

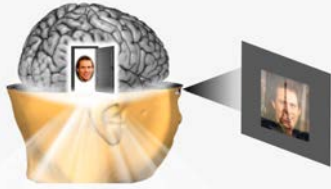
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## Introduction

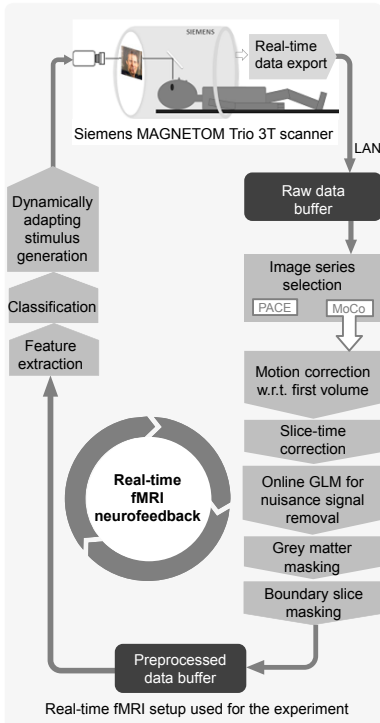
In our daily life, we are continuously flooded with information. Visual attention is used to selectively filter relevant information depending on current task demands and goals. This study used real-time functional magnetic resonance imaging (fMRI) for online decoding of attention to objects belonging to two different semantic categories. Superimposed pictures of a face and place were presented to subjects who had to attend to only one of the pictures. Decoding of the semantic category of the attended picture was performed on a TR-by-TR basis using a multivariate decoder and its performance was also compared offline to a univariate region-of-interest (ROI) based approach.

### Decoding semantic category of attended picture

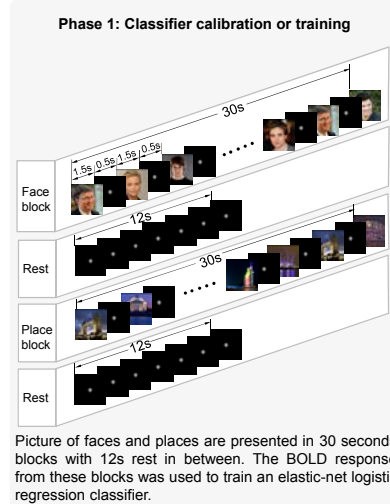


## Data Acquisition

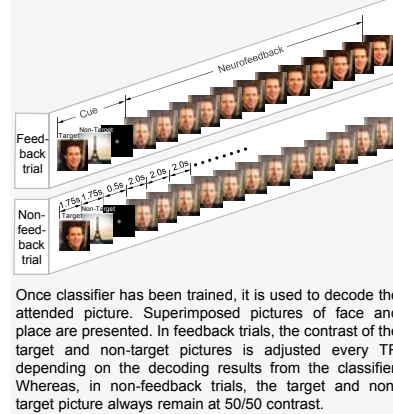
- SIEMENS 3T scanner, 32 Channel head coil
- TR = 2000 ms, TE = 30 ms, Flip angle = 75 °
- 3 x 3 x 3.3 mm voxels with 10% distance factor
- 28 oblique axial slices
- Feedback updated every TR in prediction sessions
- 7 subjects



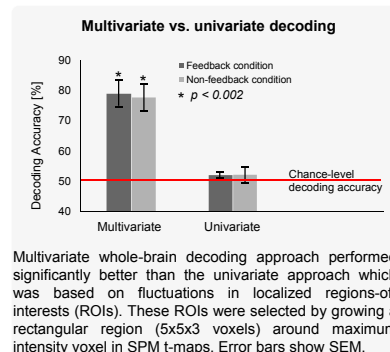
## Stimuli



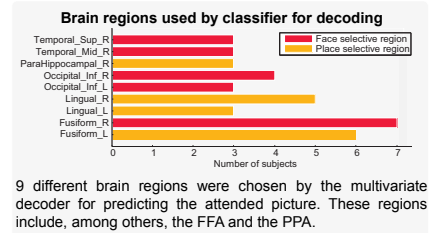
## Phase2: Decoding object-based attention



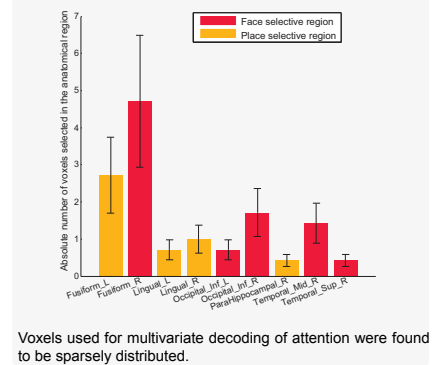
## Results



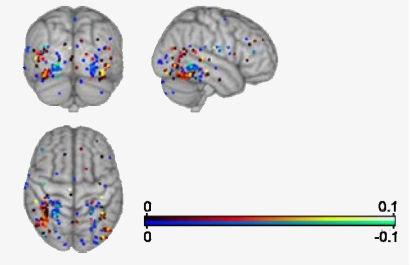
## Results (Cont.)



### Sparingly distributed representation of face and scene



### Classifier weights across group overlaid on MN152 template



## Conclusion

Optimal decoding of object-based requires a whole-brain multivariate decoding approach which can take distributed object representations into account.

For more info about this study please visit the website [www.analyze4d.com/misc\\_adnan/rfmri/decoding-attention](http://www.analyze4d.com/misc_adnan/rfmri/decoding-attention)

