ASHBi SEMINAR

The role of the superior temporal sulcus (STS) in controlling social gaze following

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Primates follow the other´s gaze to an object of interest to the other, allowing the two agents to establish joint attention. Whereas humans exploit both eye and head gaze cues, monkeys rely mostly on head gaze. This difference notwithstanding, human gaze and monkey gaze following have similar functional features, qualifying them as domain specific capacities that share similar, possibly homologous neural architectures. A central hub in a putative network subserving gaze following is a distinct patch of cortex in the STS. As shown by our comparative fMRI work this gaze following patch (GFP) is selectively activated if observers shift attention to a target determined by the other´s gaze. The monkey GFP contains a distinct set of gaze following neurons that seem to establish a linkage between the other´s gaze direction and the object, singled out by the other´s gaze, if this linkage is pertinent within the prevailing context. Microstimulation of the monkey GFP establishes a causal role of these neurons. If microstimulation is applied in a period in which the information needed for the linkage between gaze and object becomes available, gaze following is compromised. In short, the GFP plays a causal role in orchestrating gaze following and its executive control.

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