Intersubject consistency of cortical EEG signal during movie viewing with positive and negative emotional content

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133 Group

Neurophysiological research of emotions during movie viewing

- Neuroscience
- Brain as a main source of information about emotions
- Important for:
  - Neuromarketing
  - Neurobiology of emotion
  - Neuroscience of film

- Previous study:
  - Neural reliability
  - Complexity of emotions
  - Films – naturalistic stimuli
  - Dmochowski study – breakthrough*

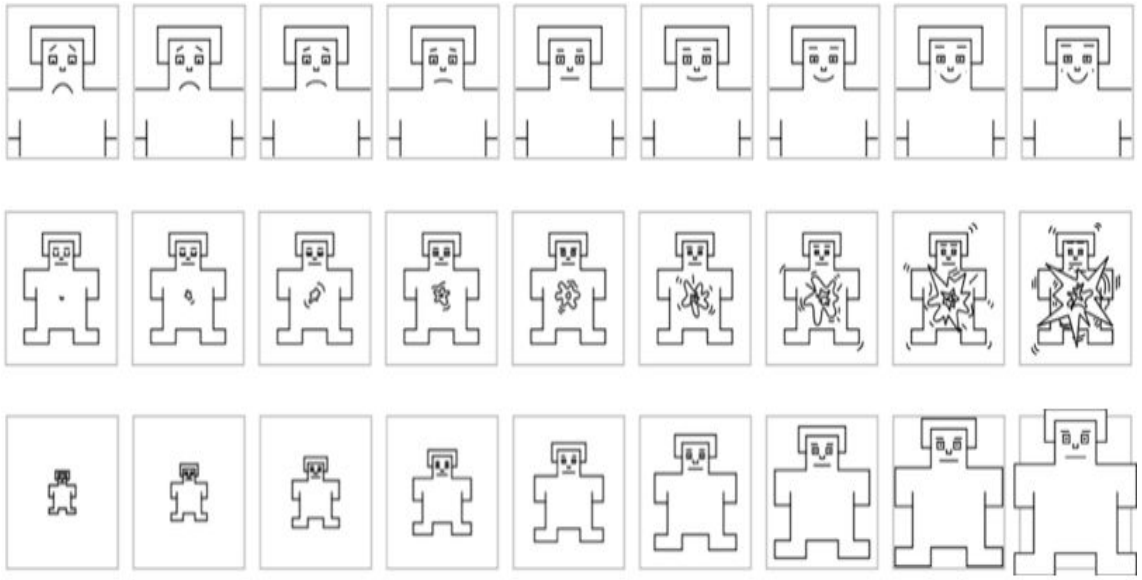
*Dmochowski, Jacek P., Matthew A. Bezdek, Brian P. Abelson, John S. Johnson, Eric H. Schumacher, and Lucas C. Parra. 2014. "Audience Preferences Are Predicted by Temporal Reliability of Neural Processing." Nat Comm 5 (July): 4567. doi:10.1038/ncomms5567.

The main goal of research

- Research questions:
  - How consistency is represented in our brain?
  - ISC – good marker of emotional state?
- Aims:
  - Identify Intersubject Correlation (ISC)
  - Show neural reliability of emotional states
- Practical purpose:
  - Develop a new method of tracking emotions

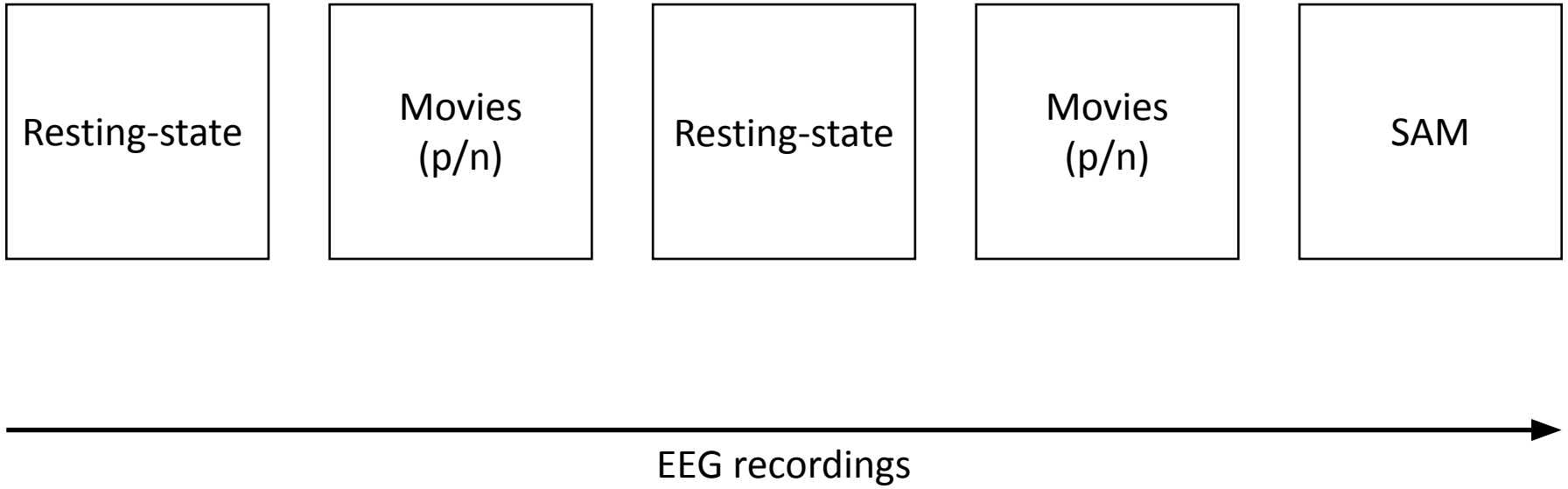
Methodology

- Methods
  - Electroencephalography (EEG)
  - Emotional Database (EMDB)
  - Self-Assessment manikin (SAM)
- Tools:
  - MATLAB software for analysis
  - sLORETA for source analysis
- Research specifications:
  - 20 subjects
  - All right handed
  - Without neural systems disease in past



Self-Assessment manikin (SAM)

Experimental Design



Expected results

- Correlation between EEG components in positive emotions
- Low level of neural reliability in negative emotions
- Questionnaire will show difference between positive and negative movies
- ISC – good marker of emotional state