

NEUROSCIENCE AND POST-SENTENCE CIVIL COMMITMENT: A RESPONSE TO PROFESSORS ERICKSON AND GOLDBERG

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INTRODUCTION

Professors Erickson and Goldberg present compelling and powerful arguments against the proposed statutory scheme outlined in my prior article. Specifically, the statute is designed to provide for the involuntary commitment of individuals based upon the satisfaction of two criteria: (1) a finding of dangerousness due to the lack of volitional control; and (2) proof of some additional factor, such as a mental illness or abnormality. Detailed procedural safeguards are contained in the statute to protect the important liberty interests at stake.

In both *Kansas v. Hendricks* and *Kansas v. Crane*, the Supreme Court held that a similar statute, which provided for the post-sentence civil confinement of sexual predators, was constitutional.¹ Specifically, the Court stated that involuntary commitment is permissible when limited to “those who suffer from a volitional impairment rendering them dangerous beyond their control.”² The

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¹ *Kansas v. Hendricks*, 521 U.S. 346, 371 (1997); see *Kansas v. Crane*, 534 U.S. 407, 411-15 (2002) (discussing how *Hendricks* should be applied).

² *Hendricks*, 521 U.S. at 358.

proposed statute seeks to do nothing more, but instead of relying upon expert testimony or actuarial assessments, it relies upon those aspects of neuroscience that can arguably predict whether a person is likely to engage in further violent acts. It is worth noting that, in both Professor Erickson's and Goldberg's outstanding articles, they spend the majority of their discussion criticizing neuroscience generally, without an accompanying analysis of the proposed statute, which is designed to address precisely the types of concerns that they raise. This response will address the arguments set forth by Professor Erickson, followed by those contained in Professor Goldberg's article.

I. PROFESSOR ERICKSON'S ARGUMENTS

In his excellent article, Professor Erickson begins by arguing that the proposed statute is unnecessary because "civil commitment is already available for agents who are both mentally ill and dangerous, irrespective of their mental state at the time of the crime."³ What is interesting here is that, given his objections to the proposed statute, nowhere does Professor Erickson intimate that the extant civil commitment statutes may prove unwise, unfair or unconstitutional. Indeed, such statutes, for prolonged commitment purposes, rely almost exclusively upon expert testimony, do not require a showing of past violence, and depend significantly upon the showing of a mental illness, despite the fact that mental illness does not, in and of itself, cause or correlate with violent conduct.⁴ Furthermore, Professor Erickson acknowledges that "states are free to adopt very broad definitions of mental impairment for matters of civil commitment."⁵ In addition, Professor Erickson alludes to existing sexual predator statutes that allow for the post-sentence confinement of such offenders under strikingly similar circumstances to those provided in the proposed statute.⁶ Thus, when Professor Erickson

³ Steven K. Erickson, *The Limits of Neurolaw*, 11 HOUS. J. HEALTH L. & POL'Y 303, 304 (2011).

⁴ See *Heller v. Doe*, 509 U.S. 312, 316-17 (1993) (discussing Kentucky's involuntary commitment statutes). "Manifestations of mental illness may be sudden, and past behavior may not be an adequate predictor of future actions." *Id.* at 323.

⁵ Erickson, *supra* note 3, at 316.

⁶ See *id.* at 316.

argues that the proposed statute is “inconsistent with established principles of fairness and justice,”⁷ I would argue that it strives to address the infirmities that are present in those statutes that the Supreme Court has already deemed constitutional. I will now turn to several of Professor Erickson’s important arguments.

A. Professor Erickson Fails to Distinguish Between Cognitive Impairments and Behavioral Abnormalities

Professor Erickson claims that individuals with frontal lobe disorder, or other brain injuries that may result in the inability (to varying extents) to control behavior suffer not only from behavior abnormalities, but from cognitive impairments as well. Specifically, Professor Erickson asserts that “the segmenting of cognition from behavior that Lamparello conveniently utilizes is misplaced: there is no wall separating cognition from behavior . . . [w]hatever neurological impairment might touch upon behavior invariably taps cognition.”⁸ As Professor Erickson explains, “control comes not from exogenous pharmaceuticals but from contemplation and perseverance.”⁹

This argument serves Professor Erickson well because it allows him to argue that the proposed statute is unnecessary due to relevant insanity defenses that already take this condition into account. Specifically, “[w]hile jurisdictions vary, many subscribe to what is known as the volitional prong of the insanity test . . . [where] an agent is not responsible if she, due to mental illness or defect, is unable to conform her conduct to the requirements of the law.”¹⁰ In other words, as Professor Erickson explains, “responsible action requires an agent who can reasonably control her conduct[, and a]cts are not morally blameworthy when they are the result of mental illnesses that render an agent unable to control herself”¹¹

The problem with Professor Erickson’s argument is that, for

⁷ *Id.* at 319.

⁸ *Id.* at 315–16.

⁹ *Id.* at 316.

¹⁰ *Id.* at 312.

¹¹ *Id.*

those individuals with frontal lobe disorder, there may be a loss of impulse control, but still a cognitive understanding that a specific action transgresses moral or legal boundaries.¹² Indeed, “frontally-damaged individuals typically do not lack understanding, they lack behavioral control.”¹³ As Professor Redding explains, frontal lobe disorder “provides an excellent example of how individuals can be cognitively intact yet have substantial impairments in impulse control.”¹⁴

This has grave implications for those brain-injured individuals who seek to invoke the insanity defense because, contrary to Professor Erickson’s assertion, under the McNaghten test, jurisdiction depends upon the individual’s ability to appreciate the wrongfulness of her conduct.¹⁵ As Professor Redding explains, it “excludes from exculpation the defendant who knew right from wrong yet could not control his or her behavior.”¹⁶ As a result, in “the thirty-two states lacking a control test for insanity, defendants with FLD cannot plead insanity due to impaired impulse control, leaving most without a viable insanity plea under prevailing cognitive tests for insanity.”¹⁷ Furthermore, five states have abolished the insanity defense entirely.¹⁸ Accordingly, in the majority of jurisdictions, the criminal law does not, based on the inability to control behavior, provide those with frontal-lobe disorder a cognizable insanity defense at trial.¹⁹

¹² See Richard E. Redding, “The Brain-Disordered Defendant: Neuroscience and Legal Insanity in the Twenty-First Century,” 56 AM. U. L. REV. 51, 52-53 (2006).

¹³ *Id.* at 53

¹⁴ *Id.* at 90.

¹⁵ *Id.* at 81.

¹⁶ *Id.* at 86.

¹⁷ *Id.*

¹⁸ *Id.* at 85.

¹⁹ *Id.* at 53.

B. Professor Erickson Fails to Distinguish a Neurological Impairment From a Mental or Psychological Disorder

Professor Erickson argues that “[w]hether an agent lacks control over his behavior because of a psychological disorder or a neurological injury is a distinction without a difference.”²⁰ Professor Erickson uses this premise to assert again that the propose statute is unnecessary, as “[s]ubstantive criminal law in most jurisdictions already affords such agents a plea of non-responsibility . . . [or] civil commitment is already available for agents who are both mentally ill and dangerous . . .”²¹ Put differently, “dispensing with the neuroscience in Lamparello’s proposal reveals that it is, in fact, very similar to existing civil commitment statutes, which can do the work without the necessity of new statutory frameworks.”²²

As quickly as he attempts to group them together, Professor Erickson provides the necessary distinctions. First, Professor Erickson asserts that “the root cause of that harm [resulting from major mental illnesses] is generally an inability of the agent to be guided by reason, usually because of grossly disorganized thinking or perceptual disturbances.”²³ While this may play a role in those individuals afflicted with frontal lobe disorder, the more pertinent problem lies in the inability to exercise volitional control. As Professor Redding explains, “[t]hrough advances in forensic neuropsychological assessment and neuroimaging, the ability of mental health professionals to assess FLD and its impact on impulse control is now sufficiently established . . .”²⁴

Stated simply, the effects that mental illness and frontal lobe disorder have on individual behavior are very different.²⁵

²⁰ Erickson, *supra* note 3, at 304.

²¹ *Id.*

²² *Id.* at 309.

²³ *Id.* at 308.

²⁴ Redding, *supra* note 12, at 101.

²⁵ See *id.* at 90 (suggesting cognitive defects associated with mental illness may not exist in FLD patients); Adam Lamparello, *Using Cognitive Neuroscience to Predict Future*

Furthermore, existing doctrines in the criminal law, including both the insanity defense (which, in most jurisdictions requires a showing that an individual did not appreciate the wrongfulness of his conduct), and civil commitment statutes (which require a showing of mental illness), are likely insufficient for the brain-injured individual.²⁶ Frontal lobe disorder is not listed in the DSM-IV as a mental illness.²⁷ It would be difficult to cover those with brain-injuries under the "mental illness" prong of civil commitment law because it results in behavioral, not cognitive impairments.²⁸

Professor Erickson's argument would fare better if it were more specific. There are a vast number of psychological disorders, whether it is depression, bi-polar disorder, schizophrenia, and the like, and each illness has different effects and implications for the individual.²⁹ This could be complicated by the administration of the many medications that are used to treat these various disorders.³⁰ However, Professor Erickson makes no distinction between any psychological disorders whatsoever, and simply assumes that there exists somewhere, someplace a psychological disorder that causes similar problems to those that stem from frontal lobe disorder. Until Professor Erickson can provide some type of evidence to support this claim, his assertion is dubious. I would assert that no such evidence is available, though, because psychological disorders are the result of cognitive, rather than behavior impairment, a distinction that is not "without a difference."³¹

Dangerousness, 42 COLUM. HUM. RTS. L. REV. 481, 521-23 (2011).

²⁶ Redding, *supra* note 12, at 97; *see also* Michael J. Leiber & Sean Anderson, *A Comparison of Pre-Reform and Post-Reform Civil Commitment Decisionmaking in Dane County, Wisconsin*, 20 NEW ENG. J. ON CRIM. & CIV. CONFINEMENT 1, 1-20 (1993).

²⁷ *See* AM. PSYCHIATRIC ASS'N, DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS (DSM-IV-TR) 13-26 (4th ed. 2000) (showing the list of disorders covered by DSM-IV-TR does not cover frontal lobe disorder).

²⁸ *See* Redding, *supra* note 12, at 53.

²⁹ *See id.* at 13-26, 34-35 (showing wide range of mental disorders and degrees of impairment).

³⁰ *See, e.g.*, ABILIFY® (aripiprazole), <http://www.abilify.com> (last updated June 2011). One of the most common medications to treat bi-polar disorder and schizophrenia is Abilify. *See id.*

³¹ Erickson, *supra* note 3, at 304.

C. Professor Erickson Attacks The Proposed Statute By Attacking Neuroscience Generally

What is quite interesting is that nowhere in his article does Professor Erickson even discuss—directly or indirectly—the specifics of the proposed statute. In fact, the statute is designed to protect precisely the type of liberty and fairness interests that Professor Erickson discusses. The problem is that Professor Erickson fails to say why the proposed statute fails to safeguard these interests. Instead, he opts to attack neuroscience, and for the most part, does so in a generalized fashion.

For example, Professor Erickson criticizes neuroscience because of its claim that it can “make predictions without the need for examinations of individual behavior; rather, forecasts of personal propensities are achieved by mere examination of neuronal tissue.”³² In addition, Professor Erickson asserts that, as a consequence, “there is no need to wait until someone acts, because we can define someone as dangerous based simply on a trait that they possess: their dangerous mind.”³³ Professor Erickson then goes one step further, stating, “[t]he ability of neuroscience to make predictions about future conduct by mere inspection of one’s physical attributes should be broadly employed . . . under Lamparello’s view.”³⁴

These criticisms would be valid except for the fact that the proposed statute goes to great lengths to address and protect each and every one of these concerns. First, the examination of individual, rather than group behavior, is the hallmark of the statute. Under the statute, the State must demonstrate, by clear and convincing evidence, that an individual suffers from a brain injury, such as frontal lobe disorder, that has caused him to experience a loss of volitional control. It is not—and could never—be enough for the State to assert that, because those with frontal lobe disorder may suffer from a volitional impairment, a particular individual should be subject to post-sentence confinement. This would be unconstitutional and unjust.

³² *Id.* at 308.

³³ *Id.*

³⁴ *Id.*

The State's burden to demonstrate an individualized loss of behavioral control requires more than a demonstration of propensity; it requires a showing that, because of specific acts of violence (other than those which resulted in the initial conviction), post-sentence confinement is warranted. Thus, we are not simply looking at neuronal tissue, biological traits, dangerous minds or physical attributes. Liberty requires much more. The State must show that *this* individual, because of a brain abnormality or defect, along with acts of violence, has substantial difficulty in controlling his behavior. The proposed statute does not stop there. For example, the State must design individualized treatment plans, and report to the Court on a frequent basis regarding the efficacy of such plan. The individual subject to confinement is also entitled to petition for release at any time.

These, and other procedures, are implemented to address precisely the concerns that Professor Erickson raises. Surprisingly, Professor Erickson never discusses the proposed statute in any detail. One must wonder whether he would deem these protections sufficient. What is important, as stated by Professor Erickson, is that the Supreme Court has already found them constitutional in *Hendricks*, holding that "volitional impairment linked with past conduct and potential future harm was all that was necessary for civil commitment."³⁵ Ultimately, it is not clear whether his principle argument is that the neuroscience is unreliable, or that the procedures in the proposed statute are problematic.

D. Individuals Can Be Both Disabled and Blameworthy

Professor Erickson argues that we cannot have it both ways—individuals are either disabled or blameworthy. However, this claim is dubious. It turns on how we define the term "disabled." Of course, "disabled" can refer to physical or psychological conditions. For purposes of this article, it obviously refers to brain injuries, primarily those which affect the frontal lobe. The question, therefore, is whether those individuals who suffer brain injuries and a concomitant loss of behavioral control can be both blameworthy and

³⁵ *Id.* at 309.

disabled. The answer is yes.

As Professor Erickson effectively explains, neuroscience cannot explain the severity of volitional impairment that an individual with frontal lobe disorder experiences. He states, “[d]espite all of the neuroscience studies on executive function, frontal lobes, and impulsivity, we still have little guidance on who truly lacks control over their conduct.”³⁶ Furthermore, “[w]e simply have no way of knowing which offenders with neurological impairments might pose more control problems than others.”³⁷ Additionally, “it remains unsettled how much control is necessary for culpability.”³⁸ Admittedly, this is complicated by the fact that neuroscience has yet to proffer empirical evidence regarding what might cause a “sustained inability to exert control over one’s own conduct.”³⁹

There is no doubt that Professor Erickson’s arguments are true and meritorious. However, it does not follow that individuals cannot be blameworthy and disabled. What it does mean is that there can be no categorical rule either refusing to admit evidence of volitional impairment as a mitigating factor, or admitting evidence rejecting the notion of volitional impairment altogether. In other words, the inability to control one’s behavior is still relevant to conduct constituting a violation of the criminal law. Also, if we are to accept Professor Erickson’s arguments as true, then the very “control tests”⁴⁰ for insanity that he claims are already available in substantive criminal law should be abandoned. Without knowing the degree to which an individual can or cannot control his behavior, it would be difficult, if not impossible, to raise this defense successfully. In the majority of states, there must be a showing that an individual did not appreciate the wrongfulness of his conduct.⁴¹ I remain curious how Professor Erickson believes that the existing doctrines in criminal law

³⁶ *Id.* at 314.

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.* at 315.

⁴⁰ *Id.* at 314.

⁴¹ See, e.g., Rita D. Buitendorp, *A Statutory Lesson from “Big Sky Country” on Abolishing the Insanity Defense*, 30 VAL. U. L. REV. 965, 975 (1996).

can accommodate brain-injured defendants.

What the criminal law does do, however, to show that defendants can be both blameworthy and disabled, is to recognize that individual attributes can serve to mitigate punishment. For example, adolescent brains and, in particular, the frontal lobes have been shown to be less developed than those of adults.⁴² Thus, the Supreme Court has found that adolescents convicted of murder cannot be subject to the death penalty.⁴³ There are countless examples where personal, environmental and biological factors have served to mitigate punishment. Whether it is a defendant's family background, intelligence quotient, specific neurological disorder, heat of passion at the time of crime, and the like, the criminal law recognizes that some people convicted of the same crime are less blameworthy than others. This is not uncommon or the subject of much dispute.

The question then becomes whether it is appropriate to call these individuals "disabled." Of course, less blameworthy does not translate into disability. However, it does mean that a person's actions resulted from some cause or catalyst that mitigated responsibility. The term "disability," as it is employed by Professor Erickson, and applied in this context, might simply mean that the individual suffered from a condition or circumstance that, to some degree, rendered that individual more susceptible to committing a criminal act, or unable to conform his behavior to legal norms. However, despite the apparent "disability," that individual is still blameworthy. The individual may receive a reduced term of imprisonment, but is still subject to the retributive aims of the criminal law. Mitigation is precisely the point at which blameworthiness and disability come together.

Unfortunately, though, this does little to help those afflicted with serious brain injuries. Mitigation of punishment does nothing to address defendants who have at least some difficulty controlling their behavior. A reduced prison term will have no effect on the factors that caused, or were at least related, to the acts which transgressed a particular law. That is where the proposed statute is

⁴² Redding, *supra* note 12, at 64.

⁴³ *Roper v. Simmons*, 543 U.S. 551, 575 (2005).

relevant. Rehabilitation (medication and cognitive behavioral therapy) is necessary to compliment mitigation because it serves an important utilitarian purpose. If the brain-injured individual has difficulty controlling behavior, as evidenced by past overt acts, then post-sentence confinement, according to the stringent procedures set forth in the statute, is constitutionally permissible.

Of course, it goes beyond satisfying constitutional parameters; it is about implementing a system that responds to individual needs and the collective good. The challenge is to ensure that individuals are treated individually. That is the primary aim of the proposed statute. If we were to relegate evidence of brain-injury solely to the punishment context, we would do nothing to solve the problem that neuroscience has already identified. We should use this information to carefully assess those individuals whose brain injuries and actions warrant intervention, and do so in accordance with fairness and due process.

II. PROFESSOR GOLDBERG'S ARGUMENTS

Professor Goldberg's article puts forth powerful arguments and presents serious challenges to neuroscience and its use in the criminal context.

A. Neuroscientific Findings Are Not Objective and Instead Result From Subjective Interpretation.

To begin with, Professor Goldberg asserts that functional magnetic imaging (fMRI) "does not provide objective proof of anything at all, let alone human behavior."⁴⁴ Instead, Professor Goldberg claims that [t]he process of making neuroimages is irreducibly and ineliminably subjective."⁴⁵ In support of this contention, Professor Goldberg argues that there are many subjective factors involved in the neuroimaging process, such as "transformation of the image into a written report, and the use of the

⁴⁴ Daniel S. Goldberg, *Against Reductionism in Law & Neuroscience*, 11 HOUS. J. HEALTH L. & POL'Y 321, 329 (2011).

⁴⁵ *Id.*

scans and the written report by referring physicians"⁴⁶

More specifically, subjectivity is evidenced by the fact that "MRI technologists make a number of decisions and assumptions that frame the area that will appear in the image, choices including slice thickness, field of view, and number of slices."⁴⁷ As a result, "fMRI techniques are not objective, but are very much contingent on a number of critical subjective features, choices, and assumptions made in the production of neuroimages themselves, let alone the interpretation given."⁴⁸ Ultimately, as Professor Goldberg argues, neuroscience cannot achieve "mechanical objectivity,"⁴⁹ namely it cannot remove "human subjective influence from the scientific process[,] and . . . represent[] the exact object of inquiry"⁵⁰

Professor Goldberg's criticism is certainly not without merit. However, in many respects, it sweeps too broadly. To begin with, let us assume *arguendo* that both magnetic resonance imaging (MRI) and fMRI have subjective components, such that in their construction and interpretation, they depend upon the analysis and judgment of medical professionals. This fact, in and of itself, is not sufficient to cast doubt on each and every neuroscientific finding as it relates to human behavior, and how that relation may prove relevant in a court of law.

Obviously, subjectivity is present in nearly all scientific and medical undertakings, which have substantial consequences on human beings. Whether it is the diagnosis of a serious psychological illness, a personality disorder, cognitive impairment, terminal medical condition and the like, the ultimate decision on what *exists* is based upon the perception and judgment of the individual, even though we do not know whether our perception or judgment is consistent with the objective reality of what *is* happening. This subjectivity, or lack of mechanical objectivity, while not without

⁴⁶ *Id.* at 330 (quoting KELLY JOYCE, *MAGNETIC APPEAL: MRI AND THE MYTH OF TRANSPARENCY* 61 (2008)).

⁴⁷ *Id.* at 330-31.

⁴⁸ *Id.* at 331.

⁴⁹ *Id.* at 327.

⁵⁰ *Id.* at 328.

problems, is not enough to doubt the promise of some neuroscientific findings.

Subjectivity should be considered far more problematic depending upon the context within which it may be exercised. More specifically, when the analysis or interpretation of an object, image or physical condition depends on subjective components, it can become particularly troubling when the margin of error is high, the potential for disparity high, and likelihood of resulting harm significant. In other words, subjectivity can be applied in situations where, through experience, we are more aware of the properties of the object we are observing and the conditions that it may cause, or where we know little about such object, thus increasing the participation of human subjectivity and thus leaving a heightened margin of error and potential for harm.

For example, if ten behavioral experts were asked whether a particular defendant may become violent if released from prison, each might come to a different conclusion. Subjectivity here is very apparent because, based on various factors, we still have difficulty predicting who will or may become violent. Thus, the margin of error would be high, and the potential harm (deprivation of liberty) significant. However, if you asked ten nurses to take your blood pressure, they would all likely arrive at a similar reading. While this procedure still involves subjective interpretation, the margin of error is low based upon what we know about the body itself, and the professional administering the procedure. In each of these examples, there can be no claim to mechanical objectivity. Thus, even if we concede that neuroscience involves *some* subjectivity, we would need to examine in more depth the specific areas of the brain that are being studied, and methods by which information is being obtained.

In so doing, it becomes apparent that, while some areas of neuroscientific inquiry may be in very early stages, and still vulnerable to a large degree of subjectivity, others areas fall closer to the mechanical objectivity that Professor Goldberg describes. Specifically, that area lies in the diagnosis, via MRI, of damage to the pre-frontal cortex/frontal lobe. Neuroscientists have discovered that damage to this area, through the detection of tumors or lesions, can result in rage attacks, an inability to control behavior, aggressiveness,

and low conformance to societal norms.⁵¹ It is also known that this condition can be caused, *inter alia*, by parental abuse, exposure to toxins, poor nutrition, poor socio-economic conditions, fetal mal-development, and the like.⁵² Frontal lobe disorder is not a "new condition," but a fairly common brain injury that has specific causal factors as well as symptoms.⁵³

The proposed statute focuses directly upon individuals afflicted with frontal lobe disorder. It does not incorporate any of the other, young but promising aspects of neuroscientific research, although it describes them in detail in the paper, and makes very optimistic statements about these findings. However, the statute does much more. It does not seek post-sentence confinement for individuals based upon a condition that they possess. It seeks confinement based upon prior acts that have been committed, which demonstrate, by clear and convincing evidence, that they lack behavioral control. Furthermore, even if commitment is warranted, there are stringent procedures governing the treatment and length of confinement.

Thus, when we discuss subjectivity we need to address the specific area of neuroscientific research that we claim is prone to subjective bias. Currently, as stated in my prior article, I discuss a method called functional magnetic resonance imaging, which measures the relationship between neuronal activity and regional blood flow.⁵⁴ In other words, neuroscientists believe that when blood flows to a particular area of the brain during a specific activity, this area is causally related to that activity. On this point I will concede to Professor Goldberg that there is a high degree of subjectivity involved, and much more to learn about the brain and its functions. Thus, the use of fMRI at this point needs further exploration.

⁵¹ See e.g., Erica-Beecher Monas & Edgar Garcia-Rill, *Genetic Predictions of Future Dangerousness: Is there a Blueprint for Violence*, 69 LAW & CONTEMP. PROBS. 301, 328-29 (2006); see also Lamparello, *Using Cognitive Neuroscience to Predict Future Dangerousness*, *supra* note 25, at 481-82; Redding, *supra* note 12, at 58, 61-62.

⁵² John Matthew Fabian, *Forensic Neuropsychological Assessment and Death Penalty Litigation*, 33 CHAMPION, Apr. 2009, at 25-26 (Apr. 2009).

⁵³ See Redding, *supra* note 12, at 57-60.

⁵⁴ Lamparello, *Using Cognitive Neuroscience to Predict Future Dangerousness*, *supra* note 25, at 481, 503-04.

Ultimately, therefore, Professor Goldberg's argument that neuroscience is inherently a subjective activity is true – to some extent.

B. Human Action and Behavior is Not Reducible to the Brain

Professor Goldberg next argues that we cannot ascribe human actions and behavior simply to brain activity. As he states, “our brains are not us.”⁵⁵ Furthermore, “the mind emerges from and is shaped by interaction among the brain, body and environment.”⁵⁶ As such, while it may be true that the “[b]rain is a *sine qua non* for mind,”⁵⁷ it is also true that “mind is not reducible to brain.”⁵⁸ Thus, the mind, self and brain constitute a complex interaction in the human experience, with the mind being “a diverse array of abilities exercised by a person.”⁵⁹ Accordingly, as Professor Goldberg argues, the “conclusion that consciousness is equivalent to nothing but brain,”⁶⁰ is erroneous and contrary to our own subjective experiences.

Professor Goldberg presents a powerful argument against the contention that all human behavior can be explained on the basis of neuronal activity and other functions located within the brain. We are more than our brains, and cannot explain our behavior simply by stating “my brain made me do it.” Of course, nowhere in my Article did I—or would I—make this argument. Like Professor Goldberg, I do not believe it to be true. Violence is also a product of social and environmental factors.⁶¹

⁵⁵ Goldberg, *supra* note 44, at 336 (quoting Walter Glannon, *Our Brains are Not Us*, 23 *BIOETHICS* 321, 321 (2009)).

⁵⁶ *Id.* (quoting Walter Glannon, *Our Brains are Not Us*, 23 *BIOETHICS* 321, 321 (2009)).

⁵⁷ *Id.* at 332 (quoting Daniel S. Goldberg, *Subjectivity, Consciousness, and Pain: The Importance of Thinking Phenomenologically*, *AM. J. BIOETHICS*, Sept. 2009, at 14).

⁵⁸ *Id.* (quoting Daniel S. Goldberg, *Subjectivity, Consciousness, and Pain: The Importance of Thinking Phenomenologically*, *AM. J. BIOETHICS*, Sept. 2009, at 14).

⁵⁹ *Id.* at 335 (quoting Michael S. Pardo & Dennis Patterson, *Philosophical Foundations of Law and Neuroscience*, 2010 *U. ILL. L. REV.* 1211, 1216 (2010)).

⁶⁰ *Id.* at 332 (quoting Daniel S. Goldberg, *Subjectivity, Consciousness, and Pain: The Importance of Thinking Phenomenologically*, *AM. J. BIOETHICS*, Sept. 2009, at 14).

⁶¹ See Redding, *supra* note 12, at 56.

What the article and proposed statute stands for, however, is the proposition that the brain can, in certain instances, have *more* of an influence over our behavior than previously thought. The example of individuals afflicted with frontal lobe disorder underscores this point. Some individuals with this disorder may be prone to violent conduct because the frontal lobe/pre-frontal cortex is responsible, at least in part, for rational judgment, impulse control, and inhibiting emotional responses from the amygdala. In such an instance, I am not stating that the brain is solely responsible for human behavior, and that all human actions can be explained away through an examination of cerebral blood flow and fancy images. What I am saying, though, is that damage to a particular area of the brain can, in some instances, result in specific and predictable conduct. This conclusion, which is the basis for the proposed statute, is a far cry from arguing that “my brain made me do it.” It is a recognition that the brain, along with other factors, play a significant role in how we act, how we feel, how we perceive, and how we know. The proposed statute reflects this fact and strives to effectuate post-sentence confinement for violent offenders not because of what they have (frontal lobe disorder), but because of what they have done (violent acts other than that for which they have been convicted).

C. Recent Neuroscientific Evidence is Merely a new Version of Past Attempts to Find A Biological Cause For Human Behavior, and Will Have Dangerous Social Consequences.

Professor Goldberg’s final argument can be summarized as follows: what we are doing now has already been tried before, has failed, and has had disastrous social consequences. In essence, there is nothing “new” about neuroscience. Professor Goldberg provides a brief but compelling history of scientific efforts to find a biological cause of violence. For example, in the nineteenth century, the field of phrenology advanced the possibility that “bumps on the exterior of the skull might correspond with personality [and] temperament . . .”⁶² In 1911, Cesare Lombroso asserted that “the neural structure of criminals was entirely different from that of law-

⁶² Goldberg, *supra* note 44, at 339.

abiding persons”⁶³ In fact, Professor Goldberg explains, the notion of frontal lobe disorder as a root cause of violence goes back to 1935, where lesions on the frontal lobes of monkeys resulted in decreased hostility towards researchers.⁶⁴ Ultimately, all of the previous attempts to explain violence have failed. In addition, they have had severe social consequences which resulted in, among other things, discrimination against disabled persons.

Professor Goldberg presents a compelling argument, and warns of the dangers that may ensue if we seek to use neuroscientific evidence prematurely to explain certain aspects of human behavior. This is even more problematic if we use neuroscience for the purpose of arguing that human actions are reducible to the brain and its neuronal activity. We need to proceed very carefully. More importantly, we need to recognize that human behavior is a complex enterprise, which results from and is motivated by environmental factors, psychological states, socio-economic factors, and, yes, biological roots. Perhaps the best answer that neuroscience can provide is that our brains play an important role in human behavior, and as a result, produce a more complete understanding of our behaviors. The one thing to avoid, as Professors Erickson and Goldberg explain, is an attempt to say that “we are our brains.” We are more than that.

CONCLUSION

Most would agree that, if we could predict with perfection whether an individual would commit a criminal act upon release from incarceration, then post-sentence confinement procedures might constitute good policy. To take matters one step further, if we could predict with perfection those who would commit criminal acts before their actual occurrence, then there would likely be a robust discussion regarding whether a deprivation of liberty is constitutionally permissible. However, we will likely never see the day when those two scenarios will exist. Instead, we have limited

⁶³ *Id.* at 340.

⁶⁴ *Id.* at 341.

knowledge of human behavior, particularly when it comes to assessing what a person may do in the future. Neuroscience, however, has provided insight on how we may look into the human brain and detect, to some extent, whether a person is likely to engage in further acts of violence. It is important to proceed cautiously, but to proceed nonetheless, because, unlike prior attempts, I would argue that today's scientific efforts to uncover the biological roots of violence have much more promise than their predecessors.