erroneously believing that a client waived his right to present mitigating evidence because counsel did not adequately investigate the client's background or mental health issues.<sup>132</sup>

Some cases involved attorneys who admitted their incompetence more straightforwardly. In *Loyd v. Whitley*,<sup>133</sup> for example, trial counsel conceded that his inability to adequately investigate and present mitigation evidence "was based upon a failure to understand the difference between the *McNaughten* test for sanity and the Louisiana mitigating factors of 'mental or emotional disturbance,' or 'mental disease or defect.'"<sup>134</sup> In other cases,

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<sup>124</sup> *Id.*

<sup>125</sup> *Id.*

<sup>126</sup> 313 F.3d at 1160.

<sup>127</sup> *Id.* at 1171–72 (internal quotations omitted).

<sup>128</sup> 379 F.3d 919, 939 (10th Cir. 2004).

<sup>129</sup> *Id.*

<sup>130</sup> *Id.* at 939–40.

<sup>131</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>132</sup> See Stat. App., *supra* note 38; DENNO, *supra* note 38; see also, e.g., Hurst v. State, 18 So. 3d 975, 1012–13 (Fla. 2009) (involving an attorney who failed to have his client examined by a mental health expert because counsel believed any mental health mitigation would undermine an innocence-based strategy); State v. Pearce, 994 So. 2d 1094, 1102–03 (Fla. 2008) (supporting "trial court's finding that counsel did not spend sufficient time to prepare for mitigation prior to Pearce's waiver . . . [and therefore] was unable to advise Pearce as to potential mitigation").

<sup>133</sup> 977 F.2d 149, 149 (5th Cir. 1992).

<sup>134</sup> *Id.* at 152 (citations omitted).

counsel stated that the client either stopped cooperating with counsel's investigation of potential mitigation evidence or counsel simply accepted a client's waiver of mental health mitigation—explanations that courts found unacceptable.<sup>135</sup> In *Perkins v. Hall*,<sup>136</sup> for example, the court acknowledged evidence of the defendant's "steadfast" resistance to being evaluated and "labeled [as] crazy" by experts, but concluded nonetheless that counsel was deficient for insufficiently acquiring mitigation evidence from non-experts.<sup>137</sup> Such an alternative would involve more thoroughly investigating the defendant's background, information from family and friends, records of the defendant's potential brain injury, and other methods of circumventing the defendant's lack of cooperation.<sup>138</sup>

A particularly troubling category of excuses involved the contention that counsel chose not to present certain mitigation evidence in an attempt to "humanize," or conversely, "de-humanize" their clients because they thought such evidence could do their clients more harm than good.<sup>139</sup> Three cases are especially representative. In *Hurst v. State*,<sup>140</sup> the court rejected defense counsel's erroneous contention that "any mitigation other than the fact that [the defendant] was a good person would have been inconsistent" with the defendant's guilt-phase claim that he was innocent.<sup>141</sup> As the court explained, counsel had "no sound basis" for failing "to investigate and present mitigation evidence of [defendant's] borderline intelligence . . . possible organic brain damage . . . and other mental mitigation."<sup>142</sup> Such evidence was in no way harmful to defendant's mitigation claim, nor did it carry the potential to "open[] the door to any damaging testimony."<sup>143</sup>

Likewise, in *Turpin v. Lipham*,<sup>144</sup> the court upheld a *Strickland* claim due to trial counsel's failure to hire a medical expert for penalty-phase mitigation based on the erroneous and medically unsubstantiated belief that their client's mental health records indicated both aggravating and mitigating factors.<sup>145</sup> The attorneys were particularly concerned that they would

<sup>135</sup> See *Perkins v. Hall* 708 S.E.2d 335, 341–42 (Ga. 2011).

<sup>136</sup> *Id.* at 335.

<sup>137</sup> *Id.* at 341–42.

<sup>138</sup> *Id.*

<sup>139</sup> See *Simmons*, 105 So. 3d at 507–10; *Hurst*, 18 So. 3d at 1012–13; *Turpin v. Lipham*, 510 S.E.2d 32, 40 (Ga. 1998).

<sup>140</sup> 18 So. 3d at 975.

<sup>141</sup> *Id.* at 1012–13.

<sup>142</sup> *Id.* at 1012.

<sup>143</sup> *Id.* at 1012–13 ("[B]ecause counsel never had Hurst examined and could not know what a mental health expert might discover, he could not make an informed tactical decision that the mental mitigation would be inconsistent with the defense or with other mitigation.").

<sup>144</sup> 510 S.E.2d at 32.

<sup>145</sup> *Id.* at 40 (noting that the caseworker who determined that defendant's records could be viewed as both aggravating and mitigating was merely an unlicensed family counselor and "[n]o other person with mental health training" evaluated the records).

dehumanize their client and unleash potentially aggravating evidence if they enabled experts to interpret their client's records for the jury.<sup>146</sup> As the court explained, however, "[t]he jury, left unguided to comb through voluminous records, was just as likely to encounter aggravating information as mitigating information," such as a nurse's note that the defendant attacked another patient as compared to a caseworker's memorandum explaining "the terrible neglect" that the client suffered at the hands of his parents.<sup>147</sup>

Finally, in *Simmons v. State*,<sup>148</sup> the court rejected the attorneys' "humanizing" justification for somewhat different reasons. In this case, although counsel claimed to be tactically humanizing the defendant, the jury heard very little positive mitigation because of counsel's failure to investigate, uncover, and present it.<sup>149</sup> Moreover, counsel provided no rationale to explain why aggravating evidence would have outweighed such mitigating evidence during the penalty phase<sup>150</sup>

In essence, then, the courts in *Hurst*, *Turpin*, and *Simmons* rejected the argument that counsel's failure to investigate or present mitigating information constituted a "strategic decision." The double-edged-sword argument is unpersuasive when counsel contends that neuroscience evidence can do more harm than good to clients. Courts plainly expect defense counsel to use neuroscience evidence when appropriate, yet the precise parameters of this expectation can be elusive.

As indicated by the degree of overlap among the categories discussed in previous sections, *Strickland* cases involving neuroscience evidence are often highly complex, and they incorporate a wide range of circumstances. In *Strickland* claims, it is not always clear what type of neuroscience evidence will be used, how the courts will handle that evidence, and finally, when and why the attorneys in these cases will be deemed ineffective. In an effort to address such questions, the next Section examines in more detail a selection of the Neuroscience Study's seventy-four cases involving a successful neuroscience-related *Strickland* claim.

#### *D. What Courts Expect from Attorneys Using Neuroscience*

This Section presents six case studies of opinions that represent the kinds of attorney failures that prompt courts to grant a neuroscience-related *Strickland* claim.<sup>151</sup> As the case studies show, the decisions made by trial attorneys are egregious in terms of their omission and/or mishandling of

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<sup>146</sup> *Id.* at 42.

<sup>147</sup> *Id.*

<sup>148</sup> 105 So. 3d at 507–10.

<sup>149</sup> *Id.* at 507.

<sup>150</sup> *Id.*

<sup>151</sup> See *infra* notes 155–274 and accompanying text.

evidence and expert testimony, often with potentially “disastrous”<sup>152</sup> or “devastating”<sup>153</sup> results for their clients. Courts typically appear influenced not by just one mistake an attorney may have made but by many such mistakes which, when combined, throw doubt on counsel’s explanations that their decisions were “strategic.” As one court stresses, bad decisions are not strategy but rather inadequacy,<sup>154</sup> and therefore just one edge of a sword.

### 1. Investigate and Present Mitigating Evidence

In the 2012 case of *Simmons v. State*,<sup>155</sup> following the circuit court’s denial of Simmons’s motion for post-conviction relief on *Strickland* grounds, the Supreme Court of Florida ultimately reversed and remanded the denial of relief as to the penalty phase. According to the court, Simmons’s counsel “failed to fully investigate and present mitigating evidence regarding Simmons’s childhood and mental health.”<sup>156</sup> Simmons’s trial counsel testified during an evidentiary hearing that, because she thought Simmons was competent, she never consulted a mental health expert on his behalf, nor did she investigate any other kind of mental mitigation.<sup>157</sup> Thus, counsel presented no medical experts whatsoever to the jury during the penalty phase.<sup>158</sup>

In sharp contrast, post-conviction defense counsel presented a range of medical testimony for the purposes of mitigation, including experts who tested Simmons during a post-conviction evidentiary hearing.<sup>159</sup> Dr. H.D., for example, a psychologist and expert in neuropsychology, conducted several non-imaging tests on Simmons including the WAIS-III and the Denman Neuropsychology Memory Scale to determine if Simmons had brain damage.<sup>160</sup> The results showed that Simmons fell in the borderline range of mental retardation.<sup>161</sup> Other investigations revealed that Simmons had been placed in early programs for the severely emotionally disturbed—a status that ultimately fostered Simmons’s conflicts with other school children and led in part to Simmons eventually dropping out of school.<sup>162</sup> Consequently, as an adult, Simmons experienced limited employability and maladjustments in his workplace.<sup>163</sup> After discovering that Simmons was accidentally

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<sup>152</sup> *Hooper v. Mullin*, 314 F.3d 1162, 1169 (10th Cir. 2002).

<sup>153</sup> *Waters*, 979 F.2d at 1494.

<sup>154</sup> *Frierson v. Woodford*, 463 F.3d 982, 992 (9th Cir. 2006).

<sup>155</sup> 105 So. 3d at 483.

<sup>156</sup> *Id.*

<sup>157</sup> *Id.* at 504.

<sup>158</sup> *Id.*

<sup>159</sup> *Id.*

<sup>160</sup> *Id.*

<sup>161</sup> *Id.*

<sup>162</sup> *Id.*

<sup>163</sup> *Id.*



suffocated as an infant and only later revived at a hospital, Dr. H.D. recommended a PET scan to further assess whether Simmons suffered brain damage.<sup>164</sup> The results validated Dr. H.D.'s view of Simmons's cognitive impairments, which, along with all of his earlier problems in school, fostered Simmons's striking impulsivity and misbehavior—"a 'sort of pervasive maladjustment.'"<sup>165</sup>

According to Dr. H.D., Simmons also suffered from a personality disorder "that manifested in fear of rejection and abandonment, running away from home, affective instability, depression, extreme self-criticism, and social isolation."<sup>166</sup> Given Dr. H.D.'s assessment that alcohol and drugs more strongly affect brain damaged individuals, and that Simmons had continuously consumed both alcohol and marijuana since a young age, Dr. H.D. rendered Simmons eligible for the statutory mitigator of "extreme mental or emotional disturbance."<sup>167</sup> Likewise, while Simmons "could appreciate the criminality of his conduct," he "had an impaired capacity to conform his conduct to the requirements of law," a classification that was also a statutory mitigator.<sup>168</sup>

A second expert, Dr. F.W., a psychologist with training in neuropsychology, provided testimony specific to Simmons's PET scan results.<sup>169</sup> According to Dr. F.W., Simmons's PET scan abnormalities were so pronounced it was clear that "Simmons has real trouble understanding people and social contexts around him."<sup>170</sup> In addition, Simmons's "underactive thalamus" could lead to a loss of control "because that portion of the brain is also involved in stopping hazardous or inappropriate behavior."<sup>171</sup> Therefore, Dr. F.W. confirmed that Simmons's PET scan results met the same criteria necessary for the two statutory mitigators supported by Dr. H.D.'s testimony.<sup>172</sup> Yet post-conviction defense counsel also presented the testimony of a third expert—a psychotherapist and mitigation specialist—who concluded from her "psychosocial evaluation of Simmons" that "Simmons never developed the skills to live in the adult world."<sup>173</sup>

The court ultimately found in Simmons's favor on the *Strickland* claim despite the State's own medical expert rebutting defense counsel's PET scan

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<sup>164</sup> *Id.*

<sup>165</sup> *Id.* at 504–05.

<sup>166</sup> *Id.* at 505.

<sup>167</sup> *Id.*

<sup>168</sup> *Id.*

<sup>169</sup> *Id.*

<sup>170</sup> *Id.*

<sup>171</sup> *Id.*

<sup>172</sup> *Id.*

<sup>173</sup> *Id.* at 506.

evidence.<sup>174</sup> The court recognized the “weighty aggravators” in Simmons’s case, but it also stressed the need to reverse for a new penalty phase in light of trial counsel’s extraordinary failure to investigate or present available mitigating evidence.<sup>175</sup> In the court’s view, trial counsel had no reasonable “strategic decision,” the contrast in quality of representation between trial and post-conviction was just too great.<sup>176</sup> In particular, Simmons’s “severe mental disturbance” was such a “weighty” mitigating factor that trial counsel’s failure to present it in the penalty phase could have been prejudicial.<sup>177</sup> The court vacated Simmons’s death sentence.<sup>178</sup>

## 2. Review Prior History and Testimony

In *Frierson v. Woodford*,<sup>179</sup> Frierson appealed for federal habeas corpus relief, alleging in his *Strickland* claim that his penalty phase counsel was ineffective for failing to investigate and present available mitigation evidence of several disorders: childhood head trauma, chronic drug abuse, mental impairments, and organic brain damage.<sup>180</sup> The court agreed that counsel’s conduct was deficient and prejudicial, emphasizing counsel’s failure to review evidence and testimony that was presented in earlier stages of the case.<sup>181</sup> Specifically, the court found that counsel never examined trial transcripts containing a drug history report prepared by Dr. R.S., a psychologist and pharmacologist.<sup>182</sup> In his trial testimony, Dr. R.S. mentioned his report six times,<sup>183</sup> stating that Frierson “was severely intoxicated with PCP” during

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<sup>174</sup> *Id.* at 503, 506. According to the State’s expert, the PET scan of Simmons’s brain did not “appear to be abnormal.” *Id.* at 506. Moreover, the same expert testified that “a PET scan cannot be used with any degree of reliability to diagnose behavioral problems;” however, on cross-examination the expert “agreed that he ha[d] not examined Simmons and ha[d] not read any reports of Simmons’ functional ability, and therefore d[id] not know how Simmons’ brain [wa]s functioning.” *Id.*

<sup>175</sup> *Id.* at 507.

<sup>176</sup> *Id.* at 510; see also *White v. Singletary*, 972 F.2d 1218, 1220–21 (11th Cir. 1992). As the U.S. Court of Appeals for the Eleventh Circuit explained:

The [*Strickland*] test has nothing to do with what the best lawyers would have done. Nor is the test even what most good lawyers would have done. We ask only whether some reasonable lawyer at the trial could have acted, in the circumstances, as defense counsel acted at trial. . . . We are not interested in grading lawyers’ performances; we are interested in whether the adversarial process at trial, in fact, worked adequately.

*Id.*

<sup>177</sup> *Simmons*, 105 So. 3d at 506–07.

<sup>178</sup> *Id.* at 510.

<sup>179</sup> 463 F.3d at 982.

<sup>180</sup> *Id.* at 989.

<sup>181</sup> *Id.*

<sup>182</sup> *Id.* at 985, 990.

<sup>183</sup> *Id.* at 990.

the commission of his crime, and that he likely suffered mental impairment from his chronic drug abuse.<sup>184</sup>

Frierson's attorney was also unaware of a report prepared by Dr. M.G., a forensic psychiatrist, who read his report into the record five times during trial testimony.<sup>185</sup> In Dr. M.G.'s opinion, Frierson's "PCP intoxication during the crime prevented Frierson from deliberating, premeditating, and meaningfully reflecting on his actions," as is required for a first-degree murder conviction.<sup>186</sup> Had Frierson's counsel reviewed the trial transcripts, he would have learned that Frierson underwent several psychiatric evaluations while in custody of the California Youth Authority, including one explaining that Frierson exhibited symptoms of brain dysfunction.<sup>187</sup> The court found that because counsel did not avail himself of this information and, in turn, give it to Dr. M.G., counsel had "'failed to provide [his expert] with the information necessary to make an accurate evaluation of [Frierson's] neurological system.'" <sup>188</sup>

Counsel contended that he purposely omitted evidence of Frierson's past psychiatric evaluations in order to present Frierson in a positive light at the penalty hearing, and to avoid evidence of his antisocial personality disorder.<sup>189</sup> As counsel explained, "such evidence would only have helped the prosecution's case by showing Mr. Frierson to be unredeemable and without remorse, and would thus have undermined my efforts to humanize [him]."<sup>190</sup> The court strongly rejected this excuse, holding that counsel's decision clearly reflected not strategy, but rather inadequacy, and was therefore deficient.<sup>191</sup>

### 3. Properly Handle Evidence and Experts

In *Hooper v. Mullin*,<sup>192</sup> Hooper sought federal habeas relief after he was convicted of three murders in state court and sentenced to death.<sup>193</sup> Hooper raised a *Strickland* claim at the sentencing phase, alleging that his

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<sup>184</sup> *Id.* at 985.

<sup>185</sup> *Id.* at 990.

<sup>186</sup> *Id.* at 986.

<sup>187</sup> *Id.* at 990. Frierson's attorney conceded that organic brain dysfunction "could have 'great legal significance,'" yet he never investigated any of the leads provided to pursue further evidence of it. *Id.*

<sup>188</sup> *Id.* at 992 (citations omitted); see also *id.* at 991 ("'Counsel . . . [has] an obligation to conduct an investigation which will allow a determination of what sort of experts to consult.'" (citations omitted)).

<sup>189</sup> *Id.* at 992.

<sup>190</sup> *Id.*

<sup>191</sup> *Id.* at 992-93.

<sup>192</sup> 314 F.3d at 1162.

<sup>193</sup> *Id.* at 1165.

attorneys mishandled mitigating psychological evidence.<sup>194</sup> On habeas review, the court agreed with Hooper, granting him relief from his death sentence.<sup>195</sup>

Before Hooper committed his crimes, he received counseling from Dr. R.A., who administered several non-imaging neuropsychological tests to ascertain Hooper's intellectual functioning.<sup>196</sup> Dr. R.A. reported that Hooper's cognitive functioning and intelligence were average, but that he may be learning disabled because of his challenges with spelling.<sup>197</sup> The test results also demonstrated that Hooper had psychological problems, including his "difficulty controlling his anger and coping with everyday problems."<sup>198</sup>

After Hooper committed his crimes but prior to his conviction, his attorneys hired a psychologist, Dr. P.M., who reviewed Dr. R.A.'s report on Hooper.<sup>199</sup> Without conducting his own evaluation of Hooper, Dr. P.M. then submitted a report indicating that "there was evidence of 'mild but probable brain damage' that could increase the likelihood of violence, especially if [Hooper] was under the influence of alcohol or other substances."<sup>200</sup> Dr. P.M. also reported that Hooper might be suffering from a "serious psychiatric thought disorder."<sup>201</sup> After Hooper's conviction, Dr. P.M. refused, for ethical reasons, the attorneys' request that he testify at the sentencing proceedings, explaining that he had never personally examined Hooper.<sup>202</sup> Dr. P.M. also warned that his comments about Hooper "likely would be aggravating rather than mitigating."<sup>203</sup>

Regardless, Hooper's attorneys subpoenaed Dr. P.M. to authenticate his report so that both Dr. P.M.'s and Dr. R.A.'s reports could be admitted into evidence at the capital sentencing phase.<sup>204</sup> Predictably, however, Dr. P.M. informed the jury that "he did not put 'enormous stock' in his conclusions because he did not personally evaluate [Hooper]."<sup>205</sup> Dr. P.M. also stated that Dr. R.A. was the better expert to address Hooper's alleged brain damage because Dr. R.A. had evaluated Hooper in person.<sup>206</sup> The State

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<sup>194</sup> *Id.* at 1167.

<sup>195</sup> *Id.* at 1165–66.

<sup>196</sup> *Id.* at 1167–68.

<sup>197</sup> *Id.* at 1168.

<sup>198</sup> *Id.*

<sup>199</sup> *Id.*

<sup>200</sup> *Id.*

<sup>201</sup> *Id.* ("Petitioner had a psychological 'profile often . . . associated with psychotic behavior . . . [and] definite difficulties with interpersonal relationships.' Dr. Murphy qualified his 'impressions' by noting that both 'possible disorders require further diagnostic investigation to confirm.'").

<sup>202</sup> *Id.*

<sup>203</sup> *Id.*

<sup>204</sup> *Id.*

<sup>205</sup> *Id.*

<sup>206</sup> *Id.*

called Dr. R.A. in rebuttal, and Dr. R.A. testified that Hooper “had a mild learning disability, but *no brain damage*.”<sup>207</sup> In addition, while Hooper had some psychological problems, “those problems would not cause him to lose touch with reality or make him incapable of controlling himself or his anger.”<sup>208</sup>

Such contradictions in the testimony of both experts moved the court to grant Hooper’s *Strickland* claim.<sup>209</sup> Neither expert had provided “any mitigating evidence” for Hooper “and their combined testimony was disastrous for [his] defense.”<sup>210</sup> As the court explained, “[t]he jury was left with unchallenged expert opinions that [Hooper] did not suffer from brain damage, had no particular trouble controlling his temper, and that his learning disability would not have affected his capacity for violence or ability to reason in adverse circumstances.”<sup>211</sup>

The court’s analysis of *Strickland*’s deficiency prong<sup>212</sup> focused on whether the attorneys’ presentation of the evidence was part of a “reasonable trial strategy” or “the product of ‘neglectful’ or otherwise erroneous representation.”<sup>213</sup> While their penalty phase strategy was to present evidence indicating that Hooper may have had brain damage that could lead to violence, in reality, defense counsel followed a course devoid of investigation.<sup>214</sup>

Hooper’s attorneys claimed that they intentionally chose not to have Dr. P.M. further evaluate Hooper out of concern that the results would do more harm than good; in other words, a more thorough assessment could show that Hooper had no brain damage.<sup>215</sup> Instead, by using Dr. P.M.’s report that Hooper “*might* have brain damage,” they could still press for mitigation on Hooper’s behalf, despite acknowledging that additional psychological testing could have provided more definitive mitigating prognoses.<sup>216</sup> The court was unconvinced; even if counsel considered their rationale to be a “strategic decision,” they still presented the evidence they had “in an un-

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<sup>207</sup> *Id.* (emphasis added).

<sup>208</sup> *Id.*

<sup>209</sup> *Id.* at 1171.

<sup>210</sup> *Id.* at 1169.

<sup>211</sup> *Id.*

<sup>212</sup> *Id.*

<sup>213</sup> *Id.* (citation omitted).

<sup>214</sup> *Id.* at 1170. (“[S]trategic choices made after thorough investigation of law and facts relevant to plausible options are virtually unchallengeable. Here, however, defense counsel deliberately pursued this strategy without conducting a thorough investigation.”) (citation omitted).

<sup>215</sup> *Id.*

<sup>216</sup> *Id.* at 1170–71.

prepared and ill-informed manner.”<sup>217</sup> The court thus affirmed Hooper’s petition for habeas relief from his death sentence.<sup>218</sup>

#### 4. Distinguish Aggravating and Mitigating Circumstances

In *Waters v. Zant*,<sup>219</sup> Waters had been convicted of capital murder in state court and sentenced to death.<sup>220</sup> He appealed a district court’s denial of his habeas corpus petition, which was grounded in part on a *Strickland* claim.<sup>221</sup> The appellate court affirmed Waters’s conviction, but granted him a writ of habeas corpus as to the death penalty because of his attorney’s ineffective assistance at the sentencing phase of trial.<sup>222</sup>

As the court explained, Waters’s attorney never informed the jury “of the role of aggravating and mitigating circumstances” even though Waters suffered from a mental illness that was a clear mitigating circumstance.<sup>223</sup> Not only did the attorney fail to acquire mitigating evidence from medical experts concerning Waters’s mental abnormalities,<sup>224</sup> he inexplicably omitted the mental illness testimony that he had introduced in an earlier effort to prove the insanity defense at trial.<sup>225</sup> Waters had twice attempted suicide and had been diagnosed with paranoid schizophrenia, an illness typically accompanied by delusions and hallucinations.<sup>226</sup> He had also been treated with an antipsychotic drug prescribed to diffuse his “feelings of anger and hostility,” but he had stopped taking the drug a few weeks prior to his crimes.<sup>227</sup>

Furthermore, testimony at Waters’s state habeas proceeding revealed that Waters’s medical experts “had *no idea*” that counsel expected them to offer mitigating evidence at the guilt-innocence phase.<sup>228</sup> The court noted, for example, that counsel failed to elicit one expert psychologist’s opinion that Waters’s mental illness would have influenced his behavior on the day he committed his crimes, or that he also could have been hallucinating that day in light of his mental condition.<sup>229</sup> Such evidence may have at least “of-

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<sup>217</sup> *Id.* at 1171.

<sup>218</sup> *Id.*

<sup>219</sup> 979 F.2d at 1473.

<sup>220</sup> *Id.* at 1474.

<sup>221</sup> *Id.*

<sup>222</sup> *See id.* at 1490–92.

<sup>223</sup> *Id.* at 1493.

<sup>224</sup> *Id.* at 1494.

<sup>225</sup> *See id.* at 1477, 1494. According to Waters’s counsel, “although the public defenders’ office had available funds to hire an independent psychiatrist, [counsel] was unable to find one willing to enter the case.” *Id.* at 1477.

<sup>226</sup> *Id.*

<sup>227</sup> *Id.* at 1477–78.

<sup>228</sup> *Id.* at 1494.

<sup>229</sup> *Id.*

ferred the jury an alternative” to what the court found to be counsel’s most deficient performance: eliciting damaging testimony from his own defense witnesses, while failing to draw upon their readily available favorable testimony.<sup>230</sup>

As the court stated, counsel “presented evidence that was not only very harmful but was devastating to his client’s plea for life.”<sup>231</sup> Furthermore, counsel introduced experts “who *never* should have been a part of the defense case,” including psychiatrist Dr. H.D., whose “*entire testimony* was harmful to Waters.”<sup>232</sup> Dr. H.D. testified that Waters only suffered from “anxiety neurosis, not paranoid schizophrenia,” and additionally that Waters was “in good contact with reality.”<sup>233</sup> As the court explained, counsel’s handling of Dr. H.D.’s harmful testimony was particularly detrimental to Waters because it was elicited by counsel himself on direct examination, not by the prosecution during cross-examination.<sup>234</sup> In addition, counsel was so unprepared that he had “no idea” what Dr. H.D. would say on the stand.<sup>235</sup>

Counsel’s elicited testimony from another expert witness was equally troublesome, suggesting first that Waters’s mental illness had no bearing on his commission of the crime,<sup>236</sup> and then, “[w]ith a persistence that resembled that of a prosecutor” drawing forth testimony that “Waters attacked his victims to fulfill his sexual desire.”<sup>237</sup> Most stunningly, the expert witness attempted to prevent counsel from extracting such detrimental information, but without success.<sup>238</sup> According to the expert’s post-conviction affidavit about his experience, counsel had never informed him that he would be testifying for Waters at the penalty phase.<sup>239</sup> Had the expert known this, his testimony would have been favorable.<sup>240</sup> He explained that Waters suffered from a “schizophrenic disorder” that provided substantial grounds for mitigation.<sup>241</sup>

According to the court, counsel “totally failed” to effectively handle the paltry mitigating evidence he did decide to present.<sup>242</sup> He also neglected to explain to the jury why Waters’s mental illness could be a mitigating fac-

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<sup>230</sup> *Id.*

<sup>231</sup> *Id.*

<sup>232</sup> *Id.* at 1494–95.

<sup>233</sup> *Id.* at 1495 (internal quotations omitted).

<sup>234</sup> *Id.*

<sup>235</sup> *Id.*

<sup>236</sup> *Id.* at 1479.

<sup>237</sup> *Id.* at 1495.

<sup>238</sup> *Id.*

<sup>239</sup> *Id.* at 1482.

<sup>240</sup> *Id.*

<sup>241</sup> *Id.*

<sup>242</sup> *Id.* at 1496.

tor.<sup>243</sup> The court emphasized ample precedent indicating that counsel's performance was without question constitutionally deficient.<sup>244</sup>

## 5. Research Early Childhood Disorders

In *Stankewitz v. Wong*,<sup>245</sup> the court ultimately vacated Stankewitz's death sentence and ordered a re-sentence of life without the possibility of parole.<sup>246</sup> According to Stankewitz's *Strickland* claim, his penalty phase attorney not only performed deficiently but also prejudiced Stankewitz with a skeletal investigation and presentation of mitigation evidence that failed to address aggravating factors.<sup>247</sup>

In particular, Stankewitz claimed that counsel failed to sufficiently investigate and present evidence of his "impaired intellectual functioning and brain damage,"<sup>248</sup> which was thoroughly documented by three medical experts who agreed that he suffered from brain injuries as well as a history of mental illness.<sup>249</sup> According to one of the experts, Stankewitz was borderline mentally retarded and evinced "significant brain dysfunction, perhaps attributable to Fetal Alcohol Syndrome and childhood abuse."<sup>250</sup> Another expert testified that Stankewitz's brain damage "would produce problems with emotional control, tendencies to be impulsive and unpredictable, and to be unable to exercise adequate judgment or to understand the consequences of his behavior."<sup>251</sup> Moreover, Stankewitz had been diagnosed with antisocial personality disorder and evidenced neurologic abnormalities based on the results of two EEG tests.<sup>252</sup> Some of the strongest testimony came from the doctor who administered the first EEG test and a psychiatric evaluation when Stankewitz was age twelve.<sup>253</sup> At that early age Stankewitz already exhibited "sudden loss of control;" in addition he "becomes abusive, uses vile language, [is] combative, [and demonstrates] ample evidence of neurotic disturbance (bitten fingernails and bed-wetting)."<sup>254</sup> Given that all of this mitigation evidence was available at the penalty phase and much

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<sup>243</sup> *Id.*

<sup>244</sup> *Id.* at 1492–94.

<sup>245</sup> 659 F. Supp. 2d 1103 (E.D. Cal. 2009).

<sup>246</sup> *Id.* at 1112.

<sup>247</sup> *Id.* at 1105; see also *Wallace v. Stewart*, 184 F.3d 1112, 1116 (9th Cir. 1999) ("Does an attorney have a professional responsibility to investigate and bring to the attention of mental health experts who are examining his client, facts that the experts do not request? The answer, at least at the sentencing phase of a capital case, is yes.").

<sup>248</sup> *Stankewitz*, 659 F. Supp. 2d at 1106.

<sup>249</sup> *Id.* at 1109.

<sup>250</sup> *Id.*

<sup>251</sup> *Id.* (internal quotations omitted).

<sup>252</sup> *Id.*

<sup>253</sup> *Id.*

<sup>254</sup> *Id.* at 1113 (citing in Appendix A the May 6, 1970 psychological evaluation with Dr. Z).



of it was officially documented, counsel's choice to exclude it was "unreasonable" and prejudicial.<sup>255</sup>

## 6. Evaluate Mental Health and Drug Abuse

In *James v. Ryan*,<sup>256</sup> petitioner James, convicted of capital murder and sentenced to death, appealed a district court's denial of his habeas corpus petition.<sup>257</sup> The court affirmed his petition for habeas relief from his death sentence,<sup>258</sup> citing counsel's "complete failure to investigate and present mitigating evidence of James's troubled childhood, his mental illness, and his history of chronic drug abuse."<sup>259</sup> The court held that this deficiency prejudiced James because his troubled history was relevant to the sentencing judge's assessment of James's moral culpability.<sup>260</sup>

In particular, the court found that counsel did not conduct even the most elementary research on James's background.<sup>261</sup> The court noted that a minimal investigation would have uncovered "obvious indications that James had suffered emotional and psychological trauma during his childhood,"<sup>262</sup> including a pretrial competency report that labeled James's early years as "disturbed."<sup>263</sup> This label was reinforced by evidence that James's father was a drug addict who was incarcerated during James's youth, as well as documentation that James's mother offered him into foster care before he reached the age of three.<sup>264</sup> Counsel also failed to gather accessible documentation of James's educational history, which would have revealed his "subaverage academic and intellectual functioning, as well as his behavioral and social problems."<sup>265</sup>

Furthermore, counsel did not sufficiently study James's mental health, which should be a key focus in any investigation of a defendant's background for mitigation purposes.<sup>266</sup> The competency reports of two doctors noted that James had a history of suicide attempts, some of which included crashing cars at high speeds.<sup>267</sup> Counsel knew that James took lithium and

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<sup>255</sup> *Id.* at 1112 ("[T]here was a reasonable probability that the jury would not have sentenced Stankewitz to death had it been presented with the evidence of the numerous deprivations and abuses Stankewitz alleges that he suffered." (citation and internal quotations omitted)).

<sup>256</sup> 679 F.3d 780, 784–85 (9th Cir. 2012), *vacated*, 133 S. Ct. 1579 (2013).

<sup>257</sup> *Id.* at 785.

<sup>258</sup> *Id.* at 820.

<sup>259</sup> *Id.* at 786.

<sup>260</sup> *Id.*

<sup>261</sup> *Id.* at 786, 807.

<sup>262</sup> *Id.* at 808.

<sup>263</sup> *Id.*

<sup>264</sup> *Id.*

<sup>265</sup> *Id.*

<sup>266</sup> *Id.*

<sup>267</sup> *Id.*

had undergone psychiatric care,<sup>268</sup> and was therefore aware of the need to investigate.

Finally, the court noted that counsel failed to investigate James's drug abuse trajectory, a requirement reinforced by case precedent stressing this "well-established" part of mitigation research.<sup>269</sup> The court again observed that there were obvious signs of James's history of polysubstance abuse of a wide range of drugs,<sup>270</sup> including marijuana, cocaine, and LSD.<sup>271</sup> Moreover, despite counsel's mitigating argument for diminished capacity based on James's LSD intoxication, counsel "failed to appreciate that chronic drug abuse itself evinces, as well as exacerbates, serious mental illness."<sup>272</sup>

In sum, although there are common themes that resonate among the ineffective assistance of counsel cases involving neuroscience evidence,<sup>273</sup> the particularized nature of the evidence and the circumstances in which it is used also invite case studies. Each case study evokes its own double-edged-sword analysis, but the shared message from the courts is this: it is critical for attorneys to fully investigate and present mitigation evidence, particularly in death penalty cases.<sup>274</sup> Neuroscience—in all of its many facets—is an important component of mitigation.

The next Part, however, deals with neuroscience cases that go to the crux of the double-edged-sword analysis, specifically those situations in which neuroscience is used not for purposes of mitigation but rather to suggest or validate a defendant's future dangerousness.<sup>275</sup> Given the emphasis courts place on mitigation, attorneys must also be aware of the flip side of what neuroscience can bring to the courtroom.

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<sup>268</sup> *Id.* at 808–09. The court quoted the U.S. Court of Appeals for the Ninth Circuit, stating:

[W]here "counsel was aware that [the defendant] tried to commit suicide in prison . . . and that he was taking anti-depressant medication at the time of trial," counsel "should have retained a mental health expert and provided the expert with the information needed to form an accurate profile of [the defendant's] mental health."

*Id.* (quoting *Hamilton v. Ayers*, 583 F.3d 1110, 1117 (9th Cir. 2009)).

<sup>269</sup> *Id.* at 809.

<sup>270</sup> *Id.*

<sup>271</sup> *Id.* Particularly relevant on this point was an expert's opinion that James's alleged use of LSD at the time of the murder "'may have' compromised James's capacity to appreciate the wrongfulness of his conduct." *Id.* at 795.

<sup>272</sup> *Id.* at 809.

<sup>273</sup> See *supra* notes 155–272 and accompanying text (exploring six shared themes of ineffective assistance of counsel cases).

<sup>274</sup> See *James*, 679 F.3d at 786; *Frierson*, 463 F.3d at 989; *Hooper*, 314 F.3d at 1170; *Stankewitz*, 659 F. Supp. 2d at 1106; *Simmons*, 105 So. 3d at 483.

<sup>275</sup> See *infra* notes 276–448 and accompanying text.

### III. NEUROSCIENCE AND FUTURE DANGEROUSNESS

The majority of death penalty states consider a defendant's potential for future dangerousness to be an aggravating factor worthy of consideration during the penalty phase of a capital trial.<sup>276</sup> Indeed, the concept of future dangerousness has garnered substantial attention in recent years.<sup>277</sup> A major concern is that prosecutors will seek the death penalty based on neuroscience evidence indicating that a defendant is likely to commit future crimes<sup>278</sup>—just as some of the mitigating factors in *Strickland* cases can be translated into aggravating factors if defense attorneys are not sufficiently prepared or careful.<sup>279</sup> Yet the Neuroscience Study found minimal support for this concern. In those rare instances when prosecutors did utilize neuroscience evidence to suggest a defendant's propensity to commit crimes, they typically did so only by building upon the evidence first introduced by a defense expert.<sup>280</sup>

In contrast, some defense attorneys decided to omit potentially mitigating evidence because they thought it may bolster the perception of a client's future dangerousness.<sup>281</sup> Such tactics are controversial, as demonstrated by this Article's discussion of the *Strickland* claim cases. As one judge voiced in a future dangerousness case, "we cannot insulate an unreasonable tactic not to present mitigating evidence by labeling it a two-edged sword."<sup>282</sup> Nonetheless, this Part shows that, for a range of reasons, cases involving neuroscience and future dangerousness typically do not evoke successful

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<sup>276</sup> See Mitzi Dorland & Daniel Krauss, *The Danger of Dangerousness in Capital Sentencing: Exacerbating the Problem of Arbitrary and Capricious Decision-Making*, 29 LAW & PSYCHOL. REV. 63, 64 (2005). The U.S. Supreme Court has also given prosecutors free reign to use this evidence. See *Simmons v. South Carolina*, 512 U.S. 154, 165 n.5 (1994) ("The State is free to argue that the defendant will pose a danger to others in prison and that executing him is the only means of eliminating the threat to the safety of other inmates or prison staff"). Although there are a number of routes for states to follow when incorporating future dangerousness into the penalty phase, four methods stand out: (1) a state statute can list future dangerousness among its statutory aggravating factors; (2) a state statute can list a lack of future dangerousness as a statutory mitigating factor; (3) states can enable prosecutors to present future dangerousness "as a non-statutory aggravating factor" or as one that jurors can weigh in choosing between the defendant's life or death; or (4) states can allow "prosecutors to present evidence of future dangerousness in rebuttal to mitigating evidence presented by the defense alleging non-dangerousness or potential for rehabilitation." Dorland & Krauss, *supra*, at 64–65.

<sup>277</sup> See *infra* notes 286–448 and accompanying text.

<sup>278</sup> See Snead, *supra* note 7, at 1318–38.

<sup>279</sup> See *supra* notes 219–244 and accompanying text.

<sup>280</sup> See *infra* notes 328–353 and accompanying text.

<sup>281</sup> See *infra* notes 304–325 and accompanying text.

<sup>282</sup> *Bryan v. Mullin*, 335 F.3d 1207, 1225 (10th Cir. 2003) (Henry, J., concurring in part and dissenting in part).

*Strickland* claims.<sup>283</sup> Section A begins with an overview of the Neuroscience Study's future dangerousness cases,<sup>284</sup> and Section B examines the trends, themes, and controversies among them.<sup>285</sup>

### A. How Cases Involve Neuroscience

Among the Neuroscience Study's 553 Defendant Cases, only 80 cases (14.47%) feature any discussion of future dangerousness related to the defendant, as Chart 7 shows.<sup>286</sup> Most of this discussion did not involve neuroscience evidence, but instead relied upon other kinds of evidence or testimony, such as a warden's personal assessment of the defendant's behavior as an inmate.<sup>287</sup> Indeed, as Chart 7 indicates, only 39 cases featured a discussion of future dangerousness that was driven, even in part, by an examination of neuroscience evidence (7.05% of the 553 Defendant Cases and 48.75% of the 80 future dangerousness cases).

Of these 39 cases, 14 cases—all of which were capital murder cases—featured a discussion of neuroscience that was intended to establish the future dangerousness of the defendant.<sup>288</sup> In addition, three of those fourteen cases contain references to future dangerousness that are only indirect or implied, rather than explicit.<sup>289</sup> In yet another case, the court upheld the

<sup>283</sup> See *infra* notes 284–448 and accompanying text. At the same time, the Neuroscience Study's sample is so small that it is difficult to generalize and the reasons for this outcome have less to do with double-edged-sword concerns than other sorts of doctrines and protections.

<sup>284</sup> See *infra* notes 286–296 and accompanying text.

<sup>285</sup> See *infra* notes 297–325 and accompanying text.

<sup>286</sup> See *infra* Chart 7; Stat. App., *supra* note 38; DENNO, *supra* note 38.

<sup>287</sup> See Stat. App., *supra* note 38; see also DENNO, *supra* note 38.

<sup>288</sup> See *Bryan*, 335 F.3d at 1243; *Wesbrook v. Thaler*, 585 F.3d 245, 255 (5th Cir. 2009); *Smith v. Workman*, 550 F.3d 1258, 1266 (10th Cir. 2008); *Lorraine v. Coyle*, 291 F.3d 416, 424 (6th Cir. 2002); *Walls v. McNeil*, No. 3:06CV237/MCR, 2009 WL 3187066, at \*24 (N.D. Fla. 2009), *aff'd*, 658 F.3d 1274 (11th Cir. 2011); *Maldonado v. Thaler*, 662 F. Supp. 2d 684, 752 (S.D. Tex. 2009), *aff'd*, 625 F.3d 229 (5th Cir. 2010); *Dowthitt v. Johnson*, 180 F. Supp. 2d 832, 861 (S.D. Tex. 2000); *Fleenor v. Farley*, 47 F. Supp. 2d 1021, 1066 (S.D. Ind. 1998), *aff'd*, 171 F.3d 1096 (7th Cir. 1999); *State v. Ross*, 646 A.2d 1318, 1368 (Conn. 1994); *Gudinas v. State*, 816 So. 2d 1095, 1103–04 (Fla. 2002); *People v. Peebles*, 793 N.E.2d 641, 682 (Ill. 2002); *Commonwealth v. Stevens*, 739 A.2d 507, 528 (Pa. 1999); *Coe v. State*, 17 S.W.3d 193, 243 (Tenn. 2000), *abrogated by State v. Irick*, 320 S.W.3d 284 (Tenn. 2010); *Ex parte Lucas*, 877 S.W.2d 315, 323 (Tex. Crim. App. 1994).

<sup>289</sup> See *Lorraine*, 291 F.3d at 425; *Gudinas*, 816 So. 2d at 1104; *Coe*, 17 S.W.3d at 243. Three cases involved future dangerousness references that were only implied or inferred in the record, as opposed to being explicitly referenced as part of the defendant's case. In two of these cases, references to the defendant's "future dangerousness" derived from expert medical testimony that was unrelated to an explicit discussion of the actual statutory aggravator of future dangerousness. In the first of these two cases, *Coe v. State*, the State's expert witness testified that Coe "possibly could become psychotic in the future." 17 S.W.3d at 243. This testimony, however, was only offered to demonstrate that at the relevant period of time, Coe was in fact competent to be executed. *Id.* at 248. In the second of these two cases, *Gudinas v. State*, the only mention of future dangerousness appeared during the court's review of the defendant's *Strickland* claim regarding counsel's alleged failure to adequately present mitigation evidence during the penalty phase. 816 So.

*Strickland* claim concerning future dangerousness, thereby whittling the total number of successful uses by prosecutors of such evidence to just ten.<sup>290</sup> The Neuroscience Study's findings thus suggest that overall there is little likelihood that neuroscience evidence introduced by the defense will be leveraged by the prosecution in an effort to prove the defendant's future dangerousness.

As Chart 7 shows,<sup>291</sup> a *Strickland* claim was raised in conjunction with future dangerousness in 33 of the 80 cases (41.25%), and the fourteen future dangerousness cases based on neuroscience evidence only rarely evoked a successful *Strickland* claim. Fourteen cases constitute a small sample, however, and future dangerousness circumstances differ from those cases involving typical *Strickland* claims. It is therefore difficult to make generalizations or reach broad conclusions linking future dangerousness arguments to the use of neuroscience evidence in criminal law cases.

One major difference with future dangerousness cases, for example, concerns the protections afforded to defendants through what is known as the *Simmons* jury instruction.<sup>292</sup> The U.S. Supreme Court's 1994 ruling in *Simmons v. South Carolina*<sup>293</sup> stipulates that if a prosecutor in a capital case raises concerns regarding a defendant's future dangerousness, the jury must be instructed that life in prison is equivalent to life without the possibility of parole.<sup>294</sup> Thus, the purpose of a *Simmons* instruction is to diminish the possibility that a jury will award a defendant the death penalty simply because of the jury's concern that a defendant could be a future danger if that defendant is no longer incarcerated.<sup>295</sup> As Chart 7 shows, a *Simmons* instruction was mentioned in 17 of the 80 cases (21.25%) that addressed future dangerousness.

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2d at 1103–04. According to the defense expert's testimony, Gudinas's psychological and emotional impairments suggested that he "would probably be a danger to others in the future unless he was properly treated and that [his crime] was consistent with the behavior of a person with his psychological makeup." *Id.* This testimony, however, was only presented in an attempt to introduce the mental health mitigator of extreme emotional disturbance. *Id.* at 1106. Notably, trial counsel testified that their strategy was to "humanize" their client and present him to the jury not as a monster, but as a person who can be rehabilitated. *Id.* In the third case, *Lorraine v. Coyle*, the only mention of future dangerousness appeared in a footnote that referenced only a portion of the myriad *Strickland* claims asserted by the defendant. 291 F.3d at 424 n.4. Specifically, Lorraine alleged that "[t]rial counsel failed to object to the State's argument inferring, improperly, future dangerousness, by calling the Petitioner a 'psychopath' in closing argument." *Id.* The court found that this claim was procedurally defaulted and did not address its merits. *Id.*

<sup>290</sup> See *infra* notes 297–301 and accompanying text.

<sup>291</sup> See *infra* Chart 7.

<sup>292</sup> *Simmons*, 512 U.S. at 171.

<sup>293</sup> *Id.* at 154.

<sup>294</sup> *Id.* at 177 (O'Connor, J., concurring).

<sup>295</sup> *Id.* at 178 (Scalia, J., dissenting).

The Neuroscience Study therefore found a limited number of cases linking the concept of future dangerousness to neuroscience; but those few cases are intricate and important for a criminal justice system preparing to accommodate an influx of innovative brain technology and prediction research.<sup>296</sup> Thus, it is critical to understand the kinds of arguments attorneys raise and the ways courts respond, especially because it becomes clear that defense attorneys can avoid the threat of potential future dangerousness arguments by preparing and remaining in control of their experts' testimony.

### *B. The Specter of the Double-Edged Sword*

Among the fourteen future dangerousness cases involving neuroscience evidence, several themes emerge. First, in all but one of the cases, the court affirmed the defendant's death sentence.<sup>297</sup> In that case, *State v. Ross*,<sup>298</sup> Ross claimed that the court committed harmful error by allowing, over objection, the State to cross-examine a defense psychiatric expert about Ross's potential for future danger if he were released from prison.<sup>299</sup> The court agreed with Ross's contention that such a cross-examination regarding future dangerousness was outside the scope of what the State was procedurally allowed to rebut relating to his mitigation case.<sup>300</sup> The court ultimately affirmed Ross's convictions, but it reversed and remanded his death sentence, reasoning that the lower court committed the harmful error.<sup>301</sup>

Judicial considerations of future dangerousness vary widely in the remaining thirteen cases, in which the courts affirmed death sentences. Generally, however, the attorneys involved in these thirteen cases demonstrate far less egregious behavior than the attorneys involved in the *Strickland* claim cases discussed in Part II.<sup>302</sup> Neuroscience evidence most commonly appeared when a court was evaluating a *Strickland* claim based on trial counsel's failure to fully develop that evidence—but courts consistently rejected defendants' *Strickland* claims in this context.<sup>303</sup> Instead, courts fa-

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<sup>296</sup> See *infra* notes 327–448 and accompanying text (discussing the limited case law on the effect of neuroscience on future dangerousness findings and the importance of the continued use of such evidence).

<sup>297</sup> See *Ross*, 646 A.2d at 1368 (reversing a death sentence); see also *supra* notes 288–290 and accompanying text (discussing the remaining thirteen cases).

<sup>298</sup> 646 A.2d at 1318.

<sup>299</sup> *Id.* at 1368.

<sup>300</sup> *Id.*

<sup>301</sup> *Id.* at 1373 (“[A defendant] is entitled to have a sentencing jury consider extenuating circumstances that may explain his behavior and mitigate his moral culpability . . . . Because evidentiary rulings by the trial court impaired the defendant’s ability to prove the existence of such mitigating factors, a new sentencing hearing must be held.”).

<sup>302</sup> See *supra* notes 155–272 and accompanying text.

<sup>303</sup> See *infra* notes 305–448 and accompanying text.

vored a finding of reasonable trial strategy across a variety of purported strategies.<sup>304</sup> In several cases, the court noted that it was objectively reasonable for counsel not to present certain neuroscience evidence due to the potentially dual nature of the evidence in capital cases as both mitigating and aggravating.<sup>305</sup>

A number of these thirteen cases referred to neuroscience mitigation evidence as a double-edged sword for this reason.<sup>306</sup> In *Bryan v. Mullin*,<sup>307</sup> for example, counsel explained why he excluded the mitigating opinions of two mental health experts who had diagnosed his client as severely psychologically impaired, or crazy, but not insane.<sup>308</sup> Counsel's concern was that because his client seemingly had the capacity to form intent, testimony concerning his client's mental abnormalities would suggest he "was a danger to society."<sup>309</sup> As the dissent in *Bryan* noted, the majority defended counsel's decision because, "[g]iven the other evidence of violent behavior, the jury could have thought this type of psychological problem indicated a propensity for future violence."<sup>310</sup>

Likewise, in *Ex parte Lucas*,<sup>311</sup> the court noted that Lucas's mental impairment, including schizophrenia and continuing psychological trauma from his abusive childhood, exemplified "evidence which both militates for and against the death penalty," and therefore supported counsel's decision to omit Lucas's mental health background.<sup>312</sup> In *Maldonado v. Thaler*,<sup>313</sup> Maldonado argued that trial counsel failed to present his mental retardation as mitigation in his capital case.<sup>314</sup> Yet the court rejected Maldonado's argu-

<sup>304</sup> See *infra* notes 305–448 and accompanying text.

<sup>305</sup> See *Bryan*, 335 F.3d at 1239 (Henry, J., concurring in part and dissenting in part); *Smith*, 550 F.3d at 1265; *Maldonado*, 662 F. Supp. 2d at 752; *Dowthitt*, 180 F. Supp. 2d at 861; *Peeples*, 793 N.E.2d at 680; *Ex parte Lucas*, 877 S.W.2d at 324.

<sup>306</sup> See *Bryan*, 335 F.3d at 1239 ("[Counsel's] choice not to present the mental health history at the sentencing stage was reasonable, given his fear of the evidence acting as a two-edged sword."); *Ex parte Lucas*, 877 S.W.2d at 324 ("[A]pplicant may have been less culpable based upon his emotional and mental problems . . . [However] such evidence was a two-edged sword in that it might diminish applicant's blameworthiness for his crime even as it indicates that there is a probability that he will be dangerous in the future.").

<sup>307</sup> 335 F.3d at 1207 (majority opinion).

<sup>308</sup> *Id.* at 1218.

<sup>309</sup> *Id.* at 1231 (Henry, J., concurring in part and dissenting in part).

<sup>310</sup> *Id.* at 1243; see also *Peeples*, 793 N.E.2d at 659 (holding that evidence of frontal lobe damage resulting in poor decision making, irrational behavior, as well as a history of psychological impairment including a quick and violent temper, may "'tend to show the court that [defendant] is, in fact, dangerous,' as well as 'his capacity for future conduct,'" as opposed to mitigating future dangerousness).

<sup>311</sup> 877 S.W.2d at 315.

<sup>312</sup> See *id.* at 319 (internal quotations omitted).

<sup>313</sup> 662 F. Supp. 2d at 684.

<sup>314</sup> *Id.* at 752.

ment, quoting *Atkins v. Virginia*<sup>315</sup> as support.<sup>316</sup> “reliance on mental retardation as a mitigating factor can be a two-edged sword that may enhance the likelihood that the aggravating factor of future dangerousness will be found by the jury.”<sup>317</sup> Thus, counsel’s omission of mental retardation evidence as a basis for mitigation “can be reasonable in order to prevent a negative jury finding on issue of future dangerousness.”<sup>318</sup>

In two cases, the courts praised attorneys for presenting evidence of mental illness even though defendants in both cases expressly requested that counsel *not* present such evidence.<sup>319</sup> In *Bryan*,<sup>320</sup> for example, the court held that trial counsel had used an acceptable strategy when introducing evidence of mental illness, despite being forbidden by his client from mentioning any such evidence and being informed that his client would not accept a guilty plea—even to avoid a death sentence.<sup>321</sup> Similarly, in *Dowthitt v. Johnson*,<sup>322</sup> Dowthitt not only consistently denied having a history of mental illness, but also showed no symptoms of mental or emotional disorders.<sup>323</sup> His attorney nonetheless retained a psychiatrist to examine Dowthitt, but the psychiatrist advised counsel not to have him testify on Dowthitt’s behalf given the psychiatrist’s own conflicting views of Dowthitt’s future dangerousness.<sup>324</sup> The court upheld as reasonable counsel’s compliance with this request.<sup>325</sup>

It is clear, therefore, that the theme of the double-edged sword in future dangerousness cases is pervasive. An analysis of particular cases further demonstrates how this theme resonates. The next Section closely analyzes the details of such cases given their relevance to the future use of neuroscience technology in court.<sup>326</sup>

### C. How Cases Involve Dangerousness

This Section examines five particularly insightful future dangerousness cases, focusing specifically on how courts view future dangerousness in the

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<sup>315</sup> 536 U.S. 304, 321 (2002) (holding the execution of mentally retarded individuals unconstitutional under the Eighth Amendment).

<sup>316</sup> *Maldonado*, 662 F. Supp. 2d at 752.

<sup>317</sup> *Id.* (quoting *Atkins*, 536 U.S. at 321).

<sup>318</sup> *Id.*

<sup>319</sup> *Bryan*, 335 F.3d at 1120; *Dowthitt*, 180 F. Supp. 2d at 859.

<sup>320</sup> 335 F.3d at 1207.

<sup>321</sup> *Id.* at 1220.

<sup>322</sup> 180 F. Supp. 2d at 832.

<sup>323</sup> *Id.* at 859.

<sup>324</sup> *Id.* at 861.

<sup>325</sup> *Id.*

<sup>326</sup> See *infra* notes 327–448 and accompanying text.



context of a double-edged-sword analysis.<sup>327</sup> These cases illustrate the murky line between what courts do and do not consider acceptable.

### 1. Unanticipated Expert Testimony

In *Fleenor v. Farley*,<sup>328</sup> Fleenor petitioned for a writ of habeas corpus following the court's affirmance of his murder conviction and death sentence.<sup>329</sup> Fleenor primarily contended that his attorneys mishandled available neuroscience evidence and arguments during the penalty phase.<sup>330</sup> Fleenor's attorneys attempted to show at the penalty phase that Fleenor was mentally abnormal and that his crimes were attributable to his mental illness, extreme mental or emotional disturbance, and/or the consequences of his intoxication from alcohol.<sup>331</sup> Yet, under cross-examination, the prosecution attempted to undercut much of this evidence.<sup>332</sup> Particularly damaging to Fleenor was the testimony provided by two experts—Dr. G.B., a court-appointed psychiatrist, and Dr. P.C., a psychologist that defense counsel chose.<sup>333</sup> During the prosecutor's cross examination of Dr. G.B., for example, Dr. G.B. stated that "if given the chance in the future, Fleenor would 'continue to involve himself in similar behavior in the future,'"—an opinion that the prosecutor then stressed and repeated to the jury.<sup>334</sup> Dr. P.C. also provided dangerousness projections about Fleenor's behavior.<sup>335</sup> In his view, "Fleenor was 'not psychotic' but that, under extreme stress, someone with borderline personality disorder [like Fleenor] [could] exhibit psychotic symptoms."<sup>336</sup> Fleenor's attorneys referred to this characterization of Fleenor as a "transient psychotic episode," but on cross-examination Dr. P.C. bolstered the prosecution's case with the following statements: "Fleenor was not psychotic and not insane, but mentally ill," and Fleenor's

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<sup>327</sup> See *infra* notes 328–448 and accompanying text.

<sup>328</sup> *Fleenor*, 47 F. Supp. 2d at 1023–24; *Fleenor v. State*, 622 N.E.2d 140, 154 (Ind. 1993), *abrogated by* *Dill v. State*, 741 N.E.2d 1230 (Ind. 2001).

<sup>329</sup> *Fleenor*, 47 F. Supp. 2d at 1035. Although there are numerous issues that arise in this doctrinally rich case, this overview focuses on a few selected challenges that Fleenor faced in an attempt to prove a *Strickland* claim in the context of neuroscience evidence of future dangerousness. See *id.* at 1035–37, 1066–72.

<sup>330</sup> *Id.*

<sup>331</sup> *Id.* at 1036. These arguments were similar to those presented at the guilt phase. See *id.* Evidence at Fleenor's guilt-phase of the trial included testimony from two court-appointed psychiatrists (including Dr. G.B.) and testimony from a psychologist selected by defense counsel (Dr. P.C.). *Id.* Testimony at the penalty phase included an expert with a doctorate in sociology and a background in counseling alcoholics. *Id.*

<sup>332</sup> *Id.*

<sup>333</sup> *Id.*

<sup>334</sup> *Id.* at 1037.

<sup>335</sup> *Id.* at 1036.

<sup>336</sup> *Id.* at 1066.

personality disorder was a long term condition that would be “quite resistant to treatment.”<sup>337</sup>

Taken together, the testimony from both experts fueled the prosecutor’s assessment of Fleenor’s likely future violence, especially during his closing argument.<sup>338</sup> According to Fleenor, however, the prosecutor had engaged in misconduct during his closing argument by offering an expert’s opinion to the jury, which violated Fleenor’s Sixth Amendment rights.<sup>339</sup> In particular, Fleenor argued that although he and his attorneys knew that Dr. G.B. would be evaluating Fleenor’s sanity and competency to stand trial, they had no idea that he would also contribute testimony during trial regarding Fleenor’s future dangerousness.<sup>340</sup> In rejecting Fleenor’s claims and affirming his death sentence, the court ultimately explained that, given the type of testimony offered, counsel was aware that “the nature of any mental disorder or behavioral problem would be explored in detail, including any persistent and continuing patterns of violent conduct.”<sup>341</sup> Likewise, it was not “unreasonable or unfair” for the prosecution to attempt to rebut expert testimony that Fleenor’s antisocial personality disorder could be controlled, especially because the defense set forth mental health and other mitigating evidence at the penalty phase.<sup>342</sup>

That said, in multiple ways the prosecutor’s closing argument demonstrated the effects of the future dangerousness testimony and the double-edged nature of the mental illness testimony presented in this case.<sup>343</sup> Referring to Fleenor as an “animal” and repeatedly as “the enemy,” the prosecutor continuously stressed the “right” and need for individuals to “protect” themselves from “people who kill and kill again.”<sup>344</sup> The prosecutor also emphasized the obligation to protect “the prison guards that have to deal with this man,” as well as the “jail dispatchers” and the “people in this [court]room.”<sup>345</sup> By declining this call to defend, the prosecutor argued, society will have “lost its ability to stand up against the blackness and against the enemy.”<sup>346</sup>

Other factors also worked against Fleenor’s efforts either to raise a *Strickland* claim or to highlight the potential impact of future dangerousness

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<sup>337</sup> *Id.*

<sup>338</sup> *Id.* at 1036, 1066.

<sup>339</sup> *Id.* at 1069.

<sup>340</sup> *Id.*

<sup>341</sup> *Id.* at 1071.

<sup>342</sup> *Id.* at 1072.

<sup>343</sup> *See id.* at 1059.

<sup>344</sup> *Id.*

<sup>345</sup> *Id.*

<sup>346</sup> *Id.*

testimony.<sup>347</sup> In contrast to Part II's accounts of attorney deficiencies,<sup>348</sup> for example, the court ultimately rejected Fleenor's ineffective assistance of counsel claims.<sup>349</sup> Not only had Fleenor's attorneys devoted more than 1000 hours of time both before and during Fleenor's trial, the court had also characterized them as "two skilled, experienced, and tenacious lawyers who fought to save [Fleenor's] life."<sup>350</sup> Thus, counsel's representation of Fleenor at both the guilt and penalty phases of trial was well above the constitutional floor set in *Strickland*.<sup>351</sup>

Indeed, as the remaining case studies indicate, attorneys in these future dangerousness cases are relatively more prepared and professional than the attorneys discussed in Part II's *Strickland* claim cases.<sup>352</sup> As a result, a defendant-petitioner's challenges against future dangerousness arguments can lose steam when attorneys are otherwise covering their legal bases. That said, as the dissent in the following case study compellingly argues, not everyone agrees that these attorneys are providing effective representation.<sup>353</sup>

## 2. The Slide From Mitigation to Danger

In *Bryan*,<sup>354</sup> Bryan appealed a district court decision denying his petition for habeas relief from his conviction of first-degree murder and attendant death sentence.<sup>355</sup> Bryan contended in his *Strickland* claim that his attorney failed to present available evidence of Bryan's mental impairment and that Bryan was therefore prejudiced.<sup>356</sup> The court ultimately rejected Bryan's claim,<sup>357</sup> but on appeal Bryan offered a vast range of evidence regarding his alleged mental abnormalities.<sup>358</sup> These included "organic brain disease" potentially linked to "his severe case of diabetes mellitus,"<sup>359</sup> a

<sup>347</sup> See *id.* at 1049.

<sup>348</sup> See *supra* notes 155–272 and accompanying text.

<sup>349</sup> *Fleenor*, 47 F. Supp. 2d at 1043. Among other things, Fleenor contended that his attorneys were deficient for failing to present a neuropsychologist and/or a neurologist's testimony that Fleenor suffered from frontal lobe damage resulting in "disinhibition or poor impulse control in addition to neurocognitive deficits and dysfunction that impaired [Fleenor's] reason, judgment and problem solving ability." *Id.* at 1038.

<sup>350</sup> *Id.* at 1049.

<sup>351</sup> *Id.*

<sup>352</sup> See *supra* 155–272 and accompanying text.

<sup>353</sup> See *Bryan*, 335 F.3d at 1225 (Henry J., concurring in part and dissenting in part).

<sup>354</sup> 335 F.3d at 1207.

<sup>355</sup> *Id.* at 1210–11.

<sup>356</sup> *Id.* at 1217–23.

<sup>357</sup> *Id.* at 1223–24.

<sup>358</sup> *Id.* at 1210–13.

<sup>359</sup> *Id.* at 1212 (noting, for example, that in 1989 "Bryan was diagnosed as suffering from an organic delusional disorder and was considered severely psychotic at the time of his admission to the hospital").

“delusional system and circumstantiality of thought,”<sup>360</sup> as well as a “serious mental disorder.”<sup>361</sup> Indeed, Bryan’s *Strickland* claim contended that counsel failed to present this evidence or any other mental health evidence on his behalf.<sup>362</sup> Contrary to *Fleenor*, then, the issue in *Bryan* was one of counsel choosing to omit evidence rather than counsel insufficiently anticipating the content of testimony already admitted into court.<sup>363</sup>

Counsel contended, however, that he had limited options during Bryan’s guilt phase, a position the court seemingly took to heart.<sup>364</sup> For example, the court concluded that Bryan’s counsel lacked the medical evidence necessary to adequately argue an insanity plea.<sup>365</sup> Moreover, Bryan himself explicitly did not want his counsel to present evidence portraying him as mentally ill.<sup>366</sup> Finally, Bryan told counsel that he would not accept a guilty plea, even if doing so meant avoiding the death sentence.<sup>367</sup> For all of these reasons, the court determined that counsel utilized sound strategy during the guilt phase.<sup>368</sup>

Regarding Bryan’s penalty-phase *Strickland* claims, the court similarly held that counsel’s decision to omit evidence of organic brain dysfunction and mental impairment for mitigation purposes was a reasonable trial strategy.<sup>369</sup> Counsel explained that introducing such evidence on Bryan’s behalf would have done “more harm than good.”<sup>370</sup> Specifically, counsel believed that testimony by either of Bryan’s medical experts “might play into the prosecution’s case that Bryan was a continuing threat to society.”<sup>371</sup>

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<sup>360</sup> *Id.* at 1213 (internal quotations omitted).

<sup>361</sup> *Id.*

<sup>362</sup> *Id.* With respect to the guilt phase, Bryan contended that his attorney should have presented the readily available evidence of his mental dysfunction to support an insanity defense or a second-degree murder instruction. *Id.* at 1217. According to Bryan, a swath of information cast doubt on his ability to form the intent to kill at the time the crime was committed, including the opinions of two medical experts, the information revealed from the CAT and SPECT scans of his brain, and his earlier records from the Eastern State Hospital. *Id.* Bryan also claimed that much of the evidence that was actually introduced was circumstantial, such as evidence “indicating that Bryan’s physical condition had so deteriorated at the time of the murder, due to his diabetes, that he was physically incapable of carrying out this crime.” *Id.* at 1219. Nonetheless, the court found that Bryan’s contention that his attorney should have pursued an insanity defense was completely unsubstantiated by prior counsel’s representation in the case, the available medical documentation, and Bryan’s own wish to avoid the insanity plea. *Id.*

<sup>363</sup> See *Bryan*, 335 F.3d at 1213; *Fleenor*, 47 F. Supp. 2d at 1069.

<sup>364</sup> *Bryan*, 335 F.3d at 1219–20.

<sup>365</sup> *Id.* at 1218.

<sup>366</sup> *Id.* at 1219.

<sup>367</sup> *Id.*

<sup>368</sup> *Id.*

<sup>369</sup> *Id.* at 1222–23.

<sup>370</sup> *Id.* at 1222.

<sup>371</sup> *Id.*

The dissent's response to the majority's argument, however, emphatically rejected the double-edged-sword argument: "Mr. Bryan's counsel provided the most ineffective defense I have ever seen . . . . [His] reasoning is untenable."<sup>372</sup> Unlike the majority, the dissent found counsel's decision to omit the available mental health mitigation completely non-strategic,<sup>373</sup> particularly counsel's fear "that the mental health testimony might be viewed to support future dangerousness."<sup>374</sup> The dissent first reviewed the vast amount of mitigation evidence available to Bryan's trial counsel based on extensive testing, especially stressing the SPECT scan results showing Bryan's extensive brain damage.<sup>375</sup> In the dissent's view, this evidence also strengthened expert testimony that Bryan was "crazy" and suffered from "paranoid," "grandiose," and "persecutory" thinking.<sup>376</sup>

The dissent then contended that despite trial counsel's "purported familiarity" with Bryan's medical history, counsel seemingly believed "the better tack was to pretend Mr. Bryan was a perfectly normal defendant who was in a bad spot," rather than present the evidence in mitigation.<sup>377</sup> Questioning counsel's concern that, because Bryan could apparently form intent, "any testimony regarding his mental distress would indicate that Mr. Bryan was a danger to society,"<sup>378</sup> the dissent concluded that counsel failed to comprehend that psychiatric evidence (as well as SPECT scan evidence) could both mitigate and dissipate the strength of aggravating factors.<sup>379</sup>

Moreover, the majority failed to consider that a defendant can be competent to stand trial yet still demonstrate mental health disorders that a judge and jury should be able to assess.<sup>380</sup> In the context of these arguments, the dissent thoroughly analyzed and critiqued the potential for neuroscience evidence to be viewed as a double-edged sword.<sup>381</sup> The dissent noted that the majority defended counsel's decision to omit the available mental health evidence as mitigation because "[g]iven the other evidence of violent behavior, the jury could have thought this type of psychological problem indi-

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<sup>372</sup> *Id.* at 1225 (Henry, J., concurring in part and dissenting in part).

<sup>373</sup> *Id.* at 1243–44. "Strickland counsels deference to plausible legal strategies, not to unilateral disarmament." *Id.* at 1243.

<sup>374</sup> *Id.* at 1225. The dissent also stressed that Bryan had three defense attorneys before his elderly parents mortgaged their home in order to hire the attorney at issue, who charged the parents \$50,000 for his services. *Id.* at 1225–26. As the dissent lamented, "[h]ad the Bryans not tried to help, paradoxically, I believe that Leroy Bryan would not be facing execution today." *Id.* at 1226.

<sup>375</sup> *Id.* at 1126–32.

<sup>376</sup> *Id.* at 1131.

<sup>377</sup> *Id.* at 1227.

<sup>378</sup> *Id.* at 1231.

<sup>379</sup> *Id.* at 1231–32.

<sup>380</sup> *Id.* at 1231.

<sup>381</sup> *See id.* at 1243–44.

cated a propensity for future violence.”<sup>382</sup> Yet the dissent found it far more important for the jury to hear all the critical evidence about Bryan’s history of mental disorders, organic disease, and treatment, as well as a previous conviction for which he was initially found to be incompetent.<sup>383</sup>

Had the jury been presented with a full set of evidence, the dissent believed that there was a reasonable probability that Bryan would not have received the death penalty because the jury had the option of sentencing Bryan to life without parole.<sup>384</sup> In essence, counsel’s tactics left the jury devoid of any argument that Bryan may not be sufficiently culpable for the death penalty despite Bryan’s brain abnormalities.<sup>385</sup> Thus, in the dissent’s eyes, counsel’s assistance at trial was constitutionally ineffective under *Strickland*.<sup>386</sup>

### 3. The Special Case of Mental Retardation

In *Maldonado*,<sup>387</sup> Maldonado was convicted of capital murder and sentenced to death.<sup>388</sup> His death sentence was affirmed on appeal, and after the State dismissed his petition for habeas relief, Maldonado filed for federal habeas relief.<sup>389</sup> Maldonado contended first that his mental retardation precluded his execution, and second, that his counsel provided ineffective assistance by neglecting to investigate his mental retardation and additional mitigating evidence.<sup>390</sup> The court ultimately denied Maldonado’s petition and granted summary judgment for the State.<sup>391</sup>

According to Maldonado, his trial counsel’s failure to investigate and present information concerning his mental retardation<sup>392</sup> was a critical omission because such evidence would have diminished the impact of his confession in the guilt phase and also provided strong mitigation in the penalty phase.<sup>393</sup> Due to major debates at trial among medical experts regarding Maldonado’s intellectual abilities, however, the court found that Maldonado

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<sup>382</sup> *Id.* at 1243.

<sup>383</sup> *Id.*

<sup>384</sup> *Id.*

<sup>385</sup> *See id.*

<sup>386</sup> *Id.* (“The compelling and extensive evidence of Mr. Bryan’s history of mental illness creates a reasonable probability that the jury would have concluded that the mitigating evidence outweighed the continuing threat aggravator and might also be viewed in a mitigating light as to past violent behavior.”).

<sup>387</sup> 662 F. Supp. 2d at 684.

<sup>388</sup> *Id.* at 689.

<sup>389</sup> *Id.* at 689–90.

<sup>390</sup> *Id.* at 692.

<sup>391</sup> *Id.* at 690.

<sup>392</sup> *Id.* at 749.

<sup>393</sup> *Id.*

was not sufficiently “subaverage”<sup>394</sup> and therefore had not demonstrated his counsel’s ineffectiveness.<sup>395</sup>

Next, Maldonado argued that trial counsel performed deficiently and prejudicially in declining to present his mental retardation as a mitigating factor against his death sentence.<sup>396</sup> The court, in reviewing this claim, noted the potential threat of future dangerousness and the challenges attorneys confront when considering whether to introduce mental retardation in the penalty phase.<sup>397</sup> In *Atkins*,<sup>398</sup> for example, the U.S. Supreme Court acknowledged that a jury could view mental retardation as both a mitigating factor and an aggravating factor predictive of a defendant’s future dangerousness.<sup>399</sup> Moreover, the Fifth Circuit had similarly embraced this double-edged-sword concept, holding that a trial attorney’s decision to omit mental retardation evidence can be reasonable as a means to preclude a jury’s finding of future dangerousness.<sup>400</sup> Thus, once again, the *Maldonado* court determined that counsel was not ineffective under *Strickland*.<sup>401</sup>

Regarding the pertinent issue of future dangerousness, the court would have weighed the aggravating factor of Maldonado’s “violent and lawless history” against the potentially mitigating evidence of his alleged mental retardation had trial counsel presented such evidence.<sup>402</sup> As the court explained, this comparison would not have helped Maldonado: “[w]hile low intelligence may have allowed the jury to find that Maldonado was (as suggested by the facts of the murder) a follower, that evidence also could have shown him to be a future danger when again encouraged by others to be violent.”<sup>403</sup> The court emphasized in particular the various ways such evidence could be viewed for good or for ill: “[t]he double-edged nature of the mitigating evidence would make it not reasonably probable that the jury would answer the special issues differently had trial counsel emphasized low intelligence in the punishment phase.”<sup>404</sup>

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<sup>394</sup> *Id.* at 734–35.

<sup>395</sup> *Id.* at 751.

<sup>396</sup> *Id.* at 752.

<sup>397</sup> *Id.*

<sup>398</sup> 536 U.S. at 321 (holding that the execution of mentally retarded individuals violates the Eighth Amendment’s ban on cruel and unusual punishments).

<sup>399</sup> *Maldonado*, 662 F. Supp. 2d at 752 (citing *Atkins*, 536 U.S. at 321).

<sup>400</sup> *Id.*

<sup>401</sup> *Id.* at 752–53 (“The Fifth Circuit has previously found no *Strickland* prejudice in failing to present evidence of low IQ because the upper borderline of mild retardation does not amount to any significant organic damage or mental illness.” (internal quotations omitted)).

<sup>402</sup> *See id.* at 753.

<sup>403</sup> *Id.*

<sup>404</sup> *Id.*

Ultimately the court held that Maldonado's claim did not have sufficient merit.<sup>405</sup> While the double-edged-sword concept can appear compelling in theory, such a balance becomes challenging in practice, particularly when so many other factors pertaining to cognitive deficiency are considered clearly mitigating.<sup>406</sup> As the next case shows, the double-edged-sword analogy has additional interpretations beyond those discussed so far.

#### 4. The Two Sides of Cognitive Deficiency

In *People v. Peeples*,<sup>407</sup> defendant-petitioner sought post-conviction relief after the appellate court affirmed his convictions, including first-degree murder.<sup>408</sup> On a post-conviction appeal, Peeples alleged for the second time that his counsel was ineffective for neglecting to research and present mitigating evidence pertaining to Peeples's disturbing family circumstances, his cognitive deficiencies, and his possible neurological disorders.<sup>409</sup>

The lower circuit court rejected Peeples's argument, emphasizing in particular that not only was such evidence a double-edged sword, it also leaned in favor of future dangerousness.<sup>410</sup> Specifically, the court held that the "additional mitigation evidence regarding defendant's family background and psychological condition 'would tend to show the court that [defendant] is, in fact, dangerous,' as well as '*his capacity for future conduct*.'"<sup>411</sup> Such evidence, therefore, would not necessarily be viewed as mitigating.<sup>412</sup>

The opinion also noted that Peeples's attorneys did make some effort to gather and present mitigation evidence, as demonstrated by their request for a continuance between the guilt phase and penalty phase.<sup>413</sup> In particular, counsel discovered that Peeples had been injured in a car accident several years prior to the case and had suffered spinal meningitis in his youth, both of which "may have affected [Peeples's] brain."<sup>414</sup> Moreover, counsel demonstrated sound trial strategy in utilizing their witnesses to account for Peeples's social background at the mitigation stage, thereby blunting the effect of Peeples's potential for future danger.<sup>415</sup> As the court stated, "[t]he record shows that defense counsel made a strategic choice to argue that

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<sup>405</sup> *Id.*

<sup>406</sup> See *supra* notes 155–272 and accompanying text.

<sup>407</sup> 793 N.E.2d at 641.

<sup>408</sup> *Id.* at 654.

<sup>409</sup> *Id.* at 655.

<sup>410</sup> *Id.* at 659.

<sup>411</sup> *Id.* (emphasis added).

<sup>412</sup> See *id.*

<sup>413</sup> *Id.* at 677–78.

<sup>414</sup> *Id.* at 677.

<sup>415</sup> *Id.* at 679.



there were ‘two William Peeples. The William Peeples that family and friends knew and the William Peeples that the jury convicted of murder.’”<sup>416</sup> In addition, counsel had, while presenting mitigation, emphasized Peeples’s positive characteristics and requested that the judge regard Peeples as someone whose life had value and who deserved forgiveness.<sup>417</sup>

Ultimately, the court concluded that Peeples sufficiently demonstrated under *Strickland* prong 1 that trial counsel was constitutionally deficient for failing to investigate and present the mitigating evidence of Peeples’s cognitive deficiency.<sup>418</sup> The court also found, however, that counsel’s deficiency did not prejudice Peeples under *Strickland* prong 2, so Peeples’s claim failed.<sup>419</sup>

In an attempt to explain its denial of prong 2, the court cited its own precedent regarding future dangerousness and the double-edged nature of certain mental health mitigation evidence.<sup>420</sup> Essentially, the precedent holds that when a jury considers evidence of mental dysfunction, the jury may find such evidence mitigating or aggravating “depending, of course, on whether the individual hearing the evidence finds that it evokes compassion or demonstrates possible future dangerousness.”<sup>421</sup> In rejecting Peeples’s claim that the evidence of mental impairment would have been mitigating, the court reasoned that one of the expert witness’s reports “may have been harmful” to Peeples’s arguments because it stated that Peeples’s academic achievement was at the high school level.<sup>422</sup> Further, Peeples’s “‘recollection of past events tend[ed] to ‘normalize’ his experience’” because Peeples “‘minimized or denied’” so many of his life’s problems.<sup>423</sup> Without providing any scientific justification for its conclusion, the court weighed all these factors negatively; that is, in the court’s view, had the jury heard such evidence about Peeples’s mental impairments, in addition to Peeples’s history of violent behavior, “the sentencer could have reasonably concluded that this evidence demonstrated [Peeples’s] future dangerousness.”<sup>424</sup>

The court also rejected Peeples’s *Strickland* claim regarding his disturbing family background, which Peeples contended should have been presented in mitigation, because the court believed the information contained

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<sup>416</sup> *Id.*

<sup>417</sup> *Id.*

<sup>418</sup> *Id.* at 680.

<sup>419</sup> *Id.*

<sup>420</sup> *See id.* at 681 (reviewing case law from U.S. Court of Appeals for the Seventh Circuit and Supreme Court of Illinois).

<sup>421</sup> *See id.* at 682 (internal quotations omitted).

<sup>422</sup> *Id.*

<sup>423</sup> *Id.* at 683.

<sup>424</sup> *See id.*

“powerful evidence of defendant’s future dangerousness.”<sup>425</sup> For example, “the evidence reveals that, throughout his life, defendant had a quick and violent temper, and that this violence animated his relationships with his family, friends, and, most especially, with women.”<sup>426</sup> For all these reasons, the court determined that what Peeples viewed as mitigation could have just as easily, and perhaps even more likely, been viewed as aggravating evidence by a reasonable jury.<sup>427</sup> Therefore, trial counsel’s failure to produce such evidence, even if constitutionally deficient, did not prejudice Peeples under *Strickland*.<sup>428</sup>

Similar to the other future dangerousness cases, however, the court provided no documentation or support for its conclusions beyond simple speculation or, in some instances, remote prior precedent. All of the evidence that Peeples deemed relevant for mitigation was, by contrast, considered critical by the courts discussed in Part II’s *Strickland* claim cases.

## 5. The Role of Psychiatric Experts

In *Smith v. Workman*,<sup>429</sup> Smith was convicted of first degree murder and sentenced to death.<sup>430</sup> Smith’s first petition for habeas relief was denied in state court, and he subsequently appealed to the court under review here for habeas relief.<sup>431</sup>

Smith first argued that his counsel was ineffective for failing to request an *Ake* expert at the mitigation stage.<sup>432</sup> In 1985, in *Ake v. Oklahoma*,<sup>433</sup> the U.S. Supreme Court held that “when a defendant demonstrates to the trial judge that his sanity at the time of the offense is to be a significant factor at trial, the State must, at a minimum, assure the defendant access to a competent psychiatrist.”<sup>434</sup> With respect to the mitigation stage of the trial, the Court determined that the State is obligated to provide a defendant a psychiatric expert “when the State presents *psychiatric evidence* of the defendant’s future dangerousness.”<sup>435</sup> According to Smith, *Ake* applies “when *any* evidence of future dangerousness is introduced,” not just psychiatric evidence.<sup>436</sup> Therefore, in Smith’s view, his counsel was ineffective for not

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<sup>425</sup> *Id.* at 684.

<sup>426</sup> *Id.* at 683.

<sup>427</sup> *Id.*

<sup>428</sup> *Id.* at 681.

<sup>429</sup> 550 F.3d at 1258.

<sup>430</sup> *Id.* at 1262.

<sup>431</sup> *Id.*

<sup>432</sup> *Id.* at 1265.

<sup>433</sup> 470 U.S. 68, 83 (1985).

<sup>434</sup> *Id.*

<sup>435</sup> *Id.* (emphasis added).

<sup>436</sup> *Smith*, 550 F.3d at 1265.

requesting an *Ake* expert despite the State's decision to exclude psychiatric evidence of Smith's future dangerousness.<sup>437</sup>

The court found that Smith's argument was correct on the merits because the State did present evidence of future dangerousness as an aggravating factor.<sup>438</sup> Smith's claim failed, however, because of its timing.<sup>439</sup> As the court noted, Smith's case was tried and his sentence was handed down during a period when the courts in Oklahoma interpreted *Ake* very narrowly; specifically, *Ake* was applied only when the State introduced expert psychiatric evidence to demonstrate future dangerousness.<sup>440</sup> Thus, counsel's failure to call an *Ake* expert when Smith's trial took place did not adequately support a *Strickland* claim even though, had the failure occurred at the time of the Tenth Circuit appeal, it would have.<sup>441</sup>

Smith also asserted that counsel failed to adequately investigate and present readily available mitigation evidence—specifically, “evidence of deprivation, neglect, physical abuse, psychological problems, addiction, and brain damage.”<sup>442</sup> The court accepted, however, counsel's contention that omitting certain kinds of evidence about Smith was a reasonable strategic decision because such information “might actually enhance rather than mitigate the State's argument that [Smith] presented a continuing threat.”<sup>443</sup> In addition to detailing counsel's investigation and presentation of mitigation at trial, the court also emphasized that counsel was “understandably reluctant” to present specific mitigation witnesses and evidence.<sup>444</sup> In particular, counsel testified that he did not want mitigation witnesses to “open the door” to Smith's “lifetime propensity for fighting,” which would have supported an aggravating factor of future dangerousness.<sup>445</sup> The court concluded that despite the evidence that could have been introduced, such as childhood abuse, “addiction problems, psychological problems, brain injury and borderline intelligence,” Smith's counsel did not perform unreasonably un-

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<sup>437</sup> *Id.* (citing *Ake*, 470 U.S. at 83).

<sup>438</sup> *Id.* at 1266.

<sup>439</sup> *Id.* at 1266–67.

<sup>440</sup> *See id.*

<sup>441</sup> *Id.*

<sup>442</sup> *Id.* at 1270.

<sup>443</sup> *Id.* at 1271.

<sup>444</sup> *Id.*

<sup>445</sup> *Id.*

der the circumstances.<sup>446</sup> Therefore, the court affirmed Smith's death sentence.<sup>447</sup>

*Smith* is an unusual case because it is based, in part, on the interpretation of legal decisions that have since been expanded to broaden the scope of *Ake*.<sup>448</sup> In addition, *Ake* is an important Supreme Court decision that provides some protection for defendants involved in future dangerousness cases. That said, like the other cases in this Section, the evidence at issue in *Smith* could just as easily be regarded as mitigating.

Overall, then, this Part discussed the future dangerousness cases focusing on the contradictions presented by the double-edged-sword concept. On the one hand, courts urge attorneys to fully investigate and present mitigating evidence such as neuroscience; they discipline those who fail to do so under appropriate circumstances, especially when defendants face a death sentence. On the other hand, in a limited number of cases, courts also accept arguments that neuroscience evidence can be indicative of a defendant's future dangerousness. The justifications for future dangerousness arguments are complex and varied, but they should not be ignored. Neuroscience evidence overwhelmingly occupies the halls of mitigation—hence the myth of the double-edged sword—but danger can lie at the ends of those halls and attorneys should be prepared for it.

## CONCLUSION

In recent years, the increasing acceptance of neuroscience evidence in the criminal justice system has spurred controversy, raising questions about how such evidence is applied. This Article tackles those questions by analyzing my unprecedented empirical Study of the 800 criminal cases that

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<sup>446</sup> See *id.* According to Smith's counsel, Smith and his family hindered his efforts to investigate Smith's history of "drugs, abuse, and mental illness." *Id.* at 1272. In light of "the apparent good faith in which the counsel conducted the investigation and the lack of transparency on the part of his primary sources of information [Smith and his family members]," the court determined that counsel's performance was reasonable. *Id.*

<sup>447</sup> *Id.* at 1274.

<sup>448</sup> See *Fitzgerald v. State*, 972 P.2d 1157, 1169 n.43 (Okla. Crim. App. 1998) (explaining that the interpretation of *Ake* had "significantly changed" since its "narrowest possible construction" was used in *Brewer v. State*, which held that *Ake* merely requires a psychologist to be appointed when the State introduces an expert to testify about a defendant's future dangerousness); *Brewer v. State*, 718 P.2d 354, 363–64 (Okla. Crim. App. 1986), *overruling recognized by Fitzgerald*, 972 F.2d at 1169 n.43; see also *Rogers v. Gibson*, 173 F.3d 1278, 1285 (10th Cir. 1999) (noting that, under *Ake*, a defendant is entitled to have a psychological expert appointed when a defendant shows that the state introduced any evidence—even if it was not an expert—relating to the defendant's future dangerousness, and defendant's "mental condition was likely to be a significant mitigating factor" at trial); *Liles v. Saffle*, 945 F.2d 333, 340 (10th Cir. 1991) (expanding *Brewer* by holding that, under *Ake*, a defendant is entitled to have a psychological expert appointed when a defendant can show that "his sanity was likely 'to be a significant factor at trial'" even if the State does not introduce an expert to testify about the defendant's future dangerousness).

addressed neuroscience evidence over the course of two decades (1992–2012). The Study’s results suggest that not only is much of the controversy concerning the role of neuroscience unwarranted, but also that the use of such evidence has been misunderstood. Neuroscience is often viewed as a “double-edged sword,” capable both of lessening and enhancing a defendant’s blameworthiness; yet, that view fuels myths that neuroscience will either justify the freeing of violent criminals or bolster unjust predictions regarding defendants’ future dangerousness.

My Study reveals a criminal justice system that accepts both the strengths and limitations of neuroscience evidence in ways that discredit the myth of the double-edged sword. For example, results show that neuroscience evidence is usually offered to mitigate punishments in the way that traditional criminal law has always allowed, and to provide fact-finders with more complete, reliable, and precise information when determining a defendant’s fate. Likewise, the Study uncovers a criminal justice system that is willing to accept modern methods of assessing defendants’ mental capabilities, and expects its attorneys to do the same. Indeed one of the Study’s most striking findings concerns the parameters of ineffective assistance of counsel claims: courts not only expect attorneys to investigate and use available neuroscience evidence in their cases when it is appropriate, but they penalize attorneys who neglect this obligation.

This Article further examines one of the most widely held myths about the double-edged sword—that prosecutors will use neuroscience evidence to fuel arguments that a defendant is a future danger and therefore deserves death or extensive incarceration. To the contrary, however, my Study found that neuroscience evidence is only rarely used to bolster a defendant’s future dangerousness and that prosecutors employ a variety of purported strategies in making such arguments. Indeed, as courts continue to support neuroscience tools and raise new questions, my Study’s empirical data will provide a foundation for discussions regarding the use of neuroscience evidence in criminal cases. The findings presented in this Article will also ensure that those discussions are grounded in fact rather than hyperbole.

APPENDIX

Chart 1  
Severity of Sentence by Number of Cases  
553 Total Cases

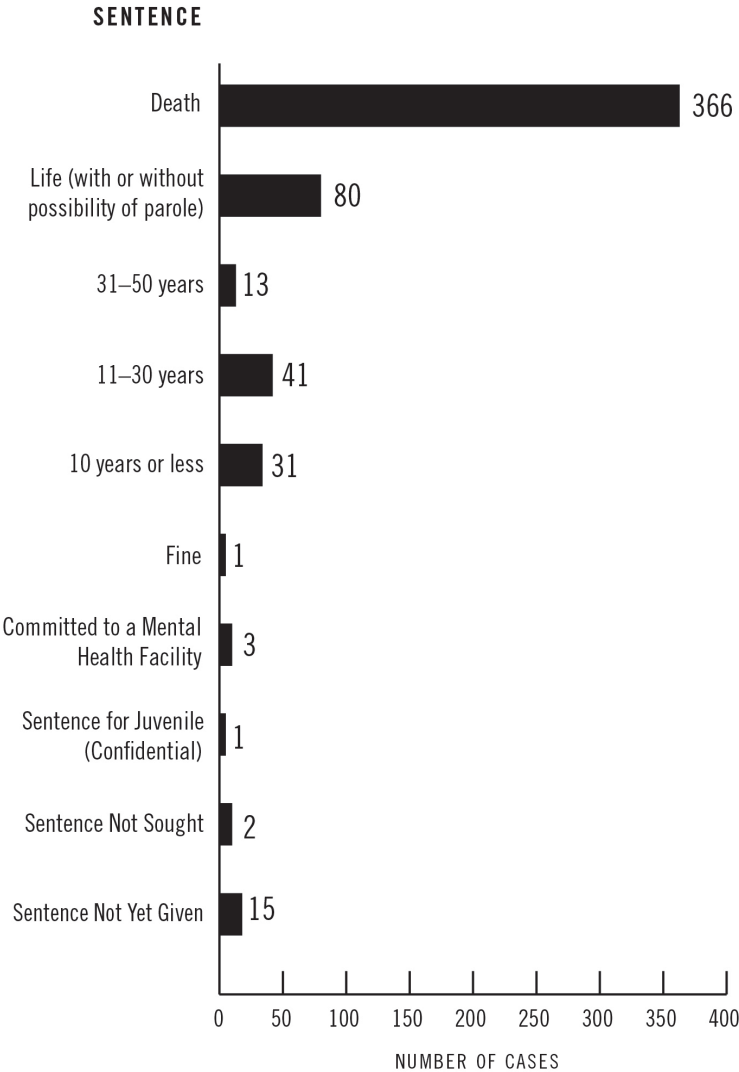
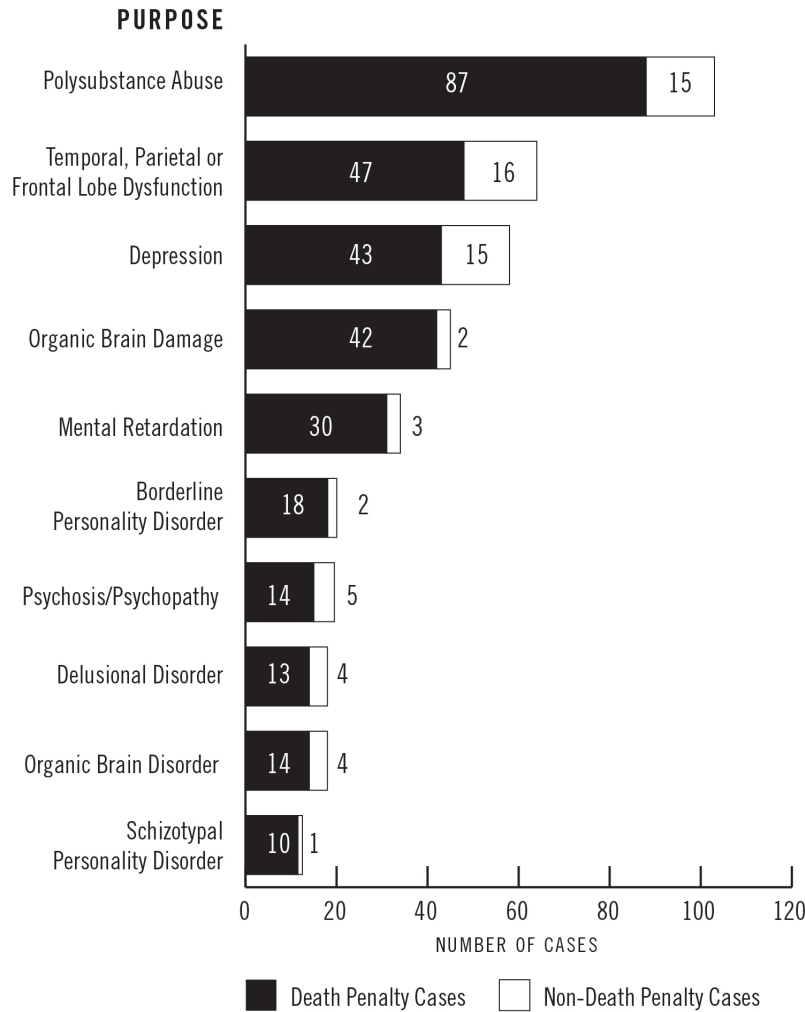
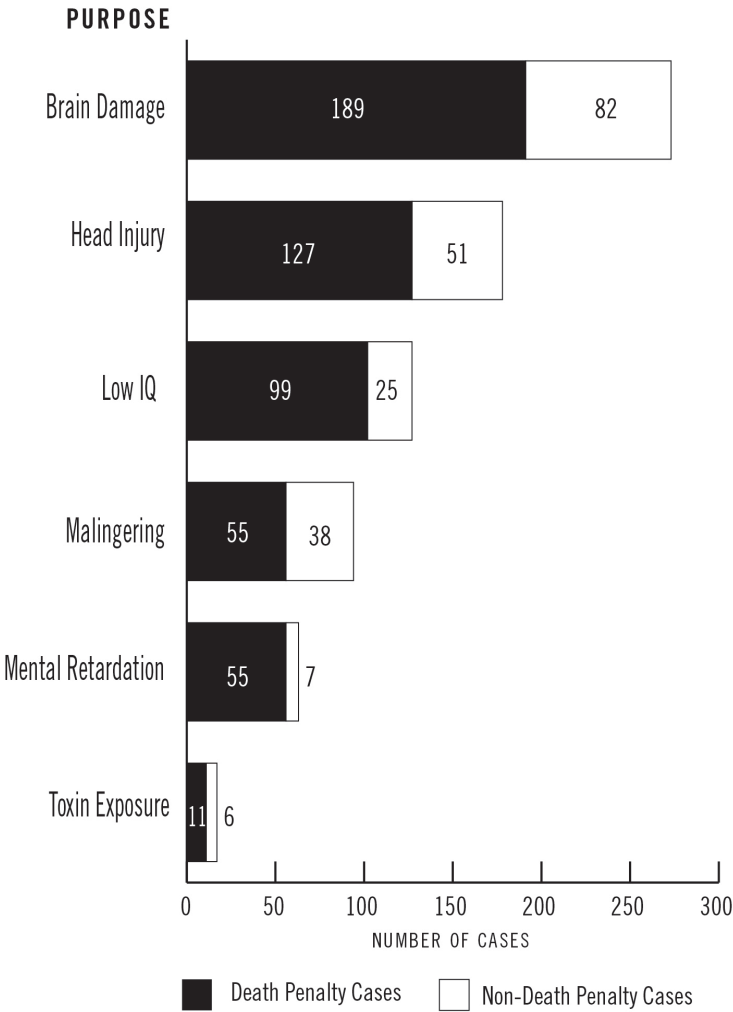


Chart 2  
Confirmed Neuroscientific Diagnoses by Number of Cases\*  
553 Total Cases



\* Categories are not mutually exclusive

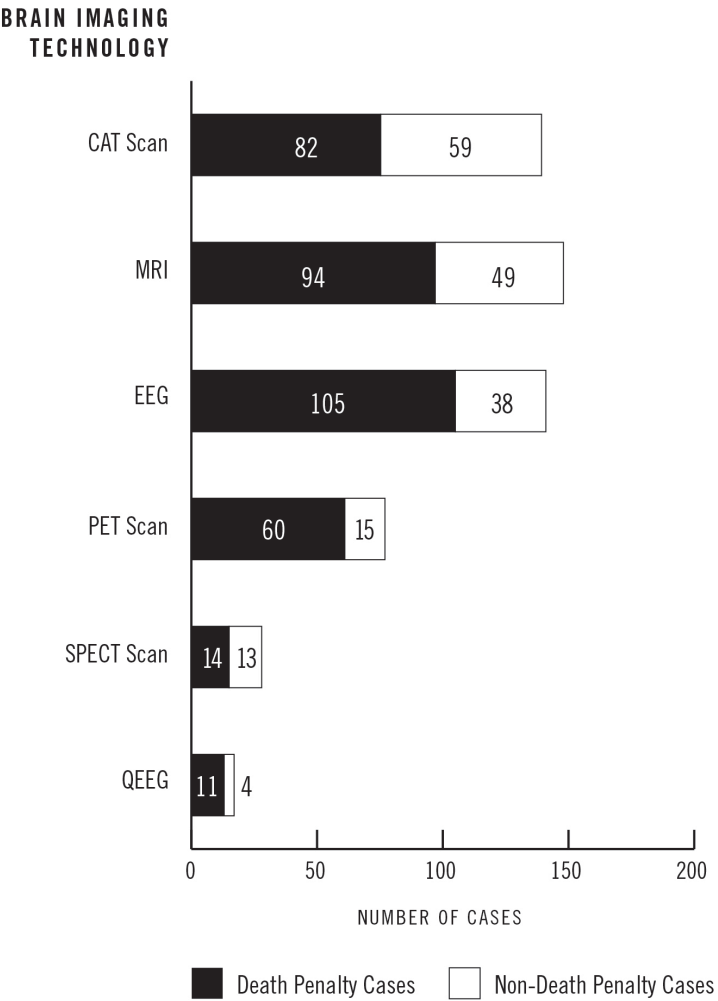
Chart 3  
Purpose of Presenting Neuroscience Evidence by Number of Cases\*  
553 Total Cases



\* Categories are not mutually exclusive

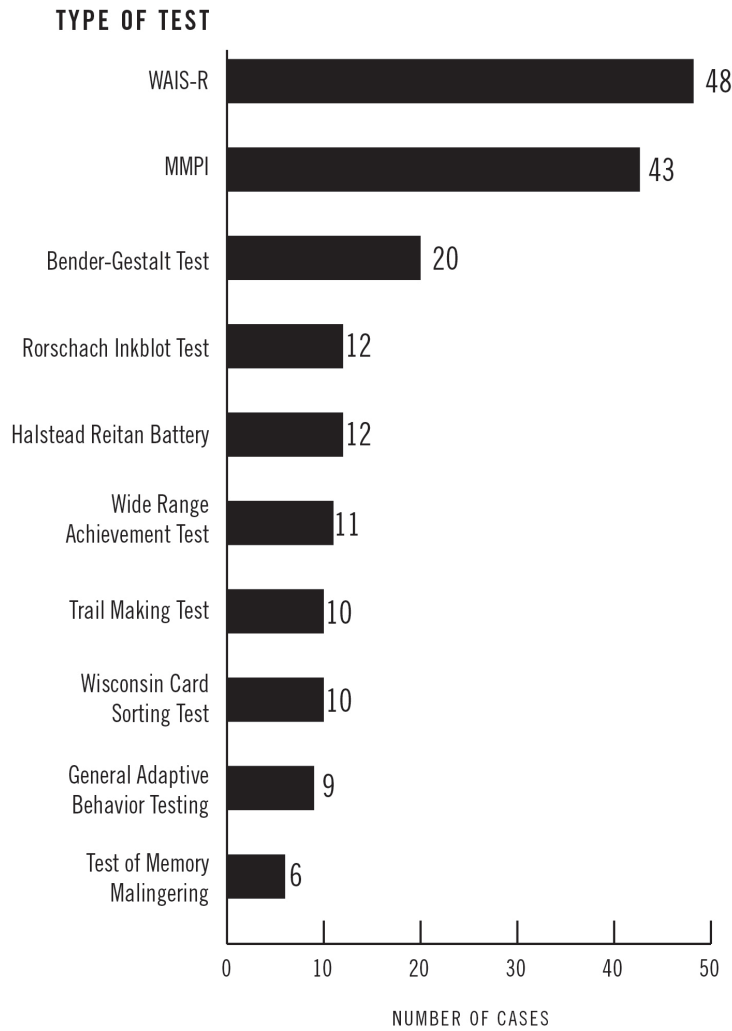


Chart 4  
Use or Discussion of Brain Imaging Technology by Number of Cases\*  
553 Total Cases



\* Categories are not mutually exclusive

Chart 5  
Use or Discussion of Non-Imaging Tests by Number of Cases\*\*  
553 Total Cases

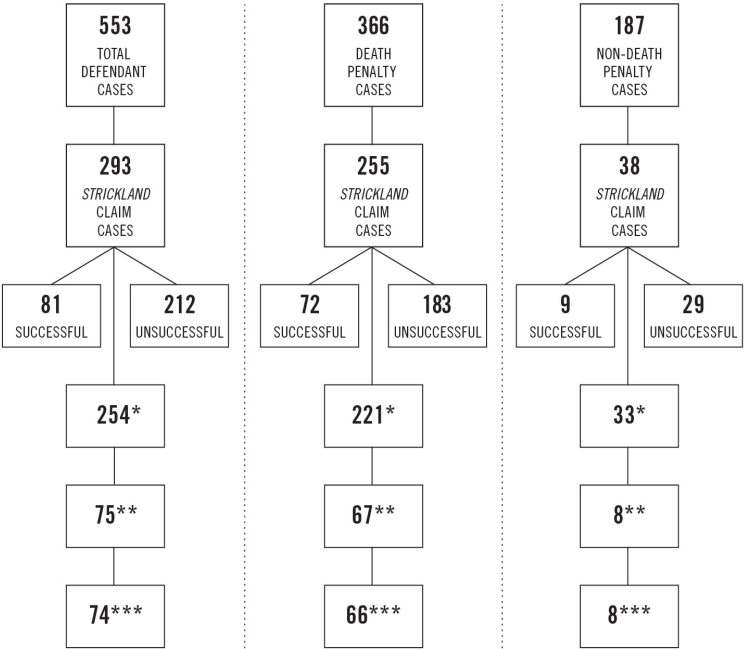


\* Categories are not mutually exclusive  
+ Chart 5 lists the top 10 most widely used tests. There were 68 additional types of tests.

Chart 6

Number of Cases Raised To Support at Least One Claim  
of Ineffective Assistance of Counsel

553 Total Cases

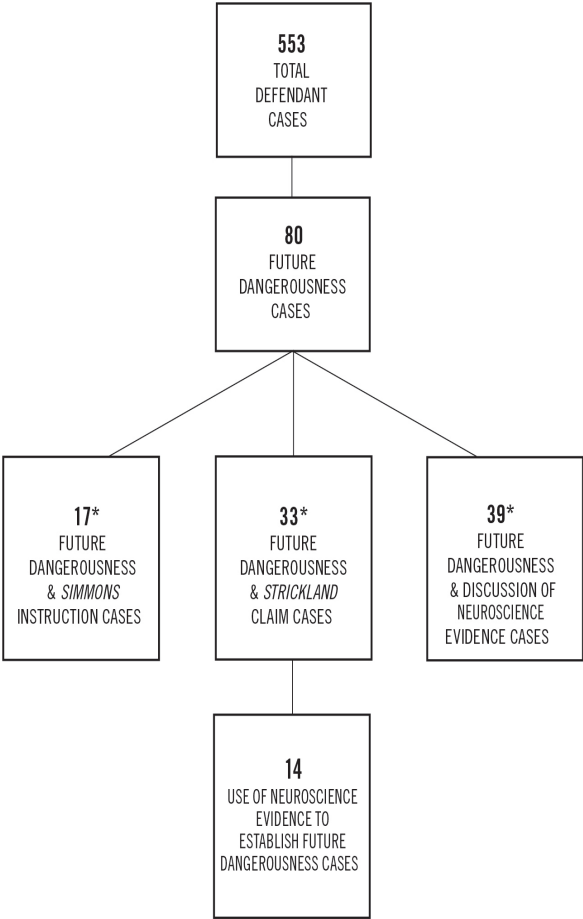


\*Category 1: Number of *Strickland* claim cases that featured at least one claim based on misuse or non-use of neuroscience evidence

\*\*Category 2: Number of *Strickland* claim cases in Category 1 that were granted

\*\*\*Category 3: Number of *Strickland* claim cases in Category 1 that were granted based on the misuse or non-use of neuroscience evidence

Chart 7  
Number of Cases Addressing Defendants' Future Dangerousness\*  
553 Total Cases



\* Categories are not mutually exclusive

