MEMOIR: THE BRAIN, NEUROETHICS, AND BIOETHICS*

LESLIE C. GRIFFIN**

This Essay examines how developments in neuroscience (or brain science) affect our views of law, medicine, ethics, and religion. Part I shows how lack of clarity about brain death can lead to premature organ donation. Part II argues that health care too often provides inadequate brain care and incomplete rehabilitation. Part III explains why recovery may be possible for those brain-injured patients who are told it is not. Part IV demonstrates how the fear of a brain-injured patient oddly affects my perspective on Tort and Criminal Law, which are being influenced by neuroscientific advances. Part V examines the new developments in neurotechnology that help and hinder the human aspects of our lives and that raise questions about our cognitive liberty. Part VI identifies the questions that brain science brings to religion. The more we learn about the brain, the more we question all aspects of our lives. Knowing more about the brain challenges what we have learned in the past.

INTRODUCTION

In this Essay, I reflect on how neuroscience (or the study of the brain) has influenced law, ethics, medicine, and religion. The effects are numerous and profound. Once someone is declared brain dead, for example, she can become an organ donor. Understanding the brain has helped and hindered patients. Their rehabilitation is often stopped by poor medical and insurance rules about

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the brain that do not allow them to get full treatment and recover. Too often patients are dismissed as brain damaged or brain dead when they can still recover. New technologies can help to heal some patients, which is a great development. Technology, however, can become a surveillance tool that limits some people's rights to cognitive liberty.

I have an unusual perspective on the subject of this Essay. In 1993 and 2016, people injured me, causing severe brain injury from which I was not expected to recover. I never lose sight of my experience as a patient of brain injury who was not expected to live or work again. Fear is one of my subjects in this Essay. Why? As a victim of violent crime, I have constant fear that I may be attacked again. That fear influences what I think Tort Law, which I have taught for many years, and Criminal Law should hold about the use of neurotechnology to prove brain injury and brain capacity.

My academic understanding of the brain was enhanced post-my-2016 recovery from attempted murder. I remember attending a speech in Galveston, Texas, when I was a fellow at the University of Texas Medical Branch ("UTMB") during the 2018–19 academic year.[1] Professor William Winslade, the director of the Institute for Bioethics and Health Humanities had arranged a fellowship for me that year.[2] Working there was a great opportunity because I long studied and taught bioethics and was glad to have the opportunity to have a research leave at UTMB.

During that year, as in many other years, I was focused on the brain. Winslade had written an important book, *Confronting Traumatic Brain Injury*, in 1998.[3] He, too, was a victim of brain injury. He was well aware of the many developments in neuroscience that led to the field of neuroethics and of the trauma of brain injury, which had plagued him when he was young. Neuroethics is a subset of bioethics that focuses on the brain. In neuroethics, we ask how the scientific developments that we learn about the brain influence our reasoning about ethics, religion, medicine, and law.[4]

1. UNIVERSITY OF TEXAS MEDICAL BRANCH, https://www.utmb.edu/ [https://perma.cc/7CDX-REJZ].

2. *William J. Winslade, JD, PhD*, UNIV. TEX. MED. BRANCH, https://www.utmb.edu/spph/department/of-bioethics/our-people/profile/emeritus-faculty/winslade-wwinslad [https://perma.cc/7T6T-N3WA].

3. WILLIAM J. WINSLADE, CONFRONTING TRAUMATIC BRAIN INJURY: DEVASTATION, HOPE, AND HEALING (1998).

4. *See* Martha J. Farah, *Neuroethics: The Ethical, Legal, and Societal Impact of Neuroscience*, 63 ANN. REV. PSYCH. 571, 572 (2012).

One speaker that year was Dr. Norman Doidge, who gave a lecture entitled "The Brain that Changes Itself,"[5] about the birth of brain death. From that talk, I learned about the development of what we describe as "brain death."

An influential insight about brain death was made at Harvard Medical School in 1968.[6] Accepting brain death as the standard for medical death would mean rejecting the traditional standard that defined medical death as occurring when the lungs or heart stopped. The physicians who established this concept of brain death framed it alongside organ donation, seeing the two as closely related—once brain death occurred, organ transplantation could proceed.[7] Brain death and organ donation went together.[8]

I admit that shocked me. Why? Because by 2019 I had twice suffered serious brain injury. In April 1993, a car hit me when I was a pedestrian crossing the street with the walk sign. I then had two brain surgeries on consecutive days. The surgeries ended with a shaved head and big scars. There was no good news then. Doctors expected me to die or to never work again, repeatedly telling me, "The brain cannot heal."

I beat the odds and built my career. Then, in October 2016, when a stranger threw me to the ground, I was knocked out, left lying on the street as passersby helped me and called the police. I do not even remember being flown from Las Vegas to Houston a few weeks later for brain trauma care. Houston has the Texas Institute for Rehabilitation and Research ("TIRR") at Memorial Hermann Hospital.[9] My brother chose Houston because I had lived there for ten years, teaching at the University of Houston Law Center, before moving to Nevada. TIRR was the reason I was back in Texas and later went back another year for the fellowship at UTMB.

Medical scholars have repeatedly asked me to write about these brain experiences. I have. I tell those scholars repeatedly that I am a patient, a law

5. *See generally* NORMAN DOIDGE, THE BRAIN THAT CHANGES ITSELF (2007) (detailing encounters with neuroplasticians—practitioners of the science of changing brains—and the patients they transformed); NORMAN DOIDGE, THE BRAIN'S WAY OF HEALING (2015) (describing the phenomenon of neuroplasticity and how the brain can transform itself without surgical or medication interventions).

6. *See generally* Henry K. Beecher, Raymond D. Adams, Clifford Barger, William J. Curran, Derek Denny-Brown, Dana L. Farnsworth, Jordi Folch-Pi, Everett I. Mendelsohn, John P. Merrill, Joseph Murray, Ralph Potter, Robert Schwab & William Sweet, *A Definition of Irreversible Coma: Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death*, 205 JAMA 85 (1968) (defining irreversible coma as a new criterion for death and outlining the characteristics of a permanently nonfunctioning brain).

7. *See id.* at 85.

8. *See id.* at 87.

9. *TIRR Memorial Hermann*, MEM'L HERMANN, https://memorialhermann.org/services/specialties/tirr [https://perma.cc/BRT2-GC8P]; W.H. Donovan, *Profile of the Institute for Rehabilitation and Research*, 35 SPINAL CORD 565, 565 (1997).

professor, a religion scholar, and an ethicist. I am not a medical or scientific expert, yet they still want to hear what I have to say.[10]

For this symposium issue, I promised University of North Carolina School of Law Professor Joan Krause, who was also my Stanford law classmate and co-author of our *Practicing Bioethics Law* casebook,[11] that I would use my academic training, and *my* brain, to say something more academic about brain science and its relationship to other fields of study. This Essay is my attempt at that. I hope to show how understanding more about the brain leads to a more robust understanding of neuroethics and adds new ideas to the four traditional bioethical principles of autonomy, nonmaleficence, beneficence, and justice.[12] While there is overlap between neuroethics and bioethics, neuroethics asks us to consider additional issues beyond these four traditional principles.

Together bioethics and neuroethics must offer an ethic of caring for the dying; a civil right for all patients, including the abled and the disabled; and a focus on recovery for everyone. Tort and criminal law must recognize that fear is part of victims' experiences. My insights on this topic come from my experience as a patient as well as my studies of law, ethics, and religion.

Part I examines organ donation from the perspective of the donor, not the recipient. Developments since the Harvard study identifying brain death show that medicine is often focused on the dying patient as a source of organs for the living. Understanding this phenomenon calls for us to view bioethics as an ethic of caring for the dying, teaching us not to take away organs from patients when they are still alive. Part II looks at rehabilitation of brain-injured persons, showing that insurance and medical diagnoses often block the best care for patients. Patients are assigned to chronic care instead of rehabilitative treatment. Understanding this problem means we should see brain care as more than a mere medical benefit. Brain care is a civil right for all people, including the disabled. Part III reminds us that rehabilitation should really mean recovery and that science must keep progressing on patient-focused medicine, which requires time and patience. Brain recovery always takes time. Part IV

10. *See, e.g.*, Leslie Griffin, *Perspective Chapter: Bambi Trauma—Surviving TBI Twice*, *in* TRAUMATIC BRAIN INJURY: RECENT ADVANCES AND CHALLENGES (Ioannis Mavroudis & Alin Ciobica eds., 2024), https://www.intechopen.com/online-first/1179800# [https://perma.cc/RXA7-M2Z7] (providing detailed descriptions of two prior experiences with traumatic brain injury and describing how independence supported recovery). *See generally* Leslie C. Griffin, *Conquering Brain Injury*, 34 J. HEAD TRAUMA REHAB. 366 (2019) (offering guidance for patients and caretakers during the recovery process).

11. LESLIE C. GRIFFIN & JOAN H. KRAUSE, PRACTICING BIOETHICS LAW (Foundation Press, 1st ed. 2016).

12. *See generally* TOM L. BEAUCHAMP & JAMES F. CHILDRESS, PRINCIPLES OF BIOMEDICAL ETHICS (Oxford University Press, 7th ed. 2013) (discussing the concepts, theories, and meanings of the four principles of biomedical ethics).

emphasizes that fear, which neuroscientists occasionally study as part of the brain, is part of the experience for tort and crime victims. Can we have a system that protects victims' brains but does not overprotect criminals? Part V asks how we can use neurotechnology for good, especially to protect cognitive liberty. It looks at neurotechnology, accepting that our cognitive liberty must be maintained even as technology threatens it. Part VI examines what religion has to say about what kinds of humans we are, namely who it is that our brains protect. It examines recent studies that argue we should develop a universal ethic that would teach people to be more tolerant of each other's religions. I conclude with my insights on what neuroethics should say to bioethics.

I. ORGAN DONATION

If you are dead, will you give your organs to someone else? What is death, which precedes organ donation, as the Harvard doctors taught us?

> Death is defined as the ending of heartbeat and respiration or brain function. This cessation must be irreversible and determined in accordance with accepted medical standards. The official definition of death, according to the UDDA (Uniform Determination of Death Act), is the "irreversible cessation of circulatory and respiratory functions or irreversible cessation of all functions of the entire brain, including the brainstem."[13]

The heart circulates blood, and the lungs breathe to provide oxygen.[14] Traditionally, the heart and lungs stopping these functions defined when someone was dead.[15] But what about the brain? Brain death is distinct from heart and lung death, with the Harvard Medical School Committee saying it was important to switch to brain death, not heart and lung death, as the standard.[16] Brain death is now the standard commonly used to define when someone is dead.[17]

The Harvard study noted that the standard in 1968 followed the definition of death in *Black's Law Dictionary*: "The cessation of life; the ceasing to exist; *defined by physicians* as a total stoppage of the circulation of the blood, and a

13. *Death*, CORN. L. SCH.: LEGAL INFO. INST., https://www.law.cornell.edu/wex/death [https://perma.cc/K24W-XF2H].

14. *Circulatory System*, CLEVELAND CLINIC (Sep. 4, 2024), https://my.clevelandclinic.org/health/body/circulatory-and-cardiovascular-system [https://perma.cc/GL3D-Q7SX] (last updated Sep. 4, 2024).

15. Beecher et al., *supra* note 6, at 86 (citing *Death*, BLACK'S LAW DICTIONARY (4th ed. 1951)).

16. *See generally id.* (discussing and critiquing how the legal system has defined "death").

17. *See* Teneille R. Brown, *When Death Is Not a Binary* 1 (Univ. Utah Coll. L. Working Paper, Paper No. 629, 2025) [hereinafter Brown, *When Death Is Not a Binary*], https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5124482 [https://perma.cc/Z8HL-DMVN].

cessation of the animal and vital functions consequent thereupon, such as respiration, pulsation, etc."[18] Death was a question of fact for the courts. A California court articulated the heart and lung test relying on *Black's*: "[D]eath occurs precisely when life ceases and does not occur until the heart stops beating and respiration ends."[19] An Arkansas court faced the question of whether, when a husband and wife were in a car accident together, the husband died at the scene on August 19, 1957, and the wife died seventeen days later at the hospital, their deaths had both occurred "simultaneously" at the time of the accident.[20] The petitioner to the court said the two "lost their power to will at the same instant, and that their demise as earthly human beings occurred at the same time in said automobile accident, neither of them ever regaining any consciousness whatsoever."[21] The court dismissed the petition also using *Black's* to say:

> [I]t would be too much of a strain of credulity for us to believe any evidence offered to the effect that Mrs. Smith was dead, scientifically or otherwise, unless the conditions set out in the definition existed . . . . Likewise, we take judicial notice that one breathing, though unconscious, is not dead.[22]

The Harvard authors acknowledged that this was the state of the law at the time of their 1968 report.[23] Significantly, however, they wanted to equip the courts with a new definition of death. Their perspective represented a "change in the current legal concept of death."[24] "Irreversible coma," the title of their report, is the standard for death.[25] In the old days, no heartbeat was a sign of death.[26] But modern technology can restore "persistent respiration and continuing heart beat" even when "there is not the remotest possibility of an individual recovering consciousness following massive brain damage."[27] Technology that kept the heart and lungs working required a brain-centered concept of death.

In advancing brain death as the new standard, the Harvard report also noted that brain-dead people could become organ donors:

> It is further suggested [they said] that the decision to declare the person dead, and then to turn off the respirator, be made by physicians not

18. Beecher et al., *supra* note 6, at 86 (citing *Death*, BLACK'S LAW DICTIONARY (4th ed. 1951)).
19. *Id.* (quoting Thomas v. Anderson, 211 P.2d 478, 482 (Cal. Ct. App. 1950)).
20. *Id.* at 86–87 (citing Smith v. Smith, 317 S.W.2d 275 (Ark. 1958)).
21. *Id.* at 87 (quoting *Smith*, 317 S.W.2d at 277).
22. *Id.* (quoting *Smith*, 317 S.W.2d at 279, 281).
23. *Id.*
24. *Id.*
25. *Id.*
26. *Id.*
27. *Id.*

> involved in any later effort to transplant organs or tissue from the deceased individual. This is advisable in order to avoid any appearance of self-interest by the physicians involved.[28]

Dr. Henry Beecher explained they insisted on two separate physicians because both patients must be protected: "What is to be made crystal clear is that the diagnosis of irreversible coma must be kept separate from an interest in transplantation."[29] For that reason, many scholars have agreed with the Harvard experts that the dying patient's doctor must be different from the doctor of the patient who stands to receive the organ.[30] That is the best ethical standard to ensure today that the dying and the living are protected equally.

Making a similar point, years later, Dr. Joseph Fins, a brilliant neuroethicist,[31] resigned from his board position with a local organ procurement association ("OPO").[32] He thought that patients were viewed as organ donors too soon.

> I had seen OPO representatives hover in an ICU, waiting to sweep in—as some intensivists have described it to me—and collect what they viewed as rightly theirs—organs that would have a salutary effect on another human being. I use the word "hover" deliberately, if a bit provocatively, because that is how families of many brain injury patients viewed it.[33]

For brain-injured patients, loss of consciousness may be just the beginning of their recuperation, so there should be no "premature harvesting."[34] Fins urges temperance on this subject, encouraging everyone to use self-restraint and not harvest when the outcome for the "dying" patient is unclear.[35]

Back to me in Galveston. Why was I shocked when Dr. Doidge, their guest speaker, said Harvard Medical School flagged an individual who seemed to meet the criteria for "death" as a potential donor? I'm sure it was because I was a patient of brain injury who wanted all the doctors' attention on me. Just on me. Not on another person who might benefit from my organs. I thought the

28. *Id.*

29. Henry K. Beecher, *Definitions of "Life" and "Death" for Medical Science and Practice*, 169 ANN. N.Y. ACAD. SCI. 471, 472 (1970).

30. *See, e.g.*, Wojciech Baginski, *Hastening Death: Dying, Dignity, and the Organ Shortage Gap*, 35 AM. J.L. & MED. 562, 574 (2009).

31. *Renowned Medical Ethicist Dr. Joseph Fins Receives Named Professorship*, N.Y. PRESBYTERIAN HOSP.: NEWSROOM (May 20, 2011), https://www.nyp.org/news/renowned-medical-ethicist-dr-joseph-fins-receive-named-professor [https://perma.cc/87V9-FJ9S].

32. Joseph J. Fins, *Severe Brain Injury and Organ Solicitation: A Call for Temperance*, 14 AMA J. ETHICS 221, 221 (2012).

33. *Id.* at 222.

34. *Id.* at 223.

35. *Id.* at 224.

doctor should be completely focused on the present patient's well-being—on my well-being.

I used a bioethical principle to justify my position. The first of the four principles of bioethics is patient autonomy.[36] Well, I call it the first principle, probably because I have been a patient. The other three are beneficence, nonmaleficence, and justice.[37] It is because of autonomy that patients must give informed consent to their medical treatments.[38] My view of autonomy has always been that doctors must always be aware of what their patients want and understand.

When I heard that brain death was influenced by organ donation, I wondered why my doctors were always so negative about my health possibilities. My doctors usually told me that my health was bad and would probably stay bad. Twice they told my family I was about to die. For the record, *both times*, against all odds, I recovered from illnesses that doctors thought were fatal or completely debilitating.

One safeguard that does exist to protect the autonomy of patients whose organs may be donated is the requirement that those patients affirmatively opt in to organ donation.[39] After my second injury, for a while, I was the only person in the world who believed I would recover. I knew I had not recovered, yet. But I was confident I would because of my first experience. The idea that brain death criteria could free doctors to give my organs to others instead of being focused 100% on my recovery, troubled me then and still does now.

But if you opt in, they may hover over you to get your organs. It is probably why (and this will annoy a lot of you) I have not yet opted in.

In June 2025, I learned more about brain death criteria. I listened to University of Utah College of Law's Professor Teneille Brown's[40] presentation of her paper, *When Death Is Not a Binary*.[41] It reminded me of the Galveston lecture.

36. *Cf.* Basil Varkey, *Principles of Clinical Ethics and Their Application to Practice*, 30 MED. PRINC. & PRAC. 17, 17 (2021) (listing the four main ethical principles for patient care with no hierarchy in their order).

37. *Id.*

38. *See Informed Consent Doctrine*, CORNELL L. SCH.: LEGAL INFO. INST., https://www.law.cornell.edu/wex/informed_consent_doctrine [https://perma.cc/U8G7-SHEE].

39. *Opt-in vs Opt-out Donation Systems*, 8 ORGAN DONATION & TRANSPLANTATION ALL.: SPOTLIGHT SERIES (June 2022), https://www.organdonationalliance.org/insight/opt-in-vs-opt-out-donation-systems/ [https://perma.cc/4AGL-MB5Z].

40. *Teneille Brown*, UNIV. OF UTAH, https://profiles.faculty.utah.edu/u0120155 [https://perma.cc/KEP3-JZ2L].

41. Brown, *When Death Is Not a Binary*, *supra* note 17.

Brown spoke at Professor Hank Greely's annual BioLawLaPaLooZa conference,[42] a place to learn a lot about ethics.[43] She talked about the brain, so I paid careful attention. State law demands that one is either alive or legally dead.[44] The Uniform Determination of Death Act ("UDDA")[45] sets up that binary between life and death.[46] The Uniform Law Commission passed the UDDA as a model act in 1980, and it has been adopted across the states as a rule defining death since then.[47] However, Brown said brain death is "far messier" and not binary.[48] It is too simple to just be either alive or dead. "The mismatch between the continuum of biology and the binary requirement of law creates weighty problems when doctors, pressured by the need for organ donations and limited hospital resources, declare patients brain dead even when they do not meet the legal standard."[49] Her paper repeatedly shows that patients have been declared brain dead even when they can "fight infections, regulate body temperature, or have a menstrual cycle."[50]

This messy legal system allows doctors to routinely violate the law by declaring patients dead even when they are not *really* dead.[51] One of the reasons doctors do this is "to increase the availability of organs for donation."[52] When I listened to Brown's lecture, I realized that my refusal to donate my own organs was probably rooted in my fear as a patient that donation would provide a reason not to heal me. You may not be with me on this point, but in my view, all things should go to healing the patient, whatever state she is in.[53]

42. *Utah Faculty Updates: May 2025*, UNIV. UTAH: S.J. QUINNEY COLL. L. (May 29, 2025), https://www.law.utah.edu/news-articles/utah-faculty-updates-may-2025/ [https://perma.cc/9ZK2-G2EL].

43. *Center for Law and the Biosciences*, STAN. L. SCH., https://law.stanford.edu/center-for-law-and-the-biosciences/ [https://perma.cc/8MLN-JFJZ]; *see Stanford Center for Law and the Biosciences: BioLawLaPaLooZa 2023-2024*, ARTIFICIËLE INTELLIGENTIE & RECHT: BLOG (May 19, 2024), https://airecht.nl/blog/2024/stanford-center-for-law-and-the-biosciences-biolawlapalooza-2023-2024 [https://perma.cc/8KCX-CPLY].

44. Brown, *When Death Is Not a Binary*, *supra* note 17.

45. UNIF. DETERMINATION DEATH ACT § 1 (UNIF. L. COMM'N 1981).

46. Lauren Riley, *A Call To Reject the Neurological Standard in the Determination of Death and Abandon the Dead Donor Rule*, 87 NOTRE DAME L. REV. 1749, 1749 (2012).

47. Melissa McCall, *What Is the Uniform Determination of Death Act?*, FINDLAW (June 7, 2023), https://www.findlaw.com/healthcare/patient-rights/what-is-the-uniform-declaration-of-death-act-or-udda.html [https://perma.cc/ZMW2-UFVY (staff-uploaded archive)].

48. Brown, *When Death Is Not a Binary*, *supra* note 17, at 1.

49. *Id.*

50. *See id.*

51. *See id.*

52. *Id.* at 4.

53. *See* Scott Schweikart, *Reexamining the Flawed Legal Basis of the "Dead Donor Rule" as a Foundation for Organ Donation Policy*, 22 AMA J. ETHICS 1019, 1021–22 (2020) ("[O]rgans from a donor who is brain dead are optimal for donation, as the organs can be procured before 'circulatory arrest' and

Brown also pointed out the inadequacies of the Harvard brain death criteria, which reminded me of my own reaction to hearing about them in Galveston. She emphasizes that the 1968 standard does not take into account modern technology and its ability to find all kinds of brain activity.[54] And she shrewdly notes that everyone disagrees about "what the definition of a living 'organism' is."[55] My perspective is much more patient-friendly than almost anyone's because I know that, against all odds, a completely comatose patient can recover. Perhaps not within a few days or even a few weeks. But eventually.

Doctors at a Kentucky hospital, for example, prepared to take the organs of a patient, Mr. Hoover, even though he was thrashing in fear.[56] They sedated him.[57] After he cried and moved, a doctor refused to remove his life support, so he lived, with some neurological injuries.[58] He was still alive and should not have been required to be an organ donor. Turns out, Mr. Hoover was not unique.[59]

A federal investigation later found that a Kentucky nonprofit ignored alertness in order to turn numerous patients into donors.[60] In 350 cases, plans to remove organs were cancelled.[61] In 73 cases, personnel should have noticed sooner that patients were conscious.[62] Hospitals were starting to take organs even when patients were alert. Apparently, hospital sedatives can make a patient appear to be in worse shape than she really is.[63] Brown taught us that the UDDA requires "the irreversible cessation of all brain function."[64] Kentucky shows us, however, that physicians do not always follow that rule and look for such cessation.

Professor Brown talks about Jahi McMath, whose name and experience I know. Her story appears in our bioethics casebook.[65] Jahi's mother said her thirteen-year-old daughter was not brain dead in 2013, although the California

hence have no 'anoxic damage.'"). This article suggests that the Dead Donor Rule can be revisited to show possible legal methods of retrieving and donating organs and further contemplates medically justifiable homicide. *Id.* at 1022.

54. Brown, *When Death Is Not a Binary*, *supra* note 17, at 6.

55. *Id.*

56. Brian M. Rosenthal, *Doctors Were Preparing To Remove Their Organs. Then They Woke Up.*, N.Y. TIMES (Dec. 16, 2025), https://www.nytimes.com/2025/06/06/us/kentucky-organ-donations.html [https://perma.cc/2D5L-2EFP (staff-uploaded, dark archive)].

57. *Id.*

58. *Id.*

59. *Id.*

60. *See id.*

61. *Id.*

62. *Id.*

63. *See id.*

64. Brown, *When Death Is Not a Binary*, *supra* note 17, at 10.

65. GRIFFIN & KRAUSE, *supra* note 11, at 106–07.

doctors said she was.[66] She then took Jahi to New Jersey, where patients can reject a concept of death for religious reasons.[67] Jahi died there in 2018, five years later.[68] Brown's point was that Jahi was not really dead in 2013; she relocated and started to menstruate post-move to New Jersey, which was proof she was still alive.[69] According to Brown, physicians were "too hot" in their absolute certainty that Jahi was dead.[70]

Brown adds, "Given histories of medical racism, patients of color worry that hospitals might not try as hard to save them."[71] Jahi's mother said if her daughter were white, her treatment might have been better.[72] Some of my bioethics students, who have worked in hospitals, tell me that racism is a regular part of what they see in medical treatment. Racism is one reason that justice is a foundational bioethical principle—every person must receive due care.[73]

Maybe I am still here because I am a well-off, highly educated white woman. After my second injury, I had the University of Nevada Boyd School of Law behind me and then the University of Houston Law Center after I was flown to TIRR. Nurses told me they got more phone calls about me than about any other patient they treated. My first surgeries occurred when I was clerking for a federal judge on the Ninth Circuit Court of Appeals. I had the insurance of a federal government employee the first time, and then of a state government employee the second. Most of my tremendously expensive medical care was paid for by my insurance. I wonder if I got better care because I had insurance lawyers arguing about my insurance coverage, as well as law professor colleagues, friends, and family keeping their eyes on every minute of my care and rehabilitation.

Rehabilitation?

II. REHABILITATION

My insurance company wanted to send me to a rehab center two weeks after my 2016 attack. Permanently. Why? I had not yet recovered, and they

66. *Id.* at 106.

67. *See* Brown, *supra* note 17, at 11.

68. GRIFFIN & KRAUSE, *supra* note 11, at 107.

69. *See* Brown, *When Death Is Not a Binary*, *supra* note 17, at 12.

70. *Id.* at 18.

71. *Id.* at 20.

72. *Id.* ("I really feel in my heart: if Jahi was a little white girl, I feel we would have gotten a little more help and attention."); *see also* The Conversation, *Why the Case of Jahi McMath is Important for Understanding the Role of Race for Black Patients* (July 12, 2018, at 06:24 ET), https://theconversation.com/why-the-case-of-jahi-mcmath-is-important-for-understanding-the-role-of-race-for-black-patients-99353# [https://perma.cc/538E-S7VQ].

73. *See generally* GRIFFIN & KRAUSE, *supra* note 11 (discussing that the principle of justice requires each person to receive her due care).

assumed I probably would not. My University of Nevada colleague and health law professor Stacey Tovino, argued with insurance to make sure they paid for me to fly to TIRR instead of being sent off to wither in rehab in Las Vegas.

While rehabilitation may seem to be a desirable option, it is often viewed as the end of the road for injured patients.[74] Sometimes it is good, but people cannot get it because the law says they are not really qualified to receive it. I know that, because I have fought my way through rehabilitation twice.[75]

Fins asked me to participate in a session about rehabilitation called *Traumatic Brain Injury Workshop: The Three-Hour Rule*.[76] What is the Three-Hour Rule? Therapy law says patients:

> can reasonably be expected to actively participate in, and benefit from, an intensive rehabilitation therapy program. Under current industry standards, this intensive rehabilitation therapy program generally consists of *at least 3 hours of therapy (physical therapy, occupational therapy, speech-language pathology, or prosthetics/orthotics therapy) per day at least 5 days per week*. In certain well-documented cases, this intensive rehabilitation therapy program might instead consist of at least 15 hours of intensive rehabilitation therapy per week. Benefit from this intensive rehabilitation therapy program is demonstrated by measurable improvement that will be of practical value to the patient in improving the patient's functional capacity or adaptation to impairments. The required therapy treatments must begin within 36 hours from midnight of the day of admission to the [Inpatient Rehabilitation Facility].[77]

Thus, in TBI rehabilitation, Medicare, insurers, and rehabilitation facilities follow a rule that a patient must be able to perform a minimum of three hours of therapy per day, five days a week, in order to qualify for rehabilitation.[78] That might sound like a good insurance-type rule. The rule is supposed to ensure that patients are really working enough hours and that only hard work is worthy of coverage. Three hours yes; two hours no. But if you are not recovering, you cannot be rehabilitated. My insurance company wanted to send me to permanent rehab after two weeks because they did not think I could recover. Two weeks is early in brain recovery, so decisions in favor of permanent chronic care at that point are usually premature. Waiting for three hours often does not help the patient either.

74. *See* Laura Brown, *Leavitt Partners' TBI Workshop on the "3-Hour Rule*," (Dec. 4, 2024), https://spauldingrehab.org/assets/spaulding/pdfs/research/tbi-summit/leavitt.pdf [https://perma.cc/PXA7-RDEP] [hereinafter Brown, *Leavitt Partners'*].

75. *Id.*

76. *Id.*

77. 42 C.F.R. § 412.622(a)(3)(ii) (2024) (emphasis added).

78. *See id.*

There is very little case law about the Three-Hour Rule. A lead decision is *Hooper v. Sullivan*,[79] where in 1989 the District Court of Connecticut ruled "Medicare determinations for hospital rehabilitation care are to be based upon an assessment of each individual patient's need for care" and "denials of admissions, services, and/or Medicare coverage based upon numerical utilization screens, diagnostic screens, diagnosis, specific treatment norms, the 'three hour rule', or other 'rules of thumb' are not appropriate."[80]

Although *Hooper* suggests that utilization screens like the Three-Hour Rule should not be used to limit medical care,[81] they do limit patients' access to good rehab. Time and again, patients suffer when their entire care is based on the minutes or the hours they can sustain effective care.[82]

Legislators' actions explain the difficulty surrounding what counts as real therapy for suffering patients. In 2025, Representative Glenn "GT" Thompson, a Republican Congressman of Pennsylvania and a former rehabilitation specialist, described the background of the Three-Hour Rule, which is used by the Centers for Medicare and Medicaid Services ("CMS") to decide patient therapy.[83] Representative Thompson said:

> Prior to 2010, CMS regulations for IRFs explicitly recognized physical therapy, occupational therapy, speech therapy, and/or orthotics and prosthetics as countable toward the "Three-Hour Rule" but allowed the physician and rehabilitation team to prescribe the appropriate mix of "other therapeutic modalities" in addition to the skilled services listed in the regulation. In 2010, CMS revised the IRF regulations and limited the "Three-Hour Rule," removing the physician's discretion to count additional therapeutic services toward satisfaction of the rule. Other skilled therapies, including recreational therapy, psychological services, respiratory therapy, and neuropsychological services, are no longer counted.
>
> Although IRFs are permitted to provide these services, the fact that they cannot be counted toward the rule has limited their availability in many rehabilitation hospitals.[84]

79. Hooper v. Sullivan, No. H-80-99(PCD), 1989 WL 107497 (D. Conn. July 20, 1989).

80. *Id.* at *1.

81. *See id.*; 42 C.F.R. § 412.622(a)(3)(ii) (2024).

82. Brown, *Leavitt Partners*', *supra* note 74.

83. *See Member Day Hearing on Priorities in the 119th Congress: Hearing before the House Committee on Ways and Means*, 119th Cong. 5 (2025) (Statement of Glenn "GT" Thompson, Member, H. Comm. on Ways & Means).

84. *Id.* (emphasis added).

So, coverage under the Three-Hour Rule was limited after 2010. Later, the Three-Hour Rule was then waived during COVID-19.[85] Representative Thompson noted that the waiver allowed patients a better range of therapies.[86] He was seeking a law that would give patients the best chance at an appropriate mix of therapies.[87]

In 2022, Representative Thompson joined with Representatives Joe Courtney (D-CT) and G.K. Butterfield (D-NC) to sponsor the Access to Inpatient Rehabilitation Therapy Act of 2022,[88] aiming to ensure Medicare rehabilitation coverage post-COVID.[89] The bill would "restore physician judgment to prescribe the appropriate mix of skilled modalities that constitute an intensive rehabilitation therapy program in an inpatient rehabilitation hospital or unit."[90] "H.R. 8746 would [have] restore[d] all physician-prescribed therapies as part of a patient's coverage, adding flexibility for the physician and rehabilitation team to determine the appropriate mix of skilled services to provide a more tailored treatment plan to meet individual patient needs."[91] Section 2(a)(8) of the proposed legislation provided:

> Skilled, therapeutic modalities in addition to physical therapy, occupational therapy, speech language pathology services, and orthotic and prosthetic services that should be counted toward the Three Hour Rule include recreational therapy services, respiratory therapy, and other skilled modalities as determined by the Secretary when such skilled services are medically necessary and prescribed by a physician as part of the patient's plan of care.[92]

In 2025, Representative Thompson reintroduced the Access to Inpatient Rehabilitation Therapy Act,[93] which would "ensure that rehabilitation physicians are able to prescribe the correct mix of skilled rehabilitation therapies for their patients by allowing 'other skilled therapeutic modalities,' including recreational therapy, respiratory therapy, and other defined by CMS, to count

85. *Id.*

86. *Id.*

87. *See id.*

88. Access to Inpatient Rehabilitation Therapy Act of 2022, H.R. 8746, 117th Cong. (2022).

89. Press Release, Butterfield, Thompson Reintroduce Access to Inpatient Rehabilitation Therapy Act (Jan. 24, 2017), https://thompson.house.gov/media-center/press-releases/thompson-butterfield-reintroduce-access-inpatient-rehabilitation-therapy [https://perma.cc/8AXD-JYES].

90. H.R. 8746.

91. Mia Connery, *Bipartisan "Three-Hour Rule" Bill Introduced to Improve Rehabilitation Therapy for Medicare Patients*, AM. ACAD. OF PHYSICAL MEDICINE & REHAB. (Aug. 29, 2022 16:47 ET), https://www.aapmr.org/members-publications/newsroom/member-news/2022/08/29/bipartisan-three-hour-rule-bill-introduced-to-improve-rehabilitation-therapy-for-medicare-patients [https://perma.cc/34F6-MXXD].

92. H.R. 8746.

93. *See Member Day Hearing*, *supra* note 83.

toward the intensity of therapy requirement during an IRF stay."[94] In other words, more flexibility about the rule would help patients.

The COVID-19 waiver affected many assessments of the Three-Hour Rule, with people asking for the rules to become more patient-friendly.[95]

> Active COVID-19 patients, as well as recovering COVID-19 patients, are often not able to tolerate three hours of therapy per day, but many nevertheless require intensive, coordinated rehabilitation care in order to maintain or regain function lost due to COVID-19 infection. [The Association of Rehabilitation Nurses] encourages CMS to maintain the three-hour rule waiver for the duration of the [public health emergency].[96]

The pre-2010 regulations, which allowed a broader range of therapies for patients, are encouraged.[97]

Post-pandemic, why should there be more flexibility to the rule? Patients on ventilators may need respiratory therapy.[98] Patients with lowered bodily functions may need recreational therapy.[99] They "should be able to participate in a rehabilitation care plan tailored to their unique medical and functional needs" without having to worry about whether they meet the Three-Hour rule.[100]

Some rehabilitation centers ask that the Three-Hour Rule be waived. One of them explains:

> The [existing] rule ignores patient heterogeneity, disregarding individual needs and holistic care, which includes essential services like wound care and nutrition. It creates financial incentive conflicts, prioritizing therapy time over necessary medical interventions. Legislative challenges arise as payors misuse the rule to deny coverage, conflicting with court rulings like *Hooper v. Sullivan*. Additionally, the rule's arbitrary thresholds penalize patients unjustly. Its narrow scope limits innovative therapies and professional judgment, undermining individualized care, and leading to regulatory misalignment and advocacy for policy reform. . . . Research underscores no correlation between the 3-hour rule and patient outcomes, further driving the need for outcome-focused, patient-centered care. . . . The rule affects patients

94. *Id.* at 5.

95. *See, e.g.*, Association of Rehabilitation Nurses, Comment Letter on Regulatory Relief to Support Economic Recovery (Dec. 28, 2020), https://rehabnurse.org/uploads/about/ARN_Comments_on_HHS_COVID_Regulatory_Relief_RFI_D0926174.pdf [https://perma.cc/573B-RWMA].

96. *Id.* (emphasis omitted).

97. *Id.*

98. *See id.*

99. *See id.*

100. *Id.*

> with multiple rehabilitation needs by limiting therapy balance. It forces prioritization of countable therapies over individualized care, creating service gaps that compromise addressing extensive patient needs, especially for those requiring multidisciplinary interventions.[101]

A Three-Hour Rule, five days a week, has little to do with good rehabilitation or entry to rehabilitation. There are *no* scientific studies that show it is a good standard for effective rehabilitation.[102] Usually, the rule keeps people out of rehabilitation.

Dr. Fins is a fabulous neuroethicist who has done more than anyone to give hope to brain-damaged patients.[103] He encouraged my colleagues that I might still recover even while I was lying in the hospital, unconscious. His book, *Rights Come to Mind: Brain Injury, Ethics and The Struggle for Consciousness*, explains why brain-injured patients have a right to care and not just a right to die.[104] Fins's scholarship is a positive contribution to bioethics, a field which often allows patients to die instead of caring for them to recover against all odds. As discussed in Part I, this phenomenon may be attributable to dead patients being viewed as organ donors.[105]

On our panel on the Three-Hour Rule, which I participated in at his invitation,[106] Fins explained that nihilism often dominates brain injury.[107] Fins tell us that the Three-Hour Rule is "ethically unjustified"; it "precludes recovery before it starts."[108] If you cannot do three hours, you don't get anything. A Three-Hour Rule keeps disabled patients from getting the care they need to get better.[109] Ten minutes is a lot of time if the brain has just been injured. My mind was not the same after either accident, but I made the most of the moments when it did work, however brief they were. Just minutes, not hours. It kept healing in those short amounts of time.

101. *What Is the 3 Hour Rule for Inpatient Rehab?*, LIVE OAKS WELLNESS, https://liveoakswellness.com/what-is-the-3-hour-rule-for-inpatient-rehab/ [https://perma.cc/92P9-M7P6].

102. *See* George Forrest, Alycia Reppel, Mina Kodsi & Joshua Smith, *Inpatient Rehabilitation Facilities: The 3-Hour Rule*, *in* 98 MED. E17096 (2019).

103. *See Joseph J. Fins, M.D., M.A.C.P., F.R.C.P*, WEILL CORNELL MED., https://weillcornell.org/jfins [https://perma.cc/TT84-6JN4].

104. *See generally* JOSEPH J. FINS, RIGHTS COME TO MIND: BRAIN INJURY, ETHICS AND THE STRUGGLE FOR CONSCIOUSNESS (2015).

105. *See supra* notes 51, 59–73 and accompanying text.

106. *See* Brown, *Leavitt Partners'*, *supra* note 74.

107. *See* Joseph J. Fins, Brain Injury, Address at the Spaulding-Harvard Medical School Traumatic Brain Injury Summit: Brain Injury Neuroethics and The Mandate for Rehabilitation (Nov. 22, 2024), https://spauldingrehab.org/assets/spaulding/pdfs/research/tbi-summit/fins.pdf [https://perma.cc/XUM9-ZPH7].

108. *Id.*

109. *See id.*

Fins explains that misdiagnosis is part of brain injury and contributes to poor rehab: "41 percent of patients with traumatic brain injury who were in chronic care and thought to be in the vegetative state were in fact in MCS [minimally conscious state]."[110] Doctors' goal is to help these patients recover.[111] Fins's intellectual work has repeatedly shown that seriously injured brains can heal.[112] When we deny care to individuals, it is the disabled who lose their care and are left to linger instead of to heal. Rehabilitation often works against the injured and the disabled, both in the hospital setting and beyond:

> Utilization reviewers, and insurance benefit companies will deny access to rehabilitation to many individuals when they leave the hospital because they are deemed not yet ready for rehabilitation. But when nearly half of those who could participate are misdiagnosed as vegetative when they are actually minimally conscious, this vulnerable group is further marginalized. Organizations like the American College of Rehabilitation Medicine have been calling for a comprehensive evaluation of patients after hospital discharge so that misdiagnosis can be prevented and those who might be helped can get the rehabilitation they need.[113]

Fins argues that rehabilitation is a civil right that everyone is entitled to, especially individuals protected by the Americans with Disabilities Act.[114] He challenges the "custodial care" that some are left to, but also claims much rehab is not very good:

> Most rehab stays are six weeks or less. But if the brain recovers through a slow process similar to development, why do we provide—and only to those lucky enough to receive it—just a few hours of rehabilitation a week for six weeks? It would be akin to sending your third grader to school for half-days of classes for a month or two and telling them that they are now on their own. Now that we know that it takes years for the developing brain to learn and mature, a similar commitment to the recovering injured brain now seems indicated.[115]

110. Joseph J. Fins, *Brain Injury and the Civil Right We Don't Think About*, N.Y. TIMES (Aug. 24, 2017), https://www.nytimes.com/2017/08/24/opinion/minimally-conscious-brain-civil-rights.html [https://perma.cc/5SH4-3K2C (staff-uploaded, dark archive)] [hereinafter Fins, *Brain Injury and the Civil Right*].

111. *Id.*

112. *Id.*

113. *Id.*

114. *Id.*; Americans with Disabilities Act of 1990, Pub. L. 101-336, 104 Stat. 327 (codified as amended at 42 U.S.C. §§ 12101–12213).

115. Fins, *Brain Injury and the Civil Right*, *supra* note 110.

Fins uses the word "segregated" to describe brain-damaged people who are ignored and not given adequate care.[116] "[T]here are large numbers of people . . . who have the potential to communicate but are sequestered—indeed, segregated—in chronic care, isolated and abandoned by society."[117] If patients are not given enough time, their recovery is never possible. Cutting coverage

> may be a good way to cut costs but it is a terrible way to conduct rehabilitation for patients with disorders of consciousness because there is a growing body of neuroimaging literature that shows that patients may be on their way to recovery by imaging criteria long before they can overtly demonstrate the same behaviorally. . . . At the bedside, in the scanner, and in the halls of Congress when rehabilitation reimbursement schemas are considered, the refrain should be "wait, wait . . . don't judge me."[118]

Each patient's "voice is a signal deserving to be heard"[119] and that requires patience from everybody.[120]

Medicine and insurance should be satisfied with any amount of care the patient can handle. Ten minutes, a half hour, an hour, and then one day you'll get to three. But setting a three-hour minimum is not responsive to where the patient is. It is putting insurance money above the patient's recovery. Just as my insurers wanted to send me off too soon, leaving me to live without effective recovery.

COVID-19 affected everyone's health care, including how the Three-Hour Rule was waived. As discussed above, some members of Congress supported legislation that allowed more flexibility for doctors so that the patient can get the coverage best suited to her needs.[121] COVID's waiver of the Three-Hour Rule made people more aware that health care must protect everyone's health and well-being and not abandon people until they get to three hours. It led Congress to recommend making changes to the law so that the Three-Hour Rule is no longer in the patient's way.[122]

I faced nihilism, fought it, and won. In 1993, my therapists told me that the brain could not heal, I would never be able to recognize something was wrong with me, and I would not work again.

116. *Id.*

117. *Id.*

118. Joseph J. Fins, *Wait, Wait . . . Don't Tell Me, Tuning in the Injured Brain*, 69 ARCHIVES NEUROLOGY 158, 159 (2012).

119. *Id.*

120. *Id.*

121. Connery, *supra* note 91.

122. *See Member Day Hearing*, *supra* note 83.

For the record, years later, when I got my courage up, I looked at the 1993 test results that brain rehab officials read to deny me any working future. In small print at the bottom, they noted I was an excellent reader and communicator, though terrible at other things that I am still terrible at today. Those strengths are exactly what my work is built on—what I do for a living. Other patients go on to do different things, but I draw confidence from athletes who recover from severe injuries, a reminder of how often people underestimate what recovery can look like—something that was already true in my case in 1993. Even then, I could do what I needed to do, and the test results themselves showed it. There was no reason for rehab officials to undermine my confidence and to tell me I was brain-damaged beyond repair when I was not.

We need to meet the brain-injured patient where she is and do everything to heal her. Not turn her into an organ donor. Or bar her progress because she has not made it to three hours, five days a week. This is probably part of what bioethicists have said is the ethical part of health care: beneficence and nonmaleficence. In other words, do everything you can for the patient and do no harm.[123] *Primum non nocere*.[124] "Brains recover by biological mechanisms, not reimbursement criteria."[125] The goal of rehabilitation is recovery.

III. RECOVERY

One way to understand brain disease is to refer to it as cognitive motor dissociation. Patients with brain injuries who do not respond to commands may still engage in cognitive activity that can be detected using functional magnetic resonance imaging ("fMRI") and electroencephalography ("EEG").[126] For example, Maggie, a woman who suffered a brain injury, was a fabulous swimmer but has not swum since her injury. Yet, if you talk to her about swimming, the primary motor cortex—a region of the brain that controls voluntary muscle movements like walking—responds. It is the same motor strip that would act if

123. *See generally* TOM L. BEAUCHAMP & JAMES F. CHILDRESS, PRINCIPLES OF BIOMEDICAL ETHICS (8th ed. 2019) (discussing these leading theories of bioethics).

124. *Id.* at 150.

125. Joseph J. Fins, *The Complicated Legacy of Terry Wallis and His Brain Injury*, 39 ISSUES SCI. & TECH. 41, 42 (2023) [hereinafter Fins, *The Complicated Legacy*].

126. Y.G. Bodien, J. Allanson, P. Cardone, A. Bonhomme, J. Carmona, C. Chatelle, S. Chennu, M. Conte, S. Dehaene, P. Finoia, G. Heinonen, J.E. Hersh, E. Kamau, P.K. Lawrence, V.C. Lupson, A. Meydan, B. Rohaut, W.R. Sanders, J.D. Sitt, A. Soddu, M. Valente, A. Velazquez, H.U. Voss, A. Vrosgou, J. Claassen, B.L. Edlow, J.J. Fins, O. Gosseries, S. Laureys, D. Menon, L. Naccache, A.M. Owen, J. Pickard, E.A. Stamatakis, A. Thibaut, J.D. Victor, J.T. Giacino, E. Bagiella & N.D. Schiff, *Cognitive Motor Dissociation in Disorders of Consciousness*, 391 NEW ENGL. J. MED. 598, 600 (2024).

she were swimming.[127] The same motor strip responds, whether she is swimming or thinking about swimming.

Dr. Fins explains that learning about the brain was a result of terrific medical and scientific research.[128] You can look at people and think they are not there, and yet their brain can respond to things you tell them about. Dr. Oliver Sacks worked with catatonic patients and watched them wake up after being given a drug for the brain.[129] As Fins emphasizes, once you know a patient is there, you have to do something for them. They have neural networks that might do more.[130] A good doctor will keep doing things to help them, even if they appear to be in terrible shape.[131]

What else have we learned about the brain from neuroscience? There is no such thing as a truly permanent vegetative state ("PVS").[132] PVS is supposed to mean that one is *permanently* unaware and completely beyond recovery.[133] Doctors changed the term in 2018 to "chronic vegetative state" because twenty percent of people diagnosed with PVS could have some recovery.[134] Recovery was found unlikely, however, for the forty percent who were misdiagnosed with PVS, because that misdiagnosis resulted in reduced therapeutic intervention.[135] Fins's studies helped him to distinguish a minimally conscious state from a vegetative state, which makes recovery more possible.[136] The hope is that someone in a minimally conscious state has brain reactions that can be enhanced through good medicine.[137]

Fins also explains that not all patients benefit from these discoveries. Too few people have access to fMRIs and EEGs.[138] If Fins was the world's "brain

127. *Ethics for Lunch: From Coma to Consciousness: Are We Worried? A Conversation with Joseph Fins, M.D., One of the Nation's Leading Neuroethicists*, COLUM. UNIV. SCH. PRO. STUD. (June 17, 2025, at 13:00 ET), https://sps.columbia.edu/events/ethics-lunch-coma-consciousness-are-we-worried-conversation-joseph-fins-md-one-nations [https://perma.cc/22JC-RFCP] [hereinafter *From Coma to Consciousness*].

128. *Id.*

129. *See generally* OLIVER SACKS, AWAKENINGS (1999) (recounting Sacks's clinical treatment of post-encephalitic, catatonic patients and documenting their dramatic awakenings following administration of L-DOPA).

130. Fins, *Brain Injury and the Civil Right*, *supra* note 110.

131. *Id.*

132. *From Coma to Consciousness*, *supra* note 127, at 16:22–16:31.

133. *Id.* at 16:30–16:40.

134. *Id.*

135. *See* Fins, *Brain Injury and the Civil Right*, *supra* note 110 (reporting that 41% of chronic-care TBI patients thought to be vegetative were actually minimally conscious and that insurers frequently deny access to rehabilitation, with most rehab stays lasting six weeks or less); Fins, *The Complicated Legacy*, *supra* note 125, at 44 (explaining that without adequate rehabilitation, patients cannot benefit from advances in neuroscience).

136. *From Coma to Consciousness*, *supra* note 127, at 5:00–16:00.

137. *Id.* at 09:00–17:00.

138. *Id.* at 07:23–08:09.

injury czar," he would set up a system of surveillance analysis that uses tests like fMRIs and EEGs to continue to monitor the brain to see how it is responding and improving.[139]

I agree with Professor Teneille Brown that the standard for determining brain death should be reexamined but do not have the expertise to say anything other than: keep people alive for a while, as they may be like me and recover; do not be "too hot" about death; and do not be anxious to identify organ donors instead of caring for the dying.

Fins has taught us that civil rights are not fully protected in the Americans with Disabilities Act.[140] Fins and his coauthors have proposed an Americans with Abilities Act that focuses on improving capabilities and integrating people into society.[141] Conditions such as brain injuries, which can evolve over time, receive less legal protection than classifications such as race. The law has to do more for those patients whose conditions can improve yet who do not receive sustained medical support. These are the people who need protection so that their progress can be properly supported and monitored. They are people whose abilities need to be nurtured.

Fins acknowledges that each person's abilities are different. He explains that when he was a medical student, he had a patient who thought in terms of colors.[142] The colors meant everything to her, but nothing to him. To him, "orange" was the color orange. To her, "orange" represented a certain set of experiences and emotions.[143] That is a huge difference in communication. He learned to communicate with her by learning her language. So when he said orange, he was using it as she understood it.[144]

As Fins states, significant brain recovery is possible. In May 2025, there was a *New York Times* story that mentioned a police officer who was in a car accident while chasing a criminal.[145] At the time, neurosurgeon Dr. Geoffrey Manley was new in his career.[146] Two days and then seven days after the police officer's injury, Manley's mentor urged him to tell the officer's family it was

139. *See id.* at 16:06–16:22.

140. Zachary E. Shapiro, Allison Rabkin Golden, Gregory E. Antill, Katherine Fang Chaarushena Deb, Elizabeth Clarke, Alexis Kallen, Hanya M. Qureshi, Kai Shulman, Caroline V. Lawrence, Laura C. Hoffman, Megan S. Wright & Joseph J. Fins, *Designing an Americans with Abilities Act: Consciousness, Capabilities, and Civil Rights*, 63 B.C. L. REV. 1729, 1730, 1764 (2022).

141. *Id.*

142. *From Coma to Consciousness*, *supra* note 127, at 47:19–47:35.

143. *Id.*

144. *Id.* at 47:43–48:01.

145. Gina Kolata, *A New System Aims To Save Injured Brains and Lives*, N.Y. TIMES (May 20, 2025), https://www.nytimes.com/2025/05/20/health/traumatic-brain-injury-tbi-guidelines.html [https://perma.cc/T63Q-EZQU] (staff-uploaded, dark archive)].

146. *Id.*

time to withdraw his life support.[147] Manley resisted.[148] Then, after ten days, the policeman started to leave the coma.[149] He went back to work and later was recognized as Police Officer of the Year.[150] Because Manley resisted, the patient recovered. The brain takes time to heal. Do not give up at two days when you can recover in ten.[151] Or even twenty or more.

Manley explains that the old brain tests have to change to protect the patients.[152] The predominant older test was the Glasgow Coma Scale ("GCS").[153] "[T]he [GCS]is a system to 'score' or measure how conscious you are. It does that by giving numbered scores for how awake you are, your level of awareness and how you respond to basic instructions."[154] I remember that test. In 1993, my neurosurgeon told me I had a high GCS score, and that indicated I could recover . . . as I did.

Dr. Michael McCrea agrees that today we need much more than the old tests.[155] Doctors get trapped in the descriptions of "mild," "moderate," or "severe" brain damage.[156] "What you call someone dictates their care," Manley said.[157] Call it severe, and people may not help. Current studies show even "mild" brain damage can cause serious injury to the brain, and so trading around the words mild, moderate, and severe does nothing to improve brain treatment.[158]

There is, however, a proposed framework that better deals with the characterization of brain injuries, by incorporating four pillars: clinical, biomarker, imagine, and modifier.[159] In my language, that means asking if

147. *Id.*
148. *Id.*
149. *Id.*
150. *Id.*
151. *Id.*
152. *Id.*
153. *Id.*
154. *Glasgow Coma Scale*, CLEVELAND CLINIC, https://my.clevelandclinic.org/health/diagnostics/24848-glasgow-coma-scale-gcs [https://perma.cc/B9NX-FBUN (staff-uploaded archive)] (last updated Mar. 26, 2023).
155. Kolata, *supra* note 145.
156. *Id.*
157. *Id.*
158. Ioannis Mavroudis, *Acute Mild Traumatic Brain Injury (Concussion) in Adults: A Comprehensive Guide to Clinical Presentation, Evaluation, and Management*, MYNEURONEWS (Apr. 27, 2025), https://myneuronews.com/2025/04/27/acute-mild-traumatic-brain-injury-concussion-in-adults-a-comprehensive-guide-to-clinical-presentation-evaluation-and-management/ [https://perma.cc/N2T4-PUB3].
159. Geoffrey T. Manley, Kristen Dams-O'Connor, Michael L. Alosco, Hibah O. Awwad, Jeffrey J. Bazarian, Peter Bragge, John D. Corrigan, Adele Doperalski, Adam R. Ferguson, Christine L. Mac Donald, David K. Menon, Molly M McNett, Joukje van der Naalt, Lindsay D. Nelson, Dana Pisica,

patients have amnesia, headaches, light sensitivity, or scans with blood clots, skull fractures, hemorrhaging, or blood biomarkers. McCrea was enthusiastic about blood biomarkers, which measure the items blood contains. One might be hours away from a CT scan at the time of injury but be able to get a blood biomarker test in an ambulance. Right away. "Time is brain," said McCrea.[160]

The *New York Times* story about the doctors and their patients also mentioned that social factors make a difference, as mentioned above in the context of racial discrimination against Jahi McMath.[161] Compare an unhoused individual with PTSD and a substance use disorder to someone with family support, no substance abuse, and good mental health. The second patient does better.[162] I have not forgotten the many people who remained there through thick and thin, supporting me and reminding my doctors and insurance companies to do their jobs. I am sure it helped my recovery that people were not going to let me live in permanent, limited chronic care because of what the insurance companies said. The bioethical principle of justice did let me have my due care, but that is not a right everyone enjoys.

These insights on the best medical care influence law as well as medicine. Professor Owen Jones writes that part of the future of law and neuroscience is better work on investigating brain injuries. Neuroscientific advances

> will increasingly aid the legal system in understanding how to investigate, demonstrate, quantify, and anticipate projected recoveries (if any) from, and implications of, various injuries to a brain's *function* . . . In suitable circumstances, these could be relevant to the domains of torts, disability benefits, contracts, and criminal law, as well as estate law, among others.[163]

Neuroscience, Jones says, can be relevant to tort and criminal law. We see that in their development, as I explain in the next section.

IV. FEAR IN TORT AND CRIMINAL LAW

As a professor of Torts and a victim of crime, my analysis of these fields is affected by one strange item. Fear. More than anxiety or depression, brain-damaged patients like me, whose injury was the result of an assault by another, often face a lot of fear. I still am aware when I cross the street that a car might

Noah D. Silverberg, Nsini Umoh, Lindsay Wilson, Esther L. Yuh, Henrik Zetterberg, Andrew I. R. Maas & Michael A. McCrea, *A New Characterization of Acute Traumatic Brain Injury: The NIH-NINDS TBI Classification and Nomenclature Initiative*, 24 LANCET NEUROLOGY 512, 512 (2025).

160. Kolata, *supra* note 145.

161. *See id.*; *see also supra* Part I.

162. Kolata, *supra* note 145.

163. Owen D. Jones, *The Future of Law and Neuroscience*, 63 WM. & MARY L. REV. 1317, 1327 (2022) (emphasis added).

hit me. I always look behind me when I walk because I constantly think someone might be there ready to attack me. Painful experiences caused by others can lead to constant fear. Yet physical patient care does not provide much guidance on how to live with the fear created when someone else harms your brain. Neuropsychiatrists and neuropsychologists provide guidance to help patients through these fears.

Neuroscientists say that there is "a new neural pathway that plays a crucial role in how the brain shifts to high-intensity fear responses."[164] They identify "a previously unknown connection between the prefrontal cortex and the amygdala, crucial for emotional regulation and decision-making during fearful situations."[165]

The more neuroscientists write about fear, the more neuropsychiatrists and neuropsychologists will understand how to treat it. However, I am a law professor, so I am less aware of possible neurological treatments for fear and more aware of how my fear transforms the way I think about Tort and Criminal Law.

I teach Torts. After my attack, it seemed to me I was a perfect tort victim, which meant that I—as a plaintiff—should have been able to collect damages from the defendant who harmed me. I have received an insurance settlement for being hit by an underinsured driver after my 1993 car accident, so Torts was not much on my mind then. I remain grateful to the Arizona insurance agent who set up my policy to protect me. He was well aware that many drivers drive without insurance. When auto insurance agents do their job, they can really help you.

The second time, it seemed that tort law *should* help me. Maybe because I had been teaching Torts for years. Those of you who have gone to law school may remember two torts, the negligent infliction of emotional distress ("NIED") and intentional infliction of emotional distress ("IIED").[166] The initialisms are how students remember those torts. Because they are so difficult to prove, courts have often been reluctant to give plaintiffs damages for emotional distress.[167] Fear is linked to emotional distress, so I instinctively think of NIED and IIED when thinking about my fears from the attack.

164. Marla Paul, *Unlocking the Brain's Fear Circuitry: A Pathway to Survival Responses*, NEUROSCIENCE NEWS (Feb. 24, 2024), https://neurosciencenews.com/fear-response-neuroscience-25656/ [https://perma.cc/6EUE-DFZL].

165. *Id.*

166. MARC A. FRANKLIN, ROBERT L. RABIN, MICHAEL D. GREEN, MARK A. GEISTFELD & NORA FREEMAN ENGSTROM, TORT LAW AND ALTERNATIVES: CASES AND MATERIALS 261–98 (11th ed., 2021).

167. Conrail v. Gottshall, 512 U.S. 532, 537 (1994).

Lawyers in Nevada and Texas told me I did not have a tort lawsuit in 2016, maybe because I was not injured enough to collect damages. Could I use my brain MRIs, which look awful, to prove to a court I was really injured?

There is a debate in Torts, among scholars and across jurisdictions, about how much technology one can use to prove a victim is damaged. My brain slides show injury. Like X-rays, brain slides are grey, black, and white. My brain slides show too much white imagery where there should be gray. As a victim of crime who fears a repeat of the damages I suffered, I support using all the victim's pictures to show what the damage is. Some writers argue that jurors are too impressed by the pictures and will give them disproportionate weight (perhaps even ignoring accompanying testimony), and so the images should not be admitted.[168] I believe pictures of the brain and its injuries are a great tool to show how much someone has been damaged.[169] Maybe if I had sent those lawyers my slides I would have had a case!

Professor Jones has noted that advances in neuroscience will give us more insight into pain.[170] One day "we will be able to distinguish, with some reasonable accuracy and reliability, between people in pain and people not in pain."[171] It is funny that I might lose damages again with that new science. My brain MRIs show injury, but I have not had pain from either of my attacks in many years. We wait to see how and if fear will be compensated in future tort law by showing juries very detailed pictures of the plaintiff's injuries.[172]

My attacker was subject to criminal law. He went to prison for attempted murder.

168. C.C. Meltzer, G. Sze, K.S. Rommelfanger, K. Kinlaw, J.D. Banja & P.R. Wolpe, *Guidelines for the Ethical Use of Neuroimages in Medical Testimony*, AM. J. NEURORADIOL. 632, 632–37 (2014); *see also* E. Spencer Compton, Note, *Not Guilty by Reason of Neuroimaging: The Need for Cautionary Jury Instructions for Neuroscience Evidence in Criminal Trials*, 12 VAND. J. ENT. & TECH. L. 333, 335–36 (2010).

169. *See Brain MRI*, CLEVELAND CLINIC, https://my.clevelandclinic.org/health/diagnostics/22966-brain-mri [https://perma.cc/QTM6-KKAL (staff-uploaded archive)] (last updated May 9, 2022).

170. Jones, *supra* note 163.

171. *Id.* at 1329.

172. *See, e.g.*, Lauren J. Camillo, *Adding Fuel to the Fire: Realistic Fears or Unrealistic Damages in AIDS Phobia Suits?*, 35 S. TEX. L. REV. 331, 342 (1994) ("Permitting recovery of damages in tort for fear of disease based solely upon an unproven supposition that exposure to a disease-causing agent could have occurred, absent any facts showing that exposure did in fact occur, would run afoul of the most basic tenets of tort law."); Howard v. Wilson, 195 Mo. App. 532, 192 S.W. 473, 476 (1917) ("[Y]et we know of no cases in the law of torts where damages are given for mental anguish, humiliation, excitement, or fear unless such effects are accompanied by an injury to one's person or personal rights or property rights, or where the wrong was inflicted by malice, insult, or inhumanity"); Williams v. Baker, 572 A.2d 1062, 1063 (D.C. 1990), *holding modified by*, Hedgepeth v. Whitman Walker Clinic, 22 A.3d 789 (D.C. 2011) ("The issue on appeal is whether a mother can recover for emotional distress caused by witnessing her child suffer from negligently inflicted harm if the mother did not reasonably fear for her own safety as a result of the negligent conduct. We hold that she cannot.").

Some writing about the brain suggests that many criminal defendants are not worthy of blame because their brains control them.[173] For example: "Evidence of organic mental deficits ranks among the most powerful types of mitigation evidence available."[174] "[D]iagnoses of specific mental illnesses" are particularly mitigating because "the involuntary physical alteration of brain structures . . . tends to diminish moral culpability, altering the causal relationship between impulse and action."[175]

This creates a drive to offer early reprieve to criminal defendants with mental illnesses. I fear that brain science might make criminals freer from punishment because their brains are damaged.[176] The state and many individuals are sympathetic to the harms these convicted criminals with mental illnesses have suffered and say everyone should be sympathetic to them. Jones says in the future neuroscience will have even more to say about criminal behaviors. "The question is simply whether or not brain data, when added to the mix of factors already considered during parole decisions, improve predictive accuracy. And the existing studies suggest brain data can do that, warranting further investigation."[177]

Is sympathy for people in prison the same sympathy that I argue tort victims should get? I am not there yet. As a victim of fear, I want criminals to be convicted and stay in prison no matter what their brains show, and tort plaintiffs to collect a lot of damages. Neuroscience might have to persuade me that fear is not the proper driver of these two fields of law.

The Journal of Genocide Research posted a story where the author examined neuroscientific evidence in trials of atrocious crime perpetrators.[178] She noted how technology has been present in many criminal cases given how many technical tools are now available to study the brain.[179] She added that "legal

173. *See, e.g.*, Uri Maoz & Gideon Yaffee, *What Does Recent Neuroscience Tell Us About Criminal Responsibility?*, J. L. & BIOSCI. 120, 120–39 (2015).

174. Littlejohn v. Trammell, 704 F.3d 817, 864 (10th Cir. 2013).

175. United States v. Barrett, 985 F.3d 1203, at 1222 (10th Cir. 2021) (quotations and alterations omitted).

176. *See* Laura Kelley, *Brain Injury Could Explain Sudden Criminal Behavior*, NEUROSCIENCE NEWS (June 27, 2025), https://neurosciencenews.com/brain-injury-crime-29358/ [https://perma.cc/5ZQT-FF8M]; Micah Johnson, *How Responsible Are Killers with Brain Damage?*, SCI. AM. (Jan. 30, 2018), https://www.scientificamerican.com/article/how-responsible-are-killers-with-brain-damage/ [https://perma.cc/EH22-FVAC].

177. Jones, *supra* note 163, at 1331; *Barrett*, 985 F.3d at 1222–23 ("[E]vidence of mental impairments has substantially more mitigating value when it helps explain the defendant's criminal behavior.").

178. Sabah Carrim, *Neuroscientific Evidence in Trials of Young Perpetrators Involved in Armed Conflict and Mass Atrocity*, J. GENOCIDE RSCH. 1 (2024).

179. *Id.*

counsels will use anything they can to defend their clients,"[180] which is what I worry about as a victim of crime. Professor Carrim then defended a "juste milieu between a highly skeptical and an overly optimistic outlook; that is, a call for an outright ban of neuroscientific evidence by neuroscientists, and its overzealous use (and hence, misuse) by defense attorneys."[181] A *juste milieu* may capture what I am looking for in studies of the brain and how they affect the tort and criminal aspects of our law.

Is fear the appropriate basis for legal decisions? Fear puts me with the tort plaintiffs and criminal victims who suffer. Is that inconsistent? I want the science of victims' brains to be valued yet remain skeptical of brain studies that might undermine criminal responsibility. Am I inconsistent in my use of brain science, to favor one side and not the other? Brain studies have given us this dilemma. There are many other things that neurotechnology does for us, both good and bad.

V. BRAIN TECHNOLOGY CAN BE USED FOR GOOD OR EVIL

Consistent with the arguments of zealous defense attorneys, some people conclude that brain studies show we have no free will because our brains determine how we act.[182] I do not yet buy that argument, as I believe patients have free will to choose to heal or to quit healing. My experience is that daily I freely choose to keep on healing. Reading a lot of brain science has not yet taught me to change my experiential feeling about having free will. Maybe I haven't read enough about it yet to be persuaded!

Duke Law professor Dr. Nita Farahany has written extensively about thinking freely, including in her book *The Battle for Your Brain: Defending Your Right To Think Freely in the Age of Neurotechnology*. Her work praises neurotechnology that improves the health of people with severe neurological injuries.[183] The technology aids paralyzed people to stand and walk and people who cannot communicate to convert their brain signals into text.

I believe in recovery—being sure to give people enough time to recover and not giving up on them after two days or two weeks or two hours. Brain

180. *Id.* at 2.

181. *Id.* at 3.

182. *See, e.g.*, Benjamin Libet, Curtis A. Gleason, Elwood W. Wright & Dennis K. Pearl, *Time of Conscious Intention To Act in Relation to Onset of Cerebral Activity (Readiness-Potential): The Unconscious Initiation of a Freely Voluntary Act*, 106 BRAIN 623, 640 (1983) ("[I]t would appear that some neuronal activity associated with the eventual performance of the act has started well before any (recallable) conscious initiation or intervention could be possible.").

183. NITA A. FARAHANY, THE BATTLE FOR YOUR BRAIN: DEFENDING THE RIGHT TO THINK FREELY IN THE AGE OF NEUROTECHNOLOGY (2024) [hereinafter FARAHANY, THE BATTLE FOR YOUR BRAIN].

science may teach us to create an improved physical body, full of technical enhancements.

Or it may not.

The outcome depends on the focus of these technologies. Farahany's hope is that neurotechnology will improve the physical and mental health of individual patients.[184] However, Farahany warns that scientists and others with access to brain data collected by neurotechnology could be drawn to focus more on that data than on the health of the technology's users.[185] Farahany points out, for example, that the technology could be used as a "new norm of neural surveillance," where people are watched all the time.[186] Neural surveillance might "become a mainstay of society."[187] How could that happen?

> The era of brain surveillance has begun. Advances in neuroscience and artificial intelligence are converging to give us an affordable and soon-to-be widely available generation of consumer neurotech devices—a catchall term for gadgets that, with the help of dry electrodes, connect human brains to computers and the ever-more-sophisticated algorithms that analyze the brain-wave data.[188]

Farahany describes the technology that is now available. Companies are creating "brain wearables" like watches, earbuds, headsets and sleep aids.[189] This could provide health benefits because these wearables can provide medical personnel detailed insight into what is really going on with the body, for example, by calculating depression or cognitive decline well in advance of older medicine.[190]

But your employer could connect you to such a system at work.[191] Brain tests conducted using wearable technologies could screen whether you would be hired or not.[192] Her description is troublesome:

> Employers can use the data to evaluate individual users' cognitive loads, compare them across their workforce, and make decisions about how to

184. *Id.*

185. *Id.* at 221 (explaining that these companies' ambitions and innovations "are not just about technological progress," but are "harbingers of a future where the sanctity of our innermost thoughts may become accessible to others," like employers, advertisers, and government actors).

186. *Id.* at 223.

187. *Id.*

188. Nita A. Farahany, *Neurotech at Work*, HARV. BUS. REV., Mar.–Apr. 2023, at 43, 43.

189. Nita A. Farahany, *Wearable Brain Devices Will Challenge Our Mental Privacy*, SCI. AM. (Mar. 27, 2023), https://www.scientificamerican.com/article/wearable-brain-devices-will-challenge-our-mental-privacy/ [https://perma.cc/VK3D-RYFU].

190. *Id.*

191. *Id.*

192. *Id.*

> optimize their workforce for greater productivity throughout the day. And of course, to make promotion, retention, and firing decisions.[193]

Farahany also tells us, "Your employer might even nudge you back to work when your mind starts to wander."[194] The law often leaves companies free to employ such technology, and workers to either approve or disapprove of it.

Similar to that work experience, the author of a neurorights article asks, "Could one person be micromanaged to do what another person intends? Are these technologies a threat to our sense of free will?"[195] One woman complained that she and eighty other people were surveilled while they watched videos.[196] Farahany reminds us "The real purpose of this research was allegedly to identify the most impressionable women for induction into sexual slavery."[197]

Yuck. Technology can be used for good or bad, depending on whether it supports the ethical principles that bioethicists have long defended.

As part of an ethic broad enough to include technology, Farahany defends "cognitive liberty," which includes "broader interpretations of self-determination, privacy, and freedom of thought" as its core components.[198] The neurorights author, Carlos Amunátegui Perelló, adds four new rights to our new technological age: "(1) the right to cognitive freedom, (2) the right to mental privacy, (3) the right to mental integrity, and (4) the right to psychological continuity."[199] Farahany concludes:

> The question now is whether we will passively accept a future where our thoughts may no longer be our own or take decisive action to champion cognitive liberty and shape a future where our neural narrative remains our own. The path we choose will not only define our relationship with technology, but also what it means to be human in the digital age.[200]

As she says, "Your right to cognitive liberty should be what governs your choices, not somebody else making the choices about what your brain and mental experiences will look like and feel like and be shaped by without any

193. Nita Farahany, *This Is the Battle for Your Brain at Work*, FAST CO. (Apr. 1, 2023), https://www.fastcompany.com/90874616/worker-surveillance-brain-productivity [https://perma.cc/X77N-GQRA].

194. *Id.*

195. Carlos Amunátegui Perelló, *The World's First Court Case*, 28 UNIV. S.F. INTELL. PROP. & TECH. L.J. 123, 127 (2024).

196. *Id.*

197. FARAHANY, THE BATTLE FOR YOUR BRAIN, *supra* note 183, at 223.

198. *Id.*

199. Perelló, *supra* note 195, at 128.

200. FARAHANY, THE BATTLE FOR YOUR BRAIN, *supra* note 183, at 225.

input that you might have otherwise."[201] "Ultimately what we're trying to teach is people thinking freely so they can navigate the world."[202]

Fins reminds us that a brain injury takes away our cognitive liberty.[203] We become someone we weren't before. The goal is to return the patient to that state that is most true to her,[204] another way of protecting cognitive liberty.

These principles, which arise from the demands neurotechnology imposes upon us, may overlap with the traditional four principles of bioethics. But they add a new dimension that protects cognitive and psychological health in ways not always protected in the past.

The past? Religions have long played a role in telling people who they are. Will neuroscience change that?

VI. RELIGION AND THE UNIVERSAL ETHICS

The world's religions, with their detailed understanding of humanity and its relation to God, or its creation by God, and their insights about the role of the brain in humanity's spiritual lives, constitute an important part of the past and present of human history.

What does it mean to be human in the digital age? Many of my thoughts about the brain and humanity involve religion. Why? I have a Ph.D. in Religious Studies, and before I went to law school, I taught theological ethics at my undergraduate alma mater. That might explain why I always had ethics *on my mind* as I faced brain injury.

Is *my mind* something separate from my brain, so that there is a dualism about me? I know something about dualism, as it is present in a lot of Western philosophy and religion. Dualism means there are two separate parts of you, the body and the mind. Or sometimes people say the body and the soul. Is there a brain that keeps my body moving, while my separate mind or soul thinks and relates me to God? Separate, but equal?

Philosopher Rene Descartes's famous expression was "*Cogito, ergo sum*."[205] I think, therefore I am. The mind or soul could be something outside the body that thinks or relates us to each other and to God. And then there is the body.

201. Brian Levenson, *Nita Farahany on Cognitive Liberty*, STRONG SKILLS, at 38:20 (Oct. 11, 2023), https://www.strongskills.co/podcast-feed/farahany (on file with the North Carolina Law Review).

202. *Id.* at 27:05.

203. *See generally From Coma to Consciousness*, *supra* note 127.

204. *Id.* at 23:50–27:35; 46:00–47:21.

205. RENE DESCARTES, DISCOURSE ON THE METHOD 53 (F.E. Sutcliffe trans., Penguin Books 1968).

Descartes is recognized as a dualist, who thought the mind and the body are two distinct things, the body physical and the mind non-physical.[206] Dualism may explain why I healed so well, as I was completely focused on what my brain did well, namely, to read and then to write. Not much else. Did I heal well because reading and writing were the only things my mind wanted to do? Whereas other people had to learn to move and walk with their physical powers?

Should I be with Friedrich Nietzsche, who said, "*Sum, ergo cogito*"?[207] I am, therefore I think. Do we know now, thanks to neuroscience, that the brain and mind are all the body, and that everything starts and ends with the shape and health of the body? So, there is not one body here and its soul over there. Not some bodiless mind or soul. The brain's physical health is where your mind comes from, which is why a healthy brain is so important as body and mind or soul are together, not separate. Everything is in the body.

Paul Churchland and Patricia Churchland are leading philosophers of science, who have spent their careers making sense of all this dualism.

> On the one hand, there are dualist theories, which claim that the mind exists and is different from the body. Most religions hold this position: the soul lives on after our bodily death. On the other hand, there are materialist theories of mind. Philosophers and scientists who hold the latter position claim that mental states and processes are nothing more than states and processes of the brain. This is Paul Churchland's position. This means that the mental can be reduced to the physical, so that the mind does not exist at all (and hence is "eliminated").[208]

Paul Churchland also concluded: "The doctrine of an immaterial soul looks, to put it frankly, like just another myth, false not just at the edges, but to the core."[209] The Churchlands also argue that the self and morality start in the physical brain, not in the questionable mind. Patricia Churchland writes that morality is "grounded in our biology, in our capacity for compassion and our ability to learn and figure things out."[210]

What does it mean for morality to be grounded in biology, and not in the mind or the soul? Can it be that neuroscience would give us a universal ethics instead of a partial religious one?

206. *See id.*; *see e.g.*, *Dualism*, STAN. ENCYCLOPEDIA OF PHILOSOPHY, https://plato.stanford.edu/entries/dualism/ [https://perma.cc/8Y4U-LKTQ] (last updated Oct. 17, 2025).

207. Jonas Monte, *Sum, Ergo Cogito: Nietzsche Re-Orders Descartes*, 25 APORIA 13, 13 (2015).

208. Hans Dooremalen, *Paul Churchland*, PHIL. MAG., https://archive.philosophersmag.com/paul-churchland/ [https://perma.cc/6U8H-ZXGU].

209. PAUL M. CHURCHLAND, THE ENGINE OF REASON, THE SEAT OF THE SOUL 17 (1995).

210. PATRICIA S. CHURCHLAND, BRAINTRUST: WHAT NEUROSCIENCE TELLS US ABOUT MORALITY 200 (2011).

Neuroscientist Dr. Michael Gazzaniga wrote a book called *The Ethical Brain*.[211] He observes that brains want to believe, and for that reason are reluctant to give up the religious beliefs that they have been taught.[212] Belief is important to people's brains. Unsurprisingly, he tells us religions hold their grips on people's brains because people believe so strongly in religion.[213] If you grow up learning about and living in a religion, its beliefs stay with you in many ways. For that reason, he accepts religion as an important part of life that follows humans' natural instincts to have a system of beliefs.[214] Religion can be studied neuroscientifically as beliefs are part of the brain's instincts.

Yet science may affect how we look at that issue. Gazzaniga's goal, based on science, is to develop a "universal ethics."[215] He says:

> We ought to seek to understand it and define it. It is a staggering idea, and one that on casual thought seems preposterous. Yet there is no way out. We now understand how tendentious our beliefs about the world and the nature of human experience truly are, and how dependent we have become on tales from the past . . . . At the same time, our species wants to believe in something, some natural order, and it is the job of modern science to help figure out how that order should be characterized.[216]

Gazzaniga thinks a biological basis of ethics might be possible.[217] It appears to me that such a basis could help different religions understand each other better and become more tolerant. Yet it might not be attractive to those who are certain they have a soul that is not physical.

This ideal of a morality rooted in brain science is very appealing to me, as I think about what the brain can do and what my brain has done. In numerous other writings I have opposed religion-based politics and law.[218] I agree with Professor Brown's conclusion that "ultimately whether someone is legally alive or dead is a legal matter, not a religious one,"[219] even though religions have plenty to say about death. Is religion the past, and science the future? Could the structure of the brain tell us something about that? Could new knowledge about the brain tell us more ways to live together on a universal ethic with better understanding instead of intolerance toward religion's different beliefs?

211. MICHAEL S. GAZZANIGA, THE ETHICAL BRAIN (2005).

212. *See id.* at 152–55.

213. *See id.*

214. *See id.* at 153–54.

215. *Id.* at 163.

216. *Id.* at 178.

217. *See id.* at 167.

218. *See, e.g.*, Leslie C. Griffin, *A Word of Warning from a Woman: Arbitrary, Categorical, and Hidden Religious Exemptions Threaten LGBT Rights*, 7 ALA. C.R. & C.L.L. REV. 97 (2015).

219. Brown, *When Death Is Not a Binary*, *supra* note 17, at 25.

From my experience I learned that the brain has "neuroplasticity," so it can survive and flourish, even after injury. Brain science, after the decade of scientific study of the brain, taught us that the brain, the most complex organ in the body, can adapt and develop new circuits.[220] Other sections of the brain take over when some parts are not working. That is a massive lesson about the brain. The story we should tell everyone is that scientists learned the brain is more flexible than any of us knew. Any patient needs to know that healing that remarkable organ is possible.

And could it teach us a whole new way of living? One that is universal and tolerant? We wait to see.

CONCLUSION

Neuroscience is constantly evolving, and neuroethics and neurorights must evolve with it, keeping in mind the bioethical principles.

The four traditional bioethical principles are autonomy, nonmaleficence, beneficence, and justice.[221] Carlos Amunátegui Perelló added four new rights to our new technological age: "(1) the right to cognitive freedom, (2) the right to mental privacy, (3) the right to mental integrity, and (4) the right to psychological continuity."[222] Together bioethics and neuroethics must search for a way to pay attention to all those principles.

Part of this future is that medicine must offer an ethic of caring for the dying, and not just a right to die. The law must protect a civil right for all patients, including the abled and the disabled. Law, medicine, and insurance must focus on recovery for everyone, even a minute at a time instead of waiting for three hours.

We still must figure out how to use neuroscience appropriately in tort and criminal law. Such science gives details to the plaintiff's pain and more understanding to the criminal's mindset. While using this technology, in law, in the workplace, and in the hospital, we must insist that technology must protect, not undermine, people's liberty.

Finally, I wonder if neuroscience will provide a new neuroreligion.

We have new principles to complement the old. Will they protect the right of *every* patient to full treatment and complete liberty, not limited by race, class, poverty, insurance, or lack of hospital resources? I hope so.

220. *See* Farahany, *supra* notes 189–94.

221. *See generally* BEAUCHAMP & CHILDRESS, *supra* note 12 (discussing the concepts, theories, and meanings of the four principles of biomedical ethics).

222. Perelló, *supra* note 195, at 128.