

Grasping with Eyes

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Abstract

Background: Visual perception is an ability to interpret and interact with the surrounding environment. The fundamental concept underlying, how we perceive the objects in accordance to their spatial orientation was explained by Ungerleider and Mishkin in the hypothetical “dorsal” stream pathway. Previous studies have failed to provide any indication on structural connectivity for this pathway. During the process of tractography, identifying hypothetical “Dorsal” stream fibers for objects spatial orientation, we the “Team NeurON” found an interesting connection between the “Visual cortex (Brodmann Areas 18 and 19) with Superior Parietal Lobule (Brodmann Area 7)”.

Objectives: Aimed to identify the neural structural connectivity between “Visual cortex with Superior Parietal Lobule” and correlates its functional importance, using “Diffusion Imaging fiber Tractography”.

Methods: The observational analysis, used ten healthy adults, ultra-high b-value, diffusion MRI Datasets from an Open access platform. The datasets, ranging from both sex, between 20–59 years, with mean age of 31.1 years.

Results: The fibers were traced, and confirmed its extension from “Visual cortex (Brodmann’s Areas 18 and 19) with Superior Parietal Lobule (Brodmann’s Area 7)”, involves in accurate hand grasping motor movements, towards visually perceived object.

Conclusion: This new observations, through an insight knowledge to understand the structural existence and functional correlations between “Visual cortex with Superior Parietal Lobule” to targeting the grasping hand movements towards the visually perceived object, called visuo-motor coordination pathway in visual perception.

Keywords: Visual cortex; tractography; spatial orientation.