

# Stanford **Technology** Law Review

## “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

MICHAEL L. PERLIN \*

CITE AS: 2009 STAN. TECH. L. REV. 4

<http://stlr.stanford.edu/pdf/perlin-and-i-see.pdf>

### INTRODUCTION

¶1 Last fall, I presented a paper at a conference on neuroimaging and the law looking at the way jurors were likely to construe neuroimaging evidence in insanity defense cases.<sup>1</sup> I tried to balance jurors’ likely positive response to the perceived *characteristics* of this evidence—vivid, objective, quantifiable, advanced<sup>2</sup>—with their likely negative response to the *use* of this evidence in such cases (reflecting their prejudice, hostility, and hatred toward insanity pleaders)<sup>3</sup>—and concluded that I was “not at all sure that the pizzazz of neuroimaging testimony—notwithstanding its colorfulness and its propensity to reductionism—will trump these deep-seated attitudes.”<sup>4</sup> In short, I sought to make the point that the *science* of neuroscience has to be assessed in the sociopolitical *context* of the specific question of law that is central to the specific case before the court.

¶2 Again, as I stressed in my earlier article, the reality is that neuroimaging is fraught with uncertainties,<sup>5</sup> that the steps used in the production and presentation of neuroimaging evidence are “[n]ot only . . . not standardized, they are easily manipulated by a person with knowledge of the

---

\* © 2009, Michael L. Perlin, Professor of Law, Director of the International Mental Disability Law Reform Project, and Director of the Online Mental Disability Law Program at New York Law School. The author wishes to thank Naomi Weinstein for her (as always) superb research assistance, and Bob Weisberg and Erin Murphy for their thoughtful and helpful comments.

<sup>1</sup> 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).

<sup>2</sup> *Id.* at 890. (“this language jumps off the page”).

<sup>3</sup> See generally MICHAEL L. PERLIN, THE JURISPRUDENCE OF THE INSANITY DEFENSE (1994). See also, e.g., Michael L. Perlin, “*She Breaks Just Like a Little Girl*”: Neonaticide, The Insanity Defense, and the Irrelevance of “Ordinary Common Sense,” 10 WM. & MARY J. WOMEN & L. 1, 9 (2003) (discussing the stereotype of persons with mental illness as evil); Michael L. Perlin, “There Was an Evil Messenger”: Blame, Mental Illness, Wickedness, the Insanity Defense and the Pretexts of the Justice System (unpublished manuscript, on file with Stanford Technology Law Review); Michael L. Perlin, *Unpacking the Myths: The Symbolism Mythology of Insanity Defense Jurisprudence*, 40 CASE W. RES. L. REV. 599, 626 (1989-1990) (“[historically], mental illness was tied to notions of religion and traditionally seen as God’s punishment for sin”).

<sup>4</sup> Perlin, *supra* note 1 at 911.

<sup>5</sup> Alexandra Roberts, *Everything New is Old Again: Brain Fingerprinting and Evidentiary Analogy*, 9 YALE J.L. & TECH. 234, 266 (2007).

technology.”<sup>6</sup> Some researchers characterize neuroimaging evidence as “indistinct.”<sup>7</sup> Amanda Pustilnik, by way of example, concludes that “neuroscience cannot provide complete, or even sufficient, explanations of criminal violence by reference primarily to purported neurobiological dysfunctions within isolated parts of offenders’ brains.”<sup>8</sup> Other scholars charge that “researchers, clinicians, and lawyers are seduced into becoming true believers in the merits of [brain imaging] for understanding the relationship between brain and behavior.”<sup>9</sup> Stacey Tovino argues that the fMRI offers only “illusory accuracy and objectivity.”<sup>10</sup> But what is clear is that the *existence* of neuroimaging techniques has changed the contours of the playing field, and no matter which side of the divide we find ourselves on, we must acknowledge that reality.

¶3 With this as backdrop, I turn to the topic that I have taken on for this article: what impact neuroimaging evidence will have on a series of “criminal procedure situations,” the resolutions of which are inextricably intertwined with pre-existing socio-political views and attitudes of judges and jurors: (1) the implications of *Ake v. Oklahoma*<sup>11</sup> (an indigent defendant’s access to expert testimony) in cases where neuroimaging tests might be critical; (2) the defendant’s competency in consenting to the imposition of a neuroimaging test or examination; and (3) the impact of medications—specifically, antipsychotic medications—on a defendant’s brain at the time that such a test is performed. I hope that this article spurs some additional hard thinking about this topic.

¶4 The criminal procedure and evidence issues that I raise here have all been the subject of extensive consideration in the scholarly literature and in litigated cases over the past three decades (and, in different guises, all have reached the U.S. Supreme Court).<sup>12</sup> All these issues, in these other guises, are (or at least should be) familiar to scholars, practitioners and to judges. Yet each of these “situations” is drastically *underdiscussed* in the neuroimaging literature and in the criminal procedure literature. With the exceptions of one discussion in the law review literature,<sup>13</sup> one in the legal “cross-over” literature<sup>14</sup> and one in the psychiatric “cross-over” literature,<sup>15</sup> there has been no consideration at all of these issues in the context of the papers in this symposium: the admissibility of MRI and related evidence in criminal trials.

¶5 This lack of attention is both surprising and not surprising. On one hand, it is surprising because (1) these procedural and constitutional issues *have*, in a range of other topics, been the topic of intense scrutiny and critique,<sup>16</sup> and the resolution of each, in their own way, has been seen as potentially ultimately dispositive of the criminal case before the court,<sup>17</sup> and (2) intuitively, these

---

<sup>6</sup> Donald R. Reeves et al., *Limitations of Brain Imaging in Forensic Psychiatry*, 31 J. AM. ACAD. PSYCHIATRY & L. 89, 90 (2003).

<sup>7</sup> Timo Vloet et al., *Structural and Functional MRI-Findings in Children and Adolescents with Antisocial Behavior*, 26 BEHAV. SCI. & L. 99, 99 (2008).

<sup>8</sup> Amanda C. Pustilnik, *Violence on the Brain: A Critique of Neuroscience in Criminal Law* 5, (Harvard Law School Faculty Scholarship Series, Paper No. 14, 2008), available at <http://lsr.nellco.org/harvard/faculty/papers/14/>.

<sup>9</sup> Laurence R. Tancredi & Jonathan D. Brodie, *The Brain and Behavior: Limitations in the Legal Use of Functional Magnetic Resonance Imaging*, 33 AM. J.L. & MED. 271, 289 (2007).

<sup>10</sup> Stacey A. Tovino, *Functional Neuroimaging Information: A Case for Neuro Exceptionalism?*, 34 FLA. ST. U. L. REV. 415, 479 (2006) (quoting Martha J. Farah, *Emerging Ethical Issues in Neuroscience*, 5 NATURE REV. NEUROSCIENCE 1123, 1127 (2002)).

<sup>11</sup> *Ake v. Oklahoma*, 470 U.S. 68, 74 (1985).

<sup>12</sup> See, e.g., *Sell v. United States*, 539 U.S. 166 (2003) (discussed *infra* text accompanying note 102); *Riggins v. Nevada*, 504 U.S. 127 (1992); *Washington v. Harper*, 494 U.S. 210 (1990).

In his commentary on the live presentation of this paper, Bob Weisberg wisely noted the artificial divide that is present in analyses of “criminal procedure questions” and “evidence questions.” Robert Weisberg, Professor of Law, Stanford Law Sch., Commentary at the Stanford Technology Law Review Symposium: Neuroscience and the Courts (Feb. 27, 2009). I hope this article helps to break down that divide.

<sup>13</sup> See Henry Greely, *Neuroscience and Criminal Justice: Not Responsibility but Treatment*, 56 U. KAN. L. REV. 1103 (2008).

<sup>14</sup> See Jennifer Kulynych, *The Regulation of MR Neuroimaging Research: Disentangling the Gordian Knot*, 33 AM. J.L. & MED. 295 (2007).

<sup>15</sup> See Reeves, *supra* note 6.

<sup>16</sup> See generally 2 MICHAEL L. PERLIN, *MENTAL DISABILITY LAW: CIVIL AND CRIMINAL* § 3B (2d ed. 1998), and 4 MICHAEL L. PERLIN, *MENTAL DISABILITY LAW: CIVIL AND CRIMINAL*, § 9A-5.1 (2d ed. 2002).

<sup>17</sup> E.g., *Ake v. Oklahoma*, 470 U.S. 68, 77 (“[A] criminal trial is fundamentally unfair if the State proceeds against an indigent defendant without making certain that he has access to the raw materials integral to the building of an effective defense.”).

issues—access to independent testing, consent to testing, and impact of medical intervention (often *involuntary* intervention) on trial fairness—should all be “high cards” to those who take these issues seriously.<sup>18</sup> On the other hand, it is *not* surprising, because (1) so much of the MRI debate is still so focused on a series of what I elsewhere call “is-it-or-isn’t-it questions”<sup>19</sup> (as to the hardness of the science, as to the ease of juror comprehension, as to the evidence’s potential heuristic power),<sup>20</sup> that it is inevitable that these admittedly less “sexy” issues have gotten almost no attention, and (2) so much of the conversation about MRI has taken place at two ends of the spectrum: at the end of high philosophy or the end of high science.<sup>21</sup> The issues that I discuss here are, concededly, neither. Rather, they deal with the “roll up your sleeves” aspects of criminal procedure, ones that may not, as I have already indicated, have the pizzazz of either the science or the philosophy “takes.” Still, in the long run, they are every bit as important (and perhaps, in “real life,” even more so).

¶6 I think that this lack of attention to the issues that I address in this article is, like “the dog that didn’t bark in the night” in the famous Sherlock Holmes story,<sup>22</sup> even more important because of its omission from the scholarly dialogue. As I noted a moment ago, these are important issues—in many cases, *dispositive*—in criminal trials. I raise them here in an effort to bring new attention and focus to them in the hopes that when this evidence becomes more commonplace (especially in what I call “invisible” cases, those that are not the subject of intense publicity because of the nature of the defendant or the victim),<sup>23</sup> courts will regularly assess these issues in their pre-trial and “at trial” decisions.

¶7 This article will proceed in the following manner. First, I will briefly restate some of my conclusions from my earlier paper, discussing the tensions inherent in the ways that jurors construe such evidence in insanity defense cases. Then, I will look at each of the three criminal procedure issues at the core of my paper: the right to a neuroimaging expert, the standards of assessing consent to the administration of neuroimaging testing, and the implications of administering antipsychotic, neuroleptic medication for a neuroimaging examiner’s findings. Finally, I will offer some conclusions and speculate on how our answers to these questions might bear on the larger “picture”—neuroimaging-and-the-law.

¶8 My title, as I expect many of you know, comes from Bob Dylan’s anthemic masterpiece *Masters of War*.<sup>24</sup> The song is a “blistering indictment of war profiteers,”<sup>25</sup> and as an indictment of the military-industrial complex, it is as vibrant and angry today as it was when it was first recorded in 1963. The lyric that I have chosen comes from this chilling verse: “Like Judas of old/You lie and deceive/A world war can be won/You want me to believe/But I see through your eyes/And I see through your brain/Like I see through the water/That runs down my drain.”<sup>26</sup> Its relevance to this topic should become clear.

---

<sup>18</sup> See, e.g., 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, 23-24 (2008/2009) (discussing the “high cards of mental disability law: the balance between autonomy and social control, the extent to which a person in the community can still be subject to social control, and the right of a person with a mental disability to refuse the imposition of antipsychotic medications.”).

<sup>19</sup> See Perlin, *supra* note 1, 915 (“Neuroimaging is (or isn’t) hard science. It is (or isn’t) relatively easy for jurors to interpret. It is (or isn’t) immune to falsification efforts. It is (or isn’t) objective. It will (or won’t) lead jurors to ‘better’ verdicts in insanity cases. It will (or won’t) be used disproportionately in news-friendly cases. It will (or won’t) ‘trump’ jurors’ inherent suspicion of the insanity defense.”).

<sup>20</sup> Michael L. Perlin, *Fatal Assumption: A Critical Evaluation of the Role of Counsel in Mental Disability Cases*, 16 LAW & HUM. BEHAV. 39, 57 n.115 (1992) (Heuristics are “cognitive-simplifying devices that frequently lead to systematically erroneous decisions through ignoring or misusing rationally useful information.”).

<sup>21</sup> See generally Perlin, *supra* note 1 (discussing multiple approaches).

<sup>22</sup> See SIR ARTHUR CONAN DOYLE, *Siber Blaze*, in THE COMPLETE SHERLOCK HOLMES 335, 349 (1927).

<sup>23</sup> See Perlin, *supra* note 1 895-898. (discussing use of neuroimaging in cases of John Hinckley and Vincent Gigante).

<sup>24</sup> BOB DYLAN, *Masters of War*, on THE FREEWHEELIN’ BOB DYLAN (Columbia Records 1963).

<sup>25</sup> ROBERT SHELTON, NO DIRECTION HOME: THE LIFE AND MUSIC OF BOB DYLAN 155 (1997).

<sup>26</sup> Bob Dylan: Masters of War, <http://www.bobdylan.com/#/songs/masters-war> (last visited Apr. 9, 2009).

## I. THE AMBIGUITIES AND AMBIVALENCES OF NEUROIMAGING EVIDENCE

¶9 Although commentators bravely assert that neuroscience seems “advanced enough to enter forensic psychiatry,”<sup>27</sup> that “[a]dvances in neurobiological research methods allow one to address the nature and biological basis of human behavior,”<sup>28</sup> and that jurors can be counted on to critically evaluate such evidence,<sup>29</sup> a cluster of other factors forces us to think seriously about how factfinders will construe neuroimaging evidence. In a recent article, I identified these factors as “visualization, reductionism, the attribution heuristic, and the impact of a belief in ‘the CSI effect.’”<sup>30</sup> Regarding “visualization,” I referred to the ways that the “visual allure”<sup>31</sup> can “dazzl[e]” and “seduc[e]” jurors<sup>32</sup> in ways that are “inappropriately persuasive.”<sup>33</sup> Regarding “reductionism,” I referred to the ways that neuroimaging testimony has the meretricious capacity to “[reduce] . . . psychosocial complexity.”<sup>34</sup>

¶10 By “the attribution heuristic,” I referred to the way that we seek to attribute human behavior, in the words of Laura Khoshbin and Shahram Khoshbin, “to a physical source in the head.”<sup>35</sup> And by the “CSI effect,” I referred to the way that we *believe* that jurors demand the “money shot” of hard forensic evidence in all trials, even though valid and reliable evidence as to the reality of that belief “is scant.”<sup>36</sup>

¶11 This remains, in the end, an area fraught with ambiguity and contradiction.<sup>37</sup>

## II. THE CRIMINAL PROCEDURE QUESTIONS

### A. Introduction

¶12 Concerns that (1) jurors may accept some scientific thinking uncritically, and (2) lawyers may not be sufficiently adept at cross-examining certain sorts of expert witnesses are not new in the evidence/trial practice scholarship.<sup>38</sup> By raising the issues that are the focal point of this paper, I hope to rearticulate these concerns in a new context: that of neuroimaging evidence.

---

<sup>27</sup> Joachim Witzel et al., *Neurophilosophical Perspectives of Neuroimaging in Forensic Psychiatry—Giving Way to a Paradigm Shift?*, 26 BEHAV. SCI. & L. 113, 115 (2008).

<sup>28</sup> Jurgén Müller et al., *Disturbed Prefrontal and Temporal Brain Function During Emotion and Cognition Interaction in Criminal Psychopathy*, 26 BEHAV. SCI. & L. 131, 131 (2008).

<sup>29</sup> Dov Fox, *Brain Imaging and the Bill of Rights: Memory Detection Technologies and American Criminal Justice*, 8 AM. J. BIOETHICS 34, 36 (2008).

<sup>30</sup> See Perlin, *supra* note 1 at 893-4.

<sup>31</sup> Laura Stephens Khoshbin & Shahram Khoshbin, *Imaging the Mind, Minding the Image: An Historical Introduction to Brain Imaging and the Law*, 33 AM. J.L. & MED. 171, 182 (2007).

<sup>32</sup> *Id.* at 183 n.98, 185; see also Tancredi & Brodie, *supra* note 9, at 289. See generally Deena Skolnick Weisberg et al., *The Seductive Allure of Neuroscience Explanations*, 20 J. COGNITIVE NEUROSCIENCE 470 (2008).

<sup>33</sup> Neil Feigenson, *Brain Imaging and Courtroom Evidence: On the Admissibility and Persuasiveness of fMRI*, 2 INT'L J.L. CONTEXT 233, 247 (2006).

<sup>34</sup> *Id.* at 248.

<sup>35</sup> Khoshbin & Khoshbin, *supra* note 31 at 171. On “heuristics” in general, see Perlin, *supra* note 20. *But see* Weisberg et al., *supra* note 32, at 476 (suggesting that the “seductive details effect” is a more likely explanation for juror behavior than use of heuristic reasoning devices).

<sup>36</sup> Donald Shelton et al., *A Study of Juror Expectations and Demands Concerning Scientific Evidence: Does the “CSI Effect” Exist?*, 9 VAND. J. ENT. & TECH. L. 331 (2006); see also, Wendy Brickell, *Is It the CSI Effect or Do We Just Distrust Juries?* 23 CRIM. JUST. 10 (Summer 2008).

<sup>37</sup> For recent experimental research, concluding that neuroscience evidence led “novices” (non-experts) to judge “bad explanations” of behavior more favorably, see Weisberg et al., *supra* note 32, at 475, urging that there are “more reasons for caution” when applying such evidence to “social issues.” *Id.* at 477.

<sup>38</sup> E.g., Shari Seidman Diamond, *How Jurors Deal With Expert Testimony and How Judges Can Help*, 16 J.L. & POL'Y 47, 48 (2007); Steven Wilkins, *Know Thine Expert: Expert Witnesses in Medical Malpractice Cases: Supplementing Disclosure with Online Investigation*, 76 N.Y. ST. B.A.J. 31 (2004).

*B. Right to an Expert*

- ¶13 The vast majority of criminal defendants are indigent.<sup>39</sup> Neuroimaging testing is expensive, and is more expensive in cases in which the examined defendant is in jail awaiting trial.<sup>40</sup> The question before us here is relatively simple: does the defendant have a right to an independent neuroimaging expert in either (1) insanity cases, or (2) other criminal trial matters, including, but not limited to, incompetency to stand trial proceedings,<sup>41</sup> sentencing hearings,<sup>42</sup> and inquiries into mental status in instances where the difference in gradations of a crime may be of great significance as a correlation of exposure to a specific punishment?<sup>43</sup>
- ¶14 Nearly twenty-five years ago, the U.S. Supreme Court addressed the question of a defendant’s right to an expert in a criminal trial. In *Ake v. Oklahoma*, a death penalty case, the Supreme Court ruled that an indigent criminal defendant who makes a threshold showing that insanity is likely to be a significant factor at trial is constitutionally entitled to a psychiatrist’s assistance.<sup>44</sup> The Court observed that it had “long recognized that when a State brings its judicial power to bear on an indigent defendant in a criminal proceeding, it must take steps to insure that the defendant has a fair opportunity to present his defense.”<sup>45</sup> This principle, grounded in the due process clause’s guarantee of “fundamental fairness,” derives from the belief “that justice cannot be equal when, simply as a result of his poverty, a defendant is denied the opportunity to participate meaningfully in a judicial proceeding in which his liberty is at stake.”<sup>46</sup>
- ¶15 “Meaningful access to justice” is the theme of the relevant cases, the Court found,<sup>47</sup> noting that “mere access to the courthouse doors does not by itself assure a proper functioning of the adversary process.”<sup>48</sup> A criminal trial is “fundamentally unfair if the State proceeds against an indigent defendant without making certain that he has access to the raw materials integral to the building of an effective defense.”<sup>49</sup>
- ¶16 In determining whether access to a psychiatrist is one of the “basic tools of an adequate defense,”<sup>50</sup> the Court set out three relevant factors:
- The first is the private interest that will be affected by the action of the State. The second is the governmental interest that will be affected if the safeguard is to be provided. The third is the probable value of the additional or substitute procedural safeguards that are sought, and the risk of an erroneous deprivation of the affected interest if those safeguards are not provided . . . .<sup>51</sup>
- ¶17 The Court quickly disposed of the first prong, characterizing the private interest in accuracy of a criminal proceeding as “almost uniquely compelling.”<sup>52</sup> In the same way, it summarily rejected the

---

<sup>39</sup> Publicly financed counsel represented about 66% of Federal felony defendants in 1998 and 82% of felony defendants in the 75 most populous counties in 1996. U.S. Department of Justice, Bureau of Justice Statistics Indigent Defense Statistics, <http://www.ojp.usdoj.gov/bjs/id.htm> (last visited April 17, 2009); Press Release, U.S. Department of Justice, Bureau of Justice Statistics, Two of Three Felony Defendants Represented by Publicly-Financed Counsel (Nov. 29, 2000), <http://www.ojp.usdoj.gov/bjs/pub/press/iddepr.htm> (last visited April 17, 2009).

<sup>40</sup> For sample fee scales, see, for example, New Hampshire Insurance Department, NH Health Cost, [http://www.nhhealthcost.org/uninsuredWizardUserInput.aspx?procedure=16&procedureName=MRI+-+Brain+\(outpatient\)](http://www.nhhealthcost.org/uninsuredWizardUserInput.aspx?procedure=16&procedureName=MRI+-+Brain+(outpatient)) (last visited April 17, 2009). See generally, Steve Silberman, *Don't Even Think About Lying: How Brain Scans Are Reinventing the Science of Lie Detection*, WIREd, Jan. 2006, at 147, available at <http://www.wired.com/wired/archive/14.01/lying.html>.

<sup>41</sup> See e.g., *United States v. Gigante*, 982 F. Supp. 140, 147 (E.D.N.Y. 1997).

<sup>42</sup> This issue is discussed extensively in Greely, *supra* note 13.

<sup>43</sup> See e.g., *People v. Weinstein*, 591 N.Y.S.2d 715 (1992).

<sup>44</sup> 470 U.S. 68, 74 (1985). See generally 4 PERLIN, *supra* note 16, § 9A-5.1, at 217-27.

<sup>45</sup> *Ake*, 470 U.S. at 76.

<sup>46</sup> *Id.*

<sup>47</sup> *Id.* at 77.

<sup>48</sup> *Id.*

<sup>49</sup> *Id.* While such a defendant does not have a right to all the assistance that a wealthier defendant might be able to purchase, he is nonetheless entitled to “an adequate opportunity to present [his] claims fairly within the adversary system.” *Ross v. Moffitt*, 417 U.S. 600, 612 (1974).

<sup>50</sup> *Britt v. North Carolina*, 404 U.S. 226, 227 (1971).

<sup>51</sup> *Ake*, 470 U.S. at 77 (citing *Little v. Streater*, 452 U.S. 1 (1981) (indigent’s right to blood grouping tests in paternity action); *Mathews v. Eldridge*, 424 U.S. 319 (1976)).

<sup>52</sup> *Ake*, 470 U.S. at 78.

argument that a reversal would “result in a staggering burden to the State,”<sup>53</sup> noting that at least forty states and the federal government already made such services available.<sup>54</sup> The Court also found it “difficult to identify *any* interest of the state, other than in its economy, that weighs against recognition of this right.”<sup>55</sup> Finally, it considered the “pivotal role” psychiatry has come to play in criminal proceedings,<sup>56</sup> reflecting the “reality . . . that when the State has made the defendant’s mental condition relevant to his criminal culpability and to the punishment he might suffer, the assistance of a psychiatrist may well be crucial to the defendant’s ability to marshal his defense.”<sup>57</sup>

¶18

The Court set out what it perceived as the role of the psychiatrist in such cases:

[P]sychiatrists gather facts, both through professional examination, interviews, and elsewhere, that they will share with the judge or jury; they analyze the information gathered and from it draw plausible conclusions about the defendant’s mental condition, and about the effects of any disorder on behavior; and they offer opinions about the defendant’s mental condition might have affected his behavior at the time in question. They know the probative questions to ask of the opposing party’s psychiatrists and how to interpret their answers. Unlike lay witnesses, who can merely describe symptoms they believe might be relevant to the defendant’s mental state, psychiatrists can identify the “elusive and often deceptive” symptoms of insanity, *Solesbee v. Balkcom*, 339 U.S. 9, 12 (1950), and tell the jury why their observations are relevant. Further, where permitted by evidentiary rules, psychiatrists can translate a medical diagnosis into language that will assist the trier of fact, and therefore offer evidence in a form that has meaning for the task at hand. Through this process of investigation, interpretation, and testimony, psychiatrists ideally assist lay jurors, who generally have no training in psychiatric matters, to make a sensible and educated determination about the medical condition of the defendant at the time of the offense.<sup>58</sup>

¶19

Because psychiatry is not an exact science, however, and because of frequent psychiatric disagreement on the classification and diagnosis of mental illness and the likelihood of future dangerousness, it is often necessary for juries to resolve differences in opinion.<sup>59</sup> On such a determination, “the testimony of psychiatrists can be crucial and ‘a virtual necessity if an insanity plea is to have any chance of success.’”<sup>60</sup> This finding led the Court “inexorably” to conclude that:

[W]ithout the assistance of a psychiatrist to conduct a professional examination on issues relevant to the defense, to help determine whether the insanity defense is viable, to present testimony, and to assist in preparing the cross-examination of a State’s psychiatric witnesses, the risk of an inaccurate resolution of sanity issues is extremely high. With such assistance, the defendant is fairly able to present at least enough information to the jury, in a meaningful manner, as to permit it to make a sensible determination.<sup>61</sup>

As the risk of error from denial of such assistance is highest “when the defendant’s mental condition is seriously in question,”<sup>62</sup> the defendant would thus qualify for such assistance when he is able to make an “*ex parte* threshold showing . . . that his sanity is likely to be a significant factor in his defense.”<sup>63</sup> The Court thus held that, when a defendant is able to demonstrate that

---

<sup>53</sup> *Id.*

<sup>54</sup> *Id.* at 79-80 & nn.4-6; *see, e.g.*, 18 U.S.C. § 3006A(e) (2006).

<sup>55</sup> *Ake*, 470 U.S. at 79 (emphasis added).

<sup>56</sup> *Id.*

<sup>57</sup> *Id.* at 80.

<sup>58</sup> *Ake*, 470 U.S. at 80-81.

<sup>59</sup> *Id.* at 81.

<sup>60</sup> *Id.* (quoting Martin R. Gardner, *The Myth of the Impartial Psychiatric Expert—Some Comments Concerning Criminal Responsibilities and the Decline of the Age of Therapy*, 2 LAW & PSYCHOL. REV. 99, 113-14 (1976)).

<sup>61</sup> *Ake*, 470 U.S. at 82. On the ethical issues involved in the relationship between the lawyer and the mental health expert, *see* W. Lawrence Fitch et al., *Legal Ethics and the Use of Mental Health Experts in Criminal Cases*, 5 BEHAV. SCI. & L. 105, 109-16 (1987).

<sup>62</sup> *Ake*, 470 U.S. at 82.

<sup>63</sup> *Id.* at 82-83 (“It is in such cases that a defense may be devastated by the absence of a psychiatric examination and testimony; with such assistance, the defendant might have a reasonable chance of success. In such a circumstance, where the potential accuracy of the jury’s determination is so dramatically enhanced, and where the interests of the individual and the State in an accurate proceeding are substantial, the State’s interest in its fisc must yield.”) (footnote omitted).

On the question of what is a “significant factor,” *see, for example*, *Volanty v. Lynaugh*, 874 F.2d 243 (5th Cir. 1989), *cert. denied*, 493 U.S. 955 (1989) (defendant’s bare assertion that he was heroin addict insufficient basis for *Ake* appointment); *Mendoza v. Leapley*, 5 F.3d 341 (8th Cir. 1993) (habeas corpus relief denied; failure to appoint expert psychologist did not deprive petitioner of fair trial); *Perkins v. State*, 450 S.E.2d 324 (Ga. Ct. App. 1994) (refusal to appoint psychiatrist at trial not error where psychiatrist

his sanity was such a “significant factor,” the state must “assure the defendant access to a competent psychiatrist who will conduct an appropriate examination and assist in evaluation, preparation, and presentation of the defense.”<sup>64</sup>

¶20 Finally, the Court held that a defendant was similarly entitled to psychiatric expert assistance to rebut the state’s evidence of future dangerousness at the penalty phase of a death penalty trial.<sup>65</sup> Where the consequence of error is so great, the relevance so evident, and the burden to the state so slim, due process requires “access to a psychiatric examination” for assistance in the preparation of the sentencing phase.<sup>66</sup>

¶21 The courts have generally read *Ake* narrowly, and have refused to require appointment of an expert unless it is “absolutely essential to the defense.”<sup>67</sup> By way of examples, courts have split on whether there is a right to an expert *psychologist* to perform psychological testing under *Ake*,<sup>68</sup> and have also, without citing *Ake*, rejected an application for the right to the appointment of a social psychologist to aid in jury selection.<sup>69</sup> *Ake*, on the other hand, was relied on so as to require the appointment of a pathologist in a criminal case.<sup>70</sup> On the perhaps-closer question of the requirement of the appointment of a DNA expert, after an intermediate appellate court in Virginia relied on *Ake* to require the appointment of such an expert, that decision was subsequently vacated, with no discussion of *Ake* in the subsequent opinion.<sup>71</sup>

¶22 In his exhaustive survey article about the implementation of *Ake*, Professor Paul Giannelli points out, in a slightly different context, that, “in 1985, the *Ake* Court could not have anticipated how the advent of DNA evidence would revolutionize forensic science.”<sup>72</sup> Nor, of course, could it have anticipated the new significance of neuroimaging evidence. To this point in time, however, lower courts have been generally reluctant to extend *Ake* to requests for funding for neuroimaging tests.<sup>73</sup> In *Bates v. State*,<sup>74</sup> no *Ake* violation was found where a defendant sought additional expert assistance in establishing functional organic brain damage, and in *Smith v. Kearney*,<sup>75</sup> there was no *Ake* error where defendant sought funds for a PET scan.<sup>76</sup> Although the court in *Walker v. Oklahoma*<sup>77</sup> found

---

who had done pretrial evaluation of defendant concluded that he was sane).

<sup>64</sup> *Ake*, 470 U.S. at 83. The Court emphasized that this did not give the defendant the right to “choose a psychiatrist of his personal liking.” *Id.* Its concern was simply that an indigent defendant “have access to a competent psychiatrist.” *Id.* Cf. *In re Gannon*, 301 A.2d 493 (N.J. Ct. Ct. 1973) (indigent in civil commitment case has no right “to shop around for a psychiatrist who agrees with him”). See generally 1 PERLIN, *supra* note 16, § 2B-16.

<sup>65</sup> *Ake*, 470 U.S. at 83-84.

<sup>66</sup> *Id.* at 84.

<sup>67</sup> STEPHEN A. SALTZBURG & DANIEL J. CAPRA, AMERICAN CRIMINAL PROCEDURE 802 (6th ed. 2000); see also David A. Harris, *Ake Revisited: Expert Psychiatric Witnesses Remain Beyond Reach for the Indigent*, 68 N.C. L. REV. 763, 783 (1990) (“Lower courts often have interpreted *Ake* less than generously, unduly constricting the availability of the right.”); Comment, *Nonpsychiatric Expert Assistance and the Requisite Showing of Need: A Catch-22 in the Post-Ake Criminal Justice System*, 37 EMORY L.J. 995 (1988) (arguing *Ake* should be read to encompass nonpsychiatric expert assistance).

<sup>68</sup> Compare *Jones v. State*, 375 S.E.2d 648 (Ga. Ct. App. 1988) (rejecting defendant’s request for additional psychological evaluation; limiting *Ake* to *psychiatrists*) and *Hough v. State*, 524 N.E.2d 1287 (Ind. 1988) (no right under *Ake* to appointment of social psychologist to help in jury selection), with *Funk v. Commonwealth*, 379 S.E.2d 371 (Va. Ct. App. 1989) (rejecting defendant’s argument that psychiatric assistance is mandated under *Ake*; no error to appoint clinical *psychologist*), and *King v. State*, 877 S.W.2d 583 (Ark. 1994) (appointment of psychologist sufficient under state statute).

<sup>69</sup> *Wallace v. State*, 553 N.E.2d 456 (Ind. 1990), cert. denied, 500 U.S. 948 (1991).

<sup>70</sup> *Rey v. State*, 897 S.W.2d 333 (Tex. Crim. App. 1995).

<sup>71</sup> See e.g., *Husske v. Commonwealth*, 448 S.E.2d 331 (Va. Ct. App. 1994) (state required to appoint DNA expert under *Ake*), vacated, 462 S.E.2d 120 (Va. Ct. App. 1995) (*Ake* issue not discussed), *aff’d*, 476 S.E.2d 920 (Va. 1996), cert. denied, 519 U.S. 1154 (1997). For a more recent consideration of the application of *Ake* to DNA and other non-psychiatric evidence, see Paul Giannelli, *Ake v. Oklahoma: The Right to Expert Assistance in a Post-Daubert, Post-DNA World*, 89 CORNELL L. REV. 1305, 1418-19 (2004), concluding that “*Ake*’s rationale extends to nonpsychiatric experts.”

Beyond the scope of this paper is a related, important question: is neuroimaging evidence—for purposes of assessing validity and reliability of testimony—more like DNA evidence or more like other more traditional forensic evidence (e.g., bitemarks, hair comparisons, etc.). See e.g., Dawn McQuiston-Surrett & Michael Saks, *Communicating Opinion Evidence in the Forensic Identification Sciences: Accuracy and Impact*, 59 HASTINGS L.J. 1159 (2008).

<sup>72</sup> Giannelli, *supra* note 71, at 1418.

<sup>73</sup> *Jones* is discussed in this context in Jennifer Kulynych, *Psychiatric Neuroimaging Evidence: A High-Tech Crystal Ball?*, 49 STAN. L. REV. 1249, 1254 (1997), and Mark Pettit, *fMRI and BF Meel FRE: Brain Imaging and the Federal Rules of Evidence*, 33 AM. J.L. & MED. 319, 335 (2007).

For an array of recent post-*Ake* decisions, see MICHAEL L. PERLIN & HEATHER ELLIS CUCOLO, MENTAL DISABILITY LAW: CIVIL AND CRIMINAL, § 9A-5.1, at 76-77 (2007 Cum. Supp.).

<sup>74</sup> 750 So. 2d 6, 16-17 (Fla. 1999).

<sup>75</sup> No. 2 CA-SA 2008-0019, 2008 WL 2721155 (Ariz. Ct. App. July 22, 2008).

<sup>76</sup> *Smith* was a challenge based on *Atkins v. Virginia*, 536 U.S. 304 (2002), arguing that the defendant’s mental retardation

that it was *Ake* error to fail to provide funds for additional neurological testing “to flesh out the etiology of [the defendant’s] mental illness,”<sup>78</sup> it deemed that error harmless.<sup>79</sup> On the other hand, *People v. Jones*<sup>80</sup> did reverse a conviction because of the lower court’s refusal to fund brain scans.

¶23 The constitutional analysis here cannot be undertaken without serious consideration of likely juror response to the glitter of neuroimaging evidence, what Dean Mobbs has called the “Christmas tree phenomenon”<sup>81</sup> in writing about the *seductiveness* of this evidence.<sup>82</sup> Certainly, this analysis argues persuasively for an expansive reading of *Ake* and its progeny.<sup>83</sup>

¶24 The need for this expansive reading is heightened because insanity defense cases are so often so utterly dissonant with jurors’ flawed “ordinary common sense” (OCS).<sup>84</sup> How well can lawyers cross-examine experts on these sophisticated questions of science where the “dazzle” of the proffered evidence makes the expression of skepticism about such evidence equally dissonant from juror OCS? Also, the neuroimaging-mental status cases (here, I am combining insanity and incompetency cohorts) that have received the most attention were the subject of saturation publicity, such as *Hinckley* and *Gigante*.<sup>85</sup> This reflects 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,” and further accentuates a mis-perception of reality.<sup>86</sup> Until neuroimaging evidence is used more frequently in what I have elsewhere called “invisible cases,”<sup>87</sup> the distortion effect of famous cases will require our speculations to remain tentative.<sup>88</sup>

---

barred the imposition of the death penalty. The Court concluded on this issue:

Thus, while we do not dispute Thompson’s testimony that frontal lobe damage can be a cause of mental retardation, Smith has not demonstrated on the facts before us how a current PET scan would be useful in assessing the pivotal question presented in this case—whether his mental functioning was significantly more deficient thirty years ago than today. *Id.*, at \*4.

<sup>77</sup> 167 F.3d 1339, 1348-49 (10th Cir.), cert. denied, 528 U.S. 987 (1999).

<sup>78</sup> See *Allen v. Mullin*, 368 F.3d 1220, 1236 (10th Cir. 2004) (discussing *Walker*).

<sup>79</sup> *Walker*, 167 F.3d at 1348-49.

<sup>80</sup> 620 N.Y.S.2d 656, 657 (N.Y. App. Div. 1994).

<sup>81</sup> See Neil Feigenson & Richard Sherwin, *Thinking Beyond the Shown: Implicit Inferences in Evidence and Argument*, 6 LAW, PROBABILITY & RISK 295, 299-300 (2007) (citing Dean Mobbs et al., *Law, Responsibility, and the Brain*, 5 PLOS BIOLOGY 693 (2007)).

<sup>82</sup> See also Richard Henson, *What Can Functional Neuroimaging Tell the Experimental Psychologist?*, A58 Q. J. EXPERIMENTAL PSYCHOL. 193 (2005) (“There is a real danger that pictures of blobs on brains seduce one into thinking that we can now directly observe psychological constructs.”); Tancredi & Brodie, *supra* note 9, at 289. Cf. Robert Granacher, *Commentary: Applications of Functional Neuroimaging to Civil Litigation of Mild Traumatic Brain Injury*, 36 J. AM. ACAD. PSYCHIATRY & L. 323, 323 (2008) (“The overselling of [neuroimaging evidence] by lawyers is a serious potential evidentiary concern in . . . civil litigation.”).

<sup>83</sup> On the dangers of showing “undue deference” to expert witnesses, see, for example, Elaine Sutherland, *Undue Deference to Experts Syndrome?* 16 IND. INT’L & COMP. L. REV. 375 (2006). On the dangers of “anecdotal forensics,” see, for example, David Faigman, *Anecdotal Forensics, Phrenology And Other Abject Lessons from the History of Science*, 59 HASTINGS L.J. 979 (2008).

Beyond the scope of this paper is a consideration of the implications of the *Daubert* doctrine on these questions. We do know, however, that courts generally “lower the bar” on the resolution of *Daubert* issues in criminal cases. See e.g., Paul Giannelli, *Forensic Science Under the Microscope*, 34 OHIO N.U.L. REV. 315, 317 & n.22 (2008); see generally, Deirdre Dwyer, *(Why) Are Civil and Criminal Expert Evidence Different?*, 43 TULSA L. REV. 381, 382-84 (2007). On the question addressed here, see James Merikangas, *Commentary: Functional MRI Lie Detection*, 36 J. AMER. ACAD. PSYCHIATRY & L. 499 (2008) (fMRI evidence, for purposes of lie detection, does not meet *Daubert* standards).

<sup>84</sup> 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.” In criminal procedure, by way of example, “OCS presupposes two self-evident truths: 1) everyone knows how to assess an individual’s behavior, and 2) everyone knows when to blame someone for doing wrong.” Perlin, *Neonaticide*, *supra* note 3, at 8, quoting Michael L. Perlin, *Psychodynamics and the Insanity Defense: Ordinary Common Sense and Heuristic Reasoning*, 69 NEB. L. REV. 3, 22-33 (1990).

<sup>85</sup> See also, e.g., *United States v. Mezvinsky*, 206 F. Supp. 2d 661 (E.D. Pa. 2002) (multi-million dollar fraud case; defendant was former Congressman); *People v. Goldstein*, 786 N.Y.S.2d 428 (App. Div. 2004), *rev’d on other grounds*, 843 N.E.2d 727 (N.Y. 2005) (murder case in which victim was Kendra Webdale, after whom New York’s assisted outpatient treatment law was named).

<sup>86</sup> 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).

<sup>87</sup> See Michael L. Perlin, *A Law of Healing*, 68 U. CIN. L. REV. 407, 425 (2000) (“[T]he overwhelming number of cases involving mental disability law issues are ‘litigated’ in pitch darkness. Involuntary civil commitment cases are routinely disposed of in minutes behind closed courtroom doors.”)

<sup>88</sup> On this phenomenon in the universe of *civil* mental disability cases, see *id.* at 424-25 (“Civil cases are rarely the focus of so much interest, but court decisions in a handful of cases involving potential professional liability—*Tarasoff v. Regents of the University of California* is, by far, the most famous—are disseminated widely to professional audiences. Their holdings—and concomitant significance for practitioners—are regularly over-exaggerated and distorted.”).

Beyond the scope of this paper is the interplay between the Supreme Court’s pallid “effectiveness of counsel” standard set out in *Strickland v. Washington*, 466 U.S. 668, 688 (1984) (“whether 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”) and the responsibilities on counsel to understand and contextualize neuroimaging evidence. (My thanks to Erin Murphy for raising this issue to me).

C. Competency to Consent

¶25 The question of “competency” has been a core issue in the criminal law for hundreds of years.<sup>89</sup> For most of this time, the focus has been solely on questions of competency to stand trial. In 1960 and 1966, the Supreme Court constitutionalized the prevailing common law standards in this area in the context of both substantive and procedural due process, establishing a lenient test for assessing a defendant’s trial competency.<sup>90</sup>

¶26 More recently, the Court ruled—in what I think was a hopelessly misguided opinion<sup>91</sup>—that the same minimalist standard articulated in *Dusky v. United States* as to matters of trial competency also applied in inquiries regarding defendants’ competency to plead guilty and/or to waive counsel.<sup>92</sup> However, in its most recent term, the Court backed off this position a bit, finding in *Indiana v. Edwards* that the Constitution permits states to insist upon representation by counsel for those who are competent enough to stand trial but who are sufficiently ill to be incompetent to conduct trial proceedings by themselves.<sup>93</sup>

¶27 Other courts have considered questions of criminal competency in a host of other pretrial (confessions, search and seizures, line-ups), trial (jury waivers, evidentiary objections, impact of incompetency finding on ability to enter insanity plea) and post-trial settings (motion for new trial, sentencing, parole or probation hearing ), but these cases all seem to have been decided without reference to or consideration of what other courts had decided in analogous (or even identical) areas of the law.<sup>94</sup>

¶28 The question of “competency” has also been a core issue in civil, constitutional and private mental disability law,<sup>95</sup> especially in the context of a patient’s right to refuse the involuntary imposition of antipsychotic medications.<sup>96</sup> The Supreme Court has considered this issue directly in three criminal cases involving different forensic populations (defendants who had been convicted of crimes,<sup>97</sup> those who were proffering the insanity defense at trial,<sup>98</sup> and those who were awaiting trial on “serious” criminal offenses<sup>99</sup>) and indirectly in a civil case.<sup>100</sup> Multiple federal appellate courts and state high courts have also weighed this issue, mostly in the civil context.<sup>101</sup>

¶29 On the criminal side of the ledger, the Supreme Court’s most recent case, *Sell v. United States*, sets out an elaborate formulation:

[T]he Constitution permits the government involuntarily to administer antipsychotic drugs to a mentally ill defendant facing serious criminal charges in order to render that defendant competent to stand trial, but only if the treatment is medically appropriate, is substantially unlikely to have side effects that may undermine the fairness of the trial, and, taking account

---

<sup>89</sup> 4 PERLIN, *supra* note 16, § 9A-2.1 at 3 (doctrine traditionally traced to mid-seventeenth century England); *But see* RONALD ROESCH & STEVEN GOLDING, COMPETENCY TO STAND TRIAL 19 (1980) (suggesting its roots are in legal developments of the thirteenth century).

<sup>90</sup> *See Dusky v. United States*, 362 U.S. 402 (1960) (test is whether the defendant “has sufficient present ability to consult with his lawyer with a reasonable degree of rational understanding” and whether he has a “rational as well as factual understanding of the proceedings against him.”); *Pate v. Robinson*, 383 U.S. 375 (1966) (conviction of mentally incompetent defendant violates due process).

<sup>91</sup> *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 (1996) (critiquing the use of a unitary standard in such cases).

<sup>92</sup> *Godinez v. Moran*, 509 U.S. 389 (1993).

<sup>93</sup> 128 S. Ct. 2379 (2008).

<sup>94</sup> Michael L. Perlin, *Beyond Dusky & Godinez: Competency Before and After Trial*, 21 BEHAV. SCI. & L. 297, 309-10 (2003) (“The failure of most of the cases to consider carefully the relevant precedents (and analogous developments in other jurisdictions) is . . . surprising.”).

<sup>95</sup> *See generally* MICHAEL L. PERLIN ET AL., COMPETENCE IN THE LAW: FROM LEGAL THEORY TO CLINICAL APPLICATION (2008).

<sup>96</sup> 2 PERLIN, *supra* note 16, chapter 5B. *See generally* 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 (2005).

<sup>97</sup> *Washington v. Harper*, 494 U.S. 210 (1990).

<sup>98</sup> *Riggins v. Nevada*, 504 U.S. 127 (1992).

<sup>99</sup> *Sell v. United States*, 539 U.S. 166 (2003).

<sup>100</sup> *Mills v. Rogers*, 457 U.S. 291 (1982).

<sup>101</sup> *See* 2 PERLIN, *supra*, note 16, § 3B-7 to 7.2F.

of less intrusive alternatives, is necessary significantly to further important governmental trial-related interests.<sup>102</sup>

¶30 On the civil side, two models have emerged: the “expanded due process model” and the “limited due process model.” Under the expanded due process model, mental health patients are often provided with procedural due process protections such as notice, counsel, the right to cross-examine witnesses, the right to present evidence (including expert testimony), and the right to appeal. Under the limited due process model, mental health patients are provided with only minimal due process protections: narrower administrative review is provided, and broad readings of the Fourteenth Amendment’s Due Process Clause are rejected.<sup>103</sup>

¶31 Analysis of the intersection between the right to refuse treatment and the criminal trial process takes on even more importance when considered in the context of the findings by the MacArthur Research Network that mental health patients are not always incompetent to make rational decisions and are not inherently more incompetent than nonmentally ill medical patients.<sup>104</sup> This research suggests that a criminal defendant’s autonomy in medication refusal decisionmaking should be more privileged and less subordinated than it typically is.<sup>105</sup>

¶32 Mostly lost to the pages of history are the “barely remembered case[s]”<sup>106</sup> of *Mackey v. Procnier*<sup>107</sup> and *Knecht v. Gillman*.<sup>108</sup> These forerunner cases set the stage<sup>109</sup> for the civil and criminal cases just discussed, but I think it is more important to think about them in the context of this inquiry.

¶33 *Mackey* and *Knecht* dealt with the use of medication as a tool of negative behavior modification/operant conditioning purposes,<sup>110</sup> and also raised issues under the First and Eighth Amendments.<sup>111</sup> I seek to resurrect these opinions here, because I think they may potentially illuminate some of the issues we need to consider when we weigh what I see as a critical (but virtually never discussed) criminal procedure question: what are the criteria for assessing whether a criminal defendant is competent to consent to neuroimaging testing?<sup>112</sup>

¶34 Although such tests are not physically invasive in the same way as injectible antipsychotic medication or nausea-inducing drugs,<sup>113</sup> a strong parallel argument can be made, I think, that such testing, involving measurement of brain functioning, *is* invasive for purposes of constitutional analysis. It can lead—directly and inexorably—to negative outcomes for the person being tested, and, as such, inevitably raises the substantive cluster of competency questions implicated by involuntary

---

<sup>102</sup> *Sell*, 539 U.S. at 179.

<sup>103</sup> Michael L. Perlin & Deborah A. Dorfman, *Is It More Than “Dodging Lions and Wastin’ Time”? Adequacy of Counsel, Questions of Competence, and the Judicial Process in Individual Right to Refuse Treatment Cases*, 2 PSYCHOL. PUB. POL’Y & L. 114, 122-23 (1996).

<sup>104</sup> Perlin, *supra* note 96, at 746-47 (discussing Thomas Grisso & Paul S. Appelbaum, *The MacArthur Treatment Competence Study. III: Abilities of Patients to Consent to Psychiatric and Medical Treatments*, 19 LAW & HUM. BEHAV. 149 (1995)).

<sup>105</sup> Grant Morris, *Judging Judgment: Assessing the Competence of Mental Patients to Refuse Treatment*, 32 SAN DIEGO L. REV. 343 (1995).

<sup>106</sup> Michael L. Perlin, *“There’s No Success like Failure/and Failure’s No Success at All”: Exposing the Pretextuality of Kansas v. Hendricks*, 92 NW. U. L. REV. 1247, 1271 (1998). *But see* Greely, *supra* note 13, at 1110 (discussing *Knecht* and *Mackey*).

<sup>107</sup> 477 F.2d 877 (9th Cir. 1973).

<sup>108</sup> 488 F.2d 1136 (8th Cir. 1973).

<sup>109</sup> Thomas Hafemeister & John Petrila, *Treating The Mentally Disordered Offender: Society’s Uncertain, Conflicted, And Changing Views*, 21 FLA. ST. U. L. REV. 731, 788-89 (1994).

<sup>110</sup> *See* Bruce Winick, *Ambiguities in the Legal Meaning and Significance of Mental Illness*, 1 PSYCHOL. PUB. POL’Y & L. 534, 590 n. 230 (1995) (*Knecht* involved the use of apomorphine, a vomit-inducing drug, in a security hospital aversive conditioning program, and *Mackey*, the use of succinylcholine, a paralyzing drug, in a California prison aversive conditioning program).

<sup>111</sup> 2 PERLIN, *supra* note 16, §§ 3B-4.1 to 4.2, at 171-79.

<sup>112</sup> Commentators have argued that, for certain purposes, neuroimaging tests may run afoul of the privilege against self-incrimination and substantive due process. *See, e.g.*, Sarah E. Stoller & Paul Root Wolpe, *Emerging Neurotechnologies for Lie Detection and the Fifth Amendment*, 33 AM. J.L. & MED. 359, 371 (2007); Jody C. Barillare, *As Its Next Witness, the State Calls . . . the Defendant: Brain Fingerprinting as “Testimonial” Under the Fifth Amendment*, 79 TEMP. L. REV. 971, 1003 (2006); Sean Kevin Thompson, *A Brave New World of Interrogation Jurisprudence?*, 33 AM. J.L. & MED. 341, 357 (2007); John New, *If You Could Read My Mind*, 29 J. LEGAL MED. 179, 193-95 (2008).

On the possible application of the Fourth Amendment, compare *id.* at 195-98 (concluding that Amendment is inapplicable), with Richard Boire, *Searching the Brain: The Fourth Amendment Implications of Brain-Based Deception Detection Devices*, 5 AM. J. BIOETHICS 62 (2005) (suggesting possible application of that Amendment).

<sup>113</sup> On the relationship between these questions and the doctrine of *Schmerber v. California*, 384 U.S. 757 (1966) (discussing physiological intrusivity and the criminal trial process, and finding extraction of blood sample constitutional), *see* Stoller & Wolpe, *supra* note 112, at 368-69.

medication practices.<sup>114</sup> We know that there is no unitary standard of competency<sup>115</sup> and that the body of case law and commentary that has evolved in criminal, mental disability and private civil law is maddeningly inconsistent.<sup>116</sup> I am not suggesting that I can resolve these multiple dilemmas in this context; rather, I simply want to call our attention to this issue as one that must be “on the table” for future discussions.

¶35 In a recent article, Jennifer Kulynych raises the important—but as of yet, rarely discussed—issue of the need to determine whether a defendant is competent to consent to the administration of neuroimaging tests,<sup>117</sup> noting that there is currently “no federal regulatory bar to enrolling adults in an MRI study.”<sup>118</sup> Robert Michels has also noted that the National Bioethics Advisory Commission considers the present system for evaluating a patient’s capacity to consent to dangerous treatment “inadequate even to assess the capacity to consent to MRI for research purposes.”<sup>119</sup>

¶36 The question of competency to consent to treatment and testing has become the focus of great attention in the past thirty years.<sup>120</sup> As I have indicated, it is a question that the US Supreme Court has considered several times in the context of the administration of antipsychotic medication in both civil and criminal cases,<sup>121</sup> concluding that “a qualified right to refuse medication is located in the Fourteenth Amendment’s Due Process Clause.”<sup>122</sup> Yet there has been no reported litigation on this specific issue that I raise here, although attention to it has been paid by leading bioethicists.<sup>123</sup> It is certainly reasonable to suggest that this is something we should be alert for in the coming years.

#### D. *The Impact of Medication*

¶37 Five years ago, in an article about brain imaging and the law, Dr. Donald Reeves and his associates stressed that “psychotropic drugs affect functional imaging of the brain,” and that the effects of such drugs “are not always short-lived.”<sup>124</sup> Given the fact that the Supreme Court, in establishing the right-to-refuse-psychotropic-drug-treatment, has stressed that “the pervasiveness of side effects is a key factor in the determination of the scope of the right,”<sup>125</sup> it comes as a surprise that this insight has not, as of yet, been discussed elsewhere in the legal literature.<sup>126</sup> Again, especially

---

<sup>114</sup> Cf. Judy Illes & Eric Racine, *Imaging or Imagining? A Neuroethics Challenge Informed by Genetics*, 5 AM. J. BIOETHICS 5, 12 (2005) (“Even while neuroimaging cannot establish moral culpability . . . of where, when, or how a crime occurred, nor individual guilt . . . the constant stream of innovative scientific approaches is aimed at deriving biologic correlates for behaviors committed in the past . . . is unrelenting. As we seek to understand responsibility of others through their biology, it is incumbent upon us to contemplate, yet again, our own responsibilities in interpreting such information, and in protecting access and appropriate use.”) On how the use of neuroimaging evidence can compromise “cognitive liberty,” see Boire, *supra* note 112, at 62-63.

<sup>115</sup> Michael L. Perlin, *Pretexts and Mental Disability Law: The Case of Competency*, 47 U. MIAMI L. REV. 625, 673 (1993) (the search for a single test is akin to a “search for the Holy Grail” (quoting Loren H. Roth et al., *Tests of Competency to Consent to Treatment*, 134 AM. J. PSYCHIATRY 279, 283 (1977))); see also, PERLIN ET AL., *supra* note 95.

<sup>116</sup> By way of example, courts routinely find mentally disabled women incompetent to engage in sexual intercourse (i.e., to lack sufficient competence to engage knowingly and voluntarily in such behavior), but just as routinely find such individuals competent to consent to give their children up for adoption. In one startling case, a court made both of these findings simultaneously about the same woman. See Michael L. Perlin, *Hospitalized Patients and the Right to Sexual Interaction: Beyond the Last Frontier?* 20 N.Y.U. REV. L. & SOC’L CHANGE 517, 538 (1993-94) (discussing research reported in Susan Stefan, *Silencing the Different Voice: Feminist Theory and Competence*, 47 U. MIAMI L. REV. 763, 805 (1993)); State v. Soura, 796 P.2d 109, 113-15 (Idaho 1990); Michael L. Perlin, *Competence to Have Sex* (unpublished manuscript), at 37-38 (discussing State v. Ortega-Martinez, 881 P.2d 231, 237 (Wash. 1994) (holding, in statutory rape case involving a woman with a mental disability, that the complainant (whom the court found incompetent to consent to having sex) was married at the time)).

<sup>117</sup> Kulynych, *supra* note 14, at 312-13.

<sup>118</sup> *Id.* at 313. Kulynych’s work is characterized as “entirely persuasive” in George Annas, *Imagining a New Era of Neuroimaging, Neuroethics, and Neurolaw*, 33 AM. J.L. & MED. 163, 168 (2007).

<sup>119</sup> Robert Michels, *Are Research Ethics Bad for Our Mental Health?*, 340 NEW ENG. J. MED. 1427, 1428 (1999).

<sup>120</sup> See, e.g., PERLIN ET AL., *supra* note 95.

<sup>121</sup> See, e.g., *Washington v. Harper*, 494 U.S. 210 (1990) (discussing the right to refuse treatment in prisons); *Riggins v. Nevada*, 504 U.S. 127 (1992) (discussing the right to refuse treatment at insanity defense trial); *Sell v. United States*, 539 U.S. 166 (2003) (discussing the right to refuse treatment in determination of defendant’s competency to stand trial); *Mills v. Rogers*, 457 U.S. 291 (1982) (state may recognize greater liberty interests for persons with mental illness than U.S. Constitution).

<sup>122</sup> Perlin, *supra* note 96, at 736.

<sup>123</sup> See, e.g., Susan Wolf et al., *Managing Incidental Findings in Human Subjects Research: Analysis and Recommendations*, 36 J.L. MED. & ETHICS 219 (2008).

<sup>124</sup> Reeves, *supra* note 6, at 92.

<sup>125</sup> Perlin, *supra* note 96, at 736. See also, e.g., *Sell*, 539 U.S. 166, 179 (2003) (discussed in *supra* text accompanying note 102).

<sup>126</sup> Reeves’s article is cited in O. Carter Snead, *Neuroimaging and the ‘Complexity’ of Capital Punishment*, 82 N.Y.U. L. REV. 1265 (2007), Richard Redding, *The Brain-Disordered Defendant: Neuroscience and Legal Insanity in the 21<sup>st</sup> Century*, 56 AM. U. L. REV. 51 (2006), and Tancredi & Brodie, *supra* note 9, but on other points.

in cases that involve individuals institutionalized against their will in matters that involve the criminal trial process, it is reasonable to predict that this will be the subject of important future consideration.

¶38 The final criminal procedure issue that I wish to discuss relates also—although from an entirely different perspective—to a question involving antipsychotic medication: what substantive impacts can that medication have on the findings of neuroimaging testing?<sup>127</sup> The answer to this question is self-evidently critical to this entire area of law and policy, because of the alleged (or at least, *perceived*) “objectivity” of such evidence, and its expected acceptance by jurors.<sup>128</sup> If antipsychotic drugging affects brain functioning—as it is *supposed* to do<sup>129</sup>—then neuroimaging tests performed on drugged defendants need to be reconsidered.<sup>130</sup> This is especially troubling, given the way that the use of neuroimaging testimony “reduces the psychosocial complexities” of the matter before the court, and “conflate[s] representation with reality.”<sup>131</sup> If the use of medication—*involuntary* medication—distorts the “pretty pictures,” jurors perceptions of “scientific reality” will be even more distorted.

¶39 I can identify at least three questions that need to be thought about in this context:

¶40 (1) Does such drugging distort the results of neuroimaging tests, as Professor Reeves suggests?

¶41 (2) If so, should such tests be performed *at all* on this cohort of defendants (or, should they only be performed after a more elaborate form of informed consent is obtained)?<sup>132</sup>

¶42 (3) In either case, what should jurors be told about this?<sup>133</sup>

¶43 Again, juror beliefs in the infallibility of neuroimaging<sup>134</sup> has to be factored into any analysis of the issues at hand. If jurors are inappropriately “seduced” by “Christmas tree phenomenon” evidence, and the pictures that are shown are not an accurate depiction or representation of the defendant’s brain at the time of the alleged crime—but rather, depict it in the aftermath of forced antipsychotic drugging—the entire enterprise becomes even more perilous.

## CONCLUSION

¶44 The issues that I have discussed in the heart of this paper—access to experts, competence to consent, and impact of antipsychotic medications—have all been the subject of intense academic and clinical interest. The debate has not been without some vitriol.<sup>135</sup> Yet, again, there has been virtually no consideration of these issues in the context of the type of testimony that is at the core of the articles in this symposium.

¶45 Given the warning signals that have been raised by commentators as to the potentiality of juror misuse and misinterpretation of neuroimaging testimony, it is, I think, all the more critical that we take seriously the issues I have raised here. I have sought to argue in this paper that there are

---

<sup>127</sup> The issue of mandatory treatment with antipsychotic drugs is raised in this context in Greely, *supra* note 13, at 1109-10.

<sup>128</sup> See, e.g., Jessica Gurley & David Marcus, The Effects of Neuroimaging and Brain Injury on Insanity Defenses, 26 BEHAV. SCI. & L. 85, 94 (2008) (“The neuroimages of readily apparent brain damage give the jurors *tangible proof* of the disorder.”) (emphasis added).

<sup>129</sup> *In re the Guardianship of Roe*, 421 N.E.2d 40, 53-55 (Mass. 1981) (comparing the administration of psychotropic medications to the use of electroconvulsive therapy, emphasizing the possible adverse side effects and potential effects on brain functioning that are attendant to the use of psychotropic drugs) (discussed in Kathleen Knepper, *The Importance of Establishing Competence in Cases Involving the Involuntary Administration of Psychotropic Medications*, 20 LAW & PSYCHOL. REV. 97, 134 n.141 (1996)). See generally, Katherine Brown & Erin Murphy, *Falling Through the Cracks: The Quebec Mental Health System*, 45 MCGILL L.J. 1037 (2000).

<sup>130</sup> Beyond the scope of this paper is an inquiry as to whether there should be any difference in the law if the aim of the drugging in question was based on the defendant’s alleged dangerousness or the desire to restore him to competence to stand trial.

<sup>131</sup> Feigenson & Sherwin, *supra* note 81, at 300.

<sup>132</sup> See Kulynych, *supra* note 14; Greely, *supra* note 13.

<sup>133</sup> *Cf.* Riggins, 504 U.S. at 130 (defendant argued that he had right to have jurors see him *not* under the influence of antipsychotic medication in his “true mental state”). The Supreme Court, in a related area, has been unsympathetic to defendants’ arguments that jurors needed more information with regards to the disposition of cases in which mental status defenses are raised. E.g., Shannon v. United States, 512 U.S. 573 (1994). Elsewhere, I characterize Shannon’s reasoning as “bizarre.” 4 PERLIN, *supra* note 16, § 9A-4.4b, at 197.

<sup>134</sup> *Cf.* Barefoot v. Estelle, 463 U.S. 880, 926 (1983) (Blackmun, J., dissenting) (expressing fear that testimony in death penalty case as to defendant’s likely future dangerousness lends “an aura of scientific infallibility [that] may shroud the evidence and thus lead the jury to accept it without critical scrutiny.”) *But see* Brickell, *supra* note 36 (questioning the empirical evidence for the proposition that jurors inappropriately defer to forensic experts).

<sup>135</sup> See, e.g., Paul S. Appelbaum & Thomas G. Gutheil, “Rotting With Their Rights On”: *Constitutional Theory and Clinical Reality in Drug Refusal by Psychiatric Patients*, 7 BULL. AM. ACAD. PSYCHIATRY & L. 306 (1979); Darold A. Treffert, *Dying with Their Rights On*, 130 AM. J. PSYCHIATRY 1041 (1973).

landmines inevitably present when we think about the use of neuroimaging in criminal trials—landmines that can infect the fairness of the trial process itself.

¶46 If an indigent criminal defendant is refused access to an independent expert in an area where juror OCS<sup>136</sup> may lead to uncritical acceptance of neuroimaging testimony (because of its visual appeal and its apparent lack of falsifiability), the fairness of the entire trial remains, to me, in question. If no attention is paid to the difficult and complex ethical issues that should surface if the question of the defendant’s competency to consent to being tested is not raised, trial fairness is a concern. And finally, if we ignore the reality that the neuroimaging evidence shown to jurors may not be an accurate depiction of the defendant’s brain at the time of the offense—but rather, a depiction of his brain at a later time when his brain biochemistry has been altered by the imposition of medication—we willfully blind ourselves to the possibility (I might say “likelihood”) that the data presented to the jury is potentially fatally flawed.

¶47 Let me pause for a second to assure you that I am not a Luddite or a nihilist. Do not interpret this as an anti-science screed, pining for the good-old-days of crime detection (perhaps based on phrenology). That is not the image that I want to leave with you. Rather, I raise these issues because I sense the power of the evidence in question, and because of my fears that its seductive dazzle may hold jurors in thrall, leading to outcomes that are both factually and legally inaccurate and constitutionally flawed. My hope is that a consideration of the issues that I am raising here will lead all of us to think a little harder about the road ahead.

¶48 I end with a return to the Bob Dylan line that serves as my title. Dylan angrily sneered at the “Masters of War,” telling us—accurately, I think, if the events of the last 45 years are to be acknowledged—that he could tell what was *really going on* in the minds of war-makers and war-profiteers.<sup>137</sup> The line—“and I see through your brain”—is an ominous one, especially in the context of the blood and death imagery that permeates the song. I use it here, because it seems to me that uncritical acceptance of neuroimaging testimony in the criminal trial process will lead jurors to *believe* that they can do what Bob said he was able to do. The difference is this: Bob was right, and the jurors are wrong.

---

<sup>136</sup> See *supra* note 84.

<sup>137</sup> BOB DYLAN, *Masters of War*, on ‘THE FREEWHEELIN’ BOB DYLAN’ (Columbia Records 1963) (“Let me ask you one question/Is your money that good/Will it buy you forgiveness/Do you think that it could/I think you will find/When your death takes its toll/All the money you made/Will never buy back your soul.”).