

Introduction to this Issue: The Neuroscience and Psychology of Moral Decision Making and the Law

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On June 12, 2008, in Mumbai, India, a judge convicted Aditi Sharma of murder based in part on results of the Bain Electrical Oscillations Signature test (BEOS). This technology involves electroencephalography and software developed by Chanpadi Raman Mukundan, who directed psychology at the National Institute of Mental Health and Neurosciences in Bangalore, India. Mukundan's BEOS technique was based upon methods developed at U.S. universities by neuroscientists such as Emanuel Danchin, Lawrence A. Farwell and J. Peter Rosenfeld. Ms. Sharma, who was accused of killing her former fiancé, agreed to undergo the BEOS test. With the electroencephalography in progress, investigators read aloud her account of what happened interspersed with neutral statements. In relating EEG changes to statements read and heard by Ms. Sharma, it was inferred that she had "experienced knowledge" of the murder. Judge S. S-Phansalker-Joshi provided within his opinion an extensive apologia of the BEOS technique and its value in corroborating other sources (Giridharadas, 2008).

If such a relatively untested brain mapping technique can be admitted into evidence and used for criminal conviction in the world's largest democracy, what next? This one case illustrates the topical importance of examining forensic applications of neuroscientific findings, and their strengths and limitations both as scientific advancements and in terms of reliability and relevance to legal questions such as those concerning criminal responsibility.

Fundamental for criminal responsibility are intentionality, rationality, self-control and consciousness. The formation and implementation of intent, which is the core function of the human will (Felthous, 2008), relies on the capacities for rationality, self-control and consciousness. Voluntariness, too, is often considered an element of criminal responsibility even if not explicitly stated in the federal penal code and several state penal codes (Denno, 2002). Like consciousness, voluntariness is defined variously, and some statutes using the term do not define it. Two common interpretations of the descriptor "voluntary" are "1. Done by design or intention 'voluntary act' [and] 2. Unconstrained by interference; not impelled by outside influence 'voluntary statement'" (Garner, 1999). Thus, voluntary can mean done with intent, self-control and/or free of external control, but, Denno (2002) argues, done consciously.

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Is it generally assumed that one must be conscious to have criminal intent. Like the voluntary/involuntary dichotomy, consciousness and unconsciousness are treated as two different, mutually exclusive states of mind. An agent is either conscious (awake, alert and aware) or not, and if not the individual is unconscious, or not conscious. The conscious/unconscious dichotomy was thought to have been accepted by drafters and revisers of the Model Penal Code because of Freudian influence through the eminent psychiatric committee members Manfred S. Guttmacher, Windred Overholser, Sheldon Gluck, and Herbert Wechsler. For decades leading up to the initial drafting of the Model Penal Code, the two major systems for understanding human behavior were Freudian psychoanalytic theory and behaviorism; the latter did not recognize the mind, the self, or the unconscious. The Unconscious of psychoanalytic and other dynamic theoretical systems was far more nuanced, protean, and interactive with consciousness, yet the law adopted the folk psychological concepts of consciousness as being like an incandescent light bulb, either switched on or off. Criminal behaviors committed during somnambulism, automatism, hypnosis, drug induced delirium, epileptic seizures, or post-convulsive states were handled variously and sometimes contradictorily by the courts. In recent decades, although investigators into consciousness do not agree on a definition and the nature of consciousness, they are in general agreement that “The boundaries between our conscious and unconscious are permeable, dynamic and interactive and there is no valid scientific support for a sharp dichotomy” (Denno, 2002, p. 308).

Criminal intent, “the mental resolution or determination” to commit a forbidden act (Gardner, 1999), is assumed for criminal offenses. Even in inchoate offenses such as conspiracy, solicitation, and attempt offenses wherein the offensive act of greatest concern has not been committed, the intent itself and the initial step(s) towards executing the intent are of central importance. Crimes defined by the mental state of recklessness are not committed without thought, but rather the risky behavior leading to the harmful conduct was undertaken with conscious awareness of the risk. In criminal negligence the actor may not have intended the harmful outcome but he “intended” to engage in conduct, aware that by doing so he was creating risk that the harm would occur.

An intent may or may not include moral decision making. One can develop and implement an intent without involving much thought. At least the capacity for some level of moral decision making is a premise upon which most insanity tests are formulated. Unless proven to be insane, offenders are assumed to be sane. From insanity tests, this would at least presume the capacity to know that the intended act was wrong or criminal and then to intend and execute the act despite this realization. The hope behind criminal law is that individuals who exercise their capacity to make moral decisions will refrain from committing crimes. Those totally bereft of the ability to make moral decisions may be prone to criminality because of this defect

“Free will” is not the linchpin of American criminal jurisprudence that many assume it to be (Morse, 1999, 2007). Criminal intent is important for the mens rea of criminal offenses. Without the ambiguous, controversial, and perhaps irresolvable descriptor “free”, the will, understood as the “executory function that produces action from desires, beliefs, and consequent intentions” (Morse, 1999, p. 154), or simply the intentional faculty of the mind (Felthous, 2008), is the essential, functional component of agency in deliberate acts, and therefore of central importance to criminal responsibility. Intentions can be sudden and unreflective or

carefully thought through, but it is hoped that intended acts with known and serious consequences would not have been executed without a decision making process including moral and legal considerations. The presumption of moral decision making capacity is especially evident in the cognitive test for the insanity defense.

The law may be more interested in functional impairments that diminish or abolish criminal responsibility than the causes of such impairments (Morse, 1999, 2007). Nonetheless, for clinicians and scientists causal explanations are typically required to establish or at least support the functional defect. Voluntary or involuntary intoxication becomes less legally relevant without an intoxicating substance. Command hallucinations are more convincing when occurring with the context of schizophrenia. Without a recognizable disorder or dimensional disturbance, the possibility of malingering waxes and the authenticity of the apparent dysfunction wanes.

For the first half of the 20th century the competing theories and techniques of psychoanalysis and behavioralism provided the predominant explanatory references for both clinical and legal purposes. To some extent psychological and legal concepts may have been mutually influencing. Consider, for example, the sharply dichotomous two states of consciousness, conscious and unconscious (Denno, 2002). By the 1970s electroencephalography was used increasingly to investigate causation of intermittent violence (Monroe, 1970), and Blumer et al. (1974) applied pneumoencephalography to explore neuroanatomical deviations co-occurring with aggressive behavioral dyscontrol. By the end of the century, advanced technology resulted in increasing contributions from molecular genetics, neurotransmitters and neurosynapses, and various neuroimaging methods.

As the research on the neuroscience and psychology of intent and of moral decision making in particular accelerates, a special issue on the topics was deemed timely and useful. Recent issues have focused on free will (25(2)) and brain imaging (26(1)). It is hoped that this issue will bring the relevance of recent scientific efforts to moral decision making in particular. More important is our goal of balancing the potential legal relevance of recent and ongoing work in this area with limitations and caveats in forensic applications.

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