

Fordham Urban Law Journal

Volume 41, Number 1

2015

Article 3

THE NEW NORMAL: GRAPPLING WITH TERRORISM IN URBAN
SPACES

A Fair Trial: When the Constitution Requires Attorneys to Investigate Their Clients' Brains

Ellen G. Koenig*

*Fordham University School of Law

Copyright ©2015 by the authors. *Fordham Urban Law Journal* is produced by The Berkeley
Electronic Press (bepress). <http://ir.lawnet.fordham.edu/ulj>

A Fair Trial: When the Constitution Requires Attorneys to Investigate Their Clients' Brains

Ellen G. Koenig

Abstract

The U.S. Constitution guarantees every criminal defendant the right to a fair trial. This fundamental right includes the right to a defense counsel who provides effective assistance. To be effective, attorneys must sometimes develop specific types of evidence in crafting the best defense. In recent years, the U.S. Supreme Court has found that defense attorneys did not provide effective assistance when they failed to consider neuroscience. But when must defense attorneys develop neuroscience in order to provide effective assistance? This question is difficult because the standard for determining effective assistance is still evolving. There are two leading approaches. First, in *Strickland v. Washington*, the Court adopted a two-prong “reasonableness” test, which, according to Justice O’Conner, may result in court decisions that fail to properly protect a criminal defendant’s rights. Recently, courts have adopted a second approach based on guidelines promulgated by the American Bar Association. This Note aims to answer this question. It first provides a background on the right to effective assistance of counsel and briefly describes neuroscience evidence, oppositions to and limitations on its use, and its admissibility in court. Second, this Note attempts to give some guidance to attorneys by exploring the American Bar Association and U.S. Supreme Court standards. Third, it summarizes the results of a statistical analysis conducted by the author, which helps further define when courts require attorneys to develop neuroscience evidence. It concludes by arguing that attorneys need guidance to ensure they are not violating the Sixth Amendment. This Note expands on the American Bar Association’s standard and suggests a framework attorneys may use to determine whether they should develop neuroscience evidence to ensure that their client has a fair trial.

KEYWORDS: Neuroscience; Criminal defense; Strickland

A FAIR TRIAL: WHEN THE CONSTITUTION REQUIRES ATTORNEYS TO INVESTIGATE THEIR CLIENTS' BRAINS

*Ellen G. Koenig**

ABSTRACT

The U.S. Constitution guarantees every criminal defendant the right to a fair trial. This fundamental right includes the right to a defense counsel who provides effective assistance. To be effective, attorneys must sometimes develop specific types of evidence in crafting the best defense. In recent years, the U.S. Supreme Court has found that defense attorneys did not provide effective assistance when they failed to consider neuroscience. But when must defense attorneys develop neuroscience in order to provide effective assistance? This question is difficult because the standard for determining effective assistance is still evolving. There are two leading approaches. First, in *Strickland v. Washington*, the Court adopted a two-prong “reasonableness” test, which, according to Justice O’Conner, may result in court decisions that fail to properly protect a criminal defendant’s rights. Recently, courts have adopted a second approach based on guidelines promulgated by the American Bar Association.

This Note aims to answer this question. It first provides a background on the right to effective assistance of counsel and briefly describes neuroscience evidence, oppositions to and limitations on its use, and its admissibility in court. Second, this Note attempts to give some guidance to attorneys by exploring the American Bar Association and U.S. Supreme Court standards. Third, it summarizes the results of a statistical analysis conducted by the author, which helps further define when courts require attorneys to develop neuroscience evidence. It concludes by arguing that attorneys need

* JD Candidate, 2014, Fordham University School of Law; B.A., 2011, Baruch College. Many thanks to Professor Deborah W. Denno for her expertise, guidance, and lively discussions from this Note’s inception.

guidance to ensure they are not violating the Sixth Amendment. This Note expands on the American Bar Association's standard and suggests a framework attorneys may use to determine whether they should develop neuroscience evidence to ensure that their client has a fair trial.

TABLE OF CONTENTS

Introduction	179
I. The Sixth Amendment, Effective Assistance, and Neuroscience: A Preliminary Framework for Understanding Counsel's Obligations.....	185
A. The Sixth Amendment's Right to (Effective) Assistance of Counsel.....	185
1. The U.S. Supreme Court's Delineated Framework: <i>Strickland v. Washington</i>	186
a. Deficient Performance	187
b. Actual Prejudice.....	189
2. The ABA's Guidelines: Expanding on <i>Strickland</i> to Further Explain Sixth Amendment Requirements.....	189
B. What Is Neuroscience?.....	190
1. Neuroscience Evidence Is Currently Used in Criminal Courts	191
2. Opposition: What Is Special About Scientific Evidence?	193
C. What Exactly Is "Neuroscience Evidence"?.....	194
1. Brain Scans.....	195
a. Function: Reveals the Living Brain	195
b. Structure: Anatomical Structure	197
c. Limitations.....	198
2. Neuroscience Evaluations	199
D. Admissibility of Neuroscience Evidence.....	200
II. Delineated Standards: When the ABA and <i>Strickland</i> Require Counsel to Develop Neuroscience Evidence in Their Background Investigation.....	202
A. The ABA Guidelines: Attorneys Must Develop Neuroscience Evidence in Some Cases	202
B. When the <i>Strickland</i> Standard Requires Attorneys to Develop Neuroscience Evidence	204
III. Case Analysis: Recent Court Decisions (Sometimes) Require Attorneys to Develop Neuroscience Evidence	207
A. Case Law Analysis	208

B. Results: Common Characteristics	209
C. Results: Duty to Investigate Red Flags	210
D. Red Flags.....	211
1. Head Injury	211
2. Low Intellectual Functioning.....	213
3. Serious Substance Abuse.....	214
4. Childhood Abuse	215
IV. Proposed Framework: A “Reasonable Investigation” Should Include Investigating a Defendant’s Mental Health Background, and, if Necessary, Developing Neuroscience Evidence	216
A. Attorneys Need More Specific Instructions to Determine if Neuroscience Evidence is Required	216
B. Proposed Framework to Satisfy Sixth Amendment Requirements	217
1. Initial Interview	217
2. Background Investigation	218
3. Follow-Up if Red Flags Are Detected.....	219
Conclusion.....	220
Appendix.....	222

INTRODUCTION

David Perkins was brutally attacked by several men when he was twenty years old.¹ Although it is unclear what precipitated the attack, the impact on Mr. Perkins was permanent.² During the attack Mr. Perkins’s attackers used a pronged rake to stab Mr. Perkin’s head, which left a permanent hole in his skull and brain.³ Mr. Perkins also had a car-accident related head injury two years earlier that left him in a coma for five days and caused him to lose six months of memory.⁴ Taken together, these two head injuries left Mr. Perkins a man with a hole in his skull, who occasionally blacked out, experienced blurry vision, and suffered from short-term memory problems⁵—all physical symptoms that neurologists say may indicate brain damage.

Physically, these head injuries left Mr. Perkins permanently impaired, mentally, the effects haunted his daily life.⁶ After these

1. *See Perkins v. Hall*, 708 S.E.2d 335, 343 (Ga. 2011).

2. *See id.*

3. *Id.*

4. *See id.*

5. *See id.*

6. *See id.* at 343–44.

injuries, friends, family, and acquaintances noticed he was not the same⁷—he suffered from, as the highest court in Georgia described, “significant personality and cognitive changes.”⁸ He would drink heavily, stare blankly into space, and suffer fits of unprovoked violence that he failed to remember after.⁹ For example, he once stabbed a couch with a knife and did not remember doing so afterwards.¹⁰

Unfortunately, even before these head injuries Mr. Perkins’ life was already filled with emotional, physical, and sexual abuse.¹¹ Starting when he was three years old, his father beat and provided him with drugs and alcohol.¹² The degradation continued into adulthood where his father would beat and urinate on him.¹³ Eventually, Mr. Perkins, who suffered from depression and was haunted by perpetual flashbacks from the physical and sexual abuse, tried to commit suicide by slitting his wrists with a razor blade.¹⁴

On Saturday, August 12, 1995, Mr. Perkins played guitar and drank beer in his apartment with a neighbor.¹⁵ Around midnight, without provocation,¹⁶ Mr. Perkins hit his neighbor with a guitar, brutally stabbed him with a knife eleven times, and crushed a liquor bottle over his head.¹⁷ At 5:00 a.m.—with bloodstains covering his neighbor’s body—he called his wife, who was staying at her mother’s house,¹⁸ and asked her to bring him over two cigarettes.¹⁹ After his wife came to the apartment, which was covered in blood, she left to call the police.²⁰ Mr. Perkins then went to a different neighbor’s door to ask for some cigarettes.²¹ Ultimately, Mr. Perkins was found guilty of murder that was “outrageously and wantonly vile, horrible, and

7. *See id.*

8. *Id.* at 343.

9. *See id.*

10. *See id.*

11. *See id.* at 342.

12. *See id.*

13. *See id.*

14. *See id.* at 342–43

15. *See Perkins v. State*, 505 S.E.2d 16, 18 (Ga. 1998)

16. While Perkins claims his attack was in self-defense, *see Hall*, 708 S.E.2d at 339, he had no defensive wounds and the forensic evidence disproved the defense. *See Brief for Appellee at 5, Perkins v. State*, 505 S.E.2d 16 (Ga. 1998) (No. S98P0624), 1998 WL 34187305.

17. *See Hall*, 708 S.E.2d at 339.

18. *See Perkins*, 505 S.E.2d at 18.

19. *See id.*

20. *See id.*

21. *See id.*

inhuman in that it involved depravity of mind.”²² During his trial, he “taunted the courtroom by making boxing gestures” at the jury.²³

At trial, Mr. Perkin’s behavior was, as his appointed trial counsel coined, “bizarre” to say the least because he did not want his counsel to speak with his family or to investigate his childhood background—he even fired one of his attorneys for asking a woman who visited him in jail about his mental health.²⁴ He was adamant that he was not “crazy” and refused to be examined by any mental health experts.²⁵ His defense team did make an unsuccessful motion to have him committed to a psychiatric hospital to be observed and made a motion to have him found incompetent to stand trial, which they later withdrew.²⁶

Fifteen years later, the Georgia Supreme Court found that Mr. Perkins’ Sixth Amendment right to effective assistance of counsel was violated when a jury sentenced him to death because his counsel did not investigate his brain injury.²⁷ In particular, these attorneys (1) limited their investigation of his background to just interviewing his ex-wife and mother and (2) did not review his medical records.²⁸ The vast majority of ineffective assistance of counsel claims are unsuccessful because of the strong presumption that attorneys effectively represent their clients.²⁹ But in Mr. Perkins’s case, the court found he had a right to have neuroscience evidence—evidence

22. *See id.* at 17.

23. *Profiles of Inmates on Georgia’s Death Row*, AUGUSTA CHRONICLE, Sept. 22, 1997, http://chronicle.augusta.com/stories/1997/09/22/met_214998.shtml.

24. *See id.* at 340–41; Brief for Respondent at 19, *Perkins v. Hall*, 708 S.E.2d 335 (2011) (No. S10A1754), 2010 WL 4955480 (“Appellant informed trial counsel that ‘he did not want them speaking with his family’ and he did not want trial counsel to ‘go into a great deal of his childhood background,’ and if trial counsel tried to discuss these issues despite Appellant’s position, Appellant would get confrontational.”).

25. *See Hall*, 708 S.E.2d at 344. Perkins said he did not want to meet with the mental health experts because the mental health expert would want to interview someone, such as his wife, who would lie about him. *See id.*

26. *See id.* at 344, 347.

27. *See id.* at 344.

28. First, their background investigation consisted only of interviewing Mr. Perkins’s mother and ex-wife. *See generally* Brief for Respondent, *Hall*, 708 S.E.2d 335 (No. S10A1754). They also interviewed some jail inmates who could testify to his mental health. *See id.* at 20. Perkins’s mother led the defense attorneys to believe that no one else in the family would be willing to participate in Mr. Perkins’s defense and the attorneys took this assertion at face value. *See id.* Second, they also failed to acquire the medical records from the rake attack—records that the habeas attorneys had no problem acquiring—which would have demonstrated how the rake literally penetrated Mr. Perkins. *See Hall*, 708 S.E.2d at 340, 343.

29. *See infra* Part II.B.

of his brain injury—developed by defense counsel.³⁰ This Note aims to better explain why in this case and others like it, the Sixth Amendment quite simply *requires* counsel to develop neuroscience evidence regardless of the defendant’s wishes.³¹

This Note is one of the first pieces of scholarly research exclusively dedicated to understanding when the Sixth Amendment requires attorneys to use neuroscience evidence.³² Scholarship on this topic is long overdue as courts across the nation—from the U.S. Supreme Court down to local county courts—find the Sixth Amendment may require counsel to develop neuroscience evidence when preparing their cases.³³

Neuroscience is highly technical and sometimes controversial. As a result, attorneys may not intuitively know that the Sixth Amendment requires them to develop this evidence. Yet in recent times, uncovering what is contained in the human brain has become not only a mission for doctors, academics, and scholars, but also a central mission of the federal government.³⁴ As neuroscience inevitably advances, the connection or lack thereof, between the human brain and crime may become better known. Consequently, neuroscience may find its way ever more into our nation’s criminal courtrooms.³⁵

30. *See Hall*, 708 S.E.2d at 344.

31. *See id.*

32. Based on preemption searches conducted on Bloomberg, WestlawClassic, WestlawNext, and LexisNexis search databases. Search terms included the following in various forms: effective assist!, ineffective assist!, Sixth Amendment, Strickland, neuro!, brain, fMRI, functional magnetic resonance imaging, MRI, magnetic resonance imaging, PET scan, position emission tomography, CAT scan, computer axonal tomography, CT scan, EEG, electroencephalogram, SPECT, single-photon emission computed tomography, MRA, BEAN, brain fingerprinting, assistance.

33. *See* Appendix for sample.

34. In 2013 President Barack Obama, while pledging 100 million dollars towards a “BRAIN” project, explained how one of the federal government’s central missions is to study the brain at a level more refined than ever before. *See B.R.A.I.N. Initiative*, WHITE HOUSE (April 2, 2013), <http://www.whitehouse.gov/infographics/brain-initiative>. The Royal Society of London has also voiced support for continued study and exploration of neuroscience and law. *See ROYAL SOC’Y OF LONDON, BRAIN WAIVES MODULE 4: NEUROSCIENCE AND THE LAW*, (2011), *available at* http://royalsociety.org/uploadedFiles/Royal_Society_Content/policy/projects/brain-waves/Brain-Waves-4.pdf.

35. For a general overview and analysis of neuroscience’s use in courts, *see* Susan A. Bandes, *The Promise and Pitfalls of Neuroscience for Criminal Law and Procedure*, 8 OHIO ST. J. CRIM. L. 119, 120 (2010) and 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, 931 (2011).

The U.S. Supreme Court and the American Bar Association (ABA) have created some standards attorneys can follow to determine if their performance is in line with the Sixth Amendment's right to effective assistance of counsel.³⁶ Unfortunately for neuroscience evidence, these standards are vague and may be difficult to practically apply.

To search for a standard that can be practically applied, the author did a comprehensive case search to attempt to locate all criminal cases in the last twenty years where courts found attorneys violated the Sixth Amendment for not developing neuroscience evidence.³⁷ The author then analyzed the over nine hundred cases that resulted from the search. The final case sample consists of seventy-four lower court decisions and five U.S. Supreme Court decisions.³⁸ These cases serve both as a source of authority for this Note and as a resource attorneys can use to help them determine when they must develop neuroscience evidence.

Mr. Perkins' story is illustrative of many cases where courts have found the Sixth Amendment requires attorneys to develop neuroscience evidence.³⁹ In his habeas petition, Mr. Perkins made the following three ineffective assistance of counsel claims: (1) that he was not competent to stand trial, (2) that his attorneys violated his

36. See *Strickland v. Washington*, 466 U.S. 668, 695 (1984) (listing the first and only framework the U.S. Supreme Court has iterated for analyzing ineffective assistance of counsel claims); *Criminal Justice Section Archive*, AM. BAR ASSOC., http://www.americanbar.org/publications/criminal_justice_section_archive.html (last visited Oct. 21, 2013) (listing the different Guidelines the American Bar Association's Criminal Justice Section promulgates).

37. See Appendix for case sample, although the search undoubtedly does not encompass all such cases.

38. The author used the electronic legal search database, WestlawNext, to search for all criminal cases since April 1, 1992 where courts found attorneys ineffective for not developing neuroscience evidence. The initial case search returned 983 cases. The author then read through each case to make sure they belonged in the sample. Most of the cases were eliminated because they were either not on point, found the attorney effective (instead of ineffective), or found the attorney ineffective for a reason unrelated to neuroscience. After initial analysis, seventy-four cases remained. As of March 25, 2013, the author could not find any key cite, head note, ALR or similar secondary source on either LexisNexis or WestlawNext that collected cases where a criminal defendant's Sixth Amendment rights were violated because his attorney failed to develop neuroscience evidence. Consequently, this case sample (contained in Appendix) appears to be one of the first on this topic and should give some aid to attorneys seeking to comply with the Sixth Amendment. Given that there are so many courts, including the U.S. Supreme Court, that have found and continue to find the Sixth Amendment sometimes requires neuroscience evidence, this case law analysis is both necessary and overdue.

39. See *infra* Part III.B for an in-depth analysis of how *Perkins* is similar to other ineffective assistance of counsel cases.

rights during the guilt phase, and (3) that his attorneys violated his rights during the sentencing phase of trial by not developing evidence regarding his brain injury even though they knew about the rake attack, which severally injured his brain.⁴⁰

Like most ineffective assistance of counsel claims, the court rejected Mr. Perkins' first claim for a procedural reason—he did not raise it on direct appeal. Further, the court did not consider Mr. Perkins' second claim asserting his trial attorneys were ineffective during the guilt phase of trial. As in many similar cases, it was only the third claim—that trial counsel was ineffective during the sentencing phase for not investigating his brain injury—that prevailed.

Like the court in *Hall*, courts are more likely to find that the Sixth Amendment requires counsel to offer neuroscience evidence during the sentencing phase, rather than in the guilt phase.⁴¹ The guilt phase of a trial occurs when the jury determines if a criminal defendant committed the charged crime beyond a reasonable doubt.⁴² If a defendant is found guilty, the sentencing phase affords the jury the ability to determine what the punishment will be.⁴³ This may be because the Federal Rules of Evidence strictly govern what evidence can be admitted during the guilt phase at trial so neuroscience evidence may not be admissible at all.⁴⁴ In contrast, the sentencing phase uses a “more is better” approach, and would prefer to let the jury see all reasonable available mitigating evidence—that is, any evidence that may help them conclude his act was less wrongful or evil.⁴⁵ For example, instances of prior abuse, the defendant's mental health, or prior brain injury may be mitigating evidence.⁴⁶

An important caveat is that just because the Sixth Amendment requires neuroscience evidence to be developed does not mean that it must be used—or is even admissible—at trial.⁴⁷ The purpose of developing this evidence is to inform counsel of possible defenses,

40. See *Perkins v. Hall*, 708 S.E.2d 335, 339 & n.2, 344. (Ga. 2011).

41. See *infra* Part III.B.

42. See generally Gary Goodpaster, *The Trial for Life: Effective Assistance of Counsel in Death Penalty Cases*, 58 N.Y.U. L. REV. 299, 330–31 (1983).

43. See *id.* at 334–35.

44. See Mark Pettit, Jr., *FMRI and BF Meet FRE: Brain Imaging and the Federal Rules of Evidence*, 33 AM. J.L. & MED. 319, 323–27 (2007).

45. See *id.*

46. See *Sixth Amendment—Ineffective Assistance of Counsel*, 121 HARV. L. REV. 255, 264 (2007).

47. See *infra* Part I.B.

even if they choose not to pursue them.⁴⁸ The scope of what the Sixth Amendment requires will be explored in Part II.

This Note is organized in four interrelated parts. Part I provides a background on the Sixth Amendment's right to effective assistance of counsel. It briefly describes neuroscience, oppositions to and limitations on its use, and its admissibility in Court. To guide attorneys, Part II provides an overview of the standards the ABA and U.S. Supreme Court have developed to explain when attorneys must develop neuroscience to be effective. Part III explains the results of a statistical analysis conducted by the author, which helps further define when courts already require attorneys to develop neuroscience evidence. Finally, Part IV explains why attorneys need guidance to ensure that they are not violating the Sixth Amendment, and expands on the ABA Guidelines by proposing a framework attorneys may use to determine whether or not they should develop neuroscience evidence.

I. THE SIXTH AMENDMENT, EFFECTIVE ASSISTANCE, AND NEUROSCIENCE: A PRELIMINARY FRAMEWORK FOR UNDERSTANDING COUNSEL'S OBLIGATIONS

This Part first describes the Sixth Amendment and how courts determine if counsel provided their client effective assistance. It then explains what neuroscience is and how it may be presented as evidence in a criminal trial.

A. The Sixth Amendment's Right to (Effective) Assistance of Counsel

The Sixth Amendment to the U.S. Constitution guarantees every criminal defendant the right to effective assistance of counsel⁴⁹ for two reasons: first, because every criminal defendant has a fundamental right to a fair trial,⁵⁰ and second, because our criminal

48. See ABA, *American Bar Association Guidelines for the Appointment and Performance of Defense Counsel in Death Penalty Cases*, reprinted in 31 HOFSTRA L. REV. 913, 1017–18 (2003).

49. See *McMann v. Richardson*, 397 U.S. 759, 771 n.14 (1970) (“[T]he right to counsel is the right to the effective assistance of counsel.”).

50. See *Strickland v. Washington*, 466 U.S. 668, 684 (1984). See also *Powell v. Alabama*, 287 U.S. 45 (1932); *Johnson v. Zerbst*, 304 U.S. 458 (1938); and *Gideon v. Wainwright*, 372 U.S. 335 (1963) for the line of cases that developed this right. The Court originally iterated the right to effective assistance in *Powell*. 287 U.S. 45, 63. Because the Sixth Amendment had not been incorporated to the states at that time, this right was based on the Due Process Clause. See *id.* at 63. This right is now understood as a Sixth Amendment right. See John H. Blume & Stacey D. Neumann,

justice system believes a fair trial occurs only if two opposing sides forcefully argue against each other.⁵¹ If the defense counsel does not argue effectively, a resulting conviction may be unjust and is not reliable.⁵²

However, courts disagree on what is or is not effective assistance, raising two questions: (1) is it better to promote independent counsel that are free to zealously defend their clients, or (2) should counsel have more guidance to ensure that counsel meets at least a minimal standard of effectiveness? From these questions, two answers emerge: the standard articulated by the U.S. Supreme Court in *Strickland*, which asks that counsel merely be “reasonable,” and the ABA Guidelines, which further instruct attorneys of specific obligations.

1. *The U.S. Supreme Court’s Delineated Framework: Strickland v. Washington*

In 1984, Justice O’Connor’s majority opinion in *Strickland v. Washington* was the first and only time the U.S. Supreme Court articulated a specific standard courts must follow to determine if an attorney provided effective assistance under the Sixth Amendment.⁵³ A Florida judge sentenced Charles Strickland to death for a series of three separate brutal murders and stabbings.⁵⁴ Mr. Strickland’s counsel neither presented any character witnesses at sentencing, nor did he request a psychiatric examination or meet with any of Mr. Strickland’s family to develop mitigating evidence.⁵⁵ Defense counsel decided not to investigate these areas due to “reasonable professional judgment”—because a prior psychiatric report had not revealed any

“*It’s Like Deja Vu All Over Again*”: Williams v. Taylor, Wiggins v. Smith, Rompilla v. Beard and a (Partial) Return to the Guidelines Approach to the Effective Assistance of Counsel, 34 AM. J. CRIM. L. 127, 131 (2007) (citing United States v. Wade, 388 U.S. 218, 223–38 (1967)).

51. See *Strickland*, 466 U.S. at 685 (explaining how our system of criminal justice relies on an adversarial system).

52. See *id.* (citing Adams v. United States *ex rel.* McCann, 317 U.S. 269, 275, 276 (1942)) (noting that effective defense counsel is fundamental to our adversarial system because “access to counsel’s skill and knowledge is necessary to accord defendants the ‘ample opportunity to meet the case of the prosecution’ to which they are entitled”).

53. *Id.* at 683 (“[T]he Court has never directly and fully addressed a claim of ‘actual ineffectiveness’ of counsel’s assistance in a case going to trial.”).

54. See *id.* at 671 (detailing the charged murders); Washington v. State, 362 So. 2d 658 (Fla. 1978).

55. *Strickland*, 466 U.S. at 673.

“major mental illness.”⁵⁶ Instead of pursuing a mental health defense, counsel decided to focus on extreme emotional disturbance and Strickland’s willingness to take responsibility for the crime.⁵⁷ The Court found counsel was effective because their performance was “reasonabl[e] under prevailing professional norms” and even if, arguendo, there was an error, Mr. Strickland was not prejudiced by it.⁵⁸

To prove ineffective assistance of counsel, *Strickland* requires a criminal defendant to prove two things: (1) that his counsel’s performance was deficient, and (2) that he was prejudiced by this deficiency.⁵⁹ If both elements are met, the criminal defendant’s Sixth Amendment rights were violated and he is entitled to either an entirely new trial or a new sentencing depending on where the deficiency occurred.⁶⁰

a. *Deficient Performance*

An attorney’s performance is deficient if, based on what they knew or should have known at the time,⁶¹ their acts were not reasonable “under prevailing professional norms.”⁶² At a minimum, attorneys must investigate the case so they can make “informed choice[s] among possible defenses.”⁶³ While this duty to investigate “is limited to a reasonable investigation,”⁶⁴ it does require investigating the

56. *Id.* at 699, 676.

57. *Id.* at 673–74.

58. *Id.* at 699.

59. *Id.* at 687. A court may determine there was not prejudice without first examining if the attorney’s performance was deficient. *Id.* at 697.

60. *Id.* at 687. This standard makes proving ineffective assistance—in any circumstance—a high bar to reach. For example, the court in *Berry v. King* found no ineffective assistance of counsel, even if counsel used drugs during trial because “under *Strickland* the fact that an attorney used drugs is not, in and of itself, relevant to an ineffective assistance claim.” 765 F.2d 451, 454 (5th Cir. 1985).

61. *See* *Caro v. Calderon*, 165 F.3d 1223, 1226 (9th Cir. 1999) (“Effectiveness must be judged as of the time the legal services were rendered so as to minimize the distortions of hindsight.”).

62. *Strickland*, 466 U.S. at 688; *see also* *Wiggins v. Smith*, 539 U.S. 510, 511 (2003).

63. *Wiggins*, 539 U.S. at 511 (2003); *see also* *Ard v. Catoe*, 642 S.E.2d 590, 597 (S.C. 2007) (“[W]ithout a doubt . . . [a] defense attorney has a duty to investigate.” (quoting *Thompson v. Wainwright*, 787 F.2d 1447, 1450 (11th Cir. 1986))); *accord* *Porter v. McCollum*, 558 U.S. 30, 37 (2009). *See generally* ABA, ABA STANDARDS FOR CRIMINAL JUSTICE: PROSECUTION FUNCTION AND DEFENSE FUNCTION (3d ed. 1993), available at http://www.americanbar.org/content/dam/aba/publications/criminal_justice_standards/prosecution_defense_function.authcheckdam.pdf.

64. *See* *Thompson*, 787 F.2d at 1450 (citing *Strickland*, 466 U.S. at 691); *Ard*, 642 S.E.2d at 597 (quoting *Thompson*, 787 F.2d at 1450).

client's background⁶⁵—specifically in capital cases where “professional norms require counsel to conduct a thorough investigation into ‘all reasonably available mitigating evidence’”⁶⁶—and may sometimes require expert consultations.⁶⁷

However, the *Strickland* Court was concerned that a set standard of rules that attorney's must follow in all cases could interfere with an attorney's constitutionally protected independence.⁶⁸ Thus, a reasonable investigation does not “require counsel to investigate every conceivable line of mitigating evidence.”⁶⁹ Counsel can even decide not to investigate certain options if it results from a strategic choice—that is, an informed, reasoned decision that is supported by “reasonable professional judgment.”⁷⁰ For instance, as discussed in *Strickland*, it was permissible for counsel to decide to stop investigating Mr. Strickland's mental health because a prior psychiatric report did not reveal any “major mental illness”—a decision that was informed and supported by “reasonable professional judgment.”⁷¹

In Justice O'Connor's words, “counsel has a duty to make reasonable investigations or to make a reasonable decision that makes particular investigations unnecessary.”⁷² As courts are extremely deferential to counsel's strategic decisions, an unreasonable investigation is only found in extremely egregious circumstances.⁷³ Unfortunately, in neuroscience cases, the U.S. Supreme Court has encountered an increasing number of such egregious cases, as explored in Part II.

65. See *Elmore v. Ozmint*, 661 F.3d 783, 857 (4th Cir. 2011) (citing *Strickland*, 466 U.S. at 691).

66. Post-Hearing Brief at 24, *Stone v. South Carolina*, 655 S.E.2d 487 (S.C. 2007) (No. 08-CP-43-905) (citing *Wiggins*, 539 U.S. at 524).

67. See *Harrington v. Richter*, 131 S. Ct. 770, 788 (2011).

68. See *Strickland*, 466 U.S. at 689.

69. See *Wiggins*, 539 U.S. at 533; see also *Rompilla v. Beard*, 545 U.S. 374, 383 (2005) (“[T]he duty to investigate does not force defense lawyers to scour the globe on the off chance something will turn up; reasonably diligent counsel may draw a line when they have good reason to think further investigation would be a waste.”).

70. See *Strickland*, 466 U.S. at 689. However, counsel cannot justify an incomplete investigation for fear that it would not reveal mitigating information or because the client does not want counsel to collect mitigating evidence. See *Hamblin v. Mitchell*, 354 F.3d 482, 492 (6th Cir. 2003).

71. See *Strickland*, 466 U.S. at 676.

72. See *id.* at 691.

73. See *supra* note 62 for an illustrative example.

b. Actual Prejudice

The client must also be prejudiced by counsel's deficient performance.⁷⁴ Prejudice occurs when there is "substantial likelihood" that the defendant's trial's result would have been different but for the counsel's unprofessional act.⁷⁵ For many proceedings, it is enough to show that "at least one juror would have struck a different balance."⁷⁶ In capital cases the court must weigh aggravating factors (factors that make a crime more wrong) with the "totality of available mitigating evidence" (factors that make a crime less wrong).⁷⁷ Because prejudice is rarely proven, counsel's deficient performance is often merely regarded as a harmless error.⁷⁸

2. *The ABA's Guidelines: Expanding on Strickland to Further Explain Sixth Amendment Requirements*

Justice Marshall explained in his *Strickland* dissent that "[t]o tell lawyers and the lower courts that counsel for a criminal defendant must behave 'reasonably' and must act like 'a reasonably competent attorney' is to tell them almost nothing."⁷⁹ To give clearer guidance to counsel and to create uniformity in lower courts,⁸⁰ the ABA

74. *Strickland*, 466 U.S. at 687; *see also* *Sears v. Upton*, 130 S. Ct. 3259, 3264 (2010); *United States v. Kurti*, 427 F.3d 159, 163 (2d Cir. 2005); *State v. Salazar*, 707 P.2d 944 (Ariz. 1985); *accord* *Hooks v. Workman*, 689 F.3d 1148, 1185 (10th Cir. 2012); *Blystone v. Horn*, 664 F.3d 397 (3rd Cir. 2011); *Wilson v. Sirmons*, 536 F.3d 1064, 1083 (10th Cir. 2008); *Caro v. Woodford*, 280 F.3d 1247, 1258 (9th Cir. 2002) (all finding the client was actually prejudiced by their defense counsel's deficient performance).

75. *See* *Porter v. McCollum*, 558 U.S. 30, 38–39 (2009) (quoting *Strickland*, 466 U.S. at 694) (finding prejudice if there is a "reasonable probability that, but for counsel's unprofessional errors, the result of the proceeding would have been different.") (emphasis added); *accord* *Lafler v. Cooper*, 132 S. Ct. 1376 (2012); *Cullen v. Pinholster*, 131 S. Ct. 1388 (2011). This likelihood must be substantial, not just conceivable, *see* *Harrington v. Richter*, 131 S. Ct. 770, 792 (2011), and cannot assume a fact finder would have disregarded the law, *see* *Strickland*, 466 U.S. at 695.

76. *See* *Porter*, 558 U.S. at 41; *Wiggins v. Smith*, 539 U.S. 510, 537 (2003); *Von Dohlen v. State*, 602 S.E.2d 738, 743 (S.C. 2004).

77. *See* *Wiggins*, 539 U.S. at 534.

78. *See supra* note 60 for an illustrative example. For an analysis of the *Strickland* Standard to better understand why so many ineffective assistance of counsel claims do not succeed, *see* Blume & Neumann, *supra* note 49, at 129.

79. *Strickland*, 466 U.S. at 707–08 (Marshall, J., dissenting).

80. For example, Guideline § 1.1(A) states, "The objective of these Guidelines is to set forth a national standard of practice for the defense of capital cases in order to ensure high quality legal representation for all persons facing the possible imposition or execution of a death sentence by any jurisdiction." ABA, *supra* note 48, at 919. These Guidelines were also made in response to a number of statistical studies regarding defense representation conducted by the federal government. *See, e.g.,*

promulgated a set of Guidelines (ABA Guidelines) that list specific obligations lawyers owe to their clients.⁸¹ The ABA Guidelines cover many topics and include instructions for defense attorneys in many different situations and cases.⁸² Part II when, according to the Guidelines, the Sixth Amendment requires counsel to develop neuroscience evidence. The Next Part explains what neuroscience is for the purposes of this Note.

B. What Is Neuroscience?

For purposes of this Note, neuroscience refers to the science of “how the brain enables mental activity.”⁸³ While neuroscience has existed in its present form since roughly the 1950s, historians and scholars have viewed the human brain as the center of intellect and decision-making,⁸⁴ and have studied the nexus between the human

BUREAU OF JUSTICE STATISTICS, NATIONAL CRIMINAL DEFENSE SYSTEMS STUDY (1986) *available at* <https://www.ncjrs.gov/pdffiles1/Digitization/94702NCJRS.pdf>; BUREAU OF JUSTICE STATISTICS BULLETIN, CRIMINAL DEFENSE FOR THE POOR, 1986 (1988); NAT'L INST. OF JUSTICE, NATIONAL ASSESSMENT PROGRAM: FINAL SURVEY RESULTS FOR PUBLIC DEFENDERS (1990).

81. *See, e.g.*, United States v. Martin, 475 F.2d 943, 954–56 (D.C. Cir. 1973) (asserting the standard for effective assistance should follow the ABA Guidelines). *See generally* ABA, *supra* note 63. For example, counsel has a duty to “conduct appropriate investigations, both factual and legal, to determine what matters of defense can be developed.” United States v. Decoster, 487 F.2d 1197, 1204 (D.C. Cir. 1973). As then-Chief Judge Bazelon of the D.C. Circuit articulated, ABA Guidelines are merely “a starting point for the court to develop, on a case by case basis, clearer guidelines for courts and for lawyers as to the meaning of effective assistance.” *Id.* at 1203 n.23. Judge Bazelon’s view was that ineffective assistance of counsel would follow a guideline approach, such as that articulated in the ABA Guidelines. *See id.* at 1203, *aff’d on reh’g en banc*, 624 F.2d 196 (D.C. Cir. 1976); *see also* United States v. Decoster (Decoster III), 624 F.2d 196, 276 (Bazelon, J., dissenting), *cited in* Blume & Neumann, *supra* note 50, at 133.

82. *See, e.g.*, ABA, *supra* note 63; ABA, ABA STANDARDS FOR CRIMINAL JUSTICE: PROVIDING DEFENSE (3d ed. 1992); ABA House of Delegates Resolution 8C (adopted Feb. 5, 2002).

83. *See* MARK GRAVES, MIND, BRAIN AND THE ELUSIVE SOUL 18 (2008). Neuroscience is broader than this definition allowed and would include “all sciences studying the nervous system and brain.” *Id.* Technically, this paper is concerned merely with cognitive neuroscience. *Id.*

84. Alcmaen, born in 535 B.C.E., is thought to be the first to realize intellect was located in the brain, an idea that was then developed by Hippocrates, the father of modern medicine, Galen, and then Descartes. *See* 13 LAW AND NEUROSCIENCE: CURRENT LEGAL ISSUES 1 (Michael Freeman ed., 2011) [hereinafter LAW AND NEUROSCIENCE]. Throughout history, there has been a struggle between “materialist” views of human behavior and immaterial views. *See* Amanda C. Pustilnik, *Violence on the Brain: A Critique of Neuroscience in Criminal Law*, 44 WAKE FOREST L. REV. 183, 190 (2009). Trying to find the source of criminality within the material human brain represents a new acceptance of a materialist view. *See id.*

brain and crime for over two hundred years.⁸⁵ In the twenty-first century, uncovering what is contained in the human brain has become not only a mission for doctors, academics, and scholars, but also a central mission of the federal government.⁸⁶ Thus, as neuroscience advances, the connection, or lack thereof, between the human brain and crime may become more known, and, consequently, neuroscience's presence in our nation's criminal courtrooms may become ubiquitous.

1. *Neuroscience Evidence Is Currently Used in Criminal Courts*

As of today, rightly or wrongly, neuroscience is already used in the criminal justice system and courts have found it probative in many areas of criminal law.⁸⁷ The court in *State v. Appacrombie*, for instance, allowed the defense to introduce an electroencephalogram, neuropsychological evaluation, and testimony by neurologist into evidence.⁸⁸ This evidence helped show that the defendant was unable to appreciate the consequences of her crime when she shot at two teenagers, killing one.⁸⁹ The evidence revealed how, prior to the crime, the defendant underwent a surgery to remove part of the temporal lobe of her brain to help her with a seizure disorder,⁹⁰ and that after the surgery she became more violent, angry, and paranoid without provocation.⁹¹

In some instances, like in *Appacrombie*, neuroscience may tell us how or why someone may have acted in a given situation.⁹² For

85. See Pustilnik, *supra* note 84, at 191. (“[T]heories of the causes of violence and of ways to identify and deal with people who may be prone to violence historically have exerted tremendous pull over many criminal law scholars and practitioners.”). Today we are back in a time where human thoughts and behaviors are localized in a material place. *See id.*

86. *See supra* Part I.

87. *See* Blume & Paavola, *supra* note 35, at 910 (citing Margaret Talbot, *Duped: Can Brain Scans Uncover Lies?*, NEW YORKER, July 2, 2007, at 52); Jonathan H. Marks, *Interrogational Neuroimaging in Counterterrorism: A “No Brainer” or a Human Rights Hazard?*, 33 AM. J.L. & MED. 483 (2007) (discussing neuroscience and terrorism); Jennifer Wild, *Brain Imaging Ready to Detect Terrorist, Say Neuroscientists*, 437 NATURE 457, 457 (2005) (same).

88. *State v. Appacrombie*, 766 So. 2d 771, 776 (La. Ct. App. 2000). For a detailed description of EEGs and their current use in the criminal justice system, see *infra* note 124 and accompanying text.

89. *See Appacrombie*, 766 So. 2d at 766.

90. *See id.* at 774.

91. *See id.* (noting how she became paranoid by, for example, believing her family was doing “voodoo” against her).

92. *See* Adam Lamparello, *Using Cognitive Neuroscience to Predict Future Dangerousness*, 42 COLUM. HUM. RTS. L. REV. 481, 495–96 (2011). There are many

example, in *Evans v. Secretary of the Department of Corrections*, the defendant shot and killed his brother's girlfriend because she was unfaithful.⁹³ The Eleventh Circuit held that testimony by three experts should have been admitted during the sentencing phase of trial to testify about the defendant's brain damage.⁹⁴ The court reasoned this damage caused him to act impulsively, limited his ability to "appreciate the criminality of his conduct," and would help explain why he killed her so impulsively.⁹⁵

Neuroscience may also reveal if a defendant was able to form the requisite premeditation or other mental state the government must prove as part of the charged crime.⁹⁶ In *Bean v. Calderon* the defendant asserted, and the Ninth Circuit agreed, that the defendant's brain damage and drug use together prevented him from being able to form the requisite intent to kill necessary to support a first-degree murder charge.⁹⁷ Further, in *Smith v. Dretke*, an expert submitted an affidavit stating the defendant likely suffered from organic brain damage, which prevented him from understanding the difference between right and wrong.⁹⁸ In agreement, the Eleventh Circuit issued a certificate of appealability.⁹⁹

Neuroscience evidence has been used at every stage of legal proceedings, including pre-trial competency, suppression hearings, culpability, and sentencing.¹⁰⁰ It can also be used for direct appeals

other ways neuroscience evidence may assist a criminal defense. For example, neuroscience has already been used in courts in order to downgrade the level of crime the defendant is charged with, to show the crime was not a voluntary act, to argue the defendant is not competent to stand trial, and by the prosecution to show the victim's injuries. *See generally* Deborah W. Denno, Book Synopsis: Changing Law's Mind: How Neuroscience Can Help Us Punish Criminals More Fairly and Effectively (Aug. 15, 2011), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1909958##. Neuroscience evidence may also show a client lacks impulse control, has a mental disease or defect, or has general cognitive defects. *See generally id.*

93. *Evans v. Sec'y, Dep't of Corr.*, 681 F.3d 1241, 1244 (11th Cir. 2012) *reh'g en banc granted, opinion vacated*, 686 F.3d 1321 (11th Cir. 2012) and *on reh'g en banc*, 703 F.3d 1316 (11th Cir. 2013), *cert. denied*, 133 S. Ct. 2742 (2013).

94. *Id.* at 1270 (11th Cir. 2012).

95. *Id.* at 1247.

96. *See* O. Carter Snead, *Neuroimaging and the "Complexity" of Capital Punishment*, 82 N.Y.U. L. REV. 1265, 1292 (2007).

97. *Bean v. Calderon*, 163 F.3d 1073, 1081 (9th Cir. 1998) (explaining how the defendant claims his "mental impairments, coupled with his habitual use of PCP, incapacitated him from forming the requisite intent for the crimes with which he was charged").

98. *Smith v. Dretke*, 422 F.3d 269, 283 n.5 (5th Cir. 2005).

99. *Id.* at 289.

100. *See* Appendix.

and in support of habeas petitions and can, in theory, be introduced by any party.¹⁰¹

2. *Opposition: What Is Special About Scientific Evidence?*

Some opponents argue that neuroscience evidence should not be used because it could not bear on any material fact in a criminal case.¹⁰² Some assert that neuroscience cannot be probative because, it is difficult to connect man-made crime with biology¹⁰³ and that, because humans have free will, their biology does not influence their behavior.¹⁰⁴ Further, some opponents assert neuroscience evidence may not be reliable because it sometimes depends on information the defendant—who is likely biased—reports about himself.¹⁰⁵ This Note does not seek to disprove these valid points. Rather, it seeks to explain how the Sixth Amendment already requires attorneys to use neuroscience evidence and to give guidelines on how to meet constitutional requirements. These criticisms are not dispositive, however, because they also apply to many other types of already admissible evidence. Further they are aimed at more than simply neuroscience—scientific evidence in general is often subject to criticism by opponents who either doubt its probative value or fear the evidence's impact may lead to injustice. While unreliable, misleading science exists, so does unreliable witness testimony and identification techniques. Other evidence can supposedly be made

101. Although this Note is not concerned with neuroscience evidence used by the prosecution, as it would not give rise to an ineffective assistance of counsel claim, this Note takes the stance that this evidence will be exclusively used by defense attorneys because the rules of evidence would bar any use by the prosecution, *see* Fed. R. Evid. 403–04. Except, of course, if the prosecution were introducing a brain scan to show the complainant's injuries, *see id.*

102. *See* Sarah Ryan, *Can Neuroscience Enhance Justice?*, YALE L. SCH. LILLIAN GOLDMAN L. LIBR. (Mar. 11, 2013), <http://library.law.yale.edu/news/can-neuroscience-enhance-justice>.

103. *See id.* (“Culturally constructed crimes cannot be mapped onto neural substrates.”).

104. *See* Theodore Y. Blumoff, *How (Some) Criminals are Made*, in LAW AND NEUROSCIENCE, *supra* note 84, at 171, 184–89 (arguing that neuroscience can influence a criminal's act without undermining free will, while providing a general overview of the philosophical arguments against this notion); *see also* Walter Glannon, *What Neuroscience Can (and Cannot) Tell Us about Criminal Responsibility*, in LAW AND NEUROSCIENCE, *supra* note 84, at 13, 17–18.

105. Commentators warn that these reports should not be used because the client, facing possible criminal penalties, has a motive to mislead. *See* Marc J. Tasse, *Adaptive Behavior Assessment and the Diagnosis of Mental Retardation in Capital Cases*, 16 APPLIED NEUROPSYCHOLOGY 114, 119 (2009) (“Relying solely on the individual's self-report is fraught with problems.”).

more truthful through techniques like cross-examination, so the question arises: why should science be treated differently? Scientific evidence's unique criticism may simply be a reaction to historical realities.

Today, scientific knowledge is tested, peer-reviewed, and safeguarded. However, like law, scientific standards are a product of history and policy. For much of human history, science was limited to 2000-year-old untested, non-replicated ideas that, at their inception, were no more than hunches.¹⁰⁶ The few privileged people who possessed scientific knowledge had an unwarranted ability to persuade and a history of abuse.¹⁰⁷ For much of history, modern ideas of scientific ethics and even science as a separate discipline did not exist.¹⁰⁸ Many empirical standards—like verification, experiments by systematic observation, and result replication—were not adopted as worldwide standards until at least the 1920s.¹⁰⁹ Given science's history, philosophers and common law courts may have been wise to limit its legal use.

Today, however, we are dealing with a much different world. Most neuroscience—and certainly any science that the Federal Rules of Evidence and its state counterparts will allow into court—derives from studies of direct observation, reviewable results, replication, and peer-review. Thus, many historical justifications for barring science from the courtroom may not be applicable today. These historical justifications do serve as reminders that courts should be ever vigilant to make sure the science they admit is trustworthy (as with all types of evidence).

C. What Exactly Is “Neuroscience Evidence”?

“Neuroscience evidence” comes in many forms, but generally falls in two broad categories: first, computer images of a human's brain,

106. For example, fifth century philosopher Leucippus's conception of the atom, based solely on his personal reasoning, was relied on in building more scientific theories even though it was not based on observational experiment or verified by a microscope.

107. PAOLO ROSSI, FRANCIS BACON: FROM MAGIC TO SCIENCE 32 (2013).

108. Until the nineteenth century, scientific numeral arts were indistinguishable from social liberal arts. Even when they divided, many scientific disciplines were not considered distinct, requiring many scientists to be generalist. Without distinct disciplines, it becomes very hard to develop the standards of reliability and validity necessary to differentiate the well-founded from the folly.

109. Many of these ideas had not entered into scientific discourse at all until the 1920s to 1940s with the Logical Positivism movement promulgated by the Vienna Circle.

called brain scans; and second, tests that a mental health professional gives a person to determine how their brain works, called neuroscience evaluations.¹¹⁰ Experts who rely on neuroscience evidence to form their expert opinions may bring this evidence with them while testifying in a criminal case.¹¹¹ When an expert testifies, they may show the jury the neuroscience evidence and explain what they believe it means.¹¹²

1. Brain Scans

One category of neuroscience evidence is computer images called brain scans. These images show either how the brain functions or its structure.¹¹³

a. Function: Reveals the Living Brain

Functional brain scans are computer images of a person's brain that show how his brain works by tracking how blood flows through the brain.¹¹⁴ This "allow[s] living brains to be observed, both as their shape changes over time and as they function," to show what part of a person's brain is used when they do particular tasks, such as moving, thinking, or experiencing sensation or emotion.¹¹⁵ Thus, this may show if a brain functions abnormally.¹¹⁶

There are a few kinds of functional brain scans. Functional magnetic resonance imaging (fMRI) is considered the "gold standard of behavioral neuroscientific imaging" because it produces an image

110. See Blume & Paavola, *supra* note 35, at 911–14.

111. See James S. Walker & William Bernet, *Neuroscience & Legal Proceedings*, in *THE ORIGINS OF ANTISOCIAL BEHAVIOR: A DEVELOPMENTAL PERSPECTIVE* 237, 238 (Christopher R. Thomas & Kayla Pope eds., 2012); see also Blume & Paavola, *supra* note 35, at 914–915.

112. See Walker & Bernet, *supra* note 111, at 238.

113. See Abram S. Barth, *A Double-Edged Sword: The Role of Neuroimaging in Federal Capital Sentencing*, 33 *AM. J.L. & MED.* 501, 503 (2007).

114. See Teneille Brown & Emily Murphy, *Through A Scanner Darkly: Functional Neuroimaging As Evidence of A Criminal Defendant's Past Mental States*, 62 *STAN. L. REV.* 1119, 1127 (2010); Pettit, *supra* note 44, at 320. The premise behind functional neuroimaging is that when a part of the brain is working, blood and sugar will flow to that part of the brain. See *ORG. FOR ECON. COOPERATION & DEV., UNDERSTANDING THE BRAIN: THE BIRTH OF A LEARNING SCIENCE* 189 (2007). Researches have relied on this premise to cure neurological diseases and perform cognitive research. See VICTORIA SHERROW, *MEDICAL IMAGING* 92 (2007) (describing the impact functional scans, including PET scans, have had in the diagnosis and treatment of neurological diseases like Alzheimer's).

115. Blume & Paavola, *supra* note 35, at 913 (citing Henry T. Greely, *Neuroethics and ELSI: Similarities and Differences*, 7 *MINN. J.L. SCI. & TECH.* 599, 612 (2006)).

116. See *id.*

with a higher resolution than any other brain scan.¹¹⁷ Medically, neurosurgeons use the scans to localize tumors and track Alzheimer's progression.¹¹⁸ It can cost a few thousand dollars in addition to the cost of an expert to both interpret it and possibly testify at trial.

Other kinds of brain scans used in courts are positron emission tomography scans (PET)¹¹⁹ and single-photon emission computed tomography scans (SPECT).¹²⁰ Medically, PET and SPECT scans are good for identifying seizures.¹²¹ One drawback from using them in court is that the results may be manipulated, and possibly unreliable.¹²² SPECT scans cost less than PET scans, but may be less useful because the images they produce have a lower resolution.¹²³

Another form of neuroscience evidence used in courts is the electroencephalogram (EEG).¹²⁴ Rather than producing an "image"

117. See Jean Macchiaroli Eggen & Eric J. Laury, *Toward A Neuroscience Model of Tort Law: How Functional Neuroimaging Will Transform Tort Doctrine*, 13 COLUM. SCI. & TECH. L. REV. 235, 239 (2012) ("[I]mage[s] generated by fMRI [are] superior, both spatially and temporally, to the images produced by PET and SPECT scans."); Neal Feigenson, *Brain Activity During Simulated Deception: An Event-Related Functional Magnetic Resonance Study*, 15 NEUROIMAGE 727 (2002).

118. See Brown & Murphy, *supra* note 114, at 1127–28. For an overview of extensive cognitive neuroscience research using fMRI, see, e.g., Feroze B. Mohamed et al., *Brain Mapping of Deception and Truth Telling About an Ecologically Valid Situation: Functional MR Imaging and Polygraph Investigation—Initial Experience*, 238 RADIOLOGY 679 (2006).

119. See Barth, *supra* note 113, at 503. PET scans track the metabolic rate by injecting a radioactive substance that binds to the sugary glucose in the brain. See THE AMERICAN PSYCHIATRIC PUBLISHING TEXTBOOK OF NEUROPSYCHIATRY AND BEHAVIORAL NEUROSCIENCE 772 (Stuart C. Yudofsky & Robert E. Hales eds., 2008). It then uses an x-ray type machine to track the radioactive substance to see where the blood and sugar flows when the patient does certain tasks. See Pettit, *supra* note 44, at 320.

120. See Brickford Brown & Samuel Tarry, *Does Your Pet Bite? The Misapplication of Brain Scans in Toxic Tort Litigation*, FOR THE DEFENSE, Mar. 1997, reprinted in CENTER FOR COGNITIVE LIBERTY & ETHICS, http://www.cognitiveliberty.org/neuro/pet_bite.html (last visited Oct. 31, 2013). For examples of brain scans used in courts see *People v. Holt*, 937 P.2d 213 (Cal. 1997), for PET scans and *Commonwealth v. Yancy*, 797 N.E.2d 371 (Mass. 2003), for SPECT scans.

121. See Walker & Bernet, *supra* note 111, at 240–41; see also *supra* Part I.A.2.

122. See Walker & Bernet, *supra* note 111.

123. See Pettit, *supra* note 44, at 320.

124. See Barth, *supra* note 113, at 503 (citing Jessie A. Seiden, *The Criminal Brain: Frontal Lobe Dysfunction Evidence in Capital Proceedings*, 16 CAP. DEF. J. 395, 402 (2004)); Snead, *supra* note 96, at 1290. Like the other methods, EEG is widely used in the clinical context and in medicine to, for example, determine brain death and communicate with the comatose. See generally 5 ATTORNEYS MEDICAL ADVISOR § 40:45 (2013); FUNDAMENTAL NEUROSCIENCE 1389 (Michael Zigmond et al. eds., 1999); Kai Keng Ang et al., *A Large Clinical Study on the Ability of Stroke Patients to Use an EEG-Based Motor Imagery Brain-Computer Interface*, CLINICAL EEG & NEUROSCIENCE, Oct. 2011. For example, it could tell if one can become comatose or

of the brain, like fMRI, PET, and SPECT scans, this technique measures the brain's electrical activity.¹²⁵ Medically, this procedure measures brains thousands of times each day to diagnose brain states like seizures or metabolic disorders.¹²⁶ Further, EEGs are often affordable, sometimes costing merely a couple hundred dollars.¹²⁷

b. Structure: Anatomical Structure

There are also brain scans that show what the brain's structure looks like. One scan commonly used in hospital emergency rooms is a computer tomography (CT) scan. A CT scan is basically a series of x-rays that when placed together can create a 3D image.¹²⁸ Thousands of CT scans are taken each day for medical purposes.¹²⁹ Medically, CTs are particularly useful for identifying strokes and brain lesions.¹³⁰ A fair market value for the scan is approximately \$700 without insurance.¹³¹

Magnetic resonance imaging (MRI) has largely replaced CT scans because it provides a far higher resolution,¹³² albeit at a higher cost.¹³³

will get a seizure when under the influence of alcohol. *See Berryman v. Ayers*, No. 1:05 CV 05309 AWI, 2007 WL 1991049, at *15–19 (E.D. Cal. July 10, 2007) (defense counsel's expert argued that an EEG showed that the client could not have committed rape without having a seizure). In addition to the scans—fMRI, PET, and SPECT—there are a few more types of tests that can be administered that this note will not generally address because they are not generally used in court. *See Denno, supra* note 92. For example, brain fingerprinting which uses EEGs to determine if a memory is accurate and Brain Electrical Activity Mapping (BEAM). *See ZILLMER ET AL., PRINCIPLES OF NEUROPSYCHOLOGY* 43 (2nd ed. 2008) (describing BEAM scans); Pettit, *supra* note 44, at 321.

125. *See* Snead, *supra* note 96, at 1282–83.

126. *See* Walker & Bernet, *supra* note 111.

127. *See EEG*, HEALTHCARE BLUE BOOK, http://healthcarebluebook.com/page_Results.aspx?id=205&dataset=MD (last visited Oct. 24, 2013) (estimating the fair market price of an EEG to be \$254).

128. *See* Keith A. Johnson, *Neuroimaging Primer*, WHOLE BRAIN ATLAS, <http://www.med.harvard.edu/AANLIB/hms1.html> (last visited Oct. 24, 2013).

129. *See* Walker & Bernet, *supra* note 111, at 240.

130. *See id.* at 239.

131. *See Brain CT (With and Without Contrast)*, HEALTHCARE BLUE BOOK, http://healthcarebluebook.com/page_Results.aspx?id=205&dataset=MD (last visited Oct. 24, 2013) (estimating the fair market price of an CT scan to be \$895, including both the scan and physician interpretation).

132. *See generally* Silvia A. Bunge & Itamar Kahn, *Cognition, Neuroimaging*, in THE ENCYCLOPEDIA OF NEUROSCIENCE (George Adelman & Barry H. Smith eds., Elsevier B.V. CD-ROM, 3d ed. 2004) (citing Snead, *supra* note 96, at 1281) (explaining that the MRI had replaced the CT because it is so detailed that it possible to differentiate gray matter from white matter with the naked eye).

Unlike the CT, which uses x-rays, the MRI produces a detailed image of the brain's anatomical structure by lining up magnets on either side of the head¹³⁴ and “measuring the signal strengths of the various radio frequencies emitted by the proton nuclei of atoms in brain tissue.”¹³⁵ Medically, MRIs are particularly suited to measure brain abnormalities such as the presence of tumors, contusions, or dementia.¹³⁶ They cost a little under \$1000.¹³⁷

Because each type of brain scan captures slightly different pieces of information, neuroscientists recommend using more than one type of brain scan on a patient, increasing the accuracy of any resulting diagnosis.¹³⁸

c. *Limitations*

While brain scans may reveal brain damage or other abnormalities, there are a number of limitations. First, because brain scans do not speak for themselves, an expert must explain to the jury what they mean.¹³⁹ Thus, it is possible for experts to disagree or to misinterpret the findings.¹⁴⁰ They may also be influenced by bias, or have a motive to mislead.¹⁴¹ The very fact that this risk exists may lead to prolonged “battle of the experts” cases where each side argues for different interpretations of a scan.¹⁴² What is worse, jurors and judges may not realize how subjective interpretations of these scans are and may commit errors in reasoning as a result.¹⁴³ Second, a person's brain and his environment work together to form his behavior—the brain alone is not determinative.¹⁴⁴ So, for example, a fully functioning “normal”

133. See J.T. Lindsay Wilson & Peter Mathew, *SPECT in Head Injury*, in *SPECT IMAGING OF THE BRAIN* 69, 69 (Roderick Duncan ed., 1997) (noting MRI scans are “slower and more expensive than CT” scans).

134. See Walker & Bernet, *supra* note 111, at 240.

135. Snead, *supra* note 96, at 1281; see also Eggen & Laury, *supra* note 117, at 241.

136. See Walker & Bernet, *supra* note 111, at 240.

137. See *Brain CT (With and Without Contrast)*, *supra* note 131 (estimating the fair market price of an MRI scan to be \$895, including both the scan and physician interpretation).

138. See Moritz F. Kircher et al., *A Brain Tumor Molecular Imaging Strategy Using A New Triple-Modality MRI-Photoacoustic-Raman Nanoparticle*, 18 *NATURE MED.* 829 (2012).

139. See Blume & Paavola, *supra* note 35, at 925–30.

140. See *id.*

141. See *id.*

142. See *id.*

143. See *id.* at 927.

144. See Barbra Bradley Hagerty, *A Neuroscientist Uncovers A Dark Secret*, NPR (June 29, 2010), <http://www.npr.org/templates/story/story.php?storyId=127888976>.

person may have a brain that looks the same as a sociopath's.¹⁴⁵ For instance, a brain scan revealed that a University of California-Irvine Neuroscientist, James Fallon, has a brain that looks like a killer's, although there is no evidence that he is a serial killer.¹⁴⁶ Third, a "normal" brain scan does not in any way mean a person is free from brain damage—there are many possible brain abnormalities that brain scans cannot detect.¹⁴⁷

2. Neuroscience Evaluations

Brain disorders and abnormalities can also be detected without using brain scans. Neuroscience evaluations are tests given by mental health professionals.¹⁴⁸ These tests measure psychological functions "known to be linked to a particular brain structure or pathway."¹⁴⁹ Such functions include: attention and concentration; visual perception and reasoning; memory; learning; verbal functions; academic skills; construction; concept formation; self-regulation and motor ability; and emotional status.¹⁵⁰ Medically, a neuroscience evaluation is a well-accepted tool to identify brain abnormalities such as brain lesions.¹⁵¹ An evaluation costs from three to four thousand dollars, depending on the test.¹⁵²

Other examinations may include: unstructured interviews with the defendant, his or her acquaintances, or family members; review of a defendant's medical, social, and academic history; and a physical examination.¹⁵³ Scholars argue neuroscience evaluations should be conducted before any brain imaging is done because they may provide more reliable evidence of brain abnormalities and are more economically feasible.¹⁵⁴

An important qualifier to remember is that all *neuroscience evidence* is just that—evidence. Like all evidence, it is only one part

145. *See id.*

146. *See id.*

147. *See* Blume & Paavola, *supra* note 35, at 927.

148. *See id.* at 912.

149. *See id.* at 911.

150. *See id.* *See generally* BERNARD J. ALPERS & ELLIOTT L. MANCALL, *ESSENTIALS OF THE NEUROLOGICAL EXAMINATION* 1–32 (4th ed. 1975) (describing in detail the neuropsychological testing process).

151. *See* Walker & Bernet, *supra* note 111, at 244.

152. *See Parent's Guide to the Pediatric Neuropsychological Assessment*, CENTER FOR NEUROPSYCHOLOGY & COUNSELING, http://thecenterinwarrington.com/Parents_Guide_to_NP_Eva.html (last visited May 9, 2013).

153. *See* ALPERS & MANCALL, *supra* note 150, at 1–32.

154. *See* Blume & Paavola, *supra* note 35, at 910.

of the picture. It should be considered alongside other background information such as the environment one grew up in or other life experiences.¹⁵⁵ Thus, many cases that use neuroscience evidence admit other evidence of the defendant's background that are mitigating, like prior abuse.¹⁵⁶

In sum, neuroscience evidence may enter criminal courtrooms in many forms. It may enter through expert testimony, through the results of a neuroscience evaluation, or even as an actual picture of the human brain.¹⁵⁷ Each type of neuroscience evidence has unique advantages and disadvantages when used in criminal courtrooms. For clarity, the remainder of this Note will collectively refer to all of these types as "neuroscience evidence."

D. Admissibility of Neuroscience Evidence

The admissibility of neuroscience evidence is governed by each jurisdiction's rules of evidence and case law.¹⁵⁸ While the Sixth Amendment may still require attorneys to develop neuroscience evidence that is not admissible at trial, whether the evidence could be admitted is a factor courts consider.¹⁵⁹ Federal Rules of Evidence (FRE) 702–06 and relevant state counterparts govern all scientific evidence, including neuroscience evidence.¹⁶⁰ Experts may also present neuroscience evidence in court by relying on the evidence during their testimony.

Federal Rule of Evidence 702 determines what scientific testimony is permissible at trial and considers facts such as whether the evidence is accepted in the relevant medical community or is otherwise highly reliable.¹⁶¹ Neuroscience evidence does not always meet this test.¹⁶²

155. See Hagerty, *supra* note 144.

156. See, e.g., *Rompilla v. Beard*, 545 U.S. 374, 392 (2005) (holding that the Sixth Amendment required the defense attorney to utilize to investigate his client's neurological and mental health while crafting the defense case theory, but also ruling that evidence of the defendant's extremely abusive childhood should have been admitted).

157. See, e.g., *Hernandez-Alberto v. State*, 889 So. 2d 721, 727 (Fla. 2004) (admitting a neuroscience evaluation and testimony of five experts, and granting defense attorney's motion to admit a PET scan of the defendant's brain in order to determine if the defendant was competent to stand trial).

158. See Walker & Bernet, *supra* note 111, at 238.

159. See BRIAN R. MEANS, *POSTCONVICTION REMEDIES* § 35:6 (2013).

160. See Walker & Bernet, *supra* note 111, at 238; see also FED. R. EVID. 702–06.

161. FED. R. EVID. 702; see also FED. R. EVID. 104(a).

162. See, e.g., *People v. Brooks*, No. A124664, 2011 WL 5979668, at *1 (Cal. Ct. App. Nov. 30, 2011), *review denied*, (Feb. 29, 2012) (finding a SPECT scan

In *People v. Hix*, an expert was prepared to testify that a SPECT scan showed the defendant suffered from a brain abnormality, namely, a dysfunction in his frontal and temporal lobes.¹⁶³ The trial court did not allow this testimony because it determined that SPECT scans are not accepted in the relevant medical community as a means to diagnose brain abnormalities.¹⁶⁴ However, this rule is not uniform. For instance, the court in *Briscoe v. Scribner* allowed an expert to testify that a SPECT scan can show the defendant suffered from a brain abnormality.¹⁶⁵

The Federal Rules of Evidence may also limit the conclusions experts can reach. In federal cases, for instance, an expert is prohibited from presenting an opinion about whether or not a criminal defendant possesses a certain mental state if it is an element of the crime.¹⁶⁶ Some, but not all, states have similar prohibitions.¹⁶⁷ When neuroscience evidence is admitted to argue the defendant could not form intent to kill, for example, the conclusion is inadmissible.¹⁶⁸

Both the Federal Rules of Evidence and their state counterparts are stricter during the guilt phase of trial than during the sentencing phase.¹⁶⁹ Neuroscience evidence, like many other types of scientific

inadmissible because it was not shown to be accepted in the relevant medical community).

162. *See* *People v. Hix*, No. B203884, 2009 WL 242318, at *6 (Cal. Ct. App. Feb. 3, 2009)

163. *See id.*

164. *Id.* at *8. (“SPECT scans are generally accepted in the scientific community of neurology to diagnose Alzheimer’s disease, stroke, and epilepsy, they are not generally accepted in the scientific community to diagnose brain injuries or mental disorders such as schizophrenia or depression. Appellant does not cite to, nor have we found, California cases holding that SPECT scans are generally accepted to diagnose schizophrenia or brain damage negating appellant’s intent to kill or proving that he was insane at the time he committed the crime.”).

164. *See* *Briscoe v. Scribner*, No. CIV S-04-2175 FCD GGH P., 2010 WL 1525695, at *52–53 (E.D. Cal. Apr. 15, 2010).

165. *See id.*

166. *See* FED. R. EVID. 704(b) (“In a criminal case, an expert witness must not state an opinion about whether the defendant did or did not have a mental state or condition that constitutes an element of the crime charged or of a defense.”). The fear is that instead of aiding the jury in their decision, it will usurp the jury of their fact-finding power. *See id.* (“Those matters are for the trier of fact alone.”).

167. *See, e.g.*, MD. R. EVID. 5-704.

168. *State v. Appacrombie*, 766 So. 2d 771, 775–76 (La. Ct. App. 2000) (admitting evidence of defendant lobotomy to argue she could not form intent to kill requisite for a second degree murder charge).

169. *See* Pustilnik, *supra* note 84, at 185 (“[N]euroscience evidence primarily has been offered by the defense in mitigation at sentencing.”). Further, in capital cases, jurors are allowed to see all reasonably available mitigating evidence because they

evidence, is more likely to be admitted during the sentencing phase of trial.¹⁷⁰ Therefore, the Sixth Amendment is more likely to require attorneys to develop neuroscience evidence when they prepare the sentencing argument.¹⁷¹

II. DELINEATED STANDARDS: WHEN THE ABA AND *STRICKLAND* REQUIRE COUNSEL TO DEVELOP NEUROSCIENCE EVIDENCE IN THEIR BACKGROUND INVESTIGATION

This Part explores when the Sixth Amendment compels attorneys to develop neuroscience evidence. First, it addresses when *Strickland* would require attorneys to develop such evidence, and then it explains how the ABA Guidelines have expanded on *Strickland*.

A. The ABA Guidelines: Attorneys Must Develop Neuroscience Evidence in Some Cases

The ABA Guidelines assert that defense counsel must investigate if their client suffers from brain damage or other mental health concerns.¹⁷² The Guidelines draw a strong dividing line between non-capital cases (where effective defense counsel may sometimes use neuroscience) and capital cases (where neuroscience must always be investigated).¹⁷³

In non-capital cases, the ABA Guidelines recognize that it may be necessary for counsel to develop neuroscience evidence.¹⁷⁴ It states

are deciding whether this person's crime is so wrong, is so evil, that only death can bring justice. When making this decision, the criminal justice system believes jurors should be given all information that may lessen the crime's ultimate wrongfulness so their decision will be as fully informed as possible. If a criminal defendant suffers from brain damage, this background information might be important for the jury to know. If they did not know, they may mistakenly believe a crime was solely caused by a defendant's evil wrongful character, not a mental disease.

170. *See id.*

171. *See* Appendix.

172. *See* ABA, *supra* note 48, at 1021.

173. Currently, most states require lawyers to provide legal services professionally and ethically in line with the ABA Guidelines for capital cases. *See id.* at 938 (“[A]ny jurisdiction wishing to impose a death sentence must at minimum provide representation that comports with these Guidelines.”); accord Richard P. Mauro, *The Chilling Effect That the Threat of Sanctions Can Have on Effective Representation in Capital Cases*, 36 HOFSTRA L. REV. 417, 424–25 (2007). Many lower courts also cite the ABA Guidelines when determining if counsel's reasonable investigation should have included neuroscience evidence. *See, e.g.*, Summerlin v. Schriro, 427 F.3d 623, 629–30 (9th Cir. 2005).

174. *See generally* *Mental Health*, A.B.A. http://www.americanbar.org/publications/criminal_justice_section_archive/crimjust_standards_mentalhealth_blk.html (last visited Oct. 24, 2013) (outlining standards

the defense attorney's "legal representation plan should provide for investigatory, expert, and other services" at all phases of trial if they are "necessary to quality legal representation."¹⁷⁵ Thus, if neuroscience is necessary for a defense, counsel must seek experts to help develop it.¹⁷⁶

In capital cases, counsel must always investigate to see if there is neuroscience evidence available to help their client, because brain damage is common among capital defendants.¹⁷⁷ As the ABA Guidelines explain, "With respect to the guilt/innocence phase, defense counsel must independently investigate the circumstances of the crime and all evidence—whether testimonial, forensic, or otherwise—purporting to inculcate the client."¹⁷⁸ Counsel must "subject[] all forensic evidence to rigorous independent scrutiny," and "investigate and present mitigating evidence."¹⁷⁹ As the comments to Guideline 4.1 explain, "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."¹⁸⁰

The Guidelines recognize that neuroscience evidence, while potentially expensive, is absolutely necessary because it is so highly probative in many areas of a criminal proceeding.¹⁸¹ The commentary for Guideline 10.7 explains that counsel also has a duty to explore "[m]edical history," including "mental and physical illness or injury . . . and neurological damage"; family history, including "family history of mental illness, cognitive impairments"; "special educational

mental health professionals must adhere to when testifying on behalf of a defendant, including disclosure requirements).

175. See ABA, ABA STANDARDS FOR CRIMINAL JUSTICE: PROVIDING DEFENSE SERVICES 5-1.4 (3d ed. 1992), available at http://www.americanbar.org/content/dam/aba/publications/criminal_justice_standards/providing_defense_services.authcheckdam.pdf.

176. See *id.*

177. See ABA, *supra* note 48, at 956, 959. See generally Craig Haney, *The Social Context of Capital Murder: Social Histories and the Logic of Mitigation*, 35 SANTA CLARA L. REV. 547, 559–83 (1995).

178. See ABA, *supra* note 48, at 926.

179. *Id.* at 926, 1021.

180. *Id.* at 956 (emphasis added).

181. They recognize the importance of mental health in many stages of a proceeding, including the initial competency, mental health when the offence occurred, ability to form intent, understanding of *Miranda* warnings, and ability to waive constitutional rights. See *id.*

needs (including cognitive limitations and learning disabilities)”; and service in the military, including “health and mental health services” received.¹⁸²

Moreover, counsel must speak with the client as soon as possible to develop records of his or her mental health.¹⁸³ Records can have “a wealth of mitigating evidence, documenting or providing clues to childhood abuse, retardation, brain damage, and/or mental illness.”¹⁸⁴ Further, they must interview the defendant’s family members and others who know the family such as neighbors and parole officers.¹⁸⁵ It is necessary to interview non-family members in case the family suffers from impairments similar to the client’s.¹⁸⁶

Thus, under 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.¹⁸⁷

B. When the *Strickland* Standard Requires Attorneys to Develop Neuroscience Evidence

The *Strickland* standard does not specify when neuroscience or other mental health evidence must be developed because the approach does not approve of “mechanical rules” regarding what is or is not effective assistance.¹⁸⁸ After *Strickland*, the U.S. Supreme Court did not find a single attorney ineffective for over sixteen years.¹⁸⁹ This means the Court provided no guidance for all kinds of evidence—not just neuroscience evidence.¹⁹⁰ Three years after *Strickland*, Justice Marshall expressed concern over how little the

182. *Id.* at 1022–23.

183. *See generally id.* at 1024–26.

184. *Id.* at 1024.

185. *Id.*

186. *See id.*

187. *See id.* at 1025.

188. *See Strickland v. Washington*, 466 U.S. 668, 696 (1984). The Court explicitly rejected the ABA Approach, stating that ABA Guidelines “are guides to determining what is reasonable, but they are only guides.” *Id.* at 688. Relying too much on guidelines would “interfere with the constitutionally protected independence of counsel and restrict the wide latitude counsel must have in making tactical decisions. Indeed, the existence of detailed guidelines for representation could distract counsel from the overriding mission of vigorous advocacy of the defendant’s cause.” *Id.* at 689.

189. *See Blume & Neumann, supra* note 50, at 134.

190. For further discussions on how the unclear *Strickland* standard leaves courts without guidance for all kinds of evidence, see *id.* at 134.

standard has done to protect the accused.¹⁹¹ He warned that unless the Court put teeth into *Strickland*, the Court will “permit the lower courts to conclude that the Sixth Amendment guarantees no more than that ‘a person who happens to be a lawyer is present at trial alongside the accused’—a notion expressly disavowed in *Strickland*.”¹⁹² It took the Court thirteen years to apply *Strickland* with more force, in a decision that arguably was only facially decided under *Strickland*.¹⁹³ During the U.S. Supreme Court’s silence, several lower courts provided attorneys with somewhat contradictory guidance about when the Sixth Amendment requires them to develop neuroscience evidence.¹⁹⁴

One common thread between the decisions, however, is that attorneys who violated their client’s Sixth Amendment rights, often did little to no investigation or preparation in many areas of the case. For instance, the defendants in *Glenn v. Tate* and *Skipper v. Lee* are quite similar.¹⁹⁵ Both were placed into special education classes in school, had low IQs, and had previously undergone mental health counseling.¹⁹⁶ Both had suffered from severe organic brain damage since childhood.¹⁹⁷

However, the defense attorney in *Glenn* failed to discover the defendant’s organic brain damage because he did not attempt to construct a social history of Glenn and did not interview family members or review school records that would have revealed the brain damage.¹⁹⁸ Because counsel did not know of the brain damage, he did not present it during the guilt or sentencing phases of trial.¹⁹⁹ In contrast, the defense attorney in *Skipper* did a background investigation into the defendant’s social history, interviewed his

191. See generally *Mitchell v. Kemp*, 483 U.S. 1026 (1987) (Marshall, J., dissenting) (lamenting how the standard iterated in *Strickland* may not an adequate safeguard for the criminally accused).

192. *Id.* (quoting *Strickland*, 446 U.S. at 685).

193. See Blume & Neumann, *supra* note 50, at 135.

194. For more cases finding ineffective assistance for failure to introduce neuroscience evidence under the *Strickland* Standard, see, for example, *Coleman v. Mitchell*, 268 F.3d 417 (6th Cir. 2001); *Nobles v. Johnson*, 127 F.3d 409 (5th Cir. 1997); *Glenn v. Tate*, 71 F.3d 1204 (6th Cir. 1995); *Loyd v. Whitley*, 977 F.2d 149 (5th Cir. 1992); *People v. Morgan*, 719 N.E.2d 681 (Ill. 1999); and *People v. Ruiz*, 686 N.E.2d 574 (Ill. 1997).

195. See *Skipper v. Lee*, 238 F.3d 414, 415 (4th Cir. 2000); *Glenn*, 71 F.3d at 1208–11.

196. See *Skipper*, 238 F.3d at 415; *Glenn*, 71 F.3d at 1208.

197. See *Skipper*, 238 F.3d at 415; *Glenn*, 71 F.3d at 1207.

198. See *Glenn*, 71 F.3d at 1208–11.

199. See *id.* at 1207.

family members, and consequently set up a psychological evaluation of his client and discovered the brain damage.²⁰⁰ While the defense attorney in *Skipper* chose not to present information about his client's brain damage at the guilt phase, he did present it at sentencing.²⁰¹ The court found that defense counsel in *Glenn* violated his client's Sixth Amendment rights, whereas the court in *Skipper* determined defense counsel provided his client with adequate representation.²⁰²

It seems clear that attorneys must do some type of background investigation and that if they do so properly, they will likely comport with the Sixth Amendment. But given that defense attorneys do not have unlimited time nor the financial resources to intensely investigate each client, and that not all defendants actually suffer from brain damage, how thorough should the investigation be? Unfortunately, *Strickland* does not provide guidance about what—precisely—is expected. For example, does a defense attorney need to develop neuroscience evidence in every case? If not, how can we tell when it is or is not required?

In addition to not developing neuroscience evidence, counsel could fail to provide adequate representation under the Constitution by failing to prepare for trial at all. For example, the defendant in *Wallace v. Stewart* brutally beat and killed his girlfriend and her three children one-by-one as they returned home.²⁰³ The defense attorney spent only thirty-six minutes preparing the psychological expert in the case and he did not provide the expert with the results of a personality test that a court appointed psychologist performed on the defendant to determine if he was competent.²⁰⁴ Likewise, in *Bean v. Calderon*, defense counsel knew his client suffered from organic brain damage as well as other serious mental impairments,²⁰⁵ yet he failed to give two experts who were testifying in the case the documentation necessary for them to testify that the client suffered from brain damage.²⁰⁶ As a result, the expert could not definitively conclude that

200. See *Skipper*, 238 F.3d at 415.

201. See *id.*

202. See *id.*; *Glenn*, 71 F.3d at 1205; see also *Loyd v. Whitley*, 977 F.2d 149, 157–58 (5th Cir. 1992) (adopting the trial courts factual determination and affirming their decision that counsel rendered ineffective assistance of counsel because defense counsel “simply failed to develop independent psychiatric evidence of mental disease or defect in a death case where this line of investigation was clearly indicated”).

203. *Wallace v. Stewart*, 184 F.3d 1112, 1113 (9th Cir. 1999).

204. *Id.* at 1115–16.

205. *Bean v. Calderon*, 163 F.3d 1073, 1078 (9th Cir. 1998).

206. See *id.* at 1078–79. During post-conviction proceedings, one of the experts testified that the defendant “exhibited substantial physical, mental, and emotional

the defendant had brain damage or that he could “appreciate the criminality of his conduct.” Instead the expert could “merely testify that Bean suffered from an organic personality disorder and was moderately defective in intelligence.”²⁰⁷

In most of these lower court cases, the attorney’s incompetence was based on a lack of general common sense. For instance, in *Buenoano*, the defense attorney merely interviewed an expert psychologist during the lunch break before trial and did not provide the psychologist with any mental health information,²⁰⁸ including details about the defendant being physically and sexually abused growing up as well as information about the defendant’s grandiose delusions, such as insisting that she was working towards her PhD and MD when she was not.²⁰⁹

Unfortunately, earlier lower court decisions often left mentally impaired defendants little constitutional recourse, and gave inadequate instruction to lawyers hoping to satisfy their Sixth Amendment duties.²¹⁰ As the ABA Guidelines explain, “Under the standards set out by the U.S. Supreme Court for reviewing claims of ineffective assistance of counsel, even seriously deficient performance all too rarely leads to reversal.”²¹¹

III. CASE ANALYSIS: RECENT COURT DECISIONS (SOMETIMES) REQUIRE ATTORNEYS TO DEVELOP NEUROSCIENCE EVIDENCE

This Part reviews results of the case study conducted by the author. First, it explains the case analysis’ background; second, it explores common elements between cases; and third, it reviews the results of the case search and goes over some “red flags” attorneys should look for to more adequately protect a criminal defendant’s Sixth Amendment rights.

impairments that were relevant to each of the . . . sentencing factors in mitigation.” *Id.* at 1079.

207. *Id.* at 1078.

208. See *Buenoano v. Singletary*, 963 F.2d 1433, 1438 (11th Cir. 1992).

209. *Id.* at 1037–38.

210. See *Blume & Neumann*, *supra* note 50, at 131.

211. ABA, *supra* note 48, at 930; see also William S. Geimer, *A Decade of Strickland’s Tin Horn: Doctrinal and Practical Undermining of the Right to Counsel*, 4 WM. & MARY BILL RTS. J. 91, 94 (1995) (“*Strickland* has been roundly and properly criticized for fostering tolerance of abysmal lawyering.”); Kim Taylor-Thompson, *Tuning Up Gideon’s Trumpet*, 71 FORDHAM L. REV. 1461, 1465 (2003) (“[T]he ruling has proved disabling to the right to effective assistance of counsel in practice.”).

A. Case Law Analysis

Since *Strickland*, some U.S. Supreme Court Justices have voiced concern over the quality of legal representation, specifically in capital cases.²¹² Justice O'Connor—who wrote the majority decision in *Strickland*—noted, “Perhaps it’s time to look at minimum standards for appointed counsel in death cases.”²¹³ These concerns have found their way into a string of U.S. Supreme Court rulings finding defense attorneys ineffective for not developing some type of mental health or neuroscience evidence about their client.²¹⁴

This seemingly significant change in U.S. Supreme Court jurisprudence is further bolstered because the opinions withstood the stringent standard of review outlined in the Antiterrorism and Effective Death Penalty Act (AEDPA), which will permit habeas review when the lower court’s decision violated “clearly established Federal law.”²¹⁵ Thus, this group of U.S. Supreme Court opinions assert that it is “clearly established law” that, in some cases, the Sixth Amendment requires defense attorneys to present arguments based on neuroscience.²¹⁶ These decisions shift effective assistance jurisprudence to a less deferential approach that treats the ABA Guidelines as a minimum “standard of professional norms.”²¹⁷

212. Justice Ginsberg noted that “people who are well represented at trial do not get the death penalty,” and Justice O’Connor noted that the court “may well be allowing some innocent defendants to be executed.” ABA, *supra* note 48, at 929 (citing Anne Gearan, *U.S. Supreme Court Justice Supports Death Penalty Moratorium*, ASSOCIATED PRESS, Apr. 10, 2001).

213. *Id.*

214. *See* *Sears v. Upton*, 130 S. Ct. 3259 (2010); *Porter v. McCollum*, 558 U.S. 30 (2009); *Rompilla v. Beard*, 545 U.S. 374 (2005); *Wiggins v. Smith*, 539 U.S. 510 (2003).

215. *See* 28 U.S.C. § 2254 (2012); *see also Rompilla*, 545 U.S. at 380; *Wiggins*, 539 U.S. at 520 (applying the statute).

216. *See* § 2254 (noting that the Court can only review a state court judgment clashing with a clearly established law).

217. *See Rompilla*, 545 U.S. at 387; *Wiggins*, 539 U.S. at 524 (“Counsel’s conduct similarly fell short of the standards for capital defense work articulated by the [ABA] standards to which we long have referred as ‘guides to determining what is reasonable.’” (quoting *Strickland v. Washington*, 466 U.S. 588, 688 (1984))). As the Sixth Circuit said in a startling departure from a prior *Strickland*-oriented approach, “American Bar Association standards have long been considered guides to the reasonableness of counsel’s conduct.” *Haliym v. Mitchell*, 492 F.3d 680, 716–17 (6th Cir. 2007). Many lower court cases now treat the ABA Guidelines as a standard of “professional norms.” *See, e.g., Littlejohn v. Trammell*, 704 F.3d 817, 859 (10th Cir. 2013). This charge is particularly pronounced in cases where defense counsel fails to introduce evidence about their clients based on neuroscience. *See, e.g., Sinisterra v. United States*, 600 F.3d 900, 908 (8th Cir. 2010); *Young v. Sirmons*, 551 F.3d 942, 957 (10th Cir. 2008); *Smith v. Dretke*, 422 F.3d 269, 279 (5th Cir. 2005).

Given that the Sixth Amendment sometimes requires defense attorneys to present neuroscience evidence, the author hoped to review case law to develop a guideline attorneys could use to ensure compliance with the Sixth Amendment.²¹⁸ Unfortunately, very few bright line rules in current case law specify when the Sixth Amendment requires defense attorneys to develop neuroscience evidence. For example, in *Perkins*, Mr. Perkins did not want to be evaluated by an expert, and insisted that his counsel not develop evidence of his mental health or abuse background.²¹⁹ The fact that Mr. Perkins literally fired one of his defense attorneys for trying to interview jail personnel about his mental health was immaterial because the Sixth Amendment *required* counsel to develop neuroscience evidence regardless of Perkins' wishes.²²⁰ In contrast, the court in *State v. Fautenberry*, found counsel did not violate their client's Sixth Amendment rights when they failed to discover his brain injury because Mr. Fautenberry said he did not want to meet with a psychologist to be evaluated.²²¹

B. Results: Common Characteristics

These decisions spurred courts across the nation to hold that the Sixth Amendment may require effective counsel to develop neuroscience evidence of their client in capital cases.²²² These cases do not follow the *Strickland* or ABA Guideline standards, but rather follow a kind of quasi-ABA approach.²²³

Many of these decisions have much in common with *Perkins*. First, like Mr. Perkins, the defendant is often charged with first-degree murder. In all five U.S. Supreme Court cases, and in seventy of the seventy-four lower court cases identified, the client was charged with first-degree murder. Second, a jury eventually sentenced Mr. Perkins to death.²²⁴ In all U.S. Supreme Court cases and the vast majority of

218. See Appendix for cases and descriptions.

219. See *supra* Introduction.

220. See *supra* Introduction.

221. See *State v. Fautenberry*, No. C-971017, 1998 WL 906395, at *4 (Ohio Ct. App. Dec. 31, 1998).

222. See Appendix for example cases.

223. No court has held, as the ABA Guidelines provide, that neuroscience must be used in all capital cases. These recent developments retain *Strickland's* "strong presumption that counsel's conduct falls within the wide range of reasonable professional assistance." JOSEPH R. SIMPSON, *NEUROIMAGING IN FORENSIC PSYCHIATRY: FROM THE CLINIC TO THE COURTROOM* 269 (2012).

224. See *Perkins v. Hall*, 708 S.E.2d 335, 338 (2011); see also *supra* Part I for further discussion of Mr. Perkins's case.

lower court cases analyzed, the client was eventually given the death penalty.

Third, the neuroscience evidence could have been used in many different stages of the case. In *Perkins*, neuroscience evidence—evidence of his brain injury—could have been useful during the competency, guilt, and sentencing phases of his trial. Like *Perkins*, in these cases counsel should have developed evidence for many stages of a criminal trial, although the most common stage was during the sentencing phase. Lastly, Mr. Perkins suffered not only from brain injury, but also from prior physical and sexual abuse.²²⁵ Many cases where the Sixth Amendment requires counsel to develop neuroscience evidence also require defense attorneys to investigate other kinds of evidence—like evidence of an abusive childhood.

C. Results: Duty to Investigate Red Flags

The Sixth Amendment is the basis for an attorney's independent duty to take specific affirmative steps to determine if their client suffers from brain damage.²²⁶ For instance, in *Correll v. Ryan*, defense counsel's investigation consisted of open-endedly asking the defendant and his family to provide him with any information that would help with the defense.²²⁷ He did not ask for any specific information about the client's "drug abuse, head injury, psychiatric history, or family dysfunction."²²⁸ The Ninth Circuit found that ineffective assistance of counsel "resulted from counsel's complete failure to ask any relevant questions"—interviewing witness and reading records alone, without asking pointed, specific questions aimed at uncovering red flags was not sufficient.²²⁹ Likewise, in *Ferrell v. Hall*, counsel only asked about "statutory mitigation factors," and neglected to follow-up on any information that did not

225. As the introduction of this Note explains, Mr. Perkins was physically abused by his father and sexually assaulted by a neighbor when he was a child. See *Perkins*, 708 S.E.2d at 342; *supra* Part I. Like many courts, the Georgia Supreme Court in *Perkins* also asserted that the defense attorneys should have also explored evidence of this abuse. See *Perkins*, 708 S.E.2d at 343–44.

226. See, e.g., *Caro v. Woodford*, 280 F.3d 1247, 1250, 1254–55 (9th Cir. 2002) (finding counsel ineffective when he knew defendant, the son of a farmer, had an "extraordinary history of exposure to pesticides and toxic chemicals, yet he neither investigated fully this history nor informed the experts who examined Caro of those facts that were known to him").

227. 539 F.3d 938, 945 (9th Cir. 2008).

228. *Id.* at 945.

229. *Id.*

portray the defendant in a positive light.²³⁰ This investigation was found unreasonable because it failed to uncover a wealth of information, including that the capital defendant had a very low IQ, suffered from hallucinations since he was a child, and had organic brain dysfunction in his frontal lobe.²³¹

However, there are some factors, or “red flags,” that should put a reasonable attorney on notice that neuroscience evidence may need to be developed. A red flag is some factor, such as a head injury or serious substance abuse, which may indicate brain damage, a brain abnormality, or another mental impairment. Case law shows that failure to obtain neuroscience evidence is most likely to raise a red flag if it is one of many errors or oversights counsel has made.²³²

D. Red Flags

Below are some “red flags” that commonly give rise to a duty for counsel to investigate further for neuroscience evidence.

1. Head Injury

State²³³ and federal²³⁴ criminal courts, of all levels—the U.S. Supreme Court,²³⁵ federal circuit courts,²³⁶ and state county courts—

230. 640 F.3d 1199, 1216 (11th Cir. 2011).

231. *Id.* at 1211–13. One of the experts said that if he had been given information about the defendant’s head injury and hallucinations, he would have recommended further neuroscience evaluation. *See id.* at 1220. Indeed, testing done for post-conviction proceedings revealed the defendant suffered from “frontal lobe dysfunction,” and “temporal lobe epilepsy” attributable to his head injury. *Id.* at 1213. The expert “explained that individuals with frontal lobe dysfunction display impaired insight and learning abilities, are more prone to impulsive and explosive behaviors, and are more prone towards affective instability, meaning a dysfunctional emotional or mental state.” *Id.* at 1213. Again, a jury gave the defendant a death sentence without knowing any of this highly important mitigation evidence. *See id.* at 1199.

232. *See* SIMPSON, *supra* note 223, at 269.

233. *See, e.g.,* Coleman v. State, 64 So. 3d 1210, 1218 (Fla. 2011).

234. *See, e.g.,* Stallings v. Bagley, 561 F. Supp. 2d 821, 877 (N.D. Ohio 2008) (finding ineffective assistance when counsel failed to follow up even though they knew their client suffered a head injury as a child); *see also* Loyd v. Whitley, 977 F.2d 149, 156 (5th Cir. 1992).

235. *See, e.g.,* Sears v. Upton, 130 S. Ct. 3259, 3261 (2010) (finding defense counsel ineffective for failing to follow up despite knowledge that their client suffered significant damage to his frontal lobe as a child).

236. All circuit courts have also treated prior head injury as a red flag counsel must inquire about, and once known, must investigate further for brain abnormalities. *See, e.g.,* Sinisterra v. United States, 600 F.3d 900, 905, 907 (8th Cir. 2010) (finding ineffective assistance when counsel knew defendant suffered head injury but did not follow up with further testing when further testing may have uncovered that

have found that head injury is highly indicative of neurological damage and have deemed counsel ineffective for not investigating possible brain abnormalities.²³⁷ For instance, the defendant in *Frierson* suffered a serious head injury that resulted in four days of hospitalization and impaired vision for over two years.²³⁸ Although his defense attorney consulted medical records and knew of the accident, he did not consult with a neurologist about the effects of the defendant's head trauma—had he done so, he would have discovered that the defendant's low IQ was due to the fall.²³⁹

Although learning of a client's prior head injury may give an attorney a duty to investigate further, attorneys may have an independent duty to develop evidence of a head injury.²⁴⁰ Such evidence of head injury may be obtained through interviews with their client, his family, or by surveying pertinent records.²⁴¹ For example, in *Blystone v. Horn*, defense counsel was ineffective because he did not develop and review records from when the client

defendant likely suffered from brain damage); *Frierson v. Woodford*, 463 F.3d 982, 990 (9th Cir. 2006) (ineffective when counsel failed to investigate when defendant's school records revealed he suffered head injury and, consequently, had a low IQ); *Pizzuto v. Arave*, 385 F.3d 1247 (9th Cir. 2004) (Fletcher, J., concurring in part and dissenting in part) (finding ineffective assistance when defense counsel knew defendant "sustained serious head injuries from falling down a flight of stairs at the age of two and from a bicycle accident when he was a teenager" and failed to inform psychiatric expert testifying in the case); *Caro v. Woodford*, 280 F.3d 1247, 1251, 1256 (9th Cir. 2002) (finding counsel ineffective for failing to follow up despite that their was likely "brain damage caused by head injury, exposure to toxic pesticides and the combination of both factors").

237. See Richard E. Redding, *The Brain-Disordered Defendant: Neuroscience and Legal Insanity in the Twenty-First Century*, 56 AM. U. L. REV. 51, 58 (2006) ("[E]ven mild head injuries can cause frontal lobe damage."); see also Appendix for a list of forty-five cases where counsel was found ineffective for failing to investigate when they either knew their client suffered a traumatic head injury or would have learned by doing a proper investigation.

238. See *Frierson*, 463 F.3d at 990.

239. See *id.*

240. See, e.g., *Blystone v. Horn*, 664 F.3d 397, 422 (3d Cir. 2011).

241. For example, in *Turpin v. Lipham*, a capital case, defense counsel did curate 2500 pages of records about the defendant to the jury to collect mitigation evidence even though "[t]rial counsel knew they had a client who had been institutionalized in mental hospitals, children's homes, and treatment centers for nine years." 510 S.E.2d 32, 41–42 (Ga. 1998). A reasonable investigation would have uncovered evidence that the defendant "had been subjected to, or diagnosed with, chronic poverty, physical abuse, alcoholic parents, severe neglect, isolation from his family, severe behavioral problems, conduct disorders, anxiety disorders, a possible learning disability, inadequate socialization, head injuries, and a wide disparity between his performance IQ and his verbal IQ." *Id.* Without this information, a blinded jury sentenced him to death. See *id.*

was incarcerated in Maryland and was enlisted in the Navy.²⁴² A review of these records would have revealed that the defendant suffered from a head injury at age four that, according to one of the defense experts, caused the defendant brain damage.²⁴³ Likewise, in *State v. Pearce*, a capital case, defense counsel did a minimal investigation for mitigating information—he never even contacted any of the defendant’s family members.²⁴⁴ The court found counsel ineffective because if he had contacted family members, it would have uncovered a wealth of mitigating information including that Pearce “fell down the stairs as a baby, received head injuries when he fell out of a truck, and was diagnosed with dyslexia that he possibly received from a brain injury.”²⁴⁵

2. *Low Intellectual Functioning*

Courts have also found that low intellectual functioning indicates the kind of brain damage that effective counsel must develop as part of a reasonable investigation.²⁴⁶ Counsel may also have a duty to determine a client’s IQ, specifically if it is contained in the defendant’s records.²⁴⁷ For example, in *Hamblin v. Mitchell*, counsel’s investigation was considered unreasonable because he failed to review school records that would have revealed this capital defendant was not educated above the seventh grade and had a low IQ.²⁴⁸ It was immaterial that the resulting investigation did not reveal cognitive impairment because counsel’s duty was only to investigate.²⁴⁹ Low intellectual functioning as a red flag may manifest in a poor academic

242. 664 F.3d at 422.

243. *See id.* at 407 n.5.

244. 994 So. 2d 1094, 1100–01 (Fla. 2008).

245. *Id.* at 1101–02.

246. *See, e.g., Goodwin v. Johnson*, 632 F.3d 301, 322 (6th Cir. 2011) (holding that an investigation that did not reveal the defendant had an IQ of seventy-three was unreasonable); *see also Hernandez v. Martel*, 824 F. Supp. 2d 1025, 1059 (C.D. Cal. 2011) (noting low intellectual function may be an “indicator[] that petitioner is neuropsychiatrically impaired”).

247. *See Goodwin*, 632 F.3d at 321–22 (concluding counsel’s investigation was unreasonable because counsel failed to review the defendant’s “education records includ[ing] a psychological report prepared in January 1989, when Goodwin was fourteen. The report indicated that Goodwin had an IQ of seventy-three”).

248. *Hamblin v. Mitchell*, 354 F.3d 482, 490 (6th Cir. 2003).

249. *See id.* at 492.

history, such as failing or repeating grades,²⁵⁰ history of special education,²⁵¹ or a low IQ.²⁵²

3. *Serious Substance Abuse*

Serious substance or alcohol abuse may exacerbate existing brain abnormalities.²⁵³ This is especially true when the defendant began using the drug at a young age and the substance correlates highly with brain damage, such as crack cocaine use.²⁵⁴ Further, parental or other family members' use of drugs or alcohol may indicate possible brain damage in the defendant, such as those who suffered from fetal alcohol syndrome.²⁵⁵ This red flag in particular is likely associated with other social factors that could be specifically mitigating. For example, often if a defendant is a drug addict and their parents were

250. See *Hernandez*, 824 F. Supp. 2d at 1059 (finding ineffective assistance when counsel failed to investigate despite client's "rather rock-bottom scholastic performance starting at first grade").

251. See, e.g., *Simmons v. State*, 105 So. 3d 475, 508 (Fla. 2012), *reh'g denied*, (Jan. 7, 2013) (finding an unreasonable investigation when "trial counsel had available material showing that Simmons had low intelligence, was in special education and classes for the emotionally handicapped in school, dropped out of school early, and suffered the loss of oxygen to his brain as a toddler" but failed to investigate further); see also *Smith v. Mullin*, 379 F.3d 919, 942–44 (10th Cir. 2004) (finding ineffective assistance of trial counsel after counsel failed to investigate client's background and present mitigating evidence of mental impairment, traumatic background, and brain injury—the fact that defendant attended special education classes in high school should have lead counsel to investigate further).

252. See, e.g., *Hurst v. State*, 18 So. 3d 975, 1009 (Fla. 2009) (finding an unreasonable investigation when counsel did not investigate further, including reading "records [that] would have shown that Hurst had a low IQ, was in special education classes, and dropped out of school after repeating tenth grade").

253. See *Redding*, *supra* note 237, at 58 ("Substance abuse, relatively common among those who sustain traumatic brain injury, exacerbates the degree of brain damage."); see also Harold V. Hall, *Criminal-Forensic Neuropsychology of Disorders of Executive Functions*, in *DISORDERS OF EXECUTIVE FUNCTIONS: CIVIL AND CRIMINAL LAW APPLICATIONS* 37, 65 (Harold V. Hall & Robert J. Sbordone eds., 1998).

254. See, e.g., *Walker v. State*, 88 So. 3d 128, 138–39 (Fla. 2012) (finding counsel ineffective for not investigating defendant's history of serious substance abuse. The evidence was extremely mitigating given that the defendant was using drugs daily at eleven years old with his family, and used crack cocaine and LSD—highly damaging illicit substances). *But see* *Smith v. Quarterman*, 515 F.3d 392, 404–05 (5th Cir. 2008) (rejecting argument that "mere knowledge of his prolonged substance abuse should have prompted trial counsel to evaluate his cognitive functions and test for organic brain damage").

255. See, e.g., *Hurst*, 18 So. 3d at 1008, 1011 (Fla. 2009) (finding that defense counsel's investigation was unreasonable because he failed to present evidence of defendant's "organic brain damage based on fetal alcohol syndrome"—highly mitigating evidence that "could have provided the jury with a basis to recommend life").

as well, he may have grown up a victim of other related sexual or physical abuse, and thus had associated traumatic childhood experiences.²⁵⁶ For example, a history of homelessness may be associated with both childhood drug abuse and childhood neglect—all of which may be highly mitigating to a jury, especially in death penalty cases.²⁵⁷

Not only can substance abuse cause brain damage, but it may also be a form of self-medication for people with mental impairments.²⁵⁸ As such, under the quasi-ABA standard, a reasonable investigation may require counsel to investigate further if a client suffers from serious substance abuse.

4. *Childhood Abuse*

Prior childhood abuse can also be a strong mitigating factor for a jury to consider and is all too common among criminal defendants.²⁵⁹ Severe physical or sexual abuse may help explain to a jury why the client committed the crime, specifically if the facts of abuse are similar to the charged offense. For example, in *Rompilla v. Beard*,²⁶⁰ the capital defendant's "father locked [him] and his brother Richard in a small wire mesh dog pen that was filthy and excrement filled They had no indoor plumbing in the house, he slept in the attic with no heat, and the children were not given clothes."²⁶¹ Counsel were ineffective because they did not present the jury with any of this mitigating information when the court sentenced him to death.²⁶² The U.S. Supreme Court ultimately found counsel violated his client's Sixth Amendment right to effective counsel, and reversed.²⁶³

256. *See, e.g.*, *Coleman v. State*, 64 So. 3d 1210, 1218 (Fla. 2011) (finding ineffective assistance when counsel failed to uncover the client's serious substance abuse. Defendant also had a poor relationship with his father, and was subjected to physical and sexual abuse as a child).

257. *See, e.g.*, *Hernandez v. Martel*, 824 F. Supp. 2d 1025, 1048 (C.D. Cal. 2011) (finding the counsel's investigation unreasonable when they failed to discover that at the time of the offense the defendant was "homeless, isolated from his family, drug addicted and living in a van").

258. *See, e.g.*, *Correll v. Ryan*, 539 F.3d 938, 952 (9th Cir. 2008) ("Correll began experimenting with alcohol and drugs around age ten. He was using marijuana, LSD, and amphetamines regularly by age twelve, behavior that can be characterized as *self-medication* for the everyday trauma of his life and for the mental health illnesses that were later diagnosed when he became a ward of the state." (emphasis added)).

259. *See Rompilla v. Beard*, 545 U.S. 374, 390–92 (2005).

260. *Id.*

261. *Id.* at 392.

262. *Id.* at 393.

263. *Id.* at 376.

IV. PROPOSED FRAMEWORK: A “REASONABLE INVESTIGATION” SHOULD INCLUDE INVESTIGATING A DEFENDANT’S MENTAL HEALTH BACKGROUND, AND, IF NECESSARY, DEVELOPING NEUROSCIENCE EVIDENCE

This Part first advocates for a model that will guide attorneys in determining when the Sixth Amendment compels them to develop neuroscience evidence. It then proposes a framework attorneys can follow to determine—at a minimum—if their performance may not be in line with the Sixth Amendment. This framework is further developed by applying it to Mr. Perkins’ case, which aims to show that if his attorneys had followed the proposed framework, they might not have violated Mr. Perkins’ Sixth Amendment right to effective assistance of counsel.²⁶⁴

A. Attorneys Need More Specific Instructions to Determine if Neuroscience Evidence is Required

There is a practical and legal need for clear standards that attorneys can follow to ensure they are in line with the Sixth Amendment while still giving their clients the effective representation they are entitled to.²⁶⁵ This need is especially strong when neuroscience evidence is required because many attorneys may not have a working understanding of neuroscience. While it may be counterintuitive for an attorney to seek out a client’s brain scan, for example, to provide effective assistance under the Sixth Amendment, this act may be necessary.²⁶⁶ Consequently, no matter how unfamiliar or counterintuitive neuroscience may be, it is a real part of a client’s background and may need to be explored as part of a reasonable investigation.²⁶⁷

Current sources of legal authority—such as the ABA Guidelines, the U.S. Supreme Court, and other case law—neither clearly explains when lawyers must develop neuroscience evidence nor describes what evidence must be developed.²⁶⁸ The following framework aims to expand on these sources, specifically the ABA Guidelines, in order to

264. *See* Perkins v. Hall, 708 S.E.2d 335, 342–44 (Ga. 2011); *see also supra* notes 1–10 and accompanying text (providing background information about David Aaron Perkins).

265. *See supra* Part II.B.

266. *See supra* Part II.

267. *See supra* Part II.

268. *See supra* Parts II, III and accompanying notes (explaining the differing standards used by the ABA, relevant Supreme Court cases, and lower court decisions).

further instruct attorneys about when the Sixth Amendment does or does not require the development of neuroscience evidence.

B. Proposed Framework to Satisfy Sixth Amendment Requirements

This Note's proposed framework consists of three parts. First, criminal defense attorneys should conduct an initial interview; second, they should do a thorough background investigation; and third, they should take further action if certain red flags are uncovered through either their interview, background investigation, or other sources.²⁶⁹ The type of crime the client is charged with and the stage in the legal proceeding may also influence this analysis.

1. Initial Interview

When taking on a new client, an attorney must conduct interviews with the client and the client's family, friends, and acquaintances. During these interviews, counsel should attempt to determine the client's current and past mental health.

During the client interview, counsel should ask, at a minimum, whether the client himself or anyone in the client's family suffers from or has been treated for mental illness. Counsel may also want to have the client fill out a questionnaire to determine the presence of any red flags possibly indicating mental illness, namely, prior head injury, low intellectual functioning, serious substance abuse, or past abuse.²⁷⁰ Depending on the circumstances, counsel may also want to investigate other factors, such as toxin exposure and what medications the client is taking.²⁷¹ Effective counsel should use this interview to determine other possible sources of information by asking what schools the client attended, if the client has ever been incarcerated, and whether the client interacted with social service or mental health agencies.

After interviewing the client, counsel should also interview family, friends, and acquaintances. In *Perkins*, for example, the Georgia

269. *See supra* Parts III.C, III.D.

270. *See id.* (further discussing red flags and how they may give rise to a duty for counsel to investigate further, at least in capital cases).

271. *See, e.g.,* *Caro v. Woodford*, 280 F.3d 1247, 1255 (9th Cir. 2002) (finding ineffective assistance of counsel in a capital case when counsel failed to investigate further or inform experts when they knew criminal defendant grew up on a farm and had a history "exposure to pesticides and toxic chemicals"—if they had investigated, they would have discovered defendant suffered from organic brain damage in part caused by this exposure).

Supreme Court found that Mr. Perkins' attorneys were ineffective because they only interviewed his mother and ex-wife, and did not interview any of his other friends, family, or acquaintances.²⁷² If they had conducted additional interviews, counsel would have learned that the defendant suffered from severe personality changes after a head injury.²⁷³

Using this approach is a simple, effective way attorneys can search for red flags that will help guide them to determine where else they should look. Opponents may argue that this interview approach is not ideal because it may lessen the independence of trial counsel, which may hinder their zealous advocacy. However, this interview is simply a "minimal" standard, so it still remains perfectly permissible for counsel to do more than a mere interview. Further, counsel already conducts client interviews, so this deeper probing interview would not drastically change how defense counsel represents their client.

Second, opponents may argue that—for some clients—asking about mental health may upset the client and ruin the attorney-client rapport. This is the argument the defense attorney gave in *Perkins* when the court found he had violated his Sixth Amendment rights.²⁷⁴ At the end of the day, if there is mitigating information that would help with the defense, it is the defense attorney's duty to try their best to find it—even if it offends the client. Nevertheless, questions to help determine if there are any red flags may be asked in a non-offensive matter if they are routinely made at an initial interview with a client.

Third, opponents may argue it is unreasonable to expect attorneys to do so much. This is exactly why the recommendations take into account the type of case and stage in the proceeding. Defending a capital murder case—which is where the Sixth Amendment usually requires this evidence—is, of course, going to require more than defending a misdemeanor case.

2. *Background Investigation*

As the ABA Guidelines state, a "legal representation plan should provide for investigatory, expert, and other services" at all phases of

272. See *Perkins v. Hall*, 708 S.E.2d 335, 340–41 (Ga. 2011); see also *supra* notes 1–5 and accompanying text.

273. See *Perkins*, 708 S.E.2d at 343–44.

274. See *supra* Introduction.

trial if they are “necessary to quality legal representation.”²⁷⁵ Thus, counsel should not rely solely on the client’s initial interview. The court in *Perkins* also found the attorneys ineffective because they failed to acquire medical records of the rake accident.²⁷⁶ Attorneys should try to acquire all reasonably available records, such as school records, medical records, the case file from prior incarceration, criminal history, facts surrounding a defendant’s prior crimes, social service records, and prior psychological evaluations. This includes all records the attorney has learned of through their prior interviews or from other sources. When attorneys get the records, they must also read them. In *Perkins*, the medical records would have revealed that a rake actually penetrated Mr. Perkins’ brain.²⁷⁷

3. Follow-Up if Red Flags Are Detected

If a defense attorney has uncovered a red flag—a warning sign that their client may suffer from some neurological impairment—he or she may want to consider two things to help determine the next step. First, counsel may want to consider how neuroscience could influence a possible defense. For example, if the accused is charged with premeditated murder, then neuroscience evidence could assist in a self-defense claim. However, if the charge is negligent homicide, neuroscience evidence may not be as probative. Second, the defendant’s attorney may want to consider how serious the red flag is. The red flag is serious in a case like *Perkins*, where prongs of a rake literally penetrated the accused’s brain and other evidence of brain damage existed.²⁷⁸ The red flag is less serious if the client had a sports concussion as a teenager and has shown no other effects, although this may, in conjunction with other factors, be important in some cases.

In cases like *Perkins*, where competency, mental state, and mitigation in sentencing could make a difference, neuroscience evidence may be part of a valid defense. In capital cases like *Perkins*, most mental health information could fit into a valid defense because it could be a mitigating factor during sentencing. However, for less serious cases such as assault, neuroscience evidence may not be as vital for a defense.

275. See ABA, *supra* note 63.

276. See *supra* notes 1–10 and accompanying text.

277. See *supra* Introduction.

278. See *supra* Introduction.

If it could fit into a valid defense, the attorney should try to determine how likely it is that the defendant suffers from brain damage. The more serious the red flags, the greater the duty to thoroughly investigate. In *Perkins*, for example, if counsel had interviewed Mr. Perkins' family, friends, and associates—as this framework recommends—counsel would have learned Mr. Perkins suffered from head injury, serious sexual and physical abuse as a child, and substance abuse beginning at a young age—all indicators of brain injury.²⁷⁹ If an investigation reveals such red flags, especially if there is more than one, the client should be sent to a mental health professional for an examination. During this examination, the mental health professional should look for possible brain damage by conducting an IQ test or a neuroscience examination on the client.²⁸⁰ The mental health professional may also recommend brain scans to determine the extent of the brain damage. This will both help ensure an informed diagnosis, and also help counsel understand the damage so that they can demonstrate such to a jury.²⁸¹

By following these steps, the minimum requirements of the Sixth Amendment should be satisfied. The attorney will have investigated the case enough to make an “informed choice among possible defenses.”²⁸² This is not to say that these steps will necessarily be enough to satisfy the Sixth Amendment in all cases, but rather, based on the U.S. Supreme Court standards, ABA Guidelines, and case law, this level of investigation will meet at least the minimum level of effective counsel.

CONCLUSION

Given the important interests at stake, analyzing whether or not a criminal defendant had a fair trial with effective assistance of counsel should not be left to a “reasonableness” standard that gives no clear guidance to courts or attorneys. The importance of the fundamental right to have criminal defendants effectively represented is too important to our adversarial system. A brain injury or abnormality may be a real part of a criminal defendant's background that would inform an attorney about the appropriate defense to pursue and, if such an injury exists, it may be too important for a defense attorney

279. *See Perkins v. Hall*, 708 S.E.2d 335, 342 (Ga. 2011).

280. *See supra* Part I.C.1c. As noted in Part I.C.2, these tests measure psychological functions, such as attention and verbal function, and may indicate if there is a brain abnormality.

281. *See supra* Part 1.C.

282. *See supra* Part 1.A.

to let the technical and scientific nature of neuroscience evidence get in the way. Attorneys must be aware of the obligations the ABA, U.S. Supreme Court, and other court cases have laid out to ensure they are effective advocates who strive to protect their clients' civil liberties and fundamental right to a fair trial.

APPENDIX

**Criminal Cases Finding Counsel Ineffective for Failing to
Develop Neuroscience Evidence
April 1992 to March 2013**

U.S. Supreme Court Decisions

2010	Sears v. Upton, 130 S. Ct. 3259 (2010)
2009	Porter v. McCollum, 558 U.S. 30 (2009)
2005	Rompilla v. Beard, 545 U.S. 374 (2005)
2003	Wiggins v. Smith, 539 U.S. 510 (2003)
2000	Williams v. Taylor, 529 U.S. 362 (2000)

Lower Federal and State Court Decisions

2013	<ul style="list-style-type: none"> • Littlejohn v. Trammell, 704 F.3d 817 (10th Cir. 2013) • Lacy v. State, 2013 Ark. 34, 2013 WL 460432
2012	<ul style="list-style-type: none"> • James v. Ryan, 679 F.3d 780 (9th Cir. 2012), <i>vacated</i>, 133 S. Ct. 1579 • Lynch v. Sec’y, Dep’t of Corr., 897 F. Supp. 2d 1277 (M.D. Fla. 2012) • Simmons v. State, 105 So. 3d 475 (Fla. 2012)
2011	<ul style="list-style-type: none"> • Blystone v. Horn, 664 F.3d 397 (3d Cir. 2011) • Ferrell v. Hall, 640 F.3d 1199 (11th Cir. 2011) • Goodwin v. Johnson, 632 F.3d 301 (6th Cir. 2011) • Hernandez v. Martel, 824 F. Supp. 2d 1025 (C.D. Cal. 2011) • Winston v. Kelly, 784 F. Supp. 2d 623 (W.D. Va. 2011) • Coleman v. State, 64 So. 3d 1210 (Fla. 2011) • Perkins v. Hall, 708 S.E.2d 335 (Ga. 2011)
2010	<ul style="list-style-type: none"> • Detrich v. Ryan, 619 F.3d 1038 (9th Cir. 2010)

	<ul style="list-style-type: none"> • Sinisterra v. United States, 600 F.3d 900 (8th Cir. 2010) • Deere v. Cullen, 713 F. Supp. 2d 1011 (C.D. Cal. 2010), <i>aff'd in part, rev'd in part</i>, 718 F.3d 1124
2009	<ul style="list-style-type: none"> • Johnson v. Mitchell, 585 F.3d 923 (6th Cir. 2009) • Libberton v. Ryan, 583 F.3d 1147 (9th Cir. 2009) • Jones v. Ryan, 583 F.3d 626 (9th Cir. 2009) • Scott v. Schriro, 567 F.3d 573 (9th Cir. 2009) • Richards v. Quarterman, 566 F.3d 553 (5th Cir. 2009) • Hummel v. Rosemeyer, 564 F.3d 290 (3d Cir. 2009) • Pierce v. Thaler, 355 F. App'x 784 (5th Cir. 2009) • Wesbrook v. Quarterman, 318 F. App'x 265 (5th Cir. 2009) • Stankewitz v. Wong, 659 F. Supp. 2d 1103 (E.D. Cal. 2009), <i>aff'd</i>, 698 F.3d 1163 (9th Cir. 2012) • Hurst v. State, 18 So. 3d 975 (Fla. 2009) • State v. Cooper, 979 A.2d 792 (N.J. Super Ct. App. Div. 2009) • State v. Barber, 206 P.3d 1223 (Utah Ct. App. 2009)
2008	<ul style="list-style-type: none"> • Correll v. Ryan, 539 F.3d 938 (9th Cir. 2008) • Stallings v. Bagley, 561 F. Supp. 2d 821 (N.D. Ohio 2008) • United States <i>ex rel.</i> Harris v. McCann, 558 F. Supp. 2d 826 (N.D. Ill. 2008) • State v. Pearce, 994 So. 2d 1094 (Fla. 2008)
2007	<ul style="list-style-type: none"> • Morales v. Mitchell, 507 F.3d 916 (6th Cir. 2007) • Haliym v. Mitchell, 492 F.3d 680 (6th Cir. 2007) • Anderson v. Sirmons, 476 F.3d 1131 (10th Cir. 2007) • Gilley v. Morrow, 246 F. App'x 519 (9th Cir. 2007)
2006	<ul style="list-style-type: none"> • Frierson v. Woodford, 463 F.3d 982 (9th Cir. 2006) • Poindexter v. Mitchell, 454 F.3d 564 (6th Cir. 2006) • Blackwood v. State, 946 So. 2d 960 (Fla. 2006)
2005	<ul style="list-style-type: none"> • Daniels v. Woodford, 428 F.3d 1181 (9th Cir. 2005) • Earp v. Stokes, 423 F.3d 1024 (9th Cir. 2005), <i>opinion suspended and amended on denial of reh'g</i>, 431 F.3d 1158 • Smith v. Dretke, 422 F.3d 269 (5th Cir. 2005)

2004	<ul style="list-style-type: none"> • Smith v. Mullin, 379 F.3d 919 (10th Cir. 2004) • State v. Duncan, 894 So. 2d 817 (Fla. 2004)
2003	<ul style="list-style-type: none"> • Hamblin v. Mitchell, 354 F.3d 482 (6th Cir. 2003) • Frazier v. Huffman, 343 F.3d 780 (6th Cir. 2003). • Powell v. Collins, 332 F.3d 376 (6th Cir. 2003) • State v. Coney, 845 So. 2d 120 (Fla. 2003)
2002	<ul style="list-style-type: none"> • Hooper v. Mullin, 314 F.3d 1162 (10th Cir. 2002) • Pirtle v. Morgan, 313 F.3d 1160 (9th Cir. 2002) • Jennings v. Woodford, 290 F.3d 1006 (9th Cir. 2002) • Caro v. Woodford, 280 F.3d 1247 (9th Cir. 2002) • People v. Harris, 794 N.E.2d 181 (Ill. 2002) • State v. Johnson, 794 A.2d 654 (Md. 2002) • Rylander v. State, 75 S.W.3d 119 (Tex. App. 2002), <i>rev'd</i>, 101 S.W.3d 107 (Tex. Crim. App. 2003)
2001	<ul style="list-style-type: none"> • Coleman v. Mitchell, 268 F.3d 417 (6th Cir. 2001) • Smith v. Stewart, 241 F.3d 1191 (9th Cir. 2001) • Slaughter v. Parker, 187 F. Supp. 2d 755 (W.D. Ky. 2001), <i>aff'd in part, rev'd in part</i>, 450 F.3d 224 (6th Cir. 2006) • Laird v. Horn, 159 F. Supp. 2d 58 (E.D. Pa. 2001) • Ragsdale v. State, 798 So. 2d 713 (Fla. 2001)
2000	<ul style="list-style-type: none"> • Jackson v. Calderon, 211 F.3d 1148 (9th Cir. 2000) • Morales v. Coyle, 98 F. Supp. 2d 849 (N.D. Ohio 2000), <i>aff'd and remanded sub nom. Morales v. Mitchell</i>, 507 F.3d 916 (6th Cir. 2007) • State v. Carter, 734 N.E.2d 345 (Ohio 2000)
1999	<ul style="list-style-type: none"> • Wallace v. Stewart, 184 F.3d 1112 (9th Cir. 1999) • People v. Morgan, 719 N.E.2d 681 (Ill. 1999)
1998	<ul style="list-style-type: none"> • Bean v. Calderon, 163 F.3d 1073 (9th Cir. 1998) • Seidel v. Merkle, 146 F.3d 750 (9th Cir. 1998) • Turpin v. Lipham, 510 S.E.2d 32 (Ga. 1998)
1997	<ul style="list-style-type: none"> • People v. Ruiz, 686 N.E.2d 574 (Ill. 1997)
1995	<ul style="list-style-type: none"> • Glenn v. Tate, 71 F.3d 1204 (6th Cir. 1995)

1992	<ul style="list-style-type: none">• Waters v. Zant, 979 F.2d 1473 (11th Cir. 1992), <i>vacated</i>, 11 F.3d 139• Loyd v. Whitley 977 F.2d 149 (5th Cir. 1992)• Buenoano v. Singletary, 963 F.2d 1433 (11th Cir. 1992)
------	---