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How the prosody in our hands helps us learn a  
first and a second language



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## Abstract

Over the past decades research has shown how co-speech gestures are tightly interconnected with speech in time and in semantic function (e.g., McNeill 1992, among many others). While a bulk of research has explored gesture-speech interactions at the semantic level, little work has addressed the relationship between prosodic and gestural features of language, and how they are integrated from a temporal and from a semantic point of view (e.g. Esteve-Gibert & Prieto 2013; Hübscher et al. 2017, among others). Functionally, both the gestural and the prosodic components of language constitute powerful cues for parsing speech, marking of information status and pragmatic information. In this talk, I will claim that synchronized gestural and prosodic prominences of language act as scaffolding mechanisms in language development. Even though recent research presents contradictory evidence on the role of beat gestures on children's recall of information (e.g., So et al 2012, Igualada et al. 2015, among others), I will discuss evidence that we have on the several experiments carried out in our research group with a Catalan population which show how synchronized prosodic and gestural prominences act as scaffolding mechanisms of L1 language learning, e.g., they facilitate the recall of focused information (Experiment 1), help boost narrative abilities (Experiment 2), and act as precursors for later language development (Experiment 3). The second part of the talk will present the results of two experiments (Experiments 4 and 5) related to how our coordinated gestural and prosodic prominences help us learn words and pronunciation in a second language. I will conclude that a multimodal/embodied approach is essential to understanding language learning, and that it can be successfully applied to language teaching and language treatment contexts.

Esteve-Gibert, N., & Prieto, P. (2013). "Prosodic structure shapes the temporal realization of intonation and manual gesture movements". *Journal of Speech, Language, and Hearing Research* 56(3), pp. 850-864.

Hübscher, I. – Esteve-Gibert, N. - Igualada, A. - Prieto, P. (2017). "Prosody and gesture as bootstrapping devices to pragmatic meaning: How children learn to understand uncertainty". *First Language* 37(1): 24-41.

Igualada, A. - Esteve-Gibert, N. - Prieto, P. (2017). "Beat gestures improve word recall in 3- to 5- year- old children", *Journal of Experimental Child Psychology* 156: 99-112.

McNeill, D. (1992). *Hand and Mind: What Gestures Reveal About Thought*. Chicago: University of Chicago Press.

So, W. C., Chen-Hui, C. S., & Wei-Shan, J. L. (2012). Mnemonic effect of iconic gesture and beat gesture in adults and children: Is meaning in gesture important for memory recall? *Language and Cognitive Processes*, 27, 665–681.