"MY BRAIN IS SO WIRED": NEUROIMAGING'S ROLE IN COMPETENCY CASES INVOLVING PERSONS WITH MENTAL DISABILITIES

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I. INTRODUCTION

In recent years, the criminal justice system has paid significant attention to the role of neuroimaging in the criminal trial process.[1] The criminal

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[1] On neuroscience in the criminal courtroom in general, see CHRIS WILLMOTT, BIOLOGICAL DETERMINISM, FREE WILL AND MORAL RESPONSIBILITY (2016); Michael L. Perlin & Alison J. Lynch, *"In the Wasteland of Your Mind": Criminology, Scientific Discoveries and the Criminal Process,* 4 VA. J. CRIM. L. 304 (2016) [hereinafter, Perlin & Lynch, *"In the Wasteland of Your Mind"*]; Jennifer Bard, *"Ah Yes,* I Remember It Well": Why the Inherent Unreliability of Human Memory Makes *Brain Imaging* Technology a Poor Measure of Truth-Telling in the Courtroom, 94 OR. L. REV. 295 (2016); Jennifer Kulynych, *Brain, Mind, and Criminal Behavior: Neuroimages as Scientific Evidence*, 36 Jurimetrics J. 235 (1996); Deborah W. Denno, *How Prosecutors and Defense Attorneys Differ in Their Use of Neuroscience Evidence*, 85 FORDHAM L. REV. 453 (2016).

justice system has mostly done so in matters involving insanity defense,[2] death penalty mitigation,[3] death row defendants' competency to be executed,[4] and access to experts.[5] The potential use of neuroimaging, however, transcends these areas of law. Because there is "general agreement and substantial proof of reliability that CT scans and MRI technology can detect brain injury, damage or atrophy."[6] neuroimaging may help shed light on all aspects of the criminal process.[7]

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[2] *See* Michael L. Perlin, *"His Brain Has Been Mismanaged with Great Skill": How Will Jurors Respond to Neuroimaging Testimony in Insanity Defense Cases?*, 42 AKRON L. REV. 885 (2009) [hereinafter Perlin, *Great Skill*]. *See generally* LEGAL INSANITY AND THE BRAIN: SCIENCE, LAW AND EUROPEAN COURTS (Sofia Moratti & Dennis Patterson, eds., 2016).

Professor Stephen Morse—one of the most important scholars in this area of law and policy—has concluded that "neuroscience can *potentially* help refine mental state categories, such as *mens rea* and mental disorder through a conceptual-empirical equilibrium in which legal categories guide neuroscientific investigation that in turn then help clarify the legal categories." Stephen J. Morse, *Actions Speak Louder Than Images: The Use of Neuroscientific Evidence in Criminal Cases*, 1 J. L. & BIOSCI. 1, 6 (2016) [hereinafter, Morse, *Actions Speak Louder*].

[3] *See* John H. Blume & Emily C. Paavola, *Life, Death, and Neuroimaging: The Advantages and Disadvantages of the Defense's Use of Neuroimages in Capital Cases-Lessons from the Front*, 62 MERCER L. REV. 909 (2011).

[4] *See* Michael L. Perlin, *"Good and Bad, I Defined These Terms, Quite Clear No Doubt Somehow": Neuroimaging and Competency to be Executed after* Panetti, 28 BEHAV. SCI. & L. 671 (2010) [hereinafter, Perlin *"Good and Bad"*].

[5] *See* Perlin, *Great Skill, supra* note 2; Michael L. Perlin, *"And I See Through Your Brain": Access to Experts, Competency to Consent, and the Impact of Antipsychotic Medications in Neuroimaging Cases in the Criminal Trial Process*, 2009 Stan. Tech. L. Rev. 4 [hereinafter Perlin, *See Through Your Brain*].

The most famous case of any sort in which neuroimaging raised was that of John W. Hinckley, who attempted to assassinate President Reagan. *See* Perlin, *Great Skill*, *supra* note 2, at 896–98. Hinckley was institutionalized at St. Elizabeth's Hospital in Washington, D.C. for thirty-five years after being granted limited conditional release in 2014. *See* United States v. Hinckley, 35 F. Supp. 3d 4, 8 (D.D.C. 2014). He was ordered released in 2016. *See* Zoe Tillman, *President Reagan Shooter John Hinckley Jr. Granted Release*, LAW.COM (July 27, 2016), http://www.law.com/sites/almstaff/2016/07/27/president-reagan-shooter-john-hinckley-jr-granted-release/?slreturn=20160629095406. For the saga of Hinckley's multiple court hearings seeking release, see MICHAEL L. PERLIN & HEATHER ELLIS CUCOLO, MENTAL DISABILITY LAW: CIVIL AND CRIMINAL (3d ed. 2017) § 14-3, at 14-215 to 14-216 n.1424.

[6] Noel Shafi, Neuroscience and Law: The Evidentiary Value of Brain Imaging, 11 GRADUATE STUDENT J. PSYCHOL. 27, 32 (2009), quoting Jane Campbell Moriarty, Flickering Admissibility: *Neuroimaging* Evidence in the U.S. Courts, 26 BEHAV. SCI. & L. 29, 40–41 (2008).

[7] In addition to the areas discussed *supra*, it may also be significant in sentencing cases, in matters of parole or probation revocation, or even, in some instances, in bail applications.

Remarkably, scholars and judges have paid almost no attention to the potential impact of neuroimaging on trial competency.[8] Less than a handful of reported cases consider the use of neuroimaging in determinations of trial competency on the merits,[9] and it is "under the radar" for most relevant scholarship as well.[10] Nevertheless, this inquiry is, numerically, the most important "disability law" question relevant to criminal law.[11] The costs of

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For its potential application in sentencing cases, see Christopher Slobogin, *Neuroscience Nuance: Dissecting the Relevance of Neuroscience in Adjudicating Criminal Culpability*, 4 J. L. & BIOSCI. 577, 582–84 (2017).

There is also much recent interest in how neurological development affects the culpability of young offenders. *See, e.g.*, Carly Loomis-Gustafson, Note, *Adjusting the Bright-Line Age of Accountability within the Criminal Justice System: Raising the Age of Majority to Age 21 Based on the Conclusions of Scientific Studies Regarding Neurological Development and Culpability of Young Adult Offenders*, 55 DUQ. L. REV. 221 (2017).

Professor Morse remains skeptical, characterizing neuroscience's contributions to legal doctrine and practice, as "modest at best." Stephen J. Morse, *Lost in Translation? An Essay on Law and Neuroscience*, LAW AND NEUROSCIENCE: CURRENT LEGAL ISSUES 529, 562 (Michael Freeman ed., 2011).

For a discussion on the way different kinds of neuroimaging have been used to make claims about mental health or mental disability, see Moriarty, *supra* note 6.

[8] On questions of criminal competency in general, see PERLIN & CUCOLO, *supra* note 5, ch. 13.

[9] *See e.g.*, United States v. Puerto, 392 Fed. Appx. 692 (11th Cir. 2010); State v. Holmes, 5 So. 3d 42 (La. 2008); State v. Marshall, 27 P.3d 192, 199 (Wash. 2001) (where competency is at issue at time of trial, sentencing, or punishment, defendant is entitled to assistance of expert testimony and testing, including neuroimaging). There is a more substantial cohort of cases in which defendants appealed or sought post-conviction relief based on their counsel's failure to seek funds for neuroimaging tests during the competency assessment phase. *See* Lyn M. Gaudet & Gary E. Marchant, *Under the Radar: Neuroimaging Evidence in the Criminal Courtroom*, 64 DRAKE L. REV. 577 (2016).

The most famous case that involved neuroimaging on the question of competency to stand trial was United States v. Gigante, 982 F. Supp. 140, 147–48 (E.D.N.Y. 1997) (finding PET scan evidence unreliable and unconvincing). Defendant, Vincent "The Chin" Gigante, was alleged to have been the model for the "Uncle Junior" character on the television show, *The Sopranos*. *See* Terry Maroney, *Emotional Competence, "Rational Understanding," and the Criminal Defendant*, 43 AM. CRIM. L. REV. 1375, 1377 n.7 (2006) (discussing See Sopranos: Whoever Did This (HBO television broadcast Nov. 10, 2002), http://www.hbo.com/sopranos/episode/season4/episode48.shtml).

See generally Perlin, *Great Skill*, *supra* note 2, at 895–96 (as of 2008, a simple Google search of "Gigante and 'PET scan'" revealed 281 documents).

[10] In his recent major article about neuroscience and the criminal law, Professor Slobogin tells us, in the first footnote, "This article does not address the use of neuroscience to assess competence or treatment issues, nor issues of criminal policy." Slobogin, *supra* note 7, at 577 n.1.

[11] As of 2007, literature suggested that each year 50,000 to 60,000 defendants are evaluated for trial competency purposes. *See* Douglas Mossman, *Predicting Restorability of*

competency hearings are "staggering,"[12] and the incompetency status in no way admits or presumes factual guilt.[13] In fact, a recent comprehensive study by Professor Deborah Denno, found that 800 cases that addressed neuroscience evidence over a ten-year period failed to mention the question of competency to stand trial.[14]

Given the number of such evaluations, and their potential significance to both the individuals involved and the entire criminal justice system, it is imperative that the ways in which neuroimaging may influence competency determinations be studied and understood. In this paper, we briefly review legal standards for competency in the context of mental disability and then examine what neuroimaging may be able to add to competency determinations.[15] We also examine neuroimaging's role in competency determinations in the context of therapeutic jurisprudence and discuss whether the introduction of scientifically-based evidence of incompetency (which neuroimaging purportedly is) will lead to therapeutic outcomes for defendant.[16] We conclude by offering suggestions for courts to consider in the future as they attempt to come to grips with the advantages and disadvantages of competence testimony based on neuroimaging reports.

Our title comes from the first verse of Bob Dylan's masterpiece, *Love Sick*.[17] That verse reads:

I'm walking through streets that are dead
Walking, walking with you in my head
My feet are so tired, my brain is so wired

Incompetent Defendants, 35 J. Am. Acad. Psychiatry & L. 34, 34 (2007).

[12] Bruce Winick, *Restructuring Competency to Stand Trial*, 32 UCLA L. Rev. 921, 928 (1985).

[13] *See* Michael L. Perlin, *"Everything's a Little Upside Down, as a Matter of Fact the Wheels Have Stopped": The Fraudulence of the Incompetency Evaluation Process*, 4 HOUS. J. HEALTH L. & POL'Y 239, 246 (2004) [hereinafter, Perlin, *Wheels*] ("[T]here is nothing in the invocation of the incompetency status that at all concedes factual guilt"). The American Bar Association Standards for Criminal Justice underscore that the status of incompetence to stand trial "has no bearing on guilt or innocence." AMERICAN BAR ASSOCIATION, STANDARDS FOR CRIMINAL JUSTICE, CRIMINAL JUSTICE MENTAL HEALTH STANDARDS, ch. 7, pt. IV (AM. BAR ASS'N 2015). Notwithstanding this fact, "it is assumed by all that the defendant did, in fact, commit the crime." Michael L. Perlin, *God Said to Abraham/Kill Me a Son: Why the Insanity Defense and the Incompetency Status Are Compatible with and Required by the Convention on the Rights of Persons with Disabilities and Basic Principles of Therapeutic Jurisprudence*, 54 AM. CRIM. L. REV. 477, 489 (2016) [hereinafter, Perlin, *God Said*].

[14] Deborah Denno, *Concocting Criminal Intent*, 105 GEO. L.J. 323, 334 (2017).

[15] *See infra* text accompanying notes 19–52.

[16] *See infra* text accompanying notes 53–108.

[17] BOB DYLAN, *Love Sick*, *on* TIME OUT OF MIND (Columbia Records 1998).

And the clouds are weeping.[18]

The question is posed: To what extent will the thoughtful and careful use of neuroimaging testimony in incompetency cases help staunch the "weeping?"

II. LEGAL STANDARDS FOR COMPETENCY[19]

"Few principles are as firmly embedded in . . . criminal jurisprudence as the doctrine that an 'incompetent' defendant may not be put to trial."[20] The doctrine is traditionally traced to mid-seventeenth century England.[21] In analyzing the roots of the competency doctrine, commentators generally have focused on: (1) the incompetent defendant's inability to aid in his defense;[22] (2) the parallels to the historic ban on trials *in absentia*;[23] and (3) the parallels to the problems raised by defendants who refused to plead to the charges entered against them.[24]

The primary purpose of the doctrine, under commentators' theories, was to "safeguard the accuracy of adjudication,"[25] and as early as 1899, a U.S. federal court of appeals held that it was "not 'due process of law' to subject

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[18] *Id.*

[19] Portions of this section are adapted from Perlin, *God Said*, *supra* note 13, at 487–89. *See generally* PERLIN & CUCOLO, *supra* note 5, at §13-1.2 (discussing a historical overview of the substantive criteria for competency).

[20] *See* PERLIN & CUCOLO, *supra* note 5, §§ 13-1.1, at 13-4.

[21] *See* Bruce Winick & Terry DeMeo, *Competency to Stand Trial in Florida*, 35 U. Miami L. Rev. 31, 32 n.2 (1980). *See generally* Group for the Advancement of Psychiatry, Misuse of Psychiatry in the Criminal Courts: Competency to Stand Trial 912-15 (1974) and HENRY Weihofen, Mental Disorder as a Criminal Defense 428-30 (1954). Roesch and Golding have suggested that the same problems may have been present as early as the thirteenth century. RONALD Roesch & STEPHEN Golding, Competency to Stand Trial 10 (1980).

[22] *See* 4 Blackstone, Commentaries 24 (9th ed. 1783); 1 Hale, The History of the Pleas of the Crown 34 (1847). *See generally* Richard Bonnie, *The Competence of Criminal Defendants with Mental Retardation to Participate in Their Own Defense*, 81 J. Crim. L. & Criminology 419, 419 (1990); Thomas Grisso, *Five-Year Research Update (1986–1990): Evaluations for Competence to Stand Trial*, 10 Behav. Sci. & L. 353, 357 (1992).

[23] *See* Caleb Foote, *A Comment on Pre-trial Commitment of Criminal Defendants*, 108 U. Pa. L. Rev. 832, 834 (1960). This issue is discussed fairly fully in People v. Berling, 251 P.2d 1017 (Cal. App. 1953).

[24] Until the late eighteenth century, if the court concluded that a defendant was remaining "mute of malice," it could order him subjected to the practice of *peine forte et dure*, the placing of increasingly heavy weights on the defendant's chest to "press" him for an answer. *See* Ralph Slovenko, *The Developing Law on Competency to Stand Trial*, 5 J. Psychiatry & L. 165, 168–69 (1977). This practice was abolished in 1772.

[25] Claudine Walker Ausness, *The Identification of Incompetent Defendants: Separating Those Unfit for Adversary Combat from Those Who Are Fit*, 66 Ky. L.J. 666, 668 (1978).

such an insane person to trial upon an indictment involving liberty or life."[26] Contemporaneously, a state supreme court suggested, "[i]t would be inhumane, and to a certain extent a denial of a trial on the merits, to require one who has been disabled by the act of God from intelligently making his defense to plead or to be tried for his life or liberty."[27]

The rationale of the competency doctrine is clear. It is fundamentally unfair to put a defendant to trial who may not have "sufficient present ability to consult with his lawyer with a reasonable degree of rational understanding [or] a rational as well as a factual understanding of the proceedings against him."[28] Incompetency is a *status*, not a defense.[29] Thus incompetency is in no way a concession of factual guilt (as is the invocation of the insanity defense).[30] The American Bar Association Standards for Criminal Justice underscore that the status of incompetence to stand trial "has no bearing on guilt or innocence."[31] Nonetheless, "it is assumed by all that the defendant [invoking the incompetency status] did, in fact, commit the crime."[32]

III. THE EFFECT THAT NEUROIMAGING MIGHT HAVE ON COMPETENCY DETERMINATIONS

Neuroscience research has two goals: (1) to understand, and therefore to predict; and (2) to manipulate, treat, or intervene for the benefit of the human subject.[33] The use of neuroimaging to determine competency is still

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[26] Youtsey v. United States, 97 F. 937, 941 (6th Cir. 1899). The Court was clearly referring to an incompetent defendant. The constant blurring of the terms "insanity" and "incompetency" has been vexing. *See, e.g.*, Bruce v. Estelle, 483 F.2d 1031, 1041–43 (5th Cir. 1973); United States v. Taylor, 437 F.2d 371, 375 (4th Cir. 1971); State v. Bowman, 681 A.2d 469, 471 (Me. 1996); Harrison v. Settle, 151 F. Supp. 372, 375 (W.D. Mo. 1957); Winick & DeMeo, *supra* note 21, at 36; ROESCH & GOLDING, *supra* note 21, at 15–17.

[27] *See* Jordan v. State, 135 S.W. 327, 328 (Tenn. 1911); *see also* Ausness, *supra* note 25, at 670 (footnotes omitted) ("A seldom mentioned but powerful psychological reason for the requirement that the defendant be competent is that in order to satisfy the urge of the community to punish, the defendant must understand what he is being punished for.").

[28] Dusky v. United States, 362 U.S. 402, 402 (1960). To be able to assist counsel, a defendant should have the ability to communicate, the capacity to reason "from a simple premise to a simple conclusion," the ability to "recall and relate facts concerning his actions," and the ability "to comprehend instructions and advice, and make decisions based on well-explained alternatives." PERLIN & CUCOLO, *supra* note 5, §§ 13-1.2.1, at 13-10 (footnotes omitted).

[29] *See* Perlin, *God Said*, *supra* note 13, at 489, citing ABA STANDARDS, *supra* note 13.

[30] *Id.*

[31] ABA STANDARDS, *supra* note 13.

[32] Perlin, *Wheels*, *supra* note 13, at 246. On why the incompetency status is also required by international human rights law, see Perlin, *God Said*, *supra* note 13, at 495–96.

[33] Emily Murphy, *Paved with Good Intentions: Sentencing Alternatives from*

a new phenomenon.[34] In a competency hearing, if used successfully, neuroimaging evidence could support a determination that a defendant is not competent to stand trial.[35] However, neuroimaging is still not widely accepted in the courts,[36] because the potential for oversimplification of complex brain function, through the use of imaging and simplistic descriptions of imaging studies, could undermined the benefits that imaging could provide in appropriate settings.[37] Professor Eyal Aharoni and his colleagues have concluded: "Neuroscience has copious challenges to undertake before becoming a reliable benefit to courtroom procedures."[38]

Part of the difficulty in assessing competency based on neuroimaging is the expert witness's knowledge of the legal standards of competency, as opposed to his or her clinical expertise.[39] While the courts determine

Neuroscience and the Policy of Problem-Solving Courts, 37 LAW & PSYCHOL. REV. 83, 86 (2013).

[34] Apparently, the first time that neurotesting was sought (and denied) in a case involving competency to stand trial was in State v. Baldwin, 174 S.E. 2d 526 (N.C. 1970). *See* Francis X. Shen, *Neuroscience, Mental Privacy, and the Law*, 36 HARV. J.L. & PUB. POL'Y 653, 708 (2013) ("Although it is not the norm, modern neuroimaging techniques are now supplementing competency evaluations in some cases.").

[35] Gaudet & Marchant, *supra* note 9, at 656. Admission of this evidence in no way guarantees that it will assist the defendant. *See* United States v. Hammer, 404 F. Supp. 2d 676, 722–25 (M.D. Pa. 2005) (entertaining MRI, PET, and computerized neuropsychological testing evidence but ultimately finding it unpersuasive as to competency).

[36] *See* Gaudet & Marchant, *supra* note 9, at apps. A–C (listing all cases). *See also* Slobogin, *supra* note 7, at 577 ("The usefulness of neuroscience in determining the blameworthiness of a particular criminal defendant is highly contested").

[37] *See* David P. McCabe & Alan D. Castel, Seeing is Believing: The Effect of Brain Images on Judgments of Scientific Reasoning, 107 COGNITION 343, 344 (2007) (criticizing media for "oversimplify[ing] and misrepresent[ing] conclusions from brain imaging studies"). *See generally*, Stephen J. Morse, *Brain Overclaim Syndrome and Criminal Responsibility: A Diagnostic Note*, 3 OHIO ST. J. CRIM. L. 397, 401 (2006) and Octavio Chen, *What Neuroscience Can and Cannot Answer*, 45 J. AM. ACAD. PSYCHIATRY & L. 278, 278 (2017).

[38] Eyal Aharoni et al., *Can Neurological* Evidence Help Courts Assess Criminal Responsibility? Lessons from Law and Neuroscience, 1124 ANALYSIS N.Y. ACAD. SCI. 145, 158 (2008). Professor Stephen Morse has asked pointedly whether we have carefully considered the actual legal relevance of brain imaging to the trial process. *See* Stephen L. Morse, *Brain Imaging in the Courtroom: The Quest for Legal Relevance*, 5 AJOB NEUROSCIENCE 24 (2014). *See also* Zurizadai Balmakund, *The Realities of Neurolaw: A Composition of Data & Research*, 9 U. ST. THOMAS J. L. & PUB. POL'Y 189, 189 (2015) (discussing "how the interests of justice are challenged and strengthened by the introduction of interdisciplinary research").

[39] *See* Michael L. Perlin, *Pretexts and Mental Disability Law: The Case of Competency*, 47 U. MIAMI L. REV. 625, 663 (1993) [hereinafter, Perlin, *Pretexts*] ("[E]xperts' evaluations frequently rely not on the examiners' experience or knowledge but on the facts of the act upon which the defendant was originally indicted.").

competency, the courts rely heavily on the opinions of health care providers with expertise regarding mental and emotional processes.[40] Thus, knowledge of both the legal standards of competency and the mental and emotional processes, which support competency, has become increasingly important.[41] The issues become more complex because, as there is "no one-to-one mapping of a particular function to a particular brain region," the process of employing neuroimaging results to shed light on an individual's mental capacity "does not entail a direct application of . . . data to the question of incompetency; rather, it contains an analytical gap, which is bridged by the expert's interpretation."[42]

Competency can be described as a combination of:

> [P]erception and comprehension of a relevant body of information; memory and recall of relevant information well enough to support further mental evaluation of the information; the capacity to identify personal options implicit in the information and to logically deliberate among the available options based on relative potential risks and the benefits; and the capacity to make an enduring decision based on prior logical deliberation.[43]

Assessing competency is even more difficult in an individual with executive dysfunction.[44] Neuropsychological assessment, which is traditionally used to assess cognitive functioning by experts and is presented in competency evaluations, has not been as helpful in quantifying

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[40] Judge-examiner agreement regularly exceeds 90%. *See* Jennifer Skeem & Stephen L. Golding, *Community Examiners' Evaluations of Competence to Stand Trial: Common Problems and Suggestions for Improvement*, 29 PROF'L PSYCHOL. 357, 357 (1998).

[41] *See also* Thomas Grisso, *The Economic and Scientific Future of Forensic Psychological Assessment*, 42 AM. PSYCHOLOGIST 831, 833 (1987) (criticizing "occasional experts," or "psychologists who supplement their general clinical practice with occasional forensic assessments" and "enter into forensic assessment with little or no specialized forensic knowledge").

[42] Sydney Roth, *The Emergence of Neuroscience Evidence in Louisiana*, 87 TUL. L. REV. 197, 214 (2012), quoting, in part, Teneille Brown & Emily Murphy, *Through a Scanner Darkly: Functional Neuroimaging as Evidence of a Criminal Defendant's Past Mental States*, 62 STAN. L. REV. 1119, 1160 (2010).

[43] G. Michelle Reid-Proctor, Karen Galin & Michael A. Cummings, *Evaluation of Legal Competency in Patients with Frontal Lobe Injury*, 15 BRAIN INJURY 377 (2001).

[44] In these cases, the term "executive dysfunction" or "executive function deficits" refer to a disruption or deficit in an individual's executive functioning, which manages high-level cognitive functions. This dysfunction can impact an individual's ability to be goal-oriented, regulate inhibition and impulses, make plans and perform some complex motor functions. *See* Young v. Astrue, 2011 WL 6812153, *4 n.1 (W.D. Mo. 2011). It is an umbrella term for functions such as planning, working memory, impulse control, inhibition and mental flexibility, as well as for the initiation and monitoring of action. *See* Elisabeth Hill, *Executive Dysfunction in Autism*, 8 TRENDS IN COGNITIVE SCI. 26, 26 (2004).

a defendant's ability to solve problems in a logical manner.[45] This ability may be directly related to one's ability to assist in one's own defense.

The challenge of measuring competency through images, rather than testing, is that imaging does not show many areas tested during a neuropsychological examination.[46] While neuropsychological testing is designed to measure aspects of mental function and to provide information about an individual's ability to process, understand, and react appropriately, neuroimaging does not simply provide a visual representation of this type of information.[47] Instead, brain images can only show areas of abnormality.[48] It is up to clinicians to interpret what that might mean in a behavioral context.[49]

The other major vexing consideration is the inevitable intertwining of the competency measurement issues with the fundamental reasons for questioning competence initially. A defendant with schizophrenia fundamental differs from a defendant with a traumatic brain injury (TBI).[50] Not only will the defendants' mental functions differ dramatically, but the way their attorneys present their cases may also differ. An individual with a TBI will frequently have a history of scans taken to show the locus of the injury.[51] This locus is a visible marker that can serve as evidence of TBI. By connecting that marker to symptoms, and ultimately, to competence, an expert witness can use neuroimaging to paint a stronger picture of that

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[45] Reid-Proctor, Galin & Cummings, *supra* note 43, at 385.

[46] See David Hughes et al., *Abnormalities on Magnetic Resonance Imaging Seen Acutely Following Mild Traumatic Brain Injury: Correlation with Neuropsychological Tests and Delayed Recovery*, 46 NEURORADIOLOGY 550, 556 (2004), for the proposition that only certain abnormalities will be visible or apparent in imaging studies, whereas neuropsychological testing that assess brain function, competency, and other abilities may provide a more comprehensive evaluation. For one example of the latter, see Claudia Jacova et al., *Neuropsychological Testing and Assessment for Dementia*, 3 ALZHEIMER'S & DEMENTIA 299, 312 (2007).

[47] Erik Parens & Josephine Johnston. *Neuroimaging: Beginning to Appreciate Its Complexities*, 44 HASTINGS CENTER REPORT S2 (2014).

[48] *Id.*; Adina L. Roskies, *Are Neuroimages Like Photographs of the Brain?* 74 PHIL. SCI. 860 (2007) WILLIAM R. UTTAL, THE NEW PHRENOLOGY: THE LIMITS OF LOCALIZING COGNITIVE PROCESSES IN THE BRAIN (2001).

[49] *See generally* Stephen J. Morse, *Brain Overclaim Redux*, 31 LAW & INEQ. 509, 527–28 (2013) and Morse, *Actions Speak Louder*, *supra* note 2.

[50] On neuroimaging and TBI in general, see Erin D. Bigler et al., *Structural Neuroimaging in Forensic Settings*, 84 UMKC L. REV. 301 (2015).

[51] Jane J. Kim & Alisa D. Gean, *Imaging for the Diagnosis and Management of Traumatic Brain Injury*, 8 NEUROTHERAPEUTICS 8, 39 (2011); Chad W. Washington & Robert L. Grubb, *Are Routine Repeat Imaging and Intensive Care Unit Admission Necessary in Mild Traumatic Brain Injury?* 116 J. NEUROSURGERY 549, 554 (2012).

injury at issue.[52] In the case of an individual with schizophrenia, brains scans will not show the same visible loci of the illness—mental illness cannot be quantified, scanned or measured in the same way as can a TBI.[53] Although there are studies pointing to abnormalities in certain regions of the brain for individuals with schizophrenia,[54] a brain scan of a person with schizophrenia will not exhibit an abnormality focal point in the way that a brain scan of a person with TBI will.[55] For that reason, neuroimaging may not be appropriate for particular defendants such as those with schizophrenia.

It is essential that courts assess testimony as to the relationship between neuroimaging findings and the ultimate legal question before the court in nuanced ways. As noted above, the first heavily-publicized incompetency case that involved neuroimaging evidence was that of suspected Mafioso Vincent Gigante.[56] In *United States v. Gigante*, the trial court rejected the admissibility of "[positron emission tomography (PET)] and other brain scans"[57]due to "speculative scientific theories," lack of baseline studies,

[52] David H. Salat et al., *Neuroimaging of Deployment-Associated Traumatic Brain Injury (TBI) with a Focus on Mild TBI (mTBI) Since 2009*, 31 BRAIN INJURY 1204 (2017); Andrei Irimia et al., *Structural and Connectomic Neuroimaging for the Personalized Study of Longitudinal Alterations in Cortical Shape, Thickness and Connectivity after Traumatic Brain Injury*, 58 J. NEUROSURGICAL SCI. 129 (2014); Maheen Adamson, Keith Main & Stephanie Kolakowsky-Hayner, *Integration of Clinical and Research Neuroimaging to Understand Traumatic Brain Injury in Veterans and Civilians*, 96 ARCH. PHYS. MED. & REHAB. 12 (2015).

[53] Philip K. McGuire & Kazunori Matsumoto, *Functional Neuroimaging in Mental Disorders*, 3 WORLD PSYCHIATRY 6 (2004); Tobias Melcher, Peter Falkai & Oliver Gruber, *Functional Brain Abnormalities in Psychiatric Disorders: Neural Mechanisms to Detect and Resolve Cognitive Conflict and Interference*, 59 BRAIN RES. REV. 96 (2008).

[54] *See, e.g.*, Mark Slifstein et al., *Deficits in Prefrontal Cortical and Extrastriatal Dopamine Release in Schizophrenia: A Positron Emission Tomographic Functional Magnetic Resonance Imaging Study*, 72 JAMA PSYCHIATRY 316, 317–18 (2015); Lampros Samartzis et al., *White Matter Alterations in Early Stages of Schizophrenia: A Systematic Review of Diffusion Tensor Imaging Studies*, 24 J. NEUROIMAGING 101 (2014); and J. Fitzsimmons et al., *Diffusion Tensor Imaging Study of the Fornix in First Episode Schizophrenia and in Healthy Controls*, 156 SCHIZOPHRENIA RES. 157, 160 (2014), for examples of various types of studies that each aim to image or identify structural or functional abnormalities in different regions of the brain, all possibly linked to schizophrenia.

[55] Neuroimaging studies of psychiatric illness are still examining clusters of disorders based on diagnosis; there is not the same ability to recognize, diagnose and predict prognoses as there is with traumatic brain injury. *See e.g.*, Slifstein et al., *supra* note 54, at 317–18; Fitzsimmons et al, *supra* note 55, at 160.

[56] *See* Perlin, *Great Skill*, *supra* note 2, at 895.

[57] United States v. Gigante, 996 F. Supp. 194, 219 (E.D.N.Y. 1998).

and the limited number of controls.[58] *Gigante* was the subject of saturation publicity.[59] Pointedly, in discussing *Gigante*, Professors Gaudet and Marchant dryly noted, "[c]ases that often make the news are not necessarily representative of how certain evidence is presented and received."[60]

Until neuroimaging evidence is used more frequently in cases involving unknown defendants, "the distortion effect of famous cases will require our speculations to remain tentative."[61]Perhaps of more significance is the more recent case of *United States v. Duncan*,[62] a death penalty case, in which the court vacated the death penalty and remanded the case for a full competency hearing on the question of whether the defendant had competently waived his right to appeal.[63] There, three experts found that the defendant suffered from "delusional beliefs, paranoia, grandiosity, and psychotic breaks with reality."[64] Further, the experts produced results from a magnetic resonance imaging (MRI) study and PET scan of the defendant's brain, which showed "an unusual brain structure" consistent with behavioral deficits in "the ability to make rational plans and modulate emotions."[65]

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[58] *Id.* at 205 (citing United States v. Gigante, 982 F. Supp. 140, 147 (E.D.N.Y. 1997)).

[59] *See* Perlin, *Great Skill*, *supra* note 2, at 896 (observing that the *Gigante* case was the subject of "intense publicity").

[60] Gaudet & Marchant, *supra* note 9, at 588 ("[T]he shortcomings of the proffered neuroimaging evidence and testimony do not lie in the scan technology itself but with its application in a particular context"). The response to the *Gigante* case reflects the dominant use of the vividness heuristic, a cognitive-simplifying device through which a "single vivid, memorable case overwhelms mountains of abstract, colorless data upon which rational choices should be made." *See* Michael L. Perlin, "*The Borderline Which Separated You from Me": The Insanity Defense, the Authoritarian Spirit, the Fear of Faking, and the Culture of Punishment*, 82 IOWA L. REV. 1375, 1417 (1997) [hereinafter, Perlin, *"The Borderline"*], and further accentuates a mis-perception of reality. *See* Perlin, *See Through Your Brain*, supra note 5, at *24. Professor Morse and a colleague are clear: "At present. . . no study has validly used neuroscientific data to assess any form of criminal competence." Stephen J. Morse & William T. Newsome, *Criminal Responsibility, Criminal Competence, and Prediction of Criminal Behavior*, in A PRIMER ON CRIMINAL LAW AND NEUROSCIENCE 150, 177 (Stephen J. Morse & Adina L. Roskies, eds. 2013).

[61] *See supra* note 60.

[62] United States v. Duncan, 643 F.3d 1242 (9th Cir. 2011), *cert. den.*, 566 U.S. 907 (2012).

[63] *Id.* at 1250.

[64] *Id.* at 1249.

[65] *Id.* For other cases grappling with the same issues, see Johns v. United States, 2011 WL 6141059, *10 (S. D. Ala. 2011) (expert stating that, "It is [quite] likely, however, at this time that there is some degree of permanent damage to the brain. Neuroimaging would be necessary to confirm this," as part of a report issued about competency). *See also* United States v. Hammer, 404 F. Supp. 2d 676, 725 (M. D. Pa. 2005):

Although we find Dr. Gur credible with respect to his psychological evaluation and

In recent years, there appears to be only one significant reported case in which neuroimaging was critical to an incompetency to stand trial disposition.[66] In *United States v. Dreyer*,[67] the Ninth Circuit agreed with defendant's contention that the lower court erred by not ordering a competency hearing.[68] In support of this claim, the defendant pointed to imaging evidence of "extensive frontal lobe damage" that likely caused impairment in judgment.[69] The court concluded that the evidence created a "genuine doubt" as to defendant's competency, and remanded for an evidentiary hearing.[70] In light of the limited case law on neuroimaging in competency matters, this area has neither developed nor has it been the topic of robust appellate thought and consideration.

IV. THE MEANING OF THERAPEUTIC JURISPRUDENCE.[71]

One of the most important legal theoretical developments of the past three decades has been the creation and dynamic growth of therapeutic jurisprudence ("TJ").[72] Therapeutic jurisprudence presents a new model for

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neuroimaging of Mr. Hammer, we do not find credible Dr. Gur's conclusion that Mr. Hammer was not competent and not acting voluntarily, intelligently and rationally at the time of (1) the change of plea proceeding, (2) the proceeding where he discharged counsel and was authorized to decide on his own whether to pursue an appeal and (3) the proceeding before the Court of Appeals when he withdrew his appeal.

[66] There have been other cases in which neuroimaging evidence was introduced or sought to be introduced in cases involving *other* criminal competencies (e.g., competency to plead guilty or competency to be sentenced. Gaudet & Marchant, *supra* note 9, at 648.). *See* United States v. Duncan, 643 F.3d 1242 (9th Cir. 2011). On these "other" incompetency questions, see Michael L. Perlin, *Beyond* Dusky *and* Godinez*: Competency Before and After Trial*, 21 BEHAV. SCI. & L. 297 (2003) and PERLIN & CUCOLO, *supra* note 5, at §§ 13-2 *et seq*.

[67] United States v. Dreyer, 705 F.3d 951, 965 (9th Cir. 2013).

[68] *Id.* at 958.

[69] *Id.* at 962.

[70] *Id.* at 965.

[71] This section is generally adapted from Michael L. Perlin, *"Yonder Stands Your Orphan with His Gun": The International Human Rights and Therapeutic Jurisprudence Implications of Juvenile Punishment Schemes*, 46 TEXAS TECH L. REV. 301 (2013); Michael L. Perlin & Alison J. Lynch, *"All His Sexless Patients": Persons with Mental Disabilities and the Competence to Have Sex*, 89 WASH. L. REV. 257 (2014) [hereinafter Perlin & Lynch, *All His Sexless Patients*], and Perlin & Lynch, *"In the Wasteland of Your Mind"*, *supra* note 1. It also distills the work that one of the co-authors (Perlin) has done on this topic for the past two decades-plus, beginning with Michael L. Perlin, *What Is Therapeutic Jurisprudence?* 10 N.Y.L. SCH. J. HUM. RTS. 623 (1993). *See also* Michael L. Perlin, *"Have You Seen Dignity?": The Story of the Development of Therapeutic Jurisprudence*, 27 U.N.Z. L. REV. 1135 (2017)..

[72] *See, e.g.*, DAVID B. WEXLER, THERAPEUTIC JURISPRUDENCE: THE LAW AS A THERAPEUTIC AGENT (1990); DAVID B. WEXLER & BRUCE J. WINICK, LAW IN A THERAPEUTIC

assessing the impact of case law and legislation, recognizing that, as a therapeutic agent, the law can have therapeutic or anti-therapeutic consequences.[73] Therapeutic jurisprudence asks whether legal rules, procedures, and lawyer roles can and should be reshaped to enhance their therapeutic potential while not subordinating due process principles.[74] David Wexler clearly identifies how the inherent tension in this inquiry must be resolved: the law's use of "mental health information to improve therapeutic functioning . . . [cannot impinge] upon justice concerns."[75] As one of us (Perlin) has written elsewhere, "[a]n inquiry into therapeutic outcomes does not mean that therapeutic concerns 'trump' civil rights and civil liberties."[76]

KEY: RECENT DEVELOPMENTS IN THERAPEUTIC JURISPRUDENCE (1996); BRUCE J. WINICK, CIVIL COMMITMENT: A THERAPEUTIC JURISPRUDENCE MODEL (2005); David B. Wexler, *Two Decades of Therapeutic Jurisprudence*, 24 TOURO L. REV. 17 (2008); PERLIN & CUCOLO, *supra* note 5, § 2-6, at 2-43 to 2-66. Wexler first used the term in a paper he presented to the National Institute of Mental Health in 1987. *See* David B. Wexler, *Putting Mental Health into Mental Health Law: Therapeutic Jurisprudence*, 16 LAW & HUM. BEHAV. 27, 27, 32–33 (1992).

[73] *See* Perlin, *Great Skill*, *supra* note 2, at 912. For a transnational perspective, see Kate Diesfeld & Ian Freckelton, *Mental Health Law and Therapeutic Jurisprudence*, *in* DISPUTES AND DILEMMAS IN HEALTH LAW 91 (Ian Freckelton & Kate Peterson eds., 2006).

[74] Michael L. Perlin, *"Everybody Is Making Love/Or Else Expecting Rain": Considering the Sexual Autonomy Rights of Persons Institutionalized Because of Mental Disability in Forensic Hospitals and in Asia*, 83 WASH. L. REV. 481 (2008); Michael L. Perlin, *"And My Best Friend, My Doctor, Won't Even Say What It Is I've Got": The Role and Significance of Counsel in Right to Refuse Treatment Cases*, 42 SAN DIEGO L. REV. 735, 751 (2005). On how therapeutic jurisprudence "might be a redemptive tool in efforts to combat sanism, as a means of 'strip[ping] bare the law's sanist façade,'" see Michael L. Perlin, *"Baby, Look Inside Your Mirror": The Legal Profession's Willful and Sanist Blindness to Lawyers with Mental Disabilities*, 69 U. PITT. L. REV. 589, 591 (2008) [hereinafter Perlin, *Mirror*], quoting, in part, MICHAEL L. PERLIN, THE HIDDEN PREJUDICE: MENTAL DISABILITY ON TRIAL 301 (2000). *See also*, Ian Freckelton, *Therapeutic Jurisprudence Misunderstood and Misrepresented: The Price and Risks of Influence*, 30 T. JEFFERSON L. REV. 575, 585–86 (2008).

Sanism is an irrational prejudice of the same quality and character of other irrational prejudices that cause (and are reflected in) prevailing social attitudes of racism, sexism, homophobia, and ethnic bigotry. *See* Michael L. Perlin, *On "Sanism"*, 46 SMU L. REV. 373, 374–75 (1992). On how sanism "permeates all aspects of mental disability law and affects all participants in the mental disability law system," see Perlin & Lynch, *All His Sexless Patients*, *supra* note 71, at 259.

[75] David B. Wexler, *Therapeutic Jurisprudence and Changing Concepts of Legal Scholarship*, 11 BEHAV. SCI. & L. 17, 21 (1993).

[76] Michael L. Perlin, *A Law of Healing*, 68 U. CIN. L. REV. 407, 412 (2000); Michael L. Perlin, *"Where the Winds Hit Heavy on the Borderline": Mental Disability Law, Theory and Practice, Us and Them*, 31 LOY. L.A. L. REV. 775, 782 (1998).

Using TJ, we "look at law as it actually impacts people's lives,"[77] and assess the law's influence on emotional life and psychological well-being.[78] One governing TJ principle is that "law should value psychological health, should strive to avoid imposing anti-therapeutic consequences whenever possible and, when consistent with other values served by law, should attempt to bring about healing and wellness".[79] TJ supports an ethic of care.[80]

One of the central principles of TJ is a commitment to dignity.[81] Professor Amy Ronner describes the "three Vs" of TJ, voice, validation, and voluntariness,[82] arguing:

> What "the three Vs" commend is pretty basic: litigants must have a sense of voice or a chance to tell their story to a decision maker. If that litigant feels that the tribunal has genuinely listened to, heard, and taken seriously the litigant's story, the litigant feels a sense of validation. When litigants emerge from a legal proceeding with a sense of voice and validation, they are more at peace with the outcome. Voice and validation create a sense of voluntary participation, one in which the litigant experiences the proceeding as less coercive. Specifically, the feeling on the part of litigants that they voluntarily partook in the very process that engendered the end result or the very judicial pronunciation that affects their own lives can initiate healing and bring about improved behavior in the future. In general, human beings prosper when they feel that they are making, or

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[77] Bruce J. Winick, *Foreword: Therapeutic Jurisprudence Perspectives on Dealing with Victims of Crime*, 33 NOVA L. REV. 535, 535 (2009).

[78] David B. Wexler, *Practicing Therapeutic Jurisprudence: Psychological Soft Spots and Strategies*, *in* PRACTICING THERAPEUTIC JURISPRUDENCE: LAW AS A HELPING PROFESSION 45, 45 (Daniel P. Stolle, David B. Wexler & Bruce J. Winick eds., 2006).

[79] Bruce Winick, *A Therapeutic Jurisprudence Model for Civil Commitment*, *in* INVOLUNTARY DETENTION AND THERAPEUTIC JURISPRUDENCE: INTERNATIONAL PERSPECTIVE ON CIVIL COMMITMENT 23, 26 (Kate Diesfeld & Ian Freckelton eds., 2003).

[80] *See* Bruce J. Winick & David B. Wexler, *The Use of Therapeutic Jurisprudence in Law School Clinical Education: Transforming the Criminal Law Clinic*, 13 CLINICAL L. REV. 605, 605–07 (2006). *See also* David B. Wexler, *Not Such a Party Pooper: An Attempt to Accommodate (Many of) Professor Quinn's Concerns about Therapeutic Jurisprudence Criminal Defense Lawyering*, 48 B.C. L. REV. 597, 599 (2007).

[81] *See* BRUCE J. WINICK, CIVIL COMMITMENT: A THERAPEUTIC JURISPRUDENCE MODEL 161 (2005). On dignity in the sentencing process generally, see MICHAEL L. PERLIN, A PRESCRIPTION FOR DIGNITY: RETHINKING CRIMINAL JUSTICE AND MENTAL DISABILITY LAW 214–15 (2013).

[82] Amy D. Ronner, *The Learned-Helpless Lawyer: Clinical Legal Education and Therapeutic Jurisprudence as Antidotes to Bartleby Syndrome*, 24 TOURO L. REV. 601, 627 (2008). On the importance of "voice," see Freckelton, *supra* note 74.

at least participating in, their own decisions.[83]

The question to be posed here is: when the criminal trial judges consider neuroscientific tests in incompetency to stand trial determinations (or choose to not consider it), to what extent does that decision-making comport with TJ principles?[84] Georgia Zara has thoughtfully and carefully considered how biologically-based criminological research can be integrated into a TJ perspective on studying the behavior of offenders,[85] but few scholars have written about this specific issue.[86] Consequently, it is sadly clear that the entire body of scholarship referred to in this section has—so far—fallen on deaf ears in the context of the incompetency process.[87]

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[83] Amy D. Ronner, *Songs of Validation, Voice, and Voluntary Participation: Therapeutic Jurisprudence,* Miranda *and Juveniles*, 71 U. CIN. L. REV. 89, 94–95 (2002). *See also*, AMY D. RONNER, LAW, LITERATURE AND THERAPEUTIC JURISPRUDENCE (2010).

[84] On the extent to which criminal sentencing decision-making considers neuroscientific tests and evidence in the context of TJ, see Perlin & Lynch, *"In the Wasteland of Your Mind," supra* note 1, at 342–47.

[85] Georgia Zara, *Therapeutic Jurisprudence as an Integrative Approach to Understanding the Socio-Psychological Reality of Young Offenders*, 71 U. CIN. L. REV. 127, 128 (2002). There has been no follow up in the legal literature to this insight of Prof. Zara.

[86] One of us (Perlin) noted this, with regards to the insanity defense some eight years ago. See Perlin, Great Skill, supra note 2, at 913 ("There has been, however, almost no therapeutic jurisprudence scholarship as of yet on the question that I am addressing here: what are the TJ implications of greater reliance on neuroimaging testimony in cases in which the defendant raises a non-responsibility defense?"). David Wexler has more recently called on researchers to consider the parallel question of neuropsychology and law as they relate to the solitary confinement for juvenile offenders. See David B. Wexler, New Wine in New Bottles: The Need to Sketch a Therapeutic Jurisprudence "Code" of Proposed Criminal Processes and Practices, 7 ARIZ. SUMMIT L. REV. 463, 469 n.15 (2014). In another paper about how juvenile civil commitment and criminal justice proceedings shame and humiliate juveniles, the authors note how the fact that juvenile brains "continue to wire and rewire, [as opposed to the brains of adults who] have more stable neural connections" needs to be considered in assessing the likely outcomes of the legal proceedings in question. Michael L. Perlin & Alison J. Lynch, "She's Nobody's Child/The Law Can't Touch Her at All": Seeking to Bring Dignity to Legal Proceedings Involving Juveniles, 56 FAM. CT. REV. 79, 81 (2018).

On the relationship between TJ and the role of counsel in the incompetency process in general, see Michael L. Perlin, *"Too Stubborn to Ever Be Governed by Enforced Insanity": Some Therapeutic Jurisprudence Dilemmas in the Representation of Criminal Defendants in Incompetency and Insanity Cases*, 33 INT'L J. L. & PSYCHIATRY 475 (2010).

[87] Interestingly, and perhaps paradoxically, there has been *great* interest shown in the relationship between TJ and the work of problem-solving courts. For a sampling of scholarship by some prominent problem-solving judges, see for example Deborah Chase & Peggy Hora, *The Best Seat in the House: The Court Assignment and Judicial Satisfaction*, 47 FAM. CT. REV. 209 (2009); Michael D. Jones, *Mainstreaming Therapeutic Jurisprudence into the Traditional Courts: Suggestions for Judges and Practitioners*, 5 PHOENIX L. REV.

V. THE EXTENT TO WHICH NEUROIMAGING "FITS" WITHIN TJ

In a recent article, the two co-authors argued that "[i]f used correctly, neuroimaging evidence could serve as a valuable tool for implementing therapeutic jurisprudence principles in [cases involving individuals with mental illness and traumatic brain injury]."[88] The question to be posed here is: to what extent can neuroimaging evidence exert an impact on a determination about competency in a therapeutic way? Using Professor Ronner's three V's,[89] we can begin to create an analysis that looks at the therapeutic (or anti-therapeutic) benefits a defendant receives when his brain is presented as evidence. While scholars have produced TJ scholarship on the importance of sentencing, using TJ principles,[90] and on the ways in which biologically-based criminological research can be integrated into a TJ perspective on studying the behavior of offenders,[91] few scholars have written about the specific issues presented here, especially in the context of competency determinations and evaluations for justice-involved individuals.[92]

Courts have regularly been known to ignore the potential role of TJ either because they are unaware of its benefits or because they believe it has no place in decisions.[93] This is particularly problematic in new areas of law,

753 (2012); Michael S. King, *Should Problem-Solving Courts Be Solution-Focused Courts*?, 80 REV. JUR. U.P.R. 1005 (2011); William Schma et al., *Therapeutic Jurisprudence: Using the Law to Improve the Public's Health*, 33 J.L. MED. & ETHICS 59 (2005); and Ginger Lerner Wren, *Mental Health Courts: Serving Justice and Promoting Recovery*, 19 ANNALS HEALTH L. 577 (2010).

[88] Perlin & Lynch, *"In the Wasteland of Your Mind"*, *supra* note 1, at 355.

[89] *See* Ronner, *Songs of Validation*, *supra* note 81.

[90] *See* Michael L. Perlin, "I Expected It to Happen/I Knew He'd Lost Control": The Impact of PTSD on Criminal Sentencing after the Promulgation of DSM-5, UTAH L. REV. 881 (2015) [hereinafter, Perlin, *"I Expected It to Happen"*]. See generally, David B. Wexler, A Tripartite Framework for Incorporating Therapeutic Jurisprudence in Criminal Law Education, Research, and Practice, in REHABILITATING LAWYERS: PRINCIPLES OF THERAPEUTIC JURISPRUDENCE FOR CRIMINAL LAW PRACTICE 11, 15 (David B. Wexler ed., 2008) and Wexler, *supra* note 86.

[91] *See, e.g.*, Heather Ellis Cucolo & Michael L. Perlin, *Preventing Sex-Offender Recidivism through Therapeutic Jurisprudence Approaches and Specialized Community Integration*, 22 TEMP. POL. & CIV. RTS. L. REV. 1, 36–37 (2012); Perlin & Lynch, *"In the Wasteland of Your Mind"*, *supra* note 1, at 353; Zara, *supra* note 85, at 128.

[92] On the TJ-related use of neuroscience in the *settlement* process, see Richard Birke, Neuroscience and Settlement: An Examination of Scientific Innovations and Practical Applications, 25 OHIO ST. J. ON DISP. RESOL. 477 (2010).

[93] For a particularly critical assessment—based on no empirical evidence—see Jennifer Oriel, *Society Expects Justice from Courts, Not Therapy*, THE WEEKEND AUSTRALIAN, Jan. 30, 2017, http://www.theaustralian.com.au/opinion/columnists/jennifer-oriel/society-expects-justice-from-courts-not-therapy/news-story/d1877596825a28d6e5a087fc41817e37,

including the area of law exploring the use of neuroimaging as evidence, where precedential decisions can come from any jurisdiction at any time.[94] If the precedential decisions are based on anti-therapeutic principles, it will be difficult to get TJ-centric practices back into the courtroom because previous decisions may limit the use and scope of novel scientific evidence in this context.[95]

The danger in failing to recognize the precedential value of decisions from other jurisdictions creates a divided legal system in which a person in one jurisdiction has the ability to introduce evidence that another individual elsewhere could not. This could be especially troubling for individuals with mental illness and traumatic brain injury since the recognition of a physical component of their illness could help to comport with the TJ principles of dignity, voice, and validation.[96] The ability to adequately present evidence to represent physical illness is generally available to individuals who have a physical difference; physical illness can even be used as mitigation evidence.[97] The opportunity for individuals with mental illness and brain injury, who are already facing additional discrimination and bias, should have a similar avenue through which they may present legitimate evidence. If used correctly, with proper analysis about its therapeutic benefits, neuroimaging evidence could serve as "a valuable tool for implementing [TJ] principles."[98] Unfortunately, as we have noted in the past, "the entire body of scholarship [on neuroimaging evidence and TJ] has fallen on deaf

responded to in Arie Freiberg & Becky Batagol, *Therapy and Justice Belong Together*, THERAPEUTIC JURISPRUDENCE IN THE MAINSTREAM (Feb. 10, 2017), https://mainstreamtj.wordpress.com/2017/02/10/therapy-and-justice-belong-together/.

[94] For some example on the greater implications of our federalist system, see Ellen Peters, *Capacity and Respect: A Perspective on the Historic Role of the State Courts in the Federal System*, 73 N.Y.U. L. REV. 1065 (1998).

[95] *See* Gaudet & Marchant, *supra* note 9 (exploring all caselaw that consider the various uses of neuroimaging). We believe that because this is still such an evolving area of law, any of the precedents set in these individual cases, some of which could be contradictory, could ultimately lead to anti-therapeutic results in individual cases.

[96] On juror response to evidence of physical brain "abnormalities" in insanity cases, see Richard Redding, *The Brain-Disordered Defendant: Neuroscience and Legal Insanity in the Twenty-First Century*, 56 AM. U. L. REV. 51 (2006). On juror response to neuroscience evidence in general, see Edith Greene & Brian S. Cahill, *Effects of Neuroimaging Evidence on Mock Juror Decision Making*, 30 BEHAV. SCI. & L. 280 (2012), and Tanneika Minott, *Born This Way: How Neuroimaging Will Impact Jury Deliberations*, 12 DUKE L. & TECH. REV. 219, 225–230 (2014).

[97] See FLA. STAT. ANN. § 921.0026(2)(d) (West 2012) (treating as a mitigating circumstance when "[t]he defendant requires specialized treatment for a mental disorder that is unrelated to substance abuse or addiction or for a physical disability, and the defendant is amenable to treatment").

[98] Perlin & Lynch, *"In the Wasteland of Your Mind"*, *supra* note 1, at 355. We discuss this extensively in *id.* at 350–58.

ears in the contexts of criminal sentencing."[99]

The potential benefits of neuroimaging as an alternative method of discussing questions of competency fall squarely within the values that TJ strives to promote.[100] Research provides little information available about neuroimaging as a tool of TJ.[101] While there is a great deal of research on judges' and jurors' perceptions of neuroimaging evidence, the TJ community has yet to discuss whether such perceptions are therapeutic or anti-therapeutic.[102] In light of the reality that "the science of neuroscience has to be assessed in the sociopolitical context of a specific question of law that is central to the specific case before the court," this gap is all the more problematic.[103] Additionally, few authors have considered the multiple levels on which this evidence may have an impact on competency determinations.[104]

Regardless of the outcome of the defendant's case, TJ-centric practitioners must recognize that an individual can feel as if he received a therapeutic benefit from the introduction of this evidence.[105] That

[99] *Id.* at 352–53.

[100] Another caveat to be added here (one beyond the scope of this paper): the potential for prosecutorial misuse of *victim* neuroscience evidence. *See* Denno, *supra* note 14, at 360–67. One of the co-authors (Perlin) has considered the therapeutic jurisprudence implications of prosecutorial misconduct in cases involving defendants with mental and intellectual disabilities in Michael L. Perlin, *"Your Corrupt Ways Had Finally Made You Blind": Prosecutorial Misconduct and the Use of "Ethnic Adjustments" in Death Penalty Cases of Defendants with Intellectual Disabilities*, 65 AM. U. L. REV. 1437 (2016), and Michael L. Perlin, "Merchants *and Thieves, Hungry for Power": Prosecutorial Misconduct and Passive Judicial Complicity in Death Penalty Trials of Defendants with Mental Disabilities*, 73 WASH. & LEE L. REV. 1501 (2016).

[101] *But see* Perlin & Lynch, *"In the Wasteland of Your Mind"*, *supra* note 1, at 355 ("If used correctly, neuroimaging evidence could serve as a valuable tool for implementing therapeutic jurisprudence principles in these cases"). *See, e.g.*, Wexler, THERAPEUTIC JURISPRUDENCE, *supra* note 72, at 469 n.15 (calling on researchers to consider neuropsychology and law as they relate to solitary confinement of juvenile offenders). For TJ-focused considerations of neuroscience in other contexts, see A.J. Stephani, *Symposium: Therapeutic Jurisprudence and Children*, 71 U. CIN. L. REV. 13, 14 (2002); and Janet Weinstein & Ricardo Weinstein, *"I Know Better Than That": The Role of Emotions and the Brain in Family Law Disputes*, 7 J.L. & FAM. STUD. 351, 383 n.127 (2005).

[102] *See* Perlin & Lynch, *"In the Wasteland of Your Mind," supra* note 1, at 341 ("Attorneys and judges must also continue to understand how neuroimaging evidence is perceived and internalized by jurors.").

[103] Perlin, *See Through Your Brain*, *supra* note 5, at *1 (emphasis in original).

[104] *See* E. Spencer Compton, 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) (discussing the role of neuroscience evidence in the insanity context).

[105] *See* Ronner, *supra* note 83, at 94–95.

therapeutic benefit may be based on the principles of voice, validation and voluntariness that Amy Ronner has thoughtfully articulated.[106] Such a benefit also fits perfectly within the construct of procedural justice, which asserts that "people's evaluations of the resolution of a dispute (including matters resolved by the judicial system) are influenced more by their perception of the fairness of the process employed than by their belief regarding whether the 'right' outcome was reached."[107]

An individual is given voice when he is allowed to speak for himself or articulate something that he believes to be important.[108] In the case of neuroimaging evidence, an individual may feel that he has been given the opportunity to have a voice if he is able to offer evidence that supports what he describes as symptoms of mental illness or explanations for his behavior.[109] If he views the evidence as bolstering his own testimony,—which will thus be taken more seriously by a judge or jury,—he may feel as if his testimony or any of his prior descriptions of his own internal thoughts has been given voice.[110]

However, the balancing test here is clear: it is likely anti-therapeutic to allow images, and analyses of these images by experts, to speak for the defendant in place of the defendant's own testimony.[111] In an analogous

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[106] *Id*.

[107] Thomas L. Hafemeister, Sharon G. Garner & Veronica E. Bath, *Forging Links and Renewing Ties: Applying the Principles of Restorative and Procedural Justice to Better Respond to Criminal Offenders with a Mental Disorder*, 60 BUFF. L. REV. 147, 200 (2012) (quoting Tom R. Tyler, *Procedural Justice and the Courts*, 44 CT. REV. 26, 26 (2007)). *See also*, Larry Heuer, *What's Just About the Criminal Justice System? A Psychological Perspective*, 13 J. L. & POL'Y 209, 213 (2005) ("[P]rocedural fairness concerns, rather than outcomes, are the best predictors of people's trust and confidence in the courts").

[108] *See* Julie Macfarlane, *Why Do People Settle?*, 46 MCGILL L.J. 663, 700 (2001) (explaining the empowerment of self-expression).

[109] *Cf.* John J. Ensminger & Thomas D. Liguori, *The Therapeutic Significance of the Civil Commitment Hearing: An Unexplored Potential*, *in* THERAPEUTIC JURISPRUDENCE: THE LAW AS A THERAPEUTIC AGENT 245, 249–53 (David B. Wexler ed., 1990) (civil commitment hearings give patients an opportunity to present and hear evidence in a meaningful court procedure).

[110] *See generally* Bernard Perlmutter, *George's Story: Voice and Transformation Through the Teaching and Practice of Therapeutic Jurisprudence in a Law School Child Advocacy Clinic*, 17 ST. THOMAS L. REV. 561, 580–81 (2005). On the importance of "voice" generally, see Ronner, *supra* note 83.

[111] *See* Stacey M. Faraci, *Slip Slidin' Away? Will Our Nation's Mental Health Court Experiment Diminish the Rights of the Mentally Ill?*, 22 QUINNIPIAC L. REV. 811, 847 (2004) (quoting in part Katherine Hunt Federle, *The Ethics of Empowerment: Rethinking the Role of Lawyers in Interviewing and Counseling the Child Client*, 64 FORDHAM L. REV. 1655, 1696 (1996) ("A defendant will have more of a sense of overall satisfaction with the court system when she perceives she has been permitted to speak "in her own voice and to determine . . . [her] own goals.")).

area of the law, the TJ-centric attorney must recognize that the defendant's own words and the words of the expert, confirming the defendant's testimony, must coexist in mitigation cases.[112]

There are similar balancing tests for Ronner's other two principles of validation and voluntariness.[113] Ultimately, a TJ-centric practitioner needs to be able to integrate novel scientific evidence into a presentation of competency that highlights the defendant as a person, rather than a caricature of a "mentally ill person" who cannot stand trial.[114] These methods of presenting competency evidence are not at odds. If used correctly, they can strengthen case presentation and potentially set the groundwork for further evidentiary presentations in a subsequent case.[115] It is essential that the TJ-involved lawyer engage in a dialogue with her client about the underlying issues.[116]

It goes without saying that there are other issues at play here as well.[117] A remarkably under-discussed issue is the application of the Supreme Court's decision in *Strickland v. Washington*—creating a pallid

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[112] *See* Lisa Bell Holleran, *Mitigation Evidence and the Ethical Role of a Defense Attorney in a Capital Case*, 36 CRIM. JUST. ETHICS 97 (2017) (on the building of a death penalty mitigation case that would comport with TJ values), and Russell Stetler, "*Mental Health Evidence and the Capital Defense Function: Prevailing Norms*, 82 UMKC L. REV. 407 (2014).

[113] Carolyn S. Salisbury, *From Violence and Victimization to Voice and Validation: Incorporating Therapeutic Jurisprudence in a Children's Law Clinic*, 17 ST. THOMAS L. REV. 623 (2004) (reviewing the importance of Ronner's "three Vs" as a therapeutic tool that must be considered against the legal implications of a hearing).

[114] *See* Michael L. Perlin, *"Dignity Was the First to Leave":* Godinez v. Moran, *Colin Ferguson, and the Trial of Mentally Disabled Criminal Defendants*, 14 BEHAV. SCI. & L. 61, 79 (1996) (statements by Colin Ferguson's initial counsel) (mentally ill criminal defendants have been characterized by their lawyers as "raving" or "deranged").

[115] *See* John Pyun, *When Neurogenetics Hurts: Examining the Use of Neuroscience and Genetic Evidence in Sentencing Decisions through Implicit Bias*, 103 CAL. L. REV. 1019 (2015).

[116] *See, e.g.*, Perlin, *"Yonder Stands Your Orphan with His Gun," supra* note 71, at 480 (model conversations for clients raising the insanity defense or the incompetency to stand trial status prior to sentencing); Perlin, *"I Expected It to Happen"*, *supra* note 90, at 924–25 (model conversations for individuals facing sexually violent predator commitments raising the insanity defense or the incompetency to stand trial status); Heather Ellis Cucolo & Michael L. Perlin, *Promoting Dignity and Preventing Shame and Humiliation by Improving the Quality and Education of Attorneys in Sexually Violent Predator (SVP) Civil Commitment Cases*, 28 FLA. J. L. & PUB. POL'Y 291, 326 (2017)). *See also* David B. Wexler, *Guiding Court Conversation Along Pathways Conductive to Rehabilitation: Integrating Procedural Justice and Therapeutic Jurisprudence*, 1 INT'L J. THER. JURIS. 367, 370–71 (2016) (suggesting conversations with client about relapse prevention planning).

[117] *See generally* Perlin, *See Through Your Brain*, *supra* note 5.

"effectiveness of counsel standard" in criminal cases[118]—to cases involving neuroimaging testimony.[119] To what extent have courts examined the responsibilities of counsel to understand and contextualize this neuroimaging evidence?[120] Although there is some case law supporting an ineffectiveness claim in a death penalty case in which counsel failed to seek funds for a brain scan,[121] research reveals no such *Strickland*-based reversals in cases dealing with the specific topic of this paper (neuroimaging and competency to stand trial).[122]

It is hard to imagine a more anti-therapeutic case than *Strickland.*[123] Indeed, the ample bodies of case law construing the *Strickland* standard rarely even consider the implications of TJ or TJ-based lawyering.[124] We urge scholars, criminal defense counsel and judges to begin to assess the sorts of cases we discuss in this paper through a TJ filter.[125]

Also, it is necessary to consider the extent to which judges will be teleological in their determinations as to whether such evidence is admissible. In a recent piece in which the co-authors looked at judicial interpretations of neuroimaging evidence, they found that judges treated biologically-based evidence in criminal cases involving questions of mental

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[118] Strickland v. Washington 466 U.S. 668, 686 (1984) ("[W]hether counsel's conduct so undermined the proper function of the adversarial process that the trial court cannot be relied on as having produced a just result"). *See also* MICHAEL L. PERLIN, MENTAL DISABILITY AND THE DEATH PENALTY: THE SHAME OF THE STATES 150 (2013) ("In many death penalty cases, *Strickland* is little more than an empty shell.").

[119] *See* PERLIN & CUCOLO, *supra* note 5, § 13-1.5.4, at 13-59 to 13-67 (explaining the application of *Strickland* in cases involving questions of competency to stand trial in general).

[120] *See* Perlin, *See Through Your Brain*, *supra* note 5, at *24 n. 88 (addressing the responsibility of counsel to understand and contextualize neuroimaging evidence).

[121] *See, e.g.*, Hurles v. Ryan, 752 F.3d 768, 781–82 (9th Cir. 2014).

[122] *See* Gaudet & Marchant, *supra* note 9, at app. C (identifying incompetency cases in which neuroimaging was at issue that had successful appeals or applications for habeas relief, but none of the identified cases appear to have involved a *Strickland*-based decision); *see* discussed *infra* text accompanying notes 138–41; United States v. Dreyer, 705 F.3d 951 (9th Cir. 2013) (not citing *Strickland*).

[123] *See* Perlin, *Mirror*, *supra* note 74, at 606.

[124] *See* Michael L. Perlin & Alison J. Lynch, *"Mr. Bad Example": Why Lawyers Need to Embrace Therapeutic Jurisprudence to Root out Sanism in the Representation of Persons with Mental Disabilities*, 16 WYO. L. REV. 299, 319 (2016); Perlin, *God Said*, *supra* note 13, at 517.

[125] *Compare* Michael L. Perlin & John Douard, *"Equality, I Spoke That Word/As If a Wedding Vow": Mental Disability Law and How We Treat Marginalized Persons*, 53 N.Y.L. SCH. L. REV. 9, 28 (2008–09) (citations omitted) ("The TJ filter can be used to shine light on the presence of sanism and pretextuality and the false use of OCS in considerations of sex offender law, the inadequacy of advocacy systems, outpatient commitment, institutional rights law, the right to refuse treatment law, or health care/hospital law.").

disability law (via privileging and subordination) so as to conform to the judges' pre-existing positions.[126] When we consider how courts are typically teleological on the question of admission of evidence in accordance with the rulings in cases such as *Daubert* and *Frye*, this should not be a surprise.[127] There is no reason to doubt the glum conclusion of Professor Susan Rozelle that "the game of scientific evidence looks fixed."[128]

In another recent manuscript,[129] one of the co-authors (Perlin) concluded that judges often "decide cases teleologically, taking refuge—perhaps unconsciously—in time-worn heuristics[130] that appeal to their own distorted 'ordinary common sense.'"[131] This teleological approach is

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[126] Perlin & Lynch, *"In the Wasteland of Your Mind"*, *supra* note 1, at 343–44 (discussing the research reported in Nicholas Scurich & Adam Shniderman, *The Selective Allure of Neuroscientific Explanations*, 9 PLOS ONE (Sept. 10, 2014) http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0107529).

[127] *See* Daubert v. Merrill Dow Pharmaceuticals, 509 U.S. 579, 586–91 (1993) (crafting a five-factor test for admissibility of evidence in federal trials); Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923) (designating general acceptance by the scientific community as the standard for the admissibility of expert testimony).

[128] Susan Rozelle, Daubert, *Schmaubert*: *Criminal Defendants and the Short End of the Science Stick*, 43 TULSA L. REV. 597, 598 (2007). *See* D. Michael Risinger, *Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock?*, 64 ALB. L. REV. 99, 105–08 (2000). In sixty-seven cases of challenged government expertise, the prosecution prevailed in sixty-one of these. *Id.* at 105. Out of fifty-four complaints by criminal defendants that their expertise was improperly excluded, the defendant lost in forty-four of these. *Id.* at 106. Contrarily, in civil cases, ninety percent of *Daubert* appeals were by the defendants, who prevailed two-thirds of the time. *Id.* at 108.

[129] Michael L. Perlin, *"I've Got My Mind Made Up": How Judicial Teleology in Cases Involving Biologically Based Evidence Violates Therapeutic Jurisprudence*, CARDOZO J. EQUAL RTS. & SOC'L JUST. 42, 43 (forthcoming 2018) (manuscript at 42–43) [hereinafter, Perlin, *"I've Got My Mind Made Up"*]. That paper was written "in an effort to re-focus on therapeutic jurisprudence as a means of combatting teleology in the law." *Id.* at 35–36.

[130] *See* Michael L. Perlin, *The Sanist Lives of Jurors in Death Penalty Cases: The Puzzling Role of Mitigating Mental Disability Evidence*, 8 NOTRE DAME J. L., ETHICS & PUB. POL'Y 239, 242 (1994) (explaining that heuristics are cognitive simplifying devices in which vivid, negative experiences overwhelm rational data); *see supra* note 112.

[131] *See* Michael L. Perlin & Naomi Weinstein, *Said I, 'But You Have No Choice': Why a Lawyer Must Ethically Honor a Client's Decision About Mental Health Treatment Even If It Is Not What S/he Would Have Chosen*, 15 CARDOZO PUB. L. POL'Y & ETHICS J. 73, 87-88 (2016) (footnotes omitted) ("Ordinary common sense' (OCS) is a 'powerful unconscious animator of legal decision making.' It is a psychological construct that reflects the level of the disparity between perception and reality that regularly pervades the judiciary in deciding cases involving individuals with mental disabilities. OCS is self-referential and non-reflective: 'I see it that way, therefore everyone sees it that way; I see it that way, therefore that's the way it is.'"). *See also* Perlin, *"The Borderline"*, *supra* note 60, at 1426 ("[W]e accept an insanity defense system that is sanist, pretextual and teleological, a system that

particularly problematic "in cases involving biologically-based evidence since so much of this evidence is out of the ken of lay persons."[132]

Such behavior similarly flies in the face of the core precepts of therapeutic jurisprudence.[133] We believe it is vital that fact-finders acknowledge this reality in the case of neuroimaging evidence in the context upon which we focus in this paper.

VI. CONCLUSION

As noted above, the vast majority of attention on the role of neuroimaging in the criminal trial process, until now, has focused upon cases involving death penalty trials,[134] and, to a lesser extent, upon insanity defense cases.[135] But, as we also noted, there has been almost no consideration of the application of neuroimaging evidence in the area of criminal law in which mental status issues play the largest role: that of incompetency to stand trial.[136] Competency is an issue in more than 50,000

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rests on the shaky underpinnings of heuristic reasoning and a false [ordinary common sense]."); Perlin, *Pretexts*, *supra* note 39, at 665 (discussing Bouchillon v. Collins, 907 F.2d 589, 594 (5th Cir. 1990)) ("Taking refuge in 'ordinary common sense' they [the trial judge and counsel] rejected the possibility that the defendant was mentally ill because he did not 'look' mentally ill."). *See generally* Michael L. Perlin, *Morality and Pretextuality, Psychiatry and Law: Of "Ordinary Common Sense," Heuristic Reasoning, and Cognitive Dissonance*, 19 BULL. AM. ACAD. PSYCHIATRY & L. 131, 136–37 (1991). See Bert van Roermund, *The Embryo and Its Rights: Technology and Teleology*, 14 GERMAN L.J. 1939, 1947 (2013) for an explanation on how teleology is "inspired" by alleged common sense.

[132] *See generally* Richard S. Schmechel et al., *Beyond the Ken? Testing Jurors' Understanding of Eyewitness Reliability Evidence*, 46 JURIMETRICS J. 177, 192 (2006) (observing that, frequently, scientific evidence is presented by experts who are not told in advance to make the content more relatable to a lay person, and attorneys questioning a witness may also not have the scientific knowledge to break down the points that the expert is making).

[133] *See* Perlin, *"I've Got My Mind Made Up"*, *supra* note 129 (manuscript at 41) ("Articulating the existence of this teleology and amassing legal and other policy-based arguments against its perpetuation will go a long way towards fulfilling therapeutic jurisprudence mandates").

[134] *See* Blume & Paavola, *supra* note 3, at 931 (mitigation cases), and Perlin, *"Good and Bad"*, *supra* note 4, at 688 (competency-to-be-executed cases).

[135] *See* Perlin, *Great Skill*, *supra* note 2, at 887; Aharoni, et al., *supra* note 38, at 158.

[136] *See supra* text accompanying notes 8–13 (this excludes the publicity that followed the *Gigante* case, as an outlier in large part because of its "made for TV" nature). *See* Maroney, *supra* note 9, at 1377 n.7. On the application of the "vividness heuristic" to the role of the *Gigante* case in this context, see Perlin, *Great Skill*, *supra* note 2, at 904. *See also* Perlin, *"The Borderline"*, *supra* note 60, at 1417 (the vividness heuristic is the cognitive-simplifying device through which a "single vivid, memorable case overwhelms mountains of abstract, colorless data upon which rational choices should be made.").

cases per year.[137] Courts have looked carefully at the extent to which mental illness or intellectual disability interferes with a defendant's ability to "consult with his lawyer with a reasonable degree of rational [and] . . . factual understanding of the proceedings against him"[138] so as to determine whether he can stand trial.[139] Although there has been a modest increase in the use of neuroimaging in recent years,[140] the number of reported appellate cases involving competency to stand trial remains statistically negligible.[141] And, as we noted earlier, in recent years, only one significant case has been reported in which neuroimaging was critical to an incompetency to stand trial disposition.[142]

The most recent survey article about the use of neuroimaging in the criminal process concluded that there was a "general trend toward more sophisticated and nuanced arguments and applications of neuroimaging evidence in criminal law cases."[143] Notwithstanding the potential overuse and misuse of this testimony, we believe that this trend is a good thing in that the "nuanced"[144] use of such testimony may help us more accurately determine whether some defendants are, in fact, competent or incompetent to stand trial.

That said, we acknowledge that this will be a good thing *only* if (1) counsel achieves a level of competency in this area of law (which, globally, certainly does not seem to be the case now),[145] and (2) the Supreme Court's holding in *Ake* is expanded so that lawyers representing indigent defendants–far and away the "supermajority" of all criminal cases[146]–

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[137] *See* Mossman, *supra* note 11, at 34.

[138] *Dusky v. United States*, 362 U.S. 402, 402 (1960).

[139] *See generally* PERLIN & CUCOLO, *supra* note 5, at ch. 13.

[140] *See* Gaudet & Marchant, *supra* note 9, at 648. Many of these cases involve (1) appeals based on ineffectiveness of counsel claims (where such brain imaging testing was not sought), and (2) appeals based on trial court refusal to grant funds for expert testimony, pursuant to the Supreme Court decision in Ake v. Oklahoma, 470 U.S. 68, 83–84 (1985) (finding for a constitutional right to an expert in cases where defendant makes a showing that his or her sanity at the time of the crime is going to be a significant issue at the trial). *See id.* at 619–23 and 638–47.

[141] *See* Gaudet & Marchant, *supra* note 9, at 648 (finding that the most current research article found 12 cases in the last three years in this cohort).

[142] *See supra* text accompanying notes 67–71 (discussing United States v. Dreyer, 705 F.3d 951, 965 (9th Cir. 2013)).

[143] Gaudet & Marchant, *supra* note 9, at 661.

[144] *Id*.

[145] *See generally id.*, at 619–23 and 638–47 (discussing cases involving ineffectiveness of counsel).

[146] It was believed a decade ago that 80% of all criminal defendants were indigent. *See* Mary Sue Backus & Paul Marcus, The Right to Counsel in Criminal Cases: A National Crisis, 57 HASTINGS L.J. 1031, 1034 (2006). It makes sense to believe that this figure is now

receive court approval for expert funding.[147] Without this additional piece, any discussion of neuroimaging in the criminal process becomes a "cocktail party conversation," unmoored from the real world of criminal law and procedure.[148]

Attorneys looking to integrate this type of evidence into their practice need to be cognizant of when the use neuroimaging is appropriate. Competency decisions are made about an individual's current mental state, so any attempt to use brain imaging should only serve to highlight or provide missing data about that mental state.[149] Attorneys should also be aware of the therapeutic or anti-therapeutic value of this type of neuroimaging evidence and the way it will be perceived by all parties involved in the resolution of the case.[150] We must keep in mind the warning that "without understanding the significance of an appropriate reference class, juries may give too much weight to the fMRI data and related expert testimony."[151]

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higher.

[147] To this point in time, lower courts have been generally reluctant to extend *Ake* to requests for funding for neuroimaging tests. *See* Perlin, *See Through Your Brain*, *supra* note 5, at **21–23.

In the most recent term, in McWilliams v. Dunn, 137 S. Ct. 1790 (2017), the Court expanded on its decision in *Ake,* holding that, "unless a defendant is 'assure[d]' the assistance of someone who can effectively perform these functions, he has not received the 'minimum' to which *Ake* entitles him." *Id.* at 1794, quoting Ake v. Oklahoma, 470 U.S. 68, 83 (1985). *See* PERLIN & CUCOLO, *supra* note 5, § 15-4.4, at 15-72 to 15-76. There do not appear to be any reported cases as of this date that consider the impact of *McWilliams* on the issues discussed in this paper.

[148] On how "cocktail party" conversations distort the actual issues in mental disability law, see for example, Michael L. Perlin, *Competency, Deinstitutionalization, and Homelessness: A Story of Marginalization*, 28 HOUS. L. REV. 63, 126 n.377 (1991) (quoting Jan Costello, *Autonomy and the Homeless Mentally Ill: Rethinking Civil Commitment in the Aftermath of Deinstitutionalization* (paper presented at the American Association of Law Schools, section on Law & Psychiatry, Annual Conference in San Francisco, California, Jan. 1990)).

[149] There is often confusion about the proper timing of neuroimaging scans, and how such timing does or does not fit into legal frameworks. For example, a neuroimage taken close to a trial date, in support of an insanity defense, would not be appropriate. The time between the occurrence of the instant offense, the consideration of mental state, and the time of trial is too removed; there is no way that a brain scan taken after the fact can confirm a past mental state or condition. *See* T. V. Asokan, *The Insanity Defense: Related Issues*, 58 INDIAN J. PSYCHIATRY S191 (Suppl. 2 2016) ("In case of assessment of 'legal insanity,' any description of past mental state is closer to a story than a depiction of an observable event. Conclusion about past mental state with available present mental state findings is criticized by some as interpretation of reality rather than identifying objective reality").

[150] *See supra* note 100.

[151] Brown & Murphy, *supra* note 42, at 1181.

The Bob Dylan lyric we use in our title is surrounded by lines that tell us the protagonist is "walking with you [his girlfriend, or more likely, ex-girlfriend] in [his] head" and that "the clouds are weeping."[152] All in all, the images in this brilliant song are fairly depressing. But on point here: fact-finders in criminal cases have an unquenchable thirst to learn what is in the defendant's head. And many cases end with the defendant—or the victim—weeping.[153] We hope that a prudent approach to neuroimaging evidence will ameliorate this situation.

[152] DYLAN, *supra* note 17.

[153] *Id.*