

Introduction to neuromarketing

Methods of neuromarketing

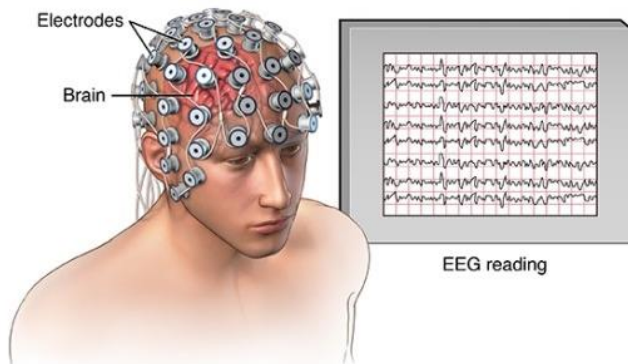
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Methods

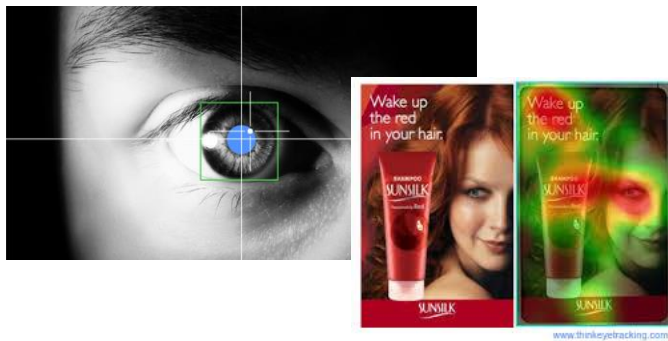
Electroencephalography (EEG)



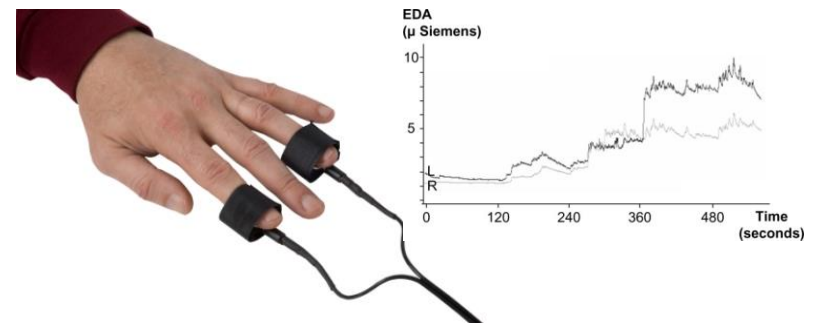
Functional magnetic resonance imaging (fMRI)



Eye tracking



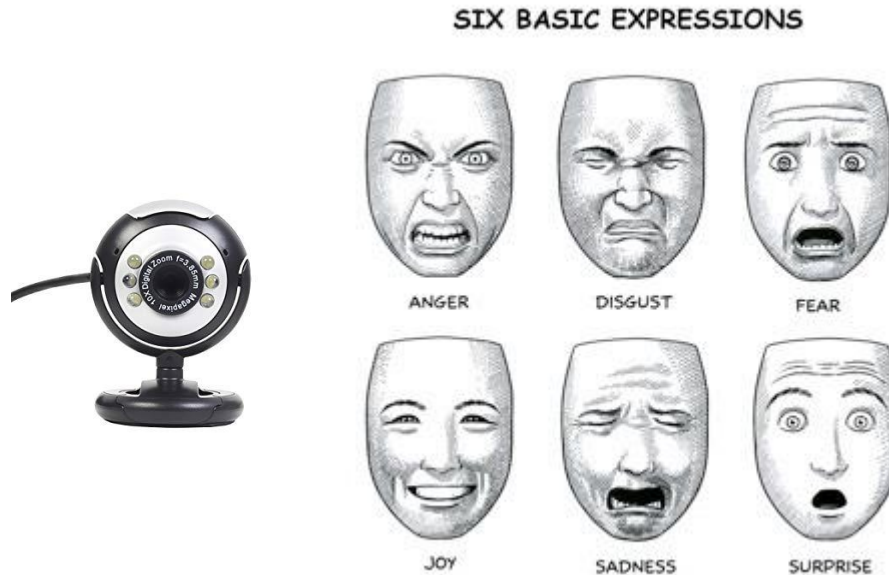
Electrodermal activity



Biometric VS neurometric

	Biometric	Neurometric
<i>Focus on</i>	Physical changes	Changes in brain activity
<i>Methods</i>	Facial expression Electromyography (EMG) Heartbeat Response time Eye tracking Galvanic skin response (GSR)	Electroencephalography (EEG) Magnetoencephalography (MEG) Functional magnetic response imaging (fMRI)
<i>Cost of obtaining data</i>	Low	High
<i>Accessibility</i>	High	Low
<i>Easy of use</i>	High	Low

Biometric measure: Facial expression



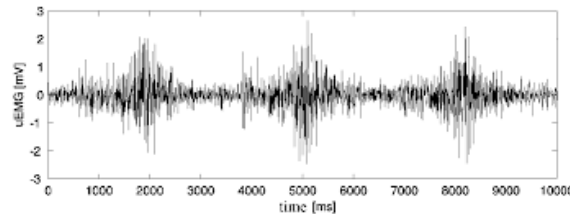
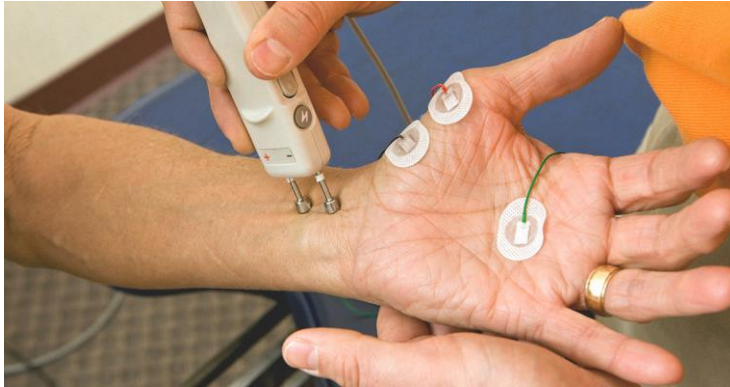
- **Strength**

- Ordinary computer equipment
- Easy, fast and cheap to use
- Good at detecting overall basic emotions
- Suitable as a supplementary measure

- **Weaknesses**

- Responses are often too weak
- Not able to capture deep feelings
- Possible to manipulate analysis (people change their facial expression if they want to)

Biometric measure: Electromyography (EMG)



- **Strength**

- Measurement of specific muscles
- Cheap and simple to use
- Detect subtle reactions to low-involved stimuli

- **Weaknesses**

- Unnatural test situation (when apply electrodes in the face)
- Difficult to place electrode on the same spot

Biometric measure: Heartbeat



- **Strength**

- Easy and cheap to acquire
- It is simple to set up experiments
- Often used as a supplementary measure along with other biometric measure

- **Weaknesses**

- Long response time
- Difficult to eliminate environmental influences (e.g., caffeine)
- Both of the weaknesses pointed out, introduces more uncertainty

Biometric measure: Response time



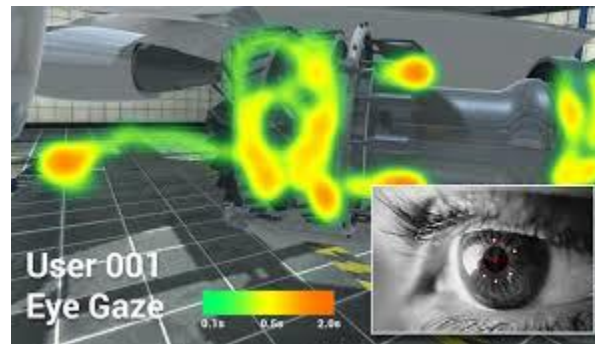
- **Strength**

- The simplicity of the technique

- **Weaknesses**

- Weak reliability

Biometric measure: Eye tracker



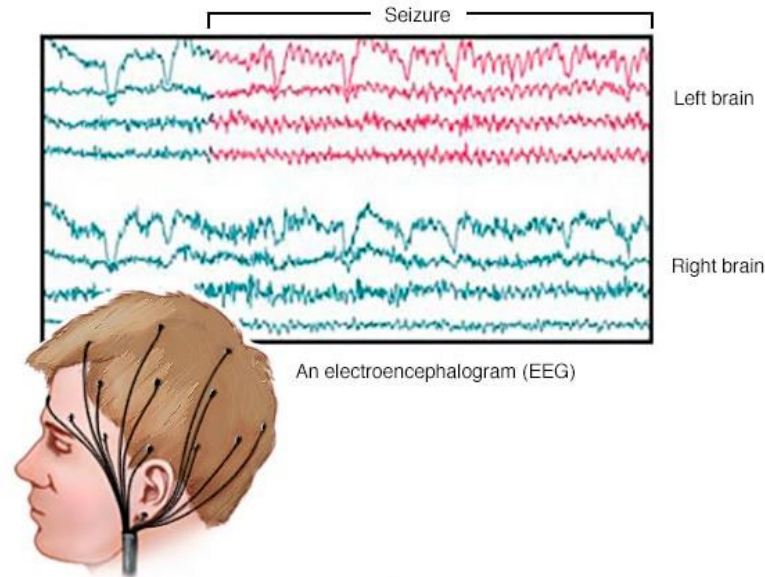
- **Strength**

- Easy access to both equipment and setup
- Many suppliers on the market

- **Weaknesses**

- The easy access could be a downside

Neurometric measure: EEG



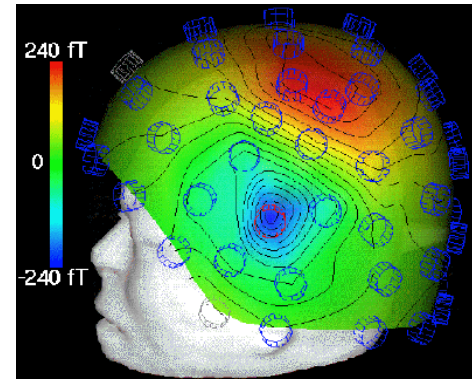
- **Strength**

- The only portable brain scanner
- Preferable brain scanning technique
- Affordable and easy to use
- Good at relating marketing stimuli to subsequent changes

- **Weaknesses**

- Captures activity underneath the skull
- Unable to detect emotions
- Low spatial resolution
- Time consuming to connect participants
- Timely calibration procedure

Neurometric measure: MEG



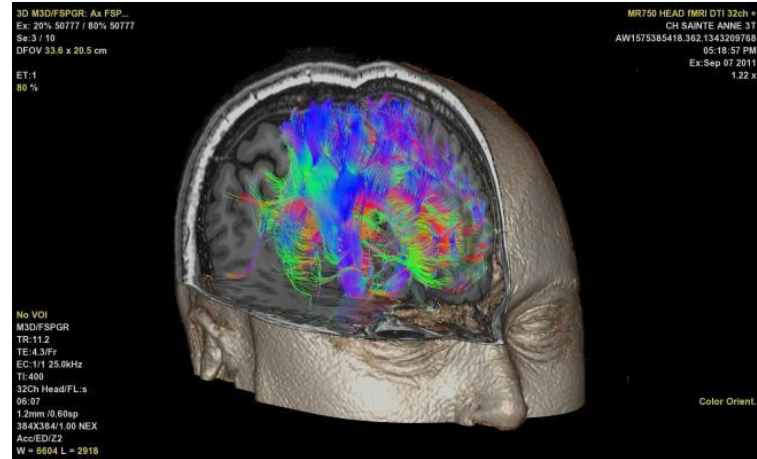
- **Strength**

- MEG outperforms the EEG
- Very high temporal resolution (~ 10 ms)
- Allows the test person sit upright

- **Weaknesses**

- Extremely sensitive to magnetic noise
- Very expensive

Neurometric measure: fMRI



- **Strength**

- Detects deep brain activity
- High spatial resolution (~1 mm)

- **Weaknesses**

- Low temporal resolution
- Extreme noisy
- Test persons are laying down

THANK YOU

For more information,
Email to **tyyang.sol@gmail.com**