

# The role of working memory and inhibition in verbal/gesture integration

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**Introduction:** Nonverbal communication skills have been a growing subject of research. A main component of these skills consists of gesturing. Because they convey semantic information related to the verbal utterance, iconic gestures are particularly interesting to investigate. Studies (Holle, Oblesser, Rueschemeyer, & Gunter, 2010 ; Holle & Gunter, 2007) showed that the iconic gesture/speech integration improved following congruent bimodal presentation (simultaneous presentation of matching visual and auditory stimuli). However, the intermediate processes involved in this integration have been sparsely investigated. One recent study by Wu and Coulson (2014) suggested a role of the visuospatial working memory (WM), showing that among young adults, the congruency advantage was lost when this process was saturated.

**Research project:** During this congress, we will propose an integrative model based on existing models (Rothi, 1993; Holle, 2007) to understand the temporality of speech/gesture integration and how WM and inhibition modulate it. To investigate how WM modulates this integration, our task will consist in a verbal and gestural recognition task with two unimodal conditions (where either a visual or auditory item is presented) and one congruent bimodal condition. The cognitive load in WM will be manipulated by gradually increasing the number of items presented in each condition. A pre-test will be conducted to determine the number of items required to saturate the WM and inhibition capacities and a total of 100 healthy participants (age 20+) will take part in the study. Preliminary results from the pre-test will be presented at the congress.