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Guilty, With An Explanation

An assessment of the role of brain science in criminal trials.
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Many years after her then sixty-five year old father, who had no history of violent behavior, was accused of strangling her step-mother and throwing her body out of the window of their apartment in Manhattan, Joni Weinstein discovered that references to him (under the pseudonym Spyder Cystkopf) continued to appear in dozens of publications devoted to neuroscience and law. Although Joni understood that reasonable people would look at the empty space in Herbert Weinstein’s brain and conclude that it was not functioning normally, she agreed with the jury that he “bears responsibility for what he did and deserves prison time.”

In The Brain Defense, journalist Kevin Davis, an editor of the American Bar Association Journal and the author of Defending the Damned and The Wrong Man, uses the Weinstein murder as the centerpiece of an informative analysis of the evolving – and contentious – role of brain science in criminal cases. As he assesses testimony based on functional magnetic resonance imaging (fMRIs), positron emission tomography (PET scanners) and quantitative electroencephalography (QEEG) introduced in behalf of defendants with traumatic brain injuries, post-traumatic stress disorder, concussions from football and wrestling, injuries induced by tumors, drug or alcohol abuse, and adolescents whose brains were not fully developed, Davis asks a perennial and still-perplexing question: how do we define responsibility and free will?
The courtroom, Davis points out, is often the scene of a culture clash between lawyers, who often are willing to stretch neuroscience to fashion a “brain defense,” and the more cautious and measured approach of researchers. Increasingly, moreover, judges and juries must assess the conflicting testimony of expert witnesses – and then decide guilt or innocence and, if the former, an appropriate sentence.

The fundamental problem, Davis emphasizes, is that neuroscience is not all that helpful in explaining how – and whether – impaired brain function “causes” an individual to commit a crime. The expert witnesses testifying for Herbert Weinstein, for example, acknowledged that violence “does not necessarily follow from frontal lobe dysfunction.” And prosecutor Zach Weiss reminded the jury that Weinstein committed no acts of violence before or after he killed his wife.

Davis reveals as well that although psychopathic killers have similar brain structures, many, many other people exhibit the same patterns. Indeed, while serving as a member of a control group for a study of Alzheimer’s patients, James Fallon, a professor of psychiatry at the University of California at Irvine, discovered that he “showed the characteristic pattern of a psychopath’s brain – decreased activity in areas of the frontal and temporal lobes,” which are linked to deficiencies in empathy, morality and self-control.”

Davis underscores the difficulties of using neuroscience in cases that pivot on the legal definition of responsibility, rationality and intent. He suggests that neuroscience has less value in assigning blame or supplying excuses than in illuminating how we should punish people, rehabilitate them, and most important, how we understand the context in which a defendant processed information when deciding whether to commit a crime. Along with David Eagleman, a professor at Baylor College of Medicine who has built the NeuroLaw Criminal Record Data Base, which contains more than thirty million records obtained through the Freedom of Information Act, Davis believes that given the complex interaction of genetics and environment, “neuroscience has a hard time determining whether we have free will or not.” Neuroscience can, however, contribute significantly to an “evidence-based forward-looking legal system” that may help identify good candidates for rehabilitation by developing tests to measure empathy, aggression, planning and risk taking – and programs “to give the frontal lobes practice in squelching impulsive behavior.”

As it progresses, Davis speculates, neuroscience might replace people’s understanding of free will with the notion that many of our actions “are not entirely under our control,” and stimulate movement toward a more pragmatic, less moralistic approach as we judge and sentence them and decide when – and under what conditions – to permit convicted criminals to return to society.