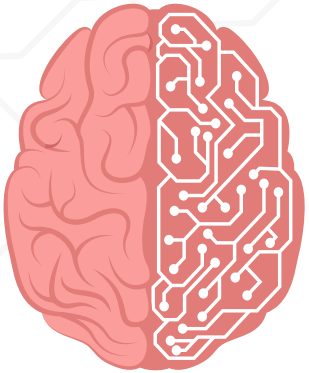


ACTUAL JELLYFISH

Gender differences in brain functional connectivity for relational processing using the HCP dataset.

#actual-jellyfish

By Shruti, Didem, Xiaowei, Sebastian

Agenda.

01.

Introduction (Shruti)

Background explained

02.

Data (Sebastian)

HCP dataset explained

03.

Approach (Didem)

What was approach our

04.

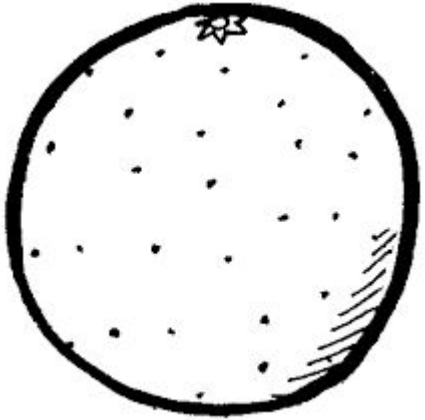
Findings (Xiaowei)

What was our outcome

01.

Introduction

Background explained



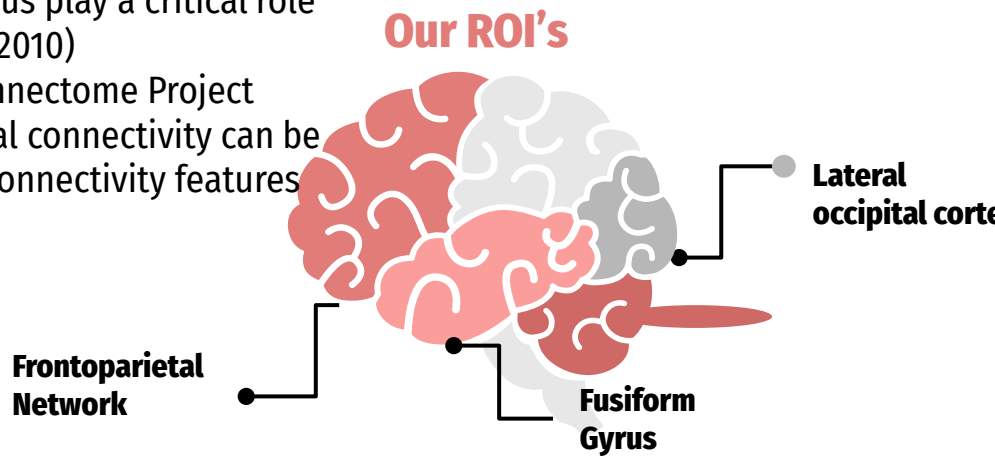
orange

tennis ball

They have the **same shape** but
different texture

Introduction.

- There are different objects that have the same geometric properties such as shape but differ in their material properties such as texture (Hunt & Einstein, 1981).
- The measurement of the interactions of multiple regions that are engaged simultaneously in a task is functional connectivity
- There are recent neuroimaging studies which show that brain connectivity varies across gender (Acer & İçer, 2020).
- The lateral occipital cortex is responsible for shape perception (Podrebarack et al., 2014), while the fusiform gyrus play a critical role in texture perception(Stylianou-Korsness et al., 2010)
- Therefore, our current study will use Human Connectome Project relational task dataset to test whether functional connectivity can be used to predict gender and identify functional connectivity features that are most predictive of gender.



02.

Data

HCP dataset explained

HCP dataset.

Subjects	Age	Regions
339	22-35	180 (Glasser 2016)

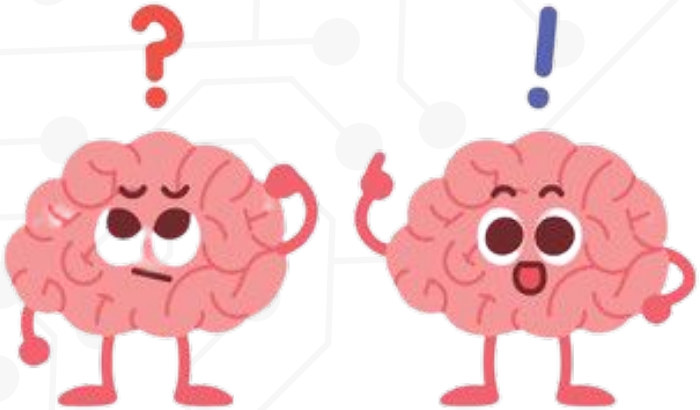
Tasks:

- Emotion (Face Matching)
- Gambling (Card Guessing)
- Motor (Move fingers, toes or tongue)
- Language (Story-Math)
- Social (Theory of Mind)
- **Relational Processing (Feature Relations v Matching)**
- Working Memory (N-back)

03.

Approach

What was our approach



Subjects:

○38 male, 62 female subjects (100 in total)

ROIs:

○Shape Perception: Lateral Occipital Gyrus (LOI1, LOI2)
○Texture Perception: Fusiform Gyrus (FFC)
○Perceptual Decision Making: Frontoparietal Network - Dorsolateral Prefrontal (8C, 8Av, i6-8, s6-8, SFL, 8BL, 9p, 9a, 8Ad, p9-46v, a9-46v, 46, and 9-46d), Inferoparietal Sulcus (IP1 and IP2)

Method:

○Correlation between ROIs
○Average out males and females correlation matrices
○Wilcoxon T-test

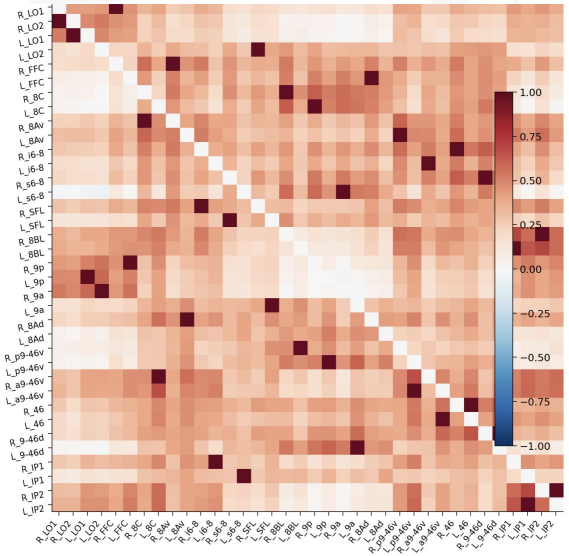
04.

Findings

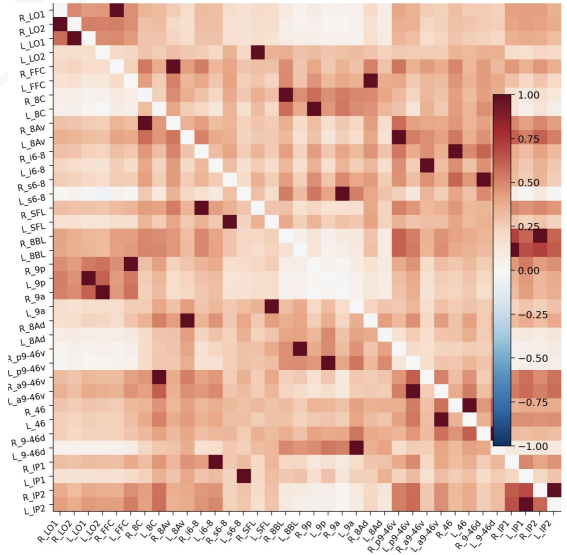
What was our outcome

Findings.

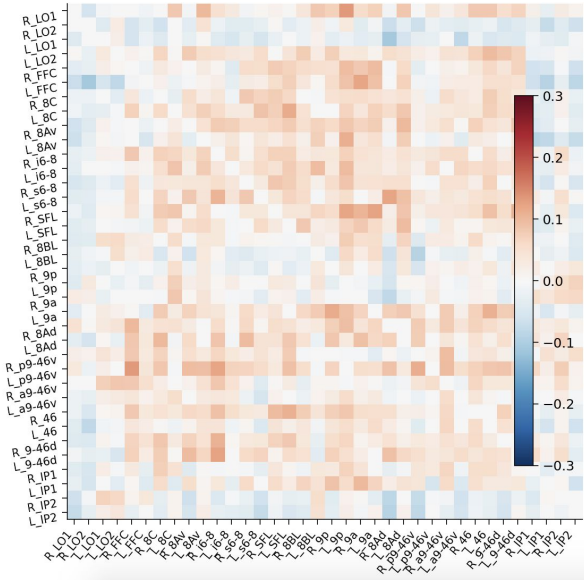
Male ROI



Female ROI



Difference in ROI



pvalue=5.751034361597756e-35)

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Thanks!

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