



BRAIN FINGER PRINTING



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Plan of the Talk.....

- Introduction
- Definition
- Equipment and Technology
- Working Principle
- Scientific Procedure
- Applications
- Benefits
- Disadvantages
- Conclusion

Introduction

- Brain fingerprinting is a scientific technique to determine whether or not specific information is stored in an individual's brain.
- Brain fingerprinting was invented by Dr. Lawrence A. Farwell
 - The chief scientist and president of Human Brain
 - Research Laboratory, USA.
- He had tested Brain Fingerprinting technology in over 170 cases. More than 80 of these were in real-life situations, and the rest were laboratory

Definition

- "Brain fingerprinting" is a computer-based test that is designed to discover, document, and provide evidence of guilty knowledge regarding crimes.
- Brain fingerprinting is a technique that measures recognition of familiar stimuli by measuring electrical brain wave responses to words, phrases, or pictures that are presented on a computer screen .

Equipment and technology

- The brain fingerprinting system comprises
 - A personal computer.
 - A data acquisition board.
 - Two monitors.
 - A EEG amplifier.
 - Software for data acquisition
 - Some electrodes.



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Computer controlled:

- The electrodes to used to measure electrical brain activity.
- The software presents the stimuli, collects the EEG data, and analyzes the data.
- Brain electrical activity amplified and stored on a memory device.
- During the data collection ,the stimuli are displayed to the subject on one monitor,and the investigator views another monitor.

Working principle

- Entire system under computer control includes
 - Presentation of the stimuli.
 - Recording of electrical brain activity.
 - Determination of "information present" or "information absent," .
 - Mathematical data analysis algorithm that compares the responses statistical confidence level for the determination.

How the technology work

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- When someone commits a crime, his brain records it has a memory .
- Brain Fingerprinting seeks to reveal that memory, by showing the suspect evidence taken from the crime scene.
- A head band with sensors is placed on the subject.
- A series of pictures or words is flashed on the screen.
- The computer records the brain waves produced in response to what the subject sees.

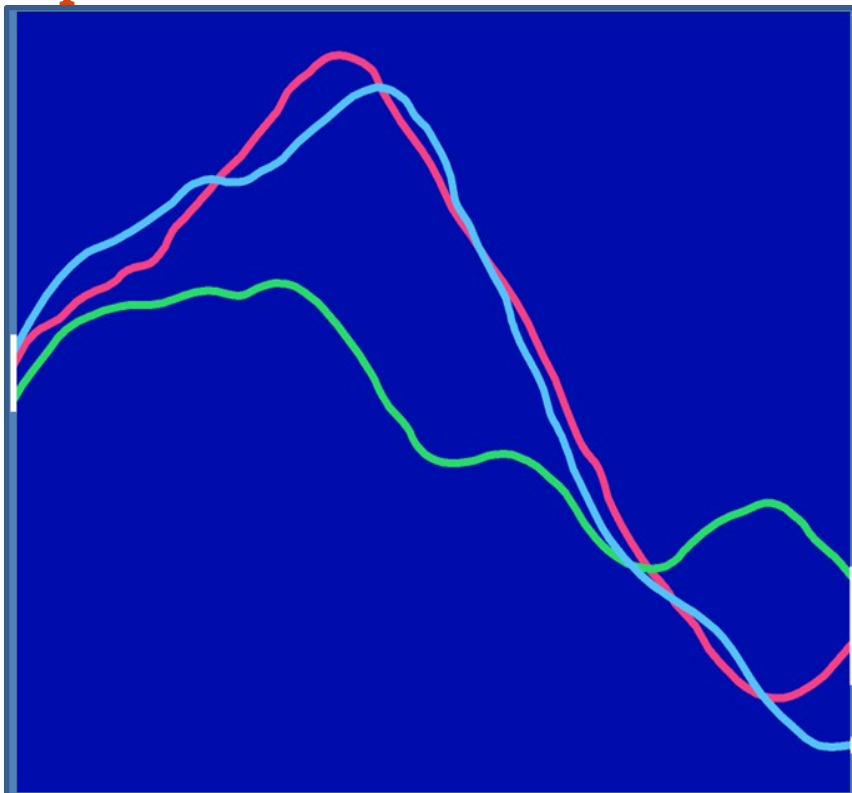
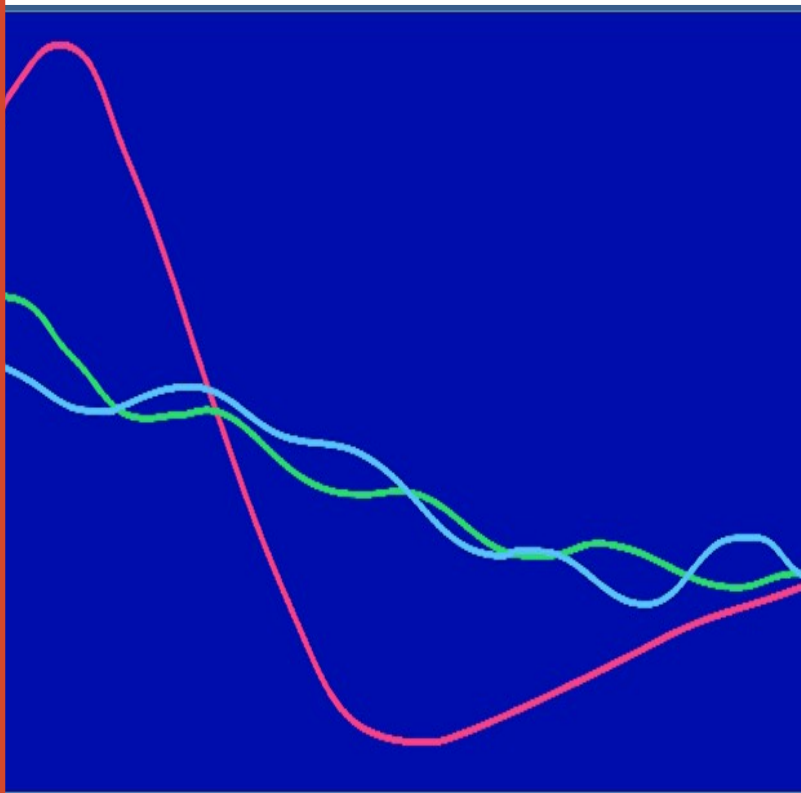
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- The brain responses called a P300/ MERMER are recorded as a wave form.
- By analyzing MERMER (Memory and Encoding Related Multifaceted Electroencephalographic Response) the pattern of waves, Farwell can determine if the subject is recognizing what he is seeing.

Crime Control Information

• Information is
absent

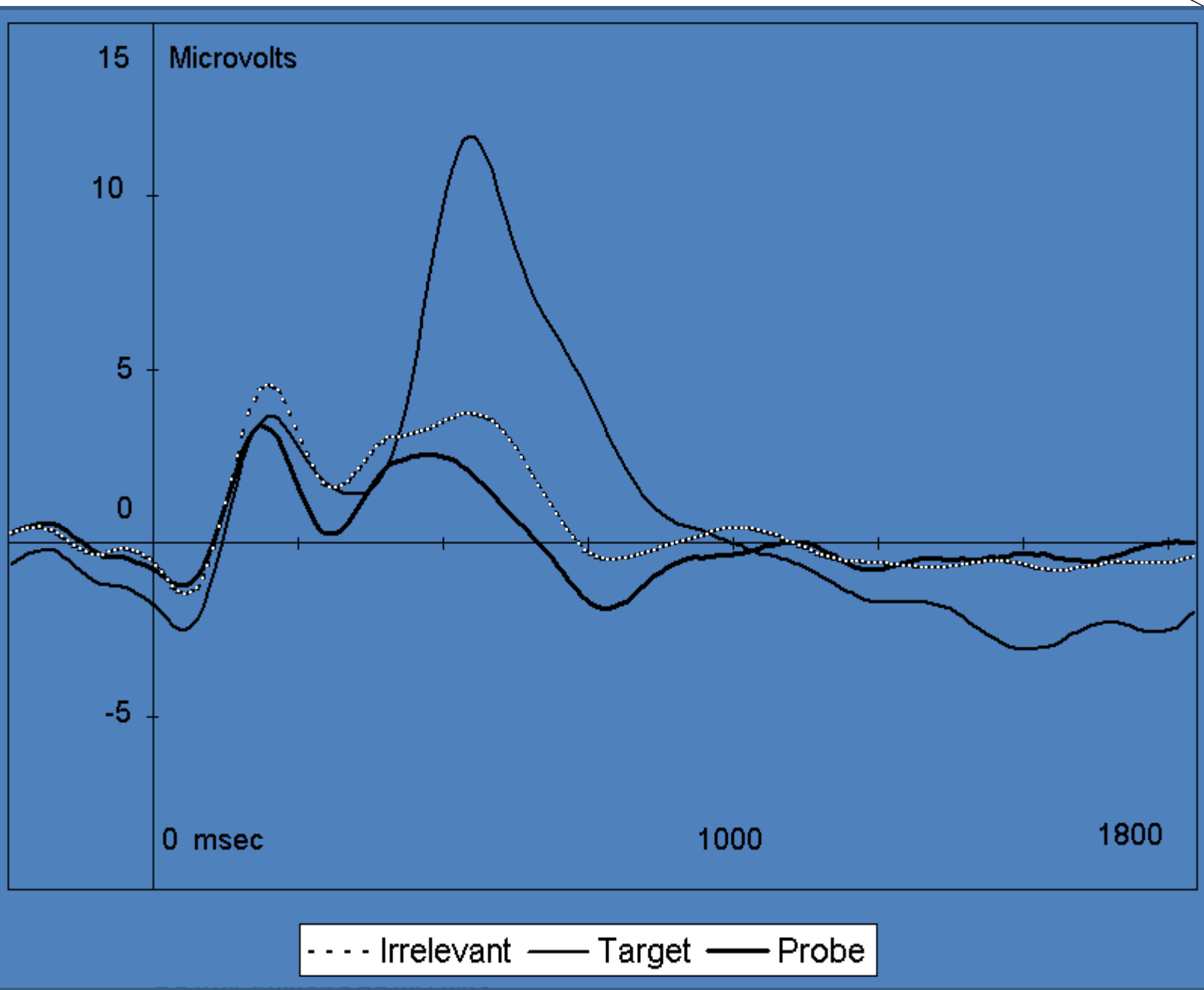
• Information is
present



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SCIENTIFIC PROCEDURE

- Stimulus appears for a fraction of a second when they are presented on a video monitor under computer control.
- Three types of stimuli are presented:
 - 1) Targets,
 - 2) Irrelevants, and
 - 3) probes.
- TARGETS stimuli Info known to suspect about the crime
Elicits a MERMER.
- IRRELEVANTS stimuli Info not related to the crime
Do not elicit a MERMER.
- PROBES stimuli Info relevant to the situation under investigation that only the perpetrators knows
Elicits a MERMER.



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Application

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- National Security.
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- To test job applicants on the falsification of an application.
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- Medical Field.
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- Helps in Identifying false-witnesses.
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Benefit

- Identify criminal quickly and scientifically, record of 100% accuracy.
- Provide immediate Scientific Result : Information Present or Information Absent.
- Reduce costs and complexities.
- Support the right to a speedy and fair trial.

Disadvantages

- Not applicable for general screening.
- It does not indicate intent of the crime.
- Takes a fair amount of time to set up and conduct properly .
- Difficult to distinguish the criminal and a witness who saw all the criminal activity happen.

Conclusion

- Brain Fingerprinting is a revolutionary new technology for solving crimes, with a record of 100% accuracy.
- The technology fulfills an urgent need for governments, law enforcement agencies, corporations, and individuals in a trillion-dollar worldwide market. The technology is fully developed and available for application in the field.

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ANY QUESTION

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THANK

YOU