

Hearing by Eye: an Introduction to speechreading/lipreading: its cognitive and neural bases

Speech is processed by ear – but it can also be seen. What falls out of this arrangement? I will discuss various phenomena, including McGurk illusions (<http://tinyurl.com/66l9wp>), speech processing when acoustic information is poor or absent, and introduce research on the perceptual and cognitive bases of speechreading (Part 1). A more advanced presentation will focus on the cortical networks that support the processing of seen speech – both in hearing and in deaf people (Part 2).

As well as discussions following the presentations, there will be opportunities to explore various silent speechreading tests, to test sensitivity to McGurk effects, and to try out your own speechreading skills over this two day project.

The course will not assume specialised knowledge in speech science or neuro-anatomy. A ‘brain crib’ is provided

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Course aims:

1. To appreciate the ways in which seeing the speaker affect speech comprehension in hearing and deaf people
2. to be aware of the role of seen speech sensitivity in the development of spoken language skills
3. to have knowledge of different phenomena and approaches to speechreading and audiovisual speech processing, and their import for speech processing theories
4. To gain an understanding of some neural bases for the processing of seen speech

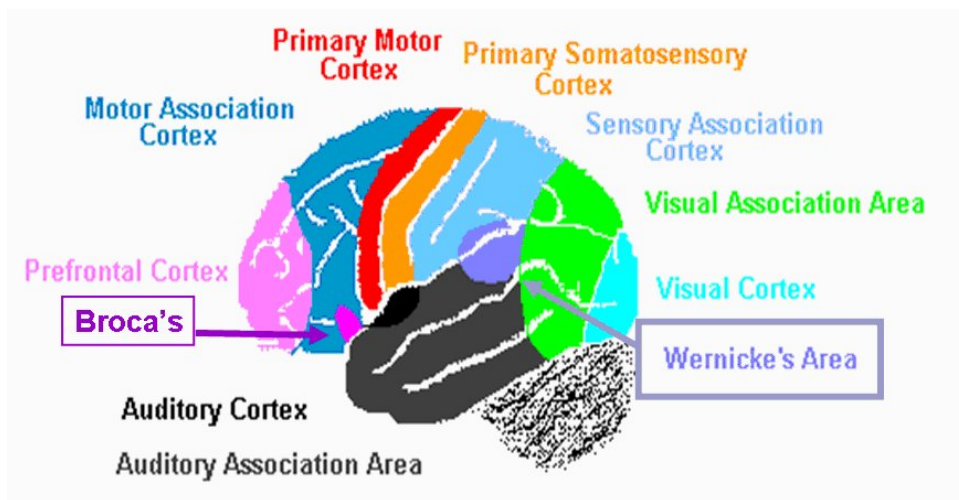
Core reading

Campbell R. The processing of audio-visual speech: empirical and neural bases. *Philos Trans R Soc Lond B Biol Sci.* 2008 Mar 12;363(1493):1001-10. Review. PMID: 17827105 doi: 10.1098/rstb.2007.2155

Cribs

1 Major functional divisions of the human brain: lateral view of the left hemisphere. The classical language areas are Broca's area (left inferior frontal gyrus) and Wernicke's area (left supramarginal regions and posterior superior temporal region)

On the assumption (Luria), that neighbouring regions are also functionally related, can you suggest which language functions may characterize each of these two language regions?



2 'long axon' connections between the language regions

Wernicke's area and Broca's area are connected via two deep bundles of fibres: arcuate fasciculus ('arqué') and uncinate fasciculus ('unciné'), as shown in this diagram

