

## EDITOR'S INTRODUCTION

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Criminal culpability generally requires a guilty mind, in addition to a criminal act. An offender's state of mind, cognitive capacity, and level of volitional control affect questions of appropriate punishment. Traditionally, judges and juries have made these decisions on the basis of subjective and unreliable evidence, like personal narrative, eyewitness testimony, and moral, values-based intuition. New developments in neuroscience and technology offer the promise of more evidence-based, individualized approaches that could enhance fairness and accuracy, and courts have already begun to admit neuroscience evidence for various purposes, while struggling to decide when and how its use in the criminal justice system is appropriate.

The theme of this issue of the *Review* is *neurolaw*: the relevance of neuroscience, mental illness, and mental states to the criminal law. Neuroscience has already begun to have profound impacts on criminal law, the legal academy, and the study of law. The tricky question for the criminal law is how to embrace neuroscience developments that can inform and enlighten criminal practice without misusing neuroscience evidence in a way that distorts it or overstates its relevance.

In *Nine Neurolaw Predictions* Judge Morris Hoffman predicts, despite the all-or-nothing claims of neuroscience's proponents and critics, respectively, that neuroscience's impact on the criminal law will be sporadic rather than revolutionary or non-existent, with significant, but not paradigm-shifting, impacts in a few discrete areas and little impact anywhere else. He predicts that, in the near future, neuroscience will be able to

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detect chronic pain accurately and reliably, to diagnose legally relevant psychiatric conditions like schizoaffective disorder and PTSD, but that these neuroscience-based diagnoses will not supplant traditional clinical methods. He predicts that, in the longer term, neuroscience will develop accurate and reliable lie detection methods and methods of assessing the accuracy of autobiographical memories of faces and places, as well as a more nuanced understanding of the relationship between intoxication, intent, and risk assessment, and undercut the traditional distinction between knowledge and awareness of risk, but that many of the potential gains for lie detection and assessing the accuracy of eyewitness identifications will be lost to the criminal law's resistance to supplanting the jury's assessments of truth, accuracy, and credibility. Finally, he predicts that neuroscience will never solve the mystery of dependence in the context of addiction, or convince the law to abandon notions of free will or responsibility.

One of neurolaw's enduring questions is that of the appropriate relationship between a demonstrable brain disease that contributes to criminal behavior and the law of excuse. In *The Blame Game*, Andrea Lyon argues that we should accept the prevalence of mental illness in the criminal justice system and provide treatment for mentally ill offenders rather than viewing them, erroneously, as inherently dangerous, morally failed, or the subjects of a defense attorney's tactical trickery. She describes the "emotional subtext" of a trial in which a defendant has raised an insanity defense, in which the jurors assess the nature of the crime and the motive of the accused, and balance the harm to the victim against the accused's perceived suffering in determining whether to credit the defense. She concludes by stressing the importance of listening to the stories of individuals in the criminal justice system who suffer from mental illness in order to develop a more informed view of its relevance.

Another of neurolaw's persistent challenges is developing an informed understanding of the concept of free will. In *Capital Punishment, Retribution, and Emotion: an Evolutionary Perspective*, Anthony Walsh and Virginia Hatch explore the emotions behind the retributive urge in the imposition of the death penalty in the United States. They argue that the retributive urge is so strong because it engages the most primitive emotions, which served adaptive purposes over the course of human evolution. They conclude that admonitions to put emotions aside in discussions about the death penalty are misguided because the emotions evoked in capital cases (disgust, anger, sympathy, and the desire for justice) evolved for the

purpose of maintaining group stability and survival by punishing freeloaders, and that neuroscience evidence indicates that, when rationality and emotion yield conflicting judgments, the latter will almost always triumph.

Neuroscience has also informed the strategic decision making of criminal justice participants. It has previously been established that the mental state of the offender and the severity of the harm caused are the two primary predictors of punishment decisions generally, but these studies fail to take into account gender disparities in sentencing decisions. In *The Impact of Neuroscience Data in Criminal Cases*, Valerie Hardcastle, MK Kitzmiller, and Shelby Lahey argue that one reason for the mixed and contradictory results in studies attempting to assess gender disparities in sentencing is that female defendants who commit similar crimes are treated differently depending upon whether their defenses portray them as suffering from a serious mental deficiency, rather than as a “normal” person who got caught up in abnormal circumstances. They present data that suggest that judges and juries use neuroscience data to support their preconceived notions of what “bad” women are like, even when defense attorneys present these data to support claims that their clients are less culpable. They conclude, therefore, that neuroscience data can act as a double-edged sword: suggesting a defendant’s blameworthiness even when it is presented in mitigation.

Neuroscience has the potential to explain why individuals commit atrocious crimes and to help human decision makers determine what to do with them when they do. The challenge that lies ahead for criminal law is to find a meaningful dividing line between individual human beings and their brains.