

**ACOUSTICS2008/827****Multistability in audiovisual speech scene analysis: behavioral and neurophysiological data on multimodal verbal transformations**

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The multistable perception of speech refers to the perceptual changes experienced while listening to a speech form cycled in rapid and continuous repetition, the so-called Verbal Transformation Effect. Because distinct interpretations of the same repeated stimulus alternate spontaneously, this effect provides an invaluable tool to examine how speech percepts are formed in the listener's mind. In a series of behavioural studies, we demonstrated that (1) articulatory-based representations play a key part in the endogenously driven emergence of auditory speech percepts; (2) vision penetrates into the transformation process, intervening both in the stability of a given pattern, and in the temporal dynamics of perceptual switches. Furthermore, we determined the cortical circuit in charge for the emergence of a shift of percept associated to a given audio input. This circuit involves a cortical "dorsal route" for speech perception, linking temporal, parietal and frontal regions. Current experiments involve further tests about the nature of both perceptuo-motor and audio-visual interactions in verbal transformations. Altogether, these results shed some new lights on the cognitive and neurobiological bases of speech perception, in which multimodal interactions between sensory and motor representations play a crucial role.