

# Novel defense helps spare perpetrator of grisly murder

**Squiggly lines on a `brain map' helped convince a Dade jury to spare a man who butchered his wife and raped her child.**

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For years, researchers have used computerized ``brain mapping" technology to read human brain waves in an attempt to diagnose maladies from attention deficit disorder to dementia.

But can the same technology be used to explain the brutality exhibited by killer Grady Nelson, who stabbed his wife 61 times in South Miami-Dade, then raped and stabbed her 11-year-old mentally disabled daughter?

His defense lawyers believe so, saying the technology proved that brain damage had left Nelson prone to impulse and violence. Now, they are trumpeting the ``QEEG brain mapping" technology after a jury, in a controversial Dec. 2 decision, rejected the death penalty and voted for life in prison.

Lawyers say Miami-Dade Circuit Judge Jacqueline Hogan Scola's decision to admit the QEEG was the first time nationally that the test has been admitted as evidence in a major criminal case.

Both prosecutors and defense lawyers believe the Nelson sentence will spark a new wave of expensive death penalty litigation, with the technology being used to justify the most violent of behavior.

``The moment this crime occurred, Grady had a broken brain," said defense attorney Terry Lenamon. ``I think this is a huge step forward in explaining why people are broken -- *not* excusing it. This is going to go a long way in mitigating death penalty sentences."

**`HOCUS POCUS'**

For Miami-Dade prosecutors, the decision was frustrating. They fought to no avail to exclude the QEEG evidence from jurors, arguing the science was unproven and used improperly to explain the heinous crimes.

Electroencephalogram tests, known as EEGs, record electronic energy in the brain through sensors attached to the head. The results are displayed as squiggly lines on paper, and the tests have been in use for decades.

Only in recent years have computers been utilized to create the "Quantitative EEG," known as QEEG, which translates the results into a digital image of a patient's brain to help analyze brain wave frequencies.

The Miami-Dade State Attorney's Office plans to appeal Scola's October decision to allow the technology in as evidence, even though the life sentence cannot be reversed.

"It was a lot of hocus pocus and bells and whistles, and it amounted to nothing," said Assistant State Attorney Abbe Rifkin, who prosecuted the case. "When you look at the facts of the case, there was nothing impulsive about this murder."

The jury in July convicted Nelson, 53, of slaying his wife, Angelina Martinez, in January 2005, and attacking her two young children. The counts: first-degree murder, attempted murder and sexual battery.

Jurors said the punishment vote was evenly split, 6-6, which results in an automatic life sentence. Three jurors interviewed by The Miami Herald were split on whether the QEEG swayed their recommendation for life.

Delores Cannon, a hospital secretary, said she leaned toward death until the technology was presented. "But then when it came in, the facts about the QEEG, some of us changed our mind," she said.

John Howard, an airport fleet services worker, said he, too, was ready to recommend death. "It turned my decision all the way around," Howard said of the QEEG. "The technology really swayed me . . . After seeing the brain scans, I was convinced this guy had some sort of brain problem."

But Leon Benbow, a retired mailman, said he voted for life not because of the QEEG but because he wanted Nelson to rot in prison with the stigma of being a child rapist.

"All that testimony, that was a waste of taxpayer money. That's phony," Benbow said of the QEEG, adding: "There's nothing wrong with that guy's brain."

## **DRENCHED IN BLOOD**

Nelson's case drew notoriety because Miami-Dade Human Services Department hired him in 2000 as a social-worker aide, despite an earlier conviction for raping a 7-year-old neighbor.

In 2005, he was again arrested, that time for having sex with Martinez's mentally disabled daughter. But when the charge was dropped, Nelson went home and butchered his wife and stabbed her children. He was also convicted of raping the girl.

Miami-Dade police found Nelson in the house, drenched in blood, wielding a knife. Nelson gave a graphic videotaped confession.

His case was one of the most expensive in recent Miami-Dade history. Tallahassee administrators paid nearly \$1.5 million to defend Nelson over five years and two trials; the first last year lasted one month and ended in a mistrial.

Most of that money went to lawyers' fees, and about \$200,000 to experts and consultants hired to sway the jury against the death penalty. Working with a tighter budget, prosecutors spent about \$26,000 on experts for the penalty phase.

Lenamon makes no apologies for the costs.

“The state of Florida wants to take somebody's life. If they're going to take someone's life, that person should be represented by the best lawyers and best resources possible,” he said.

Miami-Dade State Attorney Katherine Fernández Rundle questioned the money spent on the QEEG.

“I'm very disappointed that the courts are not more mindful of controlling costs, especially where there seems to be so much waste on something that is so experimental,” she said.

During the four-week penalty phase, prosecutors Rifkin and Hillah Mendez pointed to the brutal and calculated nature of the crimes. Nelson's 1991 rape victim testified, drawing tears from jurors and lawyers.

Defense lawyers Lenamon and David S. Markus argued that Nelson was sexually abused as a child, abandoned by his mother and became addicted to cocaine. Their central case, however, was built around the QEEG.

## **USEFUL TEST**

Reading the abnormal brain waves can be helpful in diagnosing a previously undiagnosed stroke, dementia or even too much thyroid hormone, said Dr. Andrew F. Leuchter, director of UCLA's Laboratory of Brain, Behavior and Pharmacology.

However, “I can tell you, in my opinion, there is no clear way to link an abnormality on a QEEG study with a particular violent or criminal act,” he said in an interview. “All you can say is that portions of a person's brain is not functioning properly.”

Nelson's defense team relied on Dr. Robert Thatcher of the Applied Neuroscience Research Institute in St. Petersburg, who developed the software that ultimately analyzed Nelson's brain waves.

Prosecutors bristled that they were not given enough time to prepare because they were not told of the QEEG until two months after Nelson was convicted. That complaint will form the basis of

their appeal. Nevertheless, relying on their own expert, prosecutors argued that the science was unproven and unreliable to explain Nelson's violence.

But in October, Judge Scola decided in Nelson's favor, saying the ``methodologies are sound, the techniques are sound, the science is sound."

``I feel comfortable that the average juror can figure out what they believe and disbelieve, just like any other battle of the experts," Scola said.

During the penalty phase, Thatcher presented jurors with a computer slide show replete with colorful graphics of the brain, and explanations of the effects of frontal lobe damage.

But Rifkin countered by calling the QEEG an ``electronic Ouija board."

Jurors deliberated only about an hour, saying they wanted to avoid the heated 11-hour deliberations they had in July over Nelson's guilt.