I5 Old Men Gone Bad: Frontotemporal Dementia and Its Potential Criminal Consequences

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By attending this presentation, attendees: (1) will receive an overview of frontotemporal dementia (FTD); (2) will examine the pathophysiology of acquired sociopathy; and, (3) will explore its significance related to criminal responsibility.

This presentation will impact the forensic science community by increasing the awareness of frontotemporal dementia, demonstrating how biological processes causally may impact behavior, and exploring how advancing neuroscience research may impact the criminal justice system, particularly with regard to criminal responsibility.

FTD is an insidious and progressive neurodegenerative disorder characterized by the development of neuropsychiatric symptoms which are strikingly different from premorbid behaviors. It is the second most common cause of non-vascular dementia, (only Alzheimer's Dementia is more common). In contrast to Alzheimer's, which produces a decline in memory and/or other cognitive deficits, behavioral symptoms are more prominent in FTD. FTD results from frontotemporal lobar degeneration, which includes both gross atrophy and histopathological changes in the frontal lobes and/or anterior temporal lobe regions.

The prefrontal cortex (PFC), the anterior region of the frontal lobes, is responsible for higher level cognitive processes that include the ability to strategically organize information, plan, and make judgments (i.e., "executive functioning"). The PFC mediates moral reasoning and socially-appropriate behaviors. It does this in part by functioning to promote and individual's delaying immediate gratification in order to gain a larger reward at a later time. The PFC is also critical in regulating emotions and processing regret. Damage to this structure can produce impulsive and disinhibited behavior, can decrease capacity for empathy or remorse, and can cause deterioration in social behaviors. The anterior temporal lobes are part of the limbic cortex. This region is important in processing emotions; lesions here may cause alterations in mood, aggression, and even violent behavior. In patients with FTD, antisocial behaviors are frequently seen. Stealing, reckless driving, physical assault, unethical job conduct, indecent exposure, inappropriate or offensive speech, and public urination/masturbation have been reported.

A diagnosis of FTD is made by clinical history, neuropsychological testing, and neuroimaging, which may include magnetic resonance imaging (MRI), single photon emission computerized tomography (SPECT), and/or positron emission tomography (PET). Diagnosis is often difficult and frequently delayed by as much as three to four years, because symptoms may be confused with other neurological and psychiatric disorders.

The legal implications of FTD are numerous. Sociopathic behavior seen in FTD will make contact with the legal system much more likely. In cases of older adult defendants with no history of sociopathic behavior and a reliable ancillary history suggesting a recent dramatic personality change preceding the instant offense, FTD can be considered as a defense and an expert can be consulted. Neuropsychological tests and neuroimaging can be ordered if there is a strong clinical suspicion for FTD.

If FTD has been diagnosed, what would be the defendant's level of legal responsibility? It is uncertain if a defendant with FTD would meet a cognitive insanity standard (i.e., one that assesses for knowledge of wrongfulness). Because more global cognitive processes are largely spared in the early stages of FTD, an individual with FTD often can understand still the legal and moral wrongfulness of his actions. S/he simply cannot keep from acting on his/her impulses. Therefore, it is possible that a defendant with FTD could meet the "impaired volition" prong of the American Law Institute (ALI) standard for insanity. Diminished capacity could also be a relevant partial defense for defendants with FTD and the finding of this mental state could lead to more appropriate sentencing and/or treatment planning.

As neuroscience research progresses and begins to provide more compelling evidence for biological explanations for behavior, should those better explanations diminish criminal responsibility? This raises some controversial issues. For example, there is evidence to suggest a higher prevalence of structural PFC abnormalities in death row inmates. What if new evidence emerges that individuals with certain genetic constitutions can acquire structural PFC abnormalities if involuntarily exposed to neglect or abuse in developmentally critical periods? Would this also diminish responsibility in the same manner as would FTD? Where does biological determinism begin and free will and accountability end?

Antisocial, Dementia, Violence

 ** Presenting Author*