Interactions between the cerebellum and temporal cortex during action observation

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Converging lesion and brain imaging findings uncover involvement of the cerebellum in visual perception of body motion

Pavlova et al., *Perception* 2001

Neurosurgical patients (lesion-symptom mapping)  
Healthy subjects (functional MRI)

Sokolov et al., *Cerebral Cortex* 2010  
Sokolov et al., *Neurolmage* 2012
Functional and effective task-specific connectivity between the left cerebellum and right superior temporal sulcus (STS), a key structure of the action observation network:
Diffusion tensor imaging (DTI) – first evidence for existence of a direct structural loop connecting the temporal cortex and cerebellum

Sokolov et al., Cerebral Cortex 2014

3D reconstruction of a representative fiber tract
Conclusions

- Left lateral cerebellar structures are essential for visual processing of body motion

- First evidence in favor of direct communication and anatomical connectivity between the left cerebellum and right temporal cortex

- Potential implications for neuropsychiatric diseases such as autistic spectrum disorders, epilepsy, vertigo; and for neurorehabilitation
In collaboration with

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