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THE ILLUSIVE “REASONABLE PERSON”:
CAN NEUROSCIENCE HELP THE
MENTALLY DISABLED?

*Ian J. Cosgrove**

[L]aws and institutions must go hand in hand with the progress of the human mind. As that becomes more developed, more enlightened, as new discoveries are made, new truths disclosed, and manners and opinions change with the change of circumstances, institutions must advance also, and keep pace with the times. We might as well require a man to wear still the coat which fitted him when a boy, as civilized society to remain ever under the regimen of their barbarous ancestors.

—Thomas Jefferson¹

INTRODUCTION

Recent discoveries and progressions in neuroscience have indicated that mental illnesses and disabilities are largely, if not completely, determined by biological or otherwise physical processes. Despite these findings, the law has been slow to embrace this progress. For centuries the specifics of mental illness have remained unknown, and perhaps the distinction between mental and physical disabilities has remained defensible over time. Quite simply, the legal system has lacked adequate tools to grapple with this issue; as put by the late astronomer Carl Sagan, we have been “bamboozled”² by the proper conceptualization of mental illness.

The reasonable person standard finds its roots in a time when mental disability was described by terms such as “distracted” or “lunatick,”³ over two hundred years before Thomas Jefferson acknowledged the need for legal

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1 Thomas Jefferson, Letter to Samuel Kercheval (July 12, 1816), in 12 THE WORKS OF THOMAS JEFFERSON 12 (Paul Leicester Ford ed., 1905).

2 CARL SAGAN, THE DEMON-HAUNTED WORLD: SCIENCE AS A CANDLE IN THE DARK 241 (1995) (“One of the saddest lessons of history is this: If we’ve been bamboozled long enough, we tend to reject any evidence of the bamboozle. We’re no longer interested in finding out the truth. . . . It’s simply too painful to acknowledge, even to ourselves, that we’ve been taken.”).

3 GERALD N. GROB, THE MAD AMONG US 5 (1994).

progress.⁴ Current negligence doctrine denies any exception from the “reasonable person” standard for the mentally disabled. It has long been accepted, however, that those with physical disabilities should not be held to such a standard. Today, new discoveries have been made, and we are enlightened as to the nature of mental disability.⁵ Technological and diagnostic advancement in recent years has granted new insight into consciousness and the workings of the human brain. While our full grasp of these concepts has not yet been realized, it can hardly be denied that perception of mental disabilities has changed drastically in a relatively short period.⁶ Neuroscience gives us the ability to question the bases of a mental disability and continues to prove that we have the capability to objectively identify the presence of mental disability. As such, neuroimaging has shown a substantial link between physical processes and cognitive functioning and necessarily calls into doubt the current physical-mental dichotomy in our tort jurisprudence.

New knowledge in the arena of neuroimaging may finally provide us with the ability to make such determinations a reality in the courtroom. It is not surprising that the law has lagged behind our other social institutions in this regard, but the fact that emerging technologies have been embraced in numerous fields already⁷ suggests it is only a matter of time until the legal profession follows suit.⁸ In the tort law context relevant to this Note, the “neuroscience revolution”⁹ in particular has been recognized as a possible “catalyst for significant changes.”¹⁰ The realm of negligence is fertile ground

4 The origin of the reasonable person standard stems from a 1616 English case, *Weaver v. Ward*, 80 Eng. Rep. 284 (K.B. 1616), although American origins denying a mental disability defense trace back to the slightly more recent case of *Ward v. Conatser*, 63 Tenn. 64, 65 (1874).

5 The term “mental disability” is meant to encompass those that include significant cognitive impairment, duly traceable to an underlying physical or biological cause. Examples, which will be discussed below, include schizophrenia, Alzheimer’s disease, and significant mental retardation.

6 See the Supreme Court’s unfortunate decision in *Buck v. Bell*, 274 U.S. 200 (1927), where the Court upheld forced sterilization of the mentally ill.

7 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, 237 (2012) (“Society is now in the midst of the technological revolution, with impacts already felt in intellectual property law, procedural law, and constitutional law, with many more certain to come.”); Henry T. Greely, *Neuroscience and Criminal Justice: Not Responsibility but Treatment*, 56 U. KAN. L. REV. 1103, 1103–04 (2008) (focusing on the criminal law context but noting that “advances in neuroscience will change, dramatically, the criminal justice system”).

8 See Steven K. Erickson, *Blaming the Brain*, 11 MINN. J.L. SCI. & TECH. 27, 29 & n.11 (2010) (“All share the belief that the impact of neuroscience on the law in the coming years will be inevitable, dramatic, and will fundamentally alter the way the law does business.”).

9 See Eggen & Laury, *supra* note 7, at 237 & n.6 (“[T]he term ‘new neuroscience’ . . . encompass[es] the various technologies used by neuroscientists to identify and interpret brain activity. . . . [T]he term ‘new neuroscience’ [is] broad enough to include structural neuroimaging and the study of brain waves . . .”).

10 *Id.* at 237.

for significant change, and a relatively simple solution to the disparity between treatment of the mentally disabled vis-à-vis those with physical infirmities is right under our feet.

This Note argues that the distinction between what constitutes a physical versus a mental disability can no longer rationally be sustained. Specifically, its purpose is to show that providing an exception to the “reasonable person”¹¹ standard in negligence actions for the physically disabled¹² while withholding it for those with mental infirmities¹³ is increasingly indefensible. Part I briefly tracks the origins of the current rule in tort law that holds the mentally and physically disabled to separate standards. This discussion is purposely left short because of the breadth of scholarship tracing the standard.¹⁴ Part II seeks to justify, through neuroscientific brain imaging evidence, the claim that numerous disabilities are fundamentally the same regardless of their label as either mental or physical. Additionally, Part II explores the “traditional” justifications for the current rule and attempts to undermine those rationales in light of these findings. Part III concludes with a rather straightforward remedy for this distinction without a difference that does away with the logical inconsistencies of treating the disabled in two separate subsets. This proposal, as already suggested, is fueled by the recently developed ability to identify and substantiate the existence of a mental disability. The proposed solution incorporates both a subjective and objective element that will allow courts to analyze the merits of a mental disability exception without major disruption in the administrative and procedural course of negligence litigation.

I. THE ORIGINS OF THE REASONABLE PERSON STANDARD

Current doctrine holds mentally disabled individuals to the same reasonable, prudent person standard as those of sound mind. In other words, evidence that an alleged tortfeasor is or was mentally disabled is not factored into the equation of whether the defendant acted with ordinary care under the circumstances.¹⁵ Standing in stark contrast, evidence of a person’s physi-

11 See 57A AM. JUR. 2D *Negligence* § 7 (2014) (“[N]egligence consists of acting other than as a reasonable person would do in the circumstances . . .”).

12 See RESTATEMENT (THIRD) OF TORTS: PHYS. & EMOT. HARM § 11(a) (AM. LAW INST. 2010) (“The conduct of an actor with a physical disability is negligent only if the conduct does not conform to that of a reasonably careful person with the *same disability*.” (emphasis added)).

13 *Id.* § 11(c) (“An actor’s mental or emotional disability is not considered in determining whether conduct is negligent, unless the actor is a child.”).

14 See, e.g., Okianer Christian Dark, *Tort Liability and the “Unquiet Mind”: A Proposal to Incorporate Mental Disabilities into the Standard of Care*, 30 T. MARSHALL L. REV. 169, 176–80 (2004); Harry J.F. Korrell, *The Liability of Mentally Disabled Tort Defendants*, 19 LAW & PSYCHOL. REV. 1, 3–6 (1995); Stephanie I. Splane, Note, *Tort Liability of the Mentally Ill in Negligence Actions*, 93 YALE L.J. 153, 154–58 (1983).

15 Korrell, *supra* note 14, at 6 (“The current rule . . . does not allow the consideration of evidence that would distinguish those cases in which the defendant truly was unable to conform his conduct to the standard required from those in which the defendant’s disabil-

cal disabilities—however that term may be defined—is routinely taken into account and often works as a complete defense to a finding of negligence. While the line is undoubtedly difficult to draw, it is clear that at the time of this doctrine’s genesis, physical and mental infirmities were considered entirely distinct.¹⁶

Invariably, the distinction is traced back to the case of *Weaver v. Ward*.¹⁷ The English court in that case gave no justification or rationale for the distinction, presumably because of the sparse knowledge of mental disabilities and illnesses. Seventeenth-century courts were ill-equipped to give claims of mental disability much credence because of this lack of knowledge.¹⁸ In any event this doctrine seeped into American jurisprudence and is traced back to *Williams v. Hays*¹⁹ and *Ward v. Conatser*,²⁰ both of which applied the objective negligence standard despite recognition of the defendant’s mental infirmities. Thus, from the English courts in 1616 through to the present day, mental disability “cannot be looked to as a justification” in negligence cases.²¹

The same has never been true, however, for those with categorically physical disabilities.²² In cases where an alleged tortfeasor is encumbered by

ity played no role.”). Curiously enough, courts in some instances will consider the mental particularities of an individual if the individual is a child, or if the mentally disabled party is a *plaintiff* in a negligence action for contributory liability purposes. See *Lynch v. Rosenthal*, 396 S.W.2d 272 (Mo. Ct. App. 1965); *Baldwin v. City of Omaha*, 607 N.W.2d 841 (Neb. 2000); *Cowan v. Doering*, 545 A.2d 159, 163 (N.J. 1988); *Stacy v. Jedco Constr., Inc.*, 457 S.E.2d 875, 879 (N.C. Ct. App. 1995).

16 See *Weaver v. Ward*, 80 Eng. Rep. 284 (K.B. 1616).

17 *Id.* The language eventually used to suggest that mental disabilities are not considered in evaluating a tort claim is dicta. The holding in *Weaver* itself was premised essentially on a theory of strict liability—far different from our allegedly fault-based regime today.

18 This is evidenced by the fact that a person with a supposed mental disability was routinely dismissed as “insane.” See *Dark*, *supra* note 14, at 179 n.54.

19 38 N.E. 449 (N.Y. 1894).

20 63 Tenn. 64 (1874).

21 *Id.* at 65. *Breunig v. American Family Insurance Co.*, 173 N.W.2d 619 (Wis. 1970), is one of only a few cases taking into account the mental disabilities of the defendant. The *Breunig* court wrote that “a sudden mental incapacity equivalent in its effect to . . . physical causes . . . should be treated alike and not under the general rule of insanity.” *Id.* at 624. But even this has been seen as an exception rather than a change in stance, because the court so held only for *sudden* incapacitations. See *id.* The reasoning leads one to again wonder why a mental incapacity “equivalent in its effects” to a physical incapacity should *ever* be treated differently—especially if, as will be shown, the causes of the incapacity are innately physical.

22 The First Restatement implicitly acknowledged some difficulty grappling with this standard, but as later revisions show, this subtle hint of change has also died out. Compare RESTATEMENT (FIRST) OF TORTS § 283 (AM. LAW INST. 1934) (“The Institute expresses no opinion as to whether insane persons are required to conform to the standard of behaviour which society demands of sane persons for the protection of the interests of others.”), with RESTATEMENT (SECOND) OF TORTS § 283B (AM. LAW INST. 1965) (“Unless the actor is a child, his insanity or other mental deficiency does not relieve the actor from

a physical disability, courts have nearly universally allowed such a personal characteristic to affect the outcome.²³ An alleged tortfeasor experiencing schizophrenic traits or even a person with Down's syndrome (an indisputably physical mutation of the human genome) is held to an objective standard. But if the person is physically disabled, for example, by blindness, then "that person's conduct is compared to" the reasonable person "with blindness."²⁴ This is so because requiring a disabled person to act as though the disability does not exist is "asking for the impossible."²⁵ Why doctrine has in turn asked the impossible of those with mental disabilities is not clear. What is clear is that the standard has been propped up by policy rationales—the leading of which for our purposes concerns *proof* of a mental disability—that are difficult to justify in our technological age.²⁶

Twentieth-century American courts have on occasion had to apply this standard to negligence cases involving automobile accidents. Such has been the case even though the defendant was concededly "incompetent" to assess the risks of their actions.²⁷ The language used by the Supreme Court of Colorado in the 1961 case of *Johnson v. Lambotte* is particularly perplexing: the defendant was "mentally incapable . . . and did not have the required mental capacity to realize the risk involved to herself and others" but nonetheless was liable for negligently operating the car.²⁸ This passage highlights the incongruence of holding the mentally disabled to a strictly objective standard, for negligence by its very definition involves a risk of which the defendant *should have* been aware.²⁹ If the standard is one that the defendant

liability for conduct which does not conform to the standard of a reasonable man under like circumstances."), and RESTATEMENT (THIRD) OF TORTS: PHYS. & EMOT. HARM § 11(c) (AM. LAW INST. 2010) ("An actor's mental or emotional disability is not considered in determining whether conduct is negligent, unless the actor is a child.").

23 See, e.g., *Mem'l Hosp. v. Scott*, 300 N.E.2d 50, 56 (Ind. 1973) ("The proper test to be applied in such cases is the test of a reasonable man *under the same disabilities and infirmities* in like circumstances.").

24 Dark, *supra* note 14, at 175. These determinations have largely turned on a perceptual dichotomy between infirmities of the body versus infirmities of the mind, and the assumption that the workings of the brain are those merely of the mind, not the body. Consider blindness: a damaged retina is undoubtedly evidence of a physical cause of potential blindness; but should a person who is blind not because of damage to the physical structure of the eye but because of abnormalities in the functioning of the occipital lobe of the brain, be considered a mentally or a physically disabled individual? The answer is not so clear.

25 *Id.*

26 These will be tackled below in Section II.D.

27 See, e.g., *Johnson v. Lambotte*, 363 P.2d 165 (Colo. 1961); *Gossett v. Van Egmond*, 155 P.2d 304 (Or. 1945); *Ramey v. Knorr*, 124 P.3d 314, 316 (Wash. Ct. App. 2005).

28 *Lambotte*, 363 P.2d at 166.

29 See W. PAGE KEETON ET AL., PROSSER AND KEETON ON TORTS § 31, at 169 (5th ed. 1984) ("[T]he essence of negligence is . . . behavior which should be recognized as involving unreasonable danger to others."); see also Anne Ruth Mackor, *What Can Neurosciences Say About Responsibility?*, in NEUROSCIENCE AND LEGAL RESPONSIBILITY 53, 59 (Nicole A. Vincent ed., 2013) ("Holding someone accountable for his behavior presupposes that he is

cannot possibly attain, then in effect the current rule works in practice as a rule of strict liability.³⁰ No mentally disabled defendant can meet such a threshold and therefore they will always lose, regardless of culpability. This proposition is by no means novel, as courts and scholars alike have recognized this logical misstep as deeply troubling.³¹

On occasion, courts have adopted an exception to the objective standard where the defendant is suddenly incapacitated by a mental disability.³² However, this limited exception appears to be premised on the fact that a sudden, unwarned incapacity “renders [them] incapable of conforming to the standards of ordinary care,”³³ rather than a perception of mental disability in itself. In *Ramey v. Knorr*, the defendant was found liable and incurred a half-million dollar judgment for her negligence in operating a motor vehicle. The defendant was a diagnosed schizophrenic and allegedly suffered a schizophrenic episode while driving. The court held that there was “no legally sufficient evidentiary basis” for the jury to find that the defendant was entitled to the sudden incapacitation defense because her incapacitation was foreseeable.³⁴ And yet while recognizing that a mental disability has the capability to “render[] [a defendant] incapable of conforming to the standards of ordinary care,”³⁵ the court nonetheless applied a standard of care that the defendant was incapable of meeting. Why the *Ramey* court would have considered the defendant’s mental disability for a suddenly mentally incapacitated defendant, but not for the mentally disabled in general, was dismissed because of “historical and other reasons.”³⁶ The court relied on policy rationales, most notably the belief that “the existence and degree of

capable of being held accountable. . . . We normally assume adults to have this capacity *unless* there are indications that someone does not have it, *such as* when someone shows symptoms that he suffers from acute psychosis or that he is severely mentally retarded.” (emphases added)).

30 See Kristin Harlow, Note, *Applying the Reasonable Person Standard to Psychosis: How Tort Law Unfairly Burdens Adults with Mental Illness*, 68 OHIO ST. L.J. 1733, 1735 (2007) (“By effectively requiring a strict liability standard for defendants who have a mental (as opposed to a physical) illness . . . the common law . . . [is] perpetuating stereotypes and misunderstanding about the mentally ill population.”).

31 See, e.g., *Seals v. Snow*, 254 P. 348 (Kan. 1927); *Goff v. Taylor*, 708 S.W.2d 113, 115 (Ky. Ct. App. 1986); *Dorais v. Paquin*, 304 A.2d 369, 371 (N.H. 1973) (noting that, at least for children, a more subjective standard is appropriate because of the “basic unfairness of predicating legal fault upon a standard which most children are simply incapable of meeting”); see also OLIVER WENDELL HOLMES, JR., *THE COMMON LAW* 100 (Belknap Press 2009) (1881) (“[I]f insanity of a pronounced type exists, manifestly incapacitating the sufferer from complying with the rule which he has broken, good sense would require it to be admitted as an excuse.”).

32 See, e.g., *Jankee v. Clark Cty.*, 612 N.W.2d 297 (Wis. 2000); *Breunig v. American Family Ins. Co.*, 173 N.W.2d 619 (Wis. 1970).

33 *Ramey v. Knorr*, 124 P.3d 314, 316 (Wash. Ct. App. 2005) (quoting *Jankee*, 612 N.W.2d at 312).

34 *Ramey*, 124 P.3d at 316.

35 *Id.* (quoting *Jankee*, 612 N.W.2d at 312).

36 *Ramey*, 124 P.3d at 317.

one's mental illness can be difficult to measure and is a major obstacle for applying a mental deficiency defense."³⁷

Despite an ever-increasing line of scholarship recognizing the standard's incongruence with fundamental tort principles,³⁸ the objective "reasonable person" appears to have entrenched itself beyond dispute.³⁹ The sparse flickers of judicial alteration have been snuffed out before they gathered steam.⁴⁰ Such entrenchment is exemplified by *Burch v. American Family Mutual Insurance Co.*, in which the Wisconsin Supreme Court held that although one of the defendants was diagnosed with cerebral palsy and mental retardation, to the extent that she "function[ed] at the cognitive level of a preschooler," she must nonetheless be held to the reasonable person standard.⁴¹ Curiously, the court endorsed an exception recognized in *Gould v. American Family Mutual Insurance Co.*⁴² that allows for the consideration of a defendant's mental disability for institutionalized mentally disabled persons.⁴³ The court did not elaborate, however, on why such an exception is inapplicable to mentally disabled individuals who are not institutionalized. Rather, the *Burch* court based its decision "upon the principles articulated in *Gould*,"⁴⁴ which in turn relied on "matter[s] . . . of public policy."⁴⁵ Section II.D examines whether many of these justifications are still satisfying, after analyzing whether new technologies should encourage a progressive response—that is, whether the benefits of our new knowledge tip the scale in favor of abandoning an entrenched legal doctrine.

II. NEW INSIGHTS: HOW NEUROSCIENCE AFFECTS THE ANALYSIS

There has been much recent discussion of the advances in scientific information that question the underlying policy rationales. But few have gone further to demonstrate how this knowledge can be applied to remedy the defect. Most stop at the metaphysical level, demonstrating the "link between mental, and organic or physical causes."⁴⁶ This Part seeks to carry

37 *Id.*

38 See Korrell, *supra* note 14, at 5 n.13 for an extensive gathering of literature on whether the rule aligns with the underlying principle of fault in our tort regime.

39 See *Vosnos v. Perry*, 357 N.E.2d 614, 615 (Ill. App. Ct. 1976) ("However justly this doctrine may have been originally subject to criticism . . . it is now too firmly supported by the weight of authority to be disturbed." (quoting *McIntyre v. Sholty*, 13 N.E. 239, 240 (Ill. 1887))). Indeed, almost all jurisdictions unflinchingly apply this general standard and do not factor mental disability into the equation for negligence or intentional tort actions. See Dark, *supra* note 14, at 170 & n.5, 171 n.10.

40 See Korrell, *supra* note 14, at 4 & n.10.

41 *Burch v. American Family Mut. Ins. Co.*, 543 N.W.2d 277, 278, 280 (Wis. 1996).

42 543 N.W.2d 282 (Wis. 1996).

43 *Burch*, 543 N.W.2d at 280.

44 *Id.*

45 *Gould*, 543 N.W.2d at 284. Notably, the *Gould* court acknowledged that the "origins of this rule" are traced to "a time when strict liability controlled." *Id.*

46 Dark, *supra* note 14, at 172.

the discussion one step further, by demonstrating that this knowledge can now be practically applied for evidentiary purposes.⁴⁷

Undoubtedly a contributing factor in the law's refusal to tackle the underlying nature of mental illness and disability is the fact that rapid development of scientific neurological procedures has only been available for the past few decades. At least since the (in)famous account of Phineas Gage in 1848, there have been subtle indications that the physical attributes of the brain can lead to or cause certain psychological or behavioral responses.⁴⁸ But the difference between physical injuries resulting in reduced cognitive function and the conceptualization of cognitive functions as *physical in themselves* is a subtle one, which we have only recently begun to understand.⁴⁹ Recognizing the difference may have the force to finally dismantle this entrenched doctrine.

In the 1970s, neurological imaging techniques analyzing the structure and function of the human brain became available for clinical usage.⁵⁰ Only as recently as the 1990s were noninvasive technologies available to image brain function.⁵¹ Today, however, we have a multitude of technologies at our disposal that have revolutionized our understanding of the brain's functionality and the correlative structural links. Computed axial tomography (CAT), single-photon emission computed tomography (SPECT), positron emission tomography (PET), functional Magnetic Resonance Imaging (fMRI), and others are among this group of newly developed and rapidly advancing procedures. While none of these techniques has been perfected beyond fault—due largely in part to the fact that they still require expert

47 See *id.* at 181 (“The issue is not whether this material is complex but rather whether it is available for the courts to use and rely upon in assessing liability.”).

48 Hans J. Markowitsch & Angelica Staniloiu, *Neuroscience, Neuroimaging and the Law*, 47 *CORTEX* 1248, 1248 (2011).

49 In the name of clarity, this is not intended to evolve into a discussion about dualism or its rejection. While non-dualist philosophy may add to the discussion on a metaphysical level, a rejection of traditional dualism is not necessary to support these arguments. See Martha J. Farah, *Neuroethics: The Practical and the Philosophical*, 9 *TRENDS COGNITIVE SCI.* 34, 38 (2005) (“[A]s neuroscience advances, more and more of human thought, feeling and action is being explained in terms of the functioning of the brain, a physical organ of the body . . . Nevertheless, such models do not seriously threaten our intuitively ‘dualist’ view of mind and brain.”). It suffices for our purposes to say that “[m]ind is nothing more than a term we employ to describe some of the functions of the brain.” RICHARD M. RESTAK, *THE BRAIN* 343 (1984). Nonetheless, for an insightful analysis of dualism's place in our jurisprudence, see generally Dov Fox & Alex Stein, *Dualism and Doctrine*, 90 *IND. L.J.* 975 (2015).

50 Stephen J. Morse, *The Future of Neuroscientific Evidence*, in *THE FUTURE OF EVIDENCE* 137, 137 (Carol Henderson & Jules Epstein eds., 2011). Examples of these procedures include CT, MRI, and PET. All have had a cognizable impact on our understanding of the relation between physical brain attributes and the psychological and behavioral aspects of the individual.

51 *Id.* The technique, fMRI, “has led to astonishing advances in our understanding of the relation of brain to behavior.” *Id.*

interpretation of the results⁵²—there is little room to deny that advances in neuroscience “will have an impact.”⁵³

In order to analyze what this impact might be and the magnitude of change it could bring forth, this Section will consider the capabilities of two neuroimaging procedures—PET and fMRI—and their ability to detect indicia of mental disability. Specifically, this Section will demonstrate how neuroimaging technology has allowed us to further understand the underlying etiology of certain mental disabilities and what these findings might mean for our understanding. Ultimately, this investigation will suggest that based on newly discovered evidence the distinction between physical and mental disabilities is one without a difference, and thus cannot rationally be sustained by our tort system. Again, the point is not that mental disabilities are merely like physical ones, but rather that mental disabilities *are* physical in nature.

Positron Emission Tomography is a procedure that tracks the oxidation of glucose in the brain,⁵⁴ a decidedly biological and physiological process, by “tagging” blood with a radioactive substance.⁵⁵ Through this process, cognitive brain activity can be attributed to highly oxygenated blood flow in the brain. When that blood is tagged with the radioactive substance, the breakdown can be used to pinpoint a localized reaction.⁵⁶ For example, when the reaction from the unstable O¹⁵ molecule (oxygen with fifteen electrons) to the stable O¹⁶ (oxygen with a full sixteen electrons) occurs, a positron is emitted.⁵⁷ The positron’s subsequent interaction with a nearby electron—which occurs rapidly—produces two photons (particles of light).⁵⁸ This interaction allows us to detect brain activity using PET; within an increase in the number of positron decays, we can conclude that neural activity is occurring.⁵⁹ Accepting the assumption that particular kinds of thoughts originate in specific areas of the brain, a three-dimensional map of the regions of the brain can be used to show which regions were activated, and thus “associations may . . . be drawn between these brain loci and thoughts.”⁶⁰

52 See Eggen & Laury, *supra* note 7, at 242–43; Erickson, *supra* note 8, at 31 (“Despite the claim by neuroscientists that the mind is accessible, measurable, and predictable, there are good reasons for skepticism on all of these fronts. Cognitive neuroscience, like all fields of science, utilizes assumptions to generate its conclusions.”).

53 Morse, *supra* note 50, at 138; see also WILLIAM R. UTTAL, *NEUROSCIENCE IN THE COURTROOM* xiii (2009) (“What had previously been matters of interest to only philosophers . . . now seems to have developed to the point at which it may have a direct role to play in courtroom proceedings.”).

54 See UTTAL, *supra* note 53, at 42.

55 *Id.*

56 *Id.*

57 *Id.*

58 *Id.*

59 *Id.* at 43.

60 *Id.*

Despite some shortcomings,⁶¹ PET was a great advancement over traditional X-rays that could merely identify structure. A newer, less invasive procedure, fMRI, suffers from fewer of the drawbacks of PET imaging and gives us the ability to track brain functionality in real time.⁶² By monitoring changes in blood flow to certain areas of the brain, abnormal functionality can be pinpointed. Increases in oxygenated blood to the active region of the brain results in a high signal intensity; because the blood oxygenation level is associated with neuronal activity, the measurements provide us an indication about how a particular region of the brain is functioning.⁶³ Functional MRI has already given us “unprecedented insights” into the role that physiological processes play in forming personal “cognitions, perceptions and judgments.”⁶⁴ This type of neuroimaging has given us both an “aesthetically beautiful and technologically marvelous”⁶⁵ window into the physical functionality of the human brain, and could provide a valuable tool in the courtroom. Especially allayed will be concerns about alleged tortfeasors “feigning” illness if this type of evidence is utilized. Functional MRI generates higher resolution results than its predecessors, and because it is a noninvasive procedure it can be administered any number of times within a short period—both factors serve to “enhanc[e] the potential reliability and validity of the results.”⁶⁶

What might these types of procedures mean when applied in the courtroom? The results are mixed. Many commentators express doubt that neuroimaging technology can be used reliably to prove the existence of mental disability.⁶⁷ Much of this skepticism is attributed to our uncertainty about the effects of “factors including social, hereditary, environmental, chemical, neurological, and psychological factors.”⁶⁸ Despite the complexity in this area, it cannot be denied that neuroimaging technologies such as PET and fMRI can help us better identify and substantiate a claim of mental disability.⁶⁹ At the very least, these technologies provide us with a basis for eliminating the distinction between mental and physical disabilities on account of their ability to identify physical processes underlying a mental disability. While neuroimaging evidence standing alone may not always provide explicit results, neuroimaging is at least capable of acting as a supplement to psychiat-

61 *Id.* at 44.

62 Neal Feigenson, *Brain Imaging and Courtroom Evidence: On the Admissibility and Persuasiveness of fMRI*, 2 INT’L J.L. CONTEXT 233, 234 (2006).

63 *Id.*

64 *Id.* (citing Joshua D. Greene et al., *An fMRI Investigation of Emotional Engagement in Moral Judgment*, 293 SCI. 2105, 2105–08 (2001)).

65 UTTAL, *supra* note 53, at 48.

66 Feigenson, *supra* note 62, at 234.

67 UTTAL, *supra* note 53, at 222–29.

68 *Id.* at 227.

69 Sarah K. Robins & Carl F. Craver, *No Nonsense Neuro-Law*, 4 NEUROETHICS 195, 197 (2011) (arguing that much of neuroscience is “nonsense,” and recognizing that despite that, “it is possible to infer what a person can and cannot do from what one knows about the functional and structural integrity of their brains”).

ric and other necessary medical testimony to arrive at a more conclusive determination. Drawbacks no doubt are present, as with any type of complex evidence requiring interpretation. But having a better grasp of the chemical and neurological functioning of the brain undoubtedly adds a missing piece to the puzzle, and is surely preferable to leaving these factors uninvestigated. Recognizing the limitations of neuroscience as it stands today is important, but these procedures are increasingly available to both identify mental disabilities as physical in origin and substantiate claims of such disabilities if and when they arise at trial.

A. *Evidentiary Implications*

Advances in neuroimaging provide a window into the physiological causes of mental disability. The question remains whether such technology can be successfully amalgamated into effective tort litigation—that is, whether neuroscience evidence can be efficiently applied in a civil case to satisfy evidentiary elements of proof. Like many types of evidence, in any given case neuroimaging may prove to be unhelpful or at best inconclusive. Concededly, our understanding of neuroimaging is not complete, but the following Sections will argue that we have established a sufficient base of knowledge and understanding to make neuroscience a working reality in the courtroom.

Of primary concern is establishing the reliability of the evidence at issue. Having new evidence at our disposal ultimately means nothing if we lack the procedural framework necessary to ensure its reliability. The reliability of neuroscientific evidence is one of the main concerns that scholars and practitioners have with adopting complex evidence of this sort.⁷⁰ Procedurally, there is little reason to be frightened by the inclusion of neuroimaging evidence—as with other scientific evidence, testimony supporting neuroimaging evidence must satisfy both the *Daubert*⁷¹ standard and Federal Rule of Evidence 702⁷² or its state-law equivalent. Because under either test the reliability of the evidence at issue is questioned, there should be little fear that the application of neuroimaging evidence will result in any more chaos than other types of expert testimony allowed in the medical, criminal, and complex business realms. Moreover, the burden of proving the reliability of the evidence rests with the party wishing to introduce it, and the trier of fact remains free not to credit the expert's testimony.⁷³ Basic procedural safe-

70 See, e.g., *id.*; see also Erickson, *supra* note 8, at 31.

71 *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 593–95 (1993).

72 FED. R. EVID. 702. Under Rule 702, an expert may provide testimony as to scientific, technical, or other specialized knowledge if: (i) the testimony is based upon sufficient facts or data; (ii) the testimony is the product of reliable principles and methods; and (iii) the witness has applied the principles and methods reliably to the facts of the case.

73 Feigenson, *supra* note 62, at 236 (deciding whether or not to admit scientific evidence is “within the trial judge’s discretion”). At the very least, Federal Rule of Evidence 403 allows for the exclusion of evidence if “its probative value is substantially outweighed by a danger of . . . unfair prejudice, confusing the issues, [or] misleading the jury.” FED. R.

guards counteract the notion that the assertion of mental disability cannot be reliably substantiated.⁷⁴

To be sure, the fact that neuroimaging evidence is capable of surpassing elementary evidentiary safeguards by no means ends the discussion. Neuroimaging will not always provide a concrete answer. To hope that we can always know with certainty the workings of such a complex and dynamic organ as the human brain is perhaps somewhat naïve. Professor Uttal argues that a driving force behind increasing enthusiasm for neuroscience is the “myth” that it can “read the mind” of the defendant.⁷⁵ Admittedly, we are not at the point at which “mind reading” in any significant sense can be achieved; for now, the “mind and our thoughts” are likely to remain “private and inaccessible” to extensive inquiry.⁷⁶ Still, neuroimaging can be utilized to identify abnormal brain functioning or detect specific forms of disability that may influence the legal responsibility of the defendant—this we are, and have been, capable of.

B. *What’s on the Inside Counts: Mental or Physical (or Both)?*

Schizophrenia is a highly documented mental disability that affects approximately one percent of the population.⁷⁷ The disability is characterized by significant thought disorder including hallucinations and delusions, as well as significant emotional infirmities leading to social withdrawal and apathy.⁷⁸ Schizophrenia in its most severe forms may disrupt “almost every aspect of daily functioning” and can take a significant toll on the emotional and psychological well-being of the individual and those caring for them.⁷⁹ Since its recognition, schizophrenia has been linked to brain abnormalities, and recent studies have identified the disability as a “chronic brain disorder.”⁸⁰ Doctors Barlow and Durand identify “genetic influences, neurotransmitter imbalances, [and] structural damage to the brain”—all indisputably linked to physical processes and phenomena—as leading causes of the disorder.⁸¹

EVID. 403. These procedural safeguards are adequate to guard against the introduction of such evidence for impermissible ends.

74 Even in states still utilizing the test from *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923), which asks whether a technique is “generally accepted” in its relevant scientific community, there is little room for concern—something that is “generally accepted” in our age of medicine must to some extent exhibit reliability in order to be so accepted.

75 See UTTAL, *supra* note 53, at 1.

76 *Id.* at 1–2.

77 Kiyoto Kasai et al., *Neuroanatomy and Neurophysiology in Schizophrenia*, 43 NEUROSCIENCE RES. 93, 93 (2002).

78 *Id.*

79 DAVID H. BARLOW & V. MARK DURAND, *ABNORMAL PSYCHOLOGY: AN INTEGRATIVE APPROACH* 477 (7th ed. 2015).

80 Kasai et al., *supra* note 77, at 93 (“[S]chizophrenia . . . structurally and functionally affect[s] various cortical and subcortical regions involved in cognitive, emotional, and motivational aspects of human behavior.”).

81 BARLOW & DURAND, *supra* note 79, at 507.

Advances in neuroimaging have given us increased insight into the structural abnormalities associated with schizophrenia and the measure of the functional outcomes that result. Technology allows us to pinpoint with increasing accuracy the regions of the brain that are abnormally developed in both a physical and functional respect.⁸² The use of PET scans to investigate the effects of dopamine (a neurotransmitter of the brain) and the examination of the correlation between brain ventricle size and schizophrenic symptoms through magnetic resonance imaging (MRI) have been utilized to identify the presence of schizophrenia.⁸³ Although many of the observable symptoms of schizophrenia are traditionally viewed as having only “mental” manifestations, schizophrenia cannot be explained without recognition of its biological and physical origins. The *Ramey v. Knorr*⁸⁴ holding was premised on the conclusion that schizophrenia is a “mental incapacity” and therefore “not generally recognized as [a] defense [] to a claim of negligence.”⁸⁵ Neuroimaging evidence of schizophrenia’s biological and physical origins calls such a conclusion into question. Under the current standard, however, such evidence is barred from consideration at the outset.⁸⁶ Even if courts are unwilling to classify schizophrenia as a physical disability, a similar exception to the objective standard for mental disabilities may have a profound impact on cases like *Ramey*.

Alzheimer’s disease is the most prevalent form of dementia in those over sixty-five years of age.⁸⁷ The classification of Alzheimer’s as a disease, however, is somewhat misleading. The term is employed to identify a “group of symptoms including memory loss, reduced ability to reason, impaired judgment, and progressive loss of ability to understand either spoken or written language.”⁸⁸ Those with Alzheimer’s frequently exhibit severe personality changes and physically aggressive behavior. In extreme cases, the individual may lack the ability to identify who they are and experience misperceptions of reality.⁸⁹ Undoubtedly, the presence of these symptoms in a given case should lead us to question whether an individual encumbered by Alzheimer’s has the capability of attaining the reasonable person standard.

Utilizing a strictly objective standard in the case of an individual with Alzheimer’s precludes these factors of the “disease” from being taken into account in the determination of liability. This of course is based on the perception of Alzheimer’s as an exclusively mental incapacity and, accordingly,

82 Kasai et al., *supra* note 77, at 94–96.

83 BARLOW & DURAND, *supra* note 79, at 494–97.

84 124 P.3d 314 (Wash. Ct. App. 2005). This is discussed above in Part I.

85 *Id.* at 316.

86 See RESTATEMENT (THIRD) OF TORTS: PHYS. & EMOT. HARM § 11(c) (AM. LAW INST. 2005).

87 Vaughn E. James, *No Help for the Helpless: How the Law Has Failed to Serve and Protect Persons Suffering from Alzheimer’s Disease*, 7 J. HEALTH & BIOMEDICAL L. 407, 409 (2012) (“Almost five percent of persons age sixty-five and older are severely demented, with another ten percent of that group in the moderate dementia category.”).

88 VAUGHN E. JAMES, THE ALZHEIMER’S ADVISOR 4 (2009).

89 James, *supra* note 87, at 408.

one warranting no exceptions. Admittedly, “no one knows for sure what causes the disease.”⁹⁰ Yet we know that a primary cause of Alzheimer’s is “the presence of beta amyloid plaques and neurofibrillary tangles in the brain,”⁹¹ an unmistakably physical phenomenon that is recognized as an integral aspect of the disease’s etiology. While we do not know what causes the buildup of these plaques, it is recognized that “regardless of the cause, Alzheimer’s is a disease of the brain,” and the presence of amyloid plaques and neurofibrillary tangles giving rise to the disease “*physically* attack[s] the patient’s brain.”⁹²

While much of the disease’s etiology is still unknown to us, it cannot be denied that neurological exams and brain scans are tools capable of substantiating the presence of Alzheimer’s. Using neuroimaging techniques has allowed us to diagnose Alzheimer’s with upwards of ninety percent accuracy.⁹³ Given our understanding of the extreme effects of the disease, its physical origins, and our increasingly efficient methods of identifying these physical origins, there is little substance to the contention that we should continue denying the existence of these factors in tort litigation. Neuroimaging has proven reliable enough to assist in substantiating Alzheimer’s as a defense if raised by a tort defendant.⁹⁴ Accompanying psychiatric or biomedical expert testimony can help ensure its reliability; therefore, there is little stopping us from effectively taking the symptoms of Alzheimer’s into account.

Negligence suits involving a significantly mentally retarded party perhaps best illustrate the inherent contradiction of recognizing only physical disabilities. An individual is considered mentally retarded if certain specific criteria are met, highlighted by the onset of both sub-average intellectual and cognitive functioning.⁹⁵ The indicators used to diagnose an individual as mentally retarded “suggest[] an aberration in the normal course of brain development,”⁹⁶ an indisputably physical process. While in many cases the

90 *Id.* at 410.

91 *Id.*

92 *Id.* (emphasis added); *see also* William Thies & Laura Bleiler, ALZHEIMER’S ASS’N, *Alzheimer’s Association Report: 2011 Alzheimer’s Disease Facts and Figures*, 7 ALZHEIMER’S & DEMENTIA 208, 208 (2011); *What Is Alzheimer’s?*, ALZHEIMER’S ASS’N, http://www.alz.org/alzheimers_disease_what_is_alzheimers.asp (last visited Nov. 7, 2015).

93 Thies & Bleiler, *supra* note 92, at 232 (“[More than] 90% of patients diagnosed with [Alzheimer’s] are found to have it on autopsy.”).

94 *See* Feigenson, *supra* note 62, at 237–38. As far back as 2006, Professor Feigenson reported that PET and/or SPECT evidence was involved in 130 reported opinions. While the use and receptivity of neuroimaging in those cases varied, “PET and/or SPECT evidence ha[d] been admitted in more than four-fifths . . . of cases in which it ha[d] either been admitted or excluded. *Id.* at 237.

95 *See* Igor Branchi et al., *Animal Models of Mental Retardation: From Gene to Cognitive Function*, 27 NEUROSCIENCE & BIOBEHAVIORAL REV. 141, 141 (2003). The prevalence of intellectual disabilities is estimated to be between one and three percent. Pallab K. Maulik et al., *Prevalence of Intellectual Disability: A Meta-Analysis of Population-Based Studies*, 32 RES. DEVELOPMENTAL DISABILITIES 419, 420 (2011).

96 Branchi et al., *supra* note 95, at 141.

exact etiology of mental retardation cannot be determined, in cases where the etiology is known, “genetic deficits rank among the leading causes.”⁹⁷ The cause of mental retardation is often linked to aberrations in the X chromosome, which in turn may cause alterations in the way proteins and carbohydrates are metabolized by the body. The end result is abnormalities in the development of the nervous system and cognitive performance in general.⁹⁸ Significant lack of development can thus often be traced from a physical alteration in the individual’s genome (a physical characteristic) and attributed to a suboptimal (physical) maturation in significant brain regions. When considering these origins, and the fact that a significantly retarded individual will in many cases be unable to appreciate the risks generated by their conduct, treating mental retardation as a strictly mental disability is highly suspect.

Take, for example, two separate tortfeasors. Both are disabled due to a specific genetic mutation or alteration. The defendant whose genetic aberration leads to abnormalities in the physical maturation of the brain will be considered a mentally disabled defendant and will be judged by an objective standard; the defendant whose aberration leads to an abnormality in the development of the body, such as deformity of the hands associated with achondroplasia, will have the benefit of an exception. The contradiction is even more pronounced if one considers the relatively common genetic disability Down’s syndrome. Those with Down’s syndrome may exhibit both physical abnormalities and mild-to-severe mental retardation. By which standard must such an individual be judged? Should a separate standard be applied based on whether the individual’s failure to observe reasonable care resulted from her physical disability or her mental one? Such a hypothetical is troubling.

The functioning of the brain areas marked by sub-average development, such as the neocortex and the prefrontal lobe—two areas highly involved in significant cognitive functioning⁹⁹—can be detected by neuroimaging scans such as fMRI. Thus, in the highly unlikely event that a defendant may attempt to feign mental retardation, neuroimaging provides us with another tool to dismiss unsubstantiated claims, and support valid claims of the presence of this disability. Having the ability to detect the presence of mental defects is a vital tool that should be utilized by the courts.

C. *How Neuroscientific Evidence Affects the Traditional Policy Rationales*

The main argument of this Note is that no significant distinction can be made between physical and mental disabilities. But it must be recognized

97 *Id.*

98 *Id.* at 143.

99 Dean Mobbs et al., *Law, Responsibility, and the Brain*, in *LAW, MIND AND BRAIN* 5, 8 (Michael Freeman & Oliver R. Goodenough eds., 2009) (“Modern empirical endeavours support the claim that the [prefrontal cortex] . . . is what makes us rational, intellectual, and moral entities.”).

from the outset that mental disabilities possess additional complex dimensions, and society regards them as suspect.¹⁰⁰ Mentally disabled persons are stigmatized because of their possibly erratic or inexplicable behavior. Accordingly, some argue that a standard opening the mentally disabled to wider liability is necessary to ensure that other free-moving members of society will be encouraged to interact with them; in other words, for the mentally disabled to be regarded as part of the same communal group.¹⁰¹ Yet the very reason that social stigma attaches to mental disability is our own failure to fully understand the underlying causes.¹⁰² Because of this lack of understanding, the treatment of mental disability has typically been “approached through uninformed, and thus potentially harmful, medicine.”¹⁰³ For most of history we have lacked the capacity to directly inspect the origins of mental disabilities, and thus “it was only possible to infer mental processes from behavior.”¹⁰⁴

The very fact that our understanding of mental disabilities has lagged behind that of the physical is largely what perpetuates the perception of their “otherness.”¹⁰⁵ Quite simply—and perhaps naturally—we were skeptical of what we could not yet fully understand.¹⁰⁶ This skepticism is one of many factors that originally led to institutionalization, on the belief that quarantining the mentally disabled was the best for all. We have since recognized that integration, and not alienation, is the best means of interacting with the mentally disabled.¹⁰⁷ Continuing to treat them as the “other” serves to perpetu-

100 George J. Alexander & Thomas S. Szasz, *Mental Illness as an Excuse for Civil Wrongs*, 43 NOTRE DAME LAW. 24, 24 (1967) (noting that the “crucial manifestations of mental illness are behavioral, not physical”). But such complexity does not render mental illness a “myth” as Alexander and Szasz contended. *Id.* at 27.

101 See, e.g., Splane, *supra* note 14, at 163–69.

102 This is true, in part because “[o]ur understanding of why people behave as they do is closely bound up with the content [of] our laws, social mores, and religious beliefs,” Farah, *supra* note 49, at 34, and it is clear from the current treatment of the mentally disabled that our laws and social mores are content with treating this subset of people as suspect. However, “[n]euroscience is providing us with increasingly comprehensive explanations of human behavior,” and this additional knowledge may in turn affect how our laws and social mores perceive the mentally disabled. *Id.*

103 Thomas R. Scott, *Neuroscience May Supersede Ethics and Law*, 18 SCI. & ENGINEERING ETHICS 433, 434 (2012).

104 *Id.*

105 3 ENCYCLOPEDIA OF BIOETHICS 1753 (Stephen G. Post ed., 3d ed. 2004) (“[T]hose aspects of the medical role that appear to be purely technical, such as the labeling of disease, the specific management of the patient, and the choice of medications or other treatments, have profound consequences for performance of social roles and obligations as well as for future life opportunities.”).

106 *Id.* at 1760 (“Certain [nineteenth-century] diagnoses—such as *volitional old maid*, *vagabond*, and *eccentric character*—would be laughable if they had not also been socially coercive.”).

107 See Barbara Barton, *Dreams Deferred*, 36 J. SOC. & SOC. WELFARE 13, 18 (2009) (“Today’s Independent Living movement . . . stresses the barriers to inclusion in the social environment that prevent full participation.”).

ate the stigma by herding the mentally disabled into an “individualistic” group.¹⁰⁸ While less onerous than institutionalization, holding the mentally disabled to an unattainable standard works against the development of “social cohesiveness.”¹⁰⁹ It suggests that those with a mental disability are somehow inferior to the physically disabled and other members of society, and therefore inferior protection against liability for the mentally disabled is warranted to protect others from their actions. By placing the mentally disabled outside of the “communal group” of society, we only serve to impede their integration because they are deprived of the solidarity and collectivity attributed to communal groups.¹¹⁰

The cohesiveness of a given social grouping is related to “the capacity of the group to *normalize* the symptoms of mental illness” and has a significant effect on the group’s social reaction to the mentally disabled.¹¹¹ Professor Shuman argues that the best way to achieve cultural normalization in this context is to bring the mentally disabled to a level of functionality equivalent to the reasonable person.¹¹² He posits that “[i]f the mentally ill . . . behave . . . like the normal population behave and rely on the threat of tort sanctions to shape their actions,”¹¹³ they will be encouraged to behave in a more socially responsible way. This argument assumes that the mentally disabled are capable of adjusting their conduct to meet that of the “normal population,” a contention that is dubious for those with a permanent mental infirmity. The very reason that an objective standard for the mentally disabled is inappropriate is because it is a threshold they are unlikely to meet. Contrary to Professor Shuman, the best way to normalize the mentally disabled into the communal group is to reduce their otherness by calling attention to, and promoting better understanding of, the underlying reasons for why they act as they do. The law’s utilization of neuroscientific evidence that helps to explain the fundamentals of mental illness can thus have a profound effect on whether the mentally disabled can be normalized into the communal group. The use of “cultural interpretations, social roles, or treatment tech-

108 ALLAN V. HORWITZ, *THE SOCIAL CONTROL OF MENTAL ILLNESS* 89 (1982); *see also* GROB, *supra* note 3, at 300 (noting that the institutionalization of the mentally disabled led the institutionalized to “internalize [] the behavioral norms of a hospital community”).

109 HORWITZ, *supra* note 108, at 89.

110 *Id.* A “communal group” is characterized by a high degree of cohesiveness featuring numerous ties between its members and a value system that promotes the group’s welfare. *Id.* This type of social cohesiveness is accomplished because “[t]he degree of cultural distance between members is low,” *id.*, and it cannot seriously be contended that the mentally disabled are regarded as members of the communal group if we continue to regard them as a suspect class. *See* Paul Hunt & Judith Mesquita, *Mental Disabilities and the Human Right to the Highest Attainable Standard of Health*, 28 HUM. RTS. Q. 332, 333 (2006) (“Persons with intellectual disabilities are among the most neglected—the most ‘invisible’—in our communities.”).

111 HORWITZ, *supra* note 108, at 90.

112 Daniel W. Shuman, *Therapeutic Jurisprudence and Tort Law: A Limited Subjective Standard of Care*, 46 SMU L. REV. 409, 419 (1993).

113 *Id.*

nologies” that effectively “reduce the degree of bizarreness” of the symptoms of mental disabilities make “exclusion . . . a less likely reaction.”¹¹⁴ Considering, then, that “the recognition of mental illness is directly related to the cultural distance between members,” putting to use our advanced understanding of what constitutes a mental disability will improve the social cohesiveness between the mentally disabled and society at large.¹¹⁵ Accordingly, putting neuroscientific evidence—with its corresponding normalization capabilities—to use in legal proceedings should assist our purported desire to incorporate the mentally disabled into everyday society.

Indeed, it was not too long ago that those with physical disabilities were regarded as socially suspect.¹¹⁶ Unlike the mentally disabled, however, we quickly developed ways to deal with, and remedy, many physical infirmities, thus reducing the stigma.¹¹⁷ While it is true that mental disabilities are defined by social and behavioral aspects,¹¹⁸ physical disabilities once, at least perceptually, occupied this same class.¹¹⁹ It is thus our treatment and social perception of the mentally disabled that serves to perpetuate the stigmatization, and a standard that rests on this justification can do nothing to progress their status. As our knowledge of mental disabilities catches up to our wisdom of the physical, the stigma will in like manner fade into history.¹²⁰

Perhaps one of the rationales most often raised against modifying the traditional objective approach to negligence is the administrative burden on the courts.¹²¹ To be sure, taking into consideration evidence of a party’s

114 HORWITZ, *supra* note 108, at 90.

115 *Id.* at 91. This is because the mentally disabled are excluded to a lesser extent when “both informal resources and normalization capacities are high,” while exclusion is much greater if both “are weak or absent.” *Id.* But see GROB, *supra* note 3, at 302–11 (discussing the concerns following deinstitutionalization and the inherent difficulty of effectively integrating the recently deinstitutionalized into society at large).

116 See *supra* notes 105–06 and accompanying text.

117 See, e.g., Barton, *supra* note 107, at 17 (“Currently, the technology behind prosthetics has restored most of the functional ability of people with amputations, thus excluding them from how ‘disability’ is defined.”); Stacey A. Tovino, *The Impact of Neuroscience on Health Law*, 1 NEUROETHICS 101, 103 (2008) (noting that “[m]ental disorders remain poorly understood today,” and recounting estimates by Mental Health America that the majority of Americans attribute mental disorders to “mental weakness,” “poor parenting,” and “a form of retribution for sinful or immoral behavior”).

118 Alexander & Szasz, *supra* note 100.

119 See Barton, *supra* note 107, at 17 (noting that prosthetic advancements removed these individuals from the definition of “disability”). Further developing our understanding of mental disabilities may likewise reduce “[t]he degree of cultural distance” between society as a whole and the mentally disabled. HORWITZ, *supra* note 108, at 89.

120 See generally Kenneth S. Abraham, *The Trouble with Negligence*, 54 VAND. L. REV. 1187 (2001) (arguing that because of negligence’s central place in tort law, negligence decisions have the power to not only perpetuate, but create social norms). Another powerful example of legal norm creation is evident in the influence on courts of the Restatements promulgated by the American Law Institute (ALI)—a supporter of retaining the current objective standard for the mentally disabled.

121 Splane, *supra* note 14, at 156 & n.19.

mental health will produce more work for the courts in a given case. However, the number of negligence cases that will require additional evidence will by no means be large.¹²² As with any other type of complex information that a court must take into account, expert testimony and neuroimaging evidence can be routinely applied in order to get these types of cases right. Administrative considerations also take into account the fact that judges are not neuroscientists and do not possess the requisite expertise to assess that type of evidence. Again, considering that psychiatric, medical, and other complex information is introduced and utilized in the courts suggests that this argument is nothing more than a “straw man.”¹²³ As with these other forms of complex evidence, the efficient application of neuroimaging in the courtroom cannot be achieved unless it is at least occasionally encountered in practice. Refusing to implement a new wellspring of evidence that has a rather significant potential to be outcome-determinative is simply postponing the issue, for it is inevitable that neuroscience will have an impact on future litigation.¹²⁴ Nonetheless, the introduction of expert testimony and scientific evidence in this context will be more costly and perhaps more time consuming in a given case.

A corollary to the administrative-burden rationale is that if the mental efficiency—or lack thereof—of a given defendant must be taken into account when assessing liability, then the courts will no longer have the benefit of a single, objective standard.¹²⁵ Rather, courts will be burdened by millions of separate standards. Thus it has been held that “the actor’s individual standards must give way . . . to those of the public,” and therefore, a failure to meet the reasonable person standard is negligence “even if it is due to clum-

122 The National Institute of Mental Health estimates that roughly 1% of Americans are diagnosed schizophrenics. *Schizophrenia*, NAT’L INSTS. OF HEALTH, http://www.nimh.nih.gov/health/topics/schizophrenia/index.shtml#part_145427 (last visited Nov. 7, 2015). While the prevalence of other mental disabilities varies, the portion of the population this change will affect is small and should not be an insurmountable burden for the courts.

123 See Farah, *supra* note 49, at 39 (“[W]e can draw on our experience with other areas of science and technology, and even our experiences in everyday life, to guide us.”). What is more, the U.S. Supreme Court has already implicitly accepted the use of neuroimaging technologies in *Roper v. Simmons*, 543 U.S. 551 (2005), where neuroscientific evidence had a profound impact on the outcome of the case, and neuroimaging was explicitly endorsed in Justice Breyer’s dissent in *Brown v. Entm’t Merch. Ass’n*, 131 S. Ct. 2729, 2768 (2011) (Breyer, J., dissenting). Considering that criminal courts also rely on similar evidence when assessing an insanity defense, it is apparent that courts are equipped to apply and process this type of information. See Farah, *supra* note 49, at 38 (“[E]vidence of neurological dysfunction is frequently introduced in the penalty phases of criminal trials.”).

124 Brent Garland & Paul W. Glimcher, *Cognitive Neuroscience and the Law*, 16 CURRENT OPINION NEUROBIOLOGY 130, 132 (2006) (noting that *Roper* “is an example of how lawyers are already attempting to use neuroscience to persuade, even at the highest levels of the courts”).

125 Splane, *supra* note 14, at 156–57 (“[T]he difficulty of distinguishing between mental illness and other variations in emotional, intellectual, or physical make-up would ultimately result in a complete erosion of the objective standard.”).

siness, stupidity . . . or even sheer ignorance.”¹²⁶ Ultimately, then, “society may require of a person not to be awkward or a fool.”¹²⁷ While it must be conceded that a subjective standard for all would unduly burden the courts in resolving the administration of negligence claims, this argument suffers two significant weaknesses when considered in the framework proposed by this Note. First, this Note does not advocate a subjective standard for all members of society, but rather an exception for those with a documented and substantiated mental disability. As stated, the relative size of this subset to the general population will be minimal.¹²⁸ Second, the introduction of neuroimaging evidence to assist in substantiating a claim of mental disability will aid in weeding out frivolous claims and help to ensure that the defendant is not granted an exception because of clumsiness or stupidity, but rather because of a recognized mental disability. This may be accomplished, for example, by neuroimaging evidence proving the existence of significant mental retardation, granting an exception only for those with the diagnosed disability rather than those of merely low intelligence.¹²⁹ In other words, the framework proposed by this Note protects against the very fears that this argument puts forth by necessarily limiting the field of defendants. While it is true that no administrable standard could allow a defendant of sound mind to be an awkward fool—for this is precisely what negligence seeks to ferret out—society can hardly be justified in requiring a mentally retarded defendant to not be mentally retarded.

One of the more difficult policy rationales to overcome is the contention by commentators and the judiciary that, where a loss is suffered between two innocent parties, the loss should fall on the party who ultimately caused the injury. This rationale goes directly to the theory of tort law as a compensatory vehicle to make whole those who have suffered an injury through the negligence of another. Indeed, it may well hold that where a mentally disabled individual causes injury to another, especially where that individual requires supervision, they must compensate the injured party. The rationale is a persuasive one that may inevitably lead to the continued rejection of an exception, as there are few justifiable reasons to hold the public at large open to injury without compensation. Notably, however, this justification applies equally to those with physical disabilities—and yet an exception is allowed.¹³⁰ There is little room for a distinction on this ground, as a physically disabled

126 KEETON ET AL., *supra* note 29, § 31, at 169.

127 *Id.*

128 *See supra* notes 95, 122 and accompanying text.

129 Concededly, this presents foreseeable difficulty in cases at the margins, when a defendant has an intelligence quotient so low that they may suffer from retardation. Professor Uttal addresses similar concerns. UTTAL, *supra* note 53, at 222–28 (“Unlike other categorical and taxonomic schemes, there are no objective scales that can be used to distinguish a marginally disturbed person from a seriously disturbed one.”). But the burden of proving the existence of the disability is on the defendant, and a court is free in its discretion to deny a modification of the standard in the event they are not persuaded by the testimony.

130 *See* Shuman, *supra* note 112, at 418.

individual remains quite capable to injure another party. Even so, they gain the benefit of a subjective assessment of liability not afforded to the mentally disabled.

The proposal put forth by this Note may potentially evade such problems because it does not seek to suggest a complete defense for the mentally disabled. Rather, as will be shown in Part III, a modified objective standard will still provide for liability even if a mental disability is recognized and substantiated. Such a framework still allows an injured party to recover. In essence, applying a modified objective standard rather than affording a complete bar to liability for the mentally disabled should help alleviate the innocent-party concern because it does not deny that a mentally disabled individual may still be held culpable. If this is the case, then it cannot truly be said that a loss must be distributed between two innocent parties because the mentally disabled individual causing an injury will not in all cases be “innocent.” A bright-line rejection of liability in every case is more troublesome when faced with this rationale; but recognizing that a mentally disabled individual may still be able to appreciate the risks he is encountering in certain circumstances will still leave open the possibility for liability. Rather than denying recovery to one party or the other simply because a mental disability has been substantiated, a modified objective standard will allow litigation to otherwise go forward while leveling the playing field when a mentally disabled party is involved. Nonetheless, the innocent-party policy rationale is one of the more difficult arguments to overcome, as the question of incentive in allowing this change to occur is in many instances difficult to justify.

To be sure, the lasting influence of these and other rationales are entitled to some weight. Still, it must be recognized that many if not all of these rationales assume that we lack empirical ability to identify and prove mental illness. While these policy rationales “contain no particular scientific or medical information about mental disability at all,”¹³¹ the rejection of their continuing viability does.

III. A MEANINGFUL SOLUTION

The specific proposal this Note puts forth is this: incorporate a standard consisting of both an objective and subjective element when considering the responsibility of a mentally disabled tort defendant. Namely, culpability should first be analyzed based on the subjective understanding of the facts as the mentally disabled defendant perceived them at the time. Neuroimaging evidence may factor into the analysis at this stage by substantiating a claim that the defendant was incapable of appreciating the risks of his conduct due to an underlying mental incapacity. If neuroimaging, along with additional expert psychiatric and medical testimony, establishes that such an incapacity exists, then this factor may be taken into account in determining what risks the defendant was capable of appreciating. Surely, in some cases this may

131 Dark, *supra* note 14, at 181 (“These justifications are completely uninformed by the current body of scientific knowledge and study on mental illness.”).

operate as a complete bar to liability—for example, if the trier is satisfied that the risks of the given situation were not known or appreciated to any degree by the defendant—but this will not always be the case. In many cases, the outcome under the subjective prong may yield results identical to those under which the trier is utilizing a strictly objective standard. Asking whether the defendant was subjectively capable of appreciating the risk not only comports with general conceptions of negligence, but also provides significant flexibility for the trier of fact to adequately weigh evidence.

After attempting to construct the subjective perception of the defendant, the modified standard still requires an analysis of the reasonableness of the defendant's action. Thus, once a claim of Alzheimer's has been substantiated to the requisite degree by neuroimaging evidence and accompanying testimony, *then* from this standpoint the trier of fact may question whether the conduct of the individual was reasonable under the circumstances.¹³²

Take, for example, a negligence suit brought against an individual who claims to be hampered with Alzheimer's. Under a strictly objective standard, his disability will not be taken into account, and thus his diagnosis as someone with Alzheimer's will have no bearing on the assessment of whether he exercised reasonable care under the circumstances. This is troublesome in two respects because the defendant may have been completely unable to appreciate the risks of his actions at all—and therefore should not be held liable based on fundamental tort principles—or, his Alzheimer's may have played a significant role in whether he was capable of conforming his conduct even though he appreciated the risks of his actions. In either respect, the question under a strictly objective standard ultimately boils down to this: Did this defendant cause the injury to the plaintiff? If this is answered in the affirmative, the defendant will lose. The "standard" of reasonable care thus becomes rather a bright-line rule, akin to strict liability, under which the defendant has no hope of winning. Proponents of retaining the objective standard have been adamant that there should be no exculpation from liability for the mentally disabled; they have not, however, suggested why a plaintiff should always prevail against them. In the case of a strictly objective

132 In substance and form, this framework largely traces that used for the evaluation of the negligence of a child. See Eggen & Laury, *supra* note 7, at 266 (noting that the negligence standard for children takes into account the individual child's age, intelligence, and mental capacity and recognizing that "[t]his standard is both objective . . . and subjective"). This parallel seems fitting, especially when we consider that many individuals diagnosed with mental retardation have the physical and/or functional brain activity of a child. Mary Beckman, *Adolescence: Akin to Mental Retardation?*, 305 *SCI.* 599, 599 (2004) ("Juveniles function very much like the mentally retarded. The biggest similarity is their cognitive deficit." (quoting Steven Drizin, Northwestern University)). What seems less fitting is applying such a standard in one instance yet not the other. *But see* Alexander & Szasz, *supra* note 100, at 33–35 (arguing that retaining a subjective standard for children but not the mentally disabled is justified based on other significant legal protections for minors). But this seems to work against Alexander and Szasz's conclusion given that the legal protection for the mentally disabled is far less adequate. *Cf.* Hunt & Mesquita, *supra* note 110, at 333 (noting that significant legal protection is lacking for the mentally disabled).

standard, only the plaintiff is likely to prevail; in the case of a bright-line exculpation of liability, the defendant will prevail.

Luckily, as stated, a modified objective approach will not always lead to exculpation; rather, it will level the playing field so that each side has the capability of prevailing. Utilizing this new standard, the trier of fact will first have to believe that the defendant is hampered by a mental disability—which they are under no obligation to do. Beyond psychiatric and behavioral testimony, neuroscience will play its vital role at this stage by aiding in substantiating a claim of mental infirmity. In the event that the neuroimaging presented is found unreliable, the trier is again entitled to discount any testimony as to its validity. In the event that the trier is unconvinced that a disability of any kind has been proven, the case can easily continue under the objective standard and no modification should be allowed. In the event that the trier credits such testimony, however, they may proceed to analyze how a defendant with Alzheimer's subjectively viewed the situation at the time. Was he delusional? Is there an indication that he suffers from disorganized thinking? Or, was his motor behavior compromised?

This modified objective standard has the benefit of simplicity and thus should be a relatively easy incorporation into the courtroom.¹³³ Additionally, it affords equal analysis of the disability at issue while leaving room for the subtle attenuating difficulties respecting the identification of mental disabilities. Neuroimaging factors into the analysis by allowing us to determine with greater certainty whether a claimed disability does in fact exist. This is based on the recognition that outwardly physical disabilities are more prominent and thus easier for the trier of fact to internalize; yet it still leaves open to the jury the question of whether the mentally disabled defendant's conduct was reasonable under the circumstances.¹³⁴ Allowing the question to remain one for the trier's determination has the dual benefit of not fundamentally altering the traditional procedural aspects of our civil jurisprudence and, accordingly, making the administration of such claims less burdensome on the courts. It also allows for retention of significant safeguards by leaving the credibility determination of testimony with the trier of fact. It is not, nor is it intended to be, a bright-line fix denying liability against the mentally disabled. Rather, it seeks to achieve what we have long been searching for: a meaningful way to incorporate the mentally disabled into society at large

133 In fact, some courts have already applied this very framework in certain contexts. See *supra* note 15.

134 The case of *People v. Casassa*, 404 N.E.2d 1310 (N.Y. 1980), although a criminal case, is instructive. The *Casassa* court, in administering a test for evaluating a defense of "extreme emotional disturbance" containing both a subjective and objective element, noted that the test "necessarily leaves room for the exercise of judgmental evaluation by the jury." *Id.* at 1316. Further, the court recognized that while reasonableness should be determined from the defendant's viewpoint, the "ultimate test . . . is objective; there must be 'reasonable' explanation or excuse." *Id.* at 1315–16 (quoting MODEL PENAL CODE § 201.3 cmt. (AM. LAW INST. Tentative Draft 1959)); see also Eggen & Laury, *supra* note 7, at 265 ("[T]he determination of what was reasonable in the context of the facts of the case is for the jury in the first instance.").

while simultaneously respecting the individual characteristics they possess. As was argued in Section II.C, the most meaningful way to give a sense of belonging to the mentally disabled is not to simply ignore their unique attributes as if they do not exist, but rather to embrace them as we would any other characteristic that makes us what we are—human beings.

CONCLUSION

To be sure, there may be many factors in the course of litigation that either lead to neuroimaging evidence being superfluous or inapposite, and there may very well be instances in which, while professing to apply an objective standard, a court may in fact be applying a standard with subjective elements. In many cases involving a mentally disabled defendant, the injured individual may not even institute litigation because of their awareness that the alleged tortfeasor was not culpable; a jury may nullify a decision which would otherwise hold a mentally disabled defendant liable; and, as this proposed alteration recognizes, evidence supporting a claim of mental disability may be considered unpersuasive by the trier and thus precluded from consideration in the assessment of liability. But in the majority of cases, strictly adhering to the current objective standard often precludes not only the introduction, but even the consideration of neuroimaging evidence that could reveal the physical etiology of a mental disability. Not allowing for the consideration of this available evidence contradicts the professed goal of assessing reasonableness under all the circumstances.

Now that the baseline knowledge necessary to put this framework in place has been established, the relevant laws and institutions can also move forward. Too long has this long-questioned doctrine been immune from critical analysis. There is no longer reason to hide behind our policy justifications to protect ourselves from what we once could not understand. Instead, we should take pride that we now have the ability to shed the garbs of our “barbarous ancestors,” and challenge our knowledge to take that understanding further. Undoubtedly there are limitations to neuroscience evidence as it currently stands—but these limitations do not automatically render the evidence meaningless.¹³⁵ While we may not be able to read the mind of a particular tortfeasor, we have a window into how that person’s brain is functioning and how structural abnormalities affect their ability to conform their conduct.¹³⁶ Neuroscience will require expert testimony, but this should not be a surprising revelation, as expert testimony accompanies a wide array of complex evidence given at trial. Though judges are not scientists, they are not doctors or expert financial advisors, either. As neuroimaging is applied in the courtroom, judges and counsel will in turn become more experienced in dealing with such evidence, and its administration will

135 See Mobbs et al., *supra* note 99, at 19–21 (discussing limitations on the use of neuroimaging as evidence).

136 See *supra* Part II.

allow for the production of advanced procedural safeguards should experience determine they are necessary.

