

Brain fingerprints under scrutiny

By Becky McCall
in Seattle

A controversial technique for identifying a criminal mind using involuntary brainwaves that could reveal guilt or innocence is about to take centre stage in a last-chance court appeal against a death-row conviction in the US.

The technique, called "brain fingerprinting", has already been tested by the FBI and has now become part of the key evidence to overturn the murder conviction of Jimmy Ray Slaughter who is facing execution in Oklahoma.

Brain Fingerprinting, developed by Dr Larry Farwell, chief scientist and founder of Brain Fingerprinting Laboratories, is a method of reading the brain's involuntary electrical activity in response to a subject being shown certain images relating to a crime.

Unlike the polygraph or lie detector to which it is often compared, the accuracy of this technology lies in its ability to pick up the electrical signal, known as a p300 wave, before the suspect has time to affect the output.

"It is highly scientific, brain fingerprinting doesn't have anything to do with the emotions, whether a person is sweating or not; it simply detects scientifically if that information is stored in the brain," says Dr Farwell.

"It doesn't depend upon the subjective interpretation of the person conducting the test. The computer monitors the information and comes up with information present or information absent."

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Dr Larry Farwell

Brain fingerprinting is admissible in court for use in identifying or exonerating individuals in the US.

Maximum security

A few days ago Dr Farwell ran the test on Jimmy Ray Slaughter at the maximum security state prison in Oklahoma.

A jury convicted Slaughter of shooting, stabbing and mutilating his former girlfriend, Melody Wuertz, and of shooting to death their eleven-month old-daughter, Jessica.

The crimes for which he is sentenced to death took place in a house that he is very familiar with. The results were revealing.

"Jimmy Ray Slaughter did not know where in the house the murder took place; he didn't know where the mother's body was lying or what was on her clothing at the time of death - a salient fact in the case," says Dr Farwell.

During the test, the suspect wears a headband equipped with sensors to measure activity in response to recognition of an image relating to the crime - for example, a murder weapon or possibly a code word

in the case of a spy.

"In research with the FBI, we presented words and phrases that only an FBI agent would know and we could tell by the brain responses who was an FBI agent and who was not; we could do that with 100% accuracy," says Dr Farwell.

Brain Fingerprinting has profound implications for the criminal justice system.

Any decision relies on more than just the outcome of a forensic test such as brain fingerprinting. However, in the light of these findings, the case for appeal hopes that Slaughter will either be granted a pardon, clemency or a retrial.

Critics of brain fingerprinting believe it needs far more refinement before its use becomes widespread and cases are won and lost on its evidence.

Needless to say, Dr Farwell disagrees.

"What I can say definitively from a scientific standpoint, is that Jimmy Ray Slaughter's brain does not contain a record of some of the most salient details about the murder for which he's been convicted and sentenced to death," says Dr Farwell.

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<http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/3495433.stm>

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