

fMRI scans used in murder trial sentencing

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Scale of justice. Image: Wikipedia

(PhysOrg.com) -- Functional Magnetic Resonance Imaging (fMRI) scans have been used, possibly for the first time, in the sentencing phase of a murder trial in Chicago in the US.

The defendant, Brian Dugan, was convicted for the 1983 kidnapping, rape and murder of a 10-year-old girl, Jeanine Nicarico. Dugan had pleaded guilty in July this year, while serving life sentences for two other murders. Prosecutors at the trial asked for the death penalty to be imposed.

The defense lawyers believed Dugan had suffered from a mental illness -- psychopathy -- from birth and asked for fMRI scans to be presented as evidence in the sentencing phase. Lead defense attorney Steve Greeberg

said the fMRI scans indicated Dugan had a brain disorder in keeping with psychopathy, and his mental illness meant his ability to control his psychopathic urges was reduced.

Dugan had been given a standard [diagnostic test](#) for psychopathy and scored 37 out of a possible 40, which placed him in the 99.5th percentile, according to neuroscientist Kent Kiehl of the University of Mexico, who was an expert witness for the defense.

Kiehl runs fMRI and other brain scans on inmates in prisons in New Mexico, as they perform a series of activities, including tests involving moral reasoning. Kiehl testified that Dugan's fMRI scans showed similar features to those of other psychopaths.

An expert witness for the prosecution, Jonathan Brodie of New York University, said the evidence presented by the scans was irrelevant since they could not indicate Dugan's thought processes in 1983, when the murder was committed.

After 10 hours of deliberation the jury returned with the death sentence, apparently after a change of mind in at least one juror who had wanted Dugan to receive a life sentence instead. Greenberg said the last minute change was highly irregular, and he is planning to appeal.

In previous cases PET scans have been used as evidence of [brain disorders](#), but the Dugan case is believed to be the first in which fMRI scans have been used. Professor Hank Greely of Stanford Law School said the standards required for evidence in the [sentencing](#) phase were less stringent than during the trial, especially in capital cases when the law makes special dispensation to allow the defendant to introduce almost any evidence that might save him from the death penalty.

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