
Speech and co-speech gesture coordination in Hungarian: The role of prosody & information structure

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The close integration of speech and co-speech gestures has been investigated extensively, yet the principles underlying their temporal coordination remain unclear. Prior work has shown alignment between co-speech gestures and prosodic prominence (Carignan et al. 2024, *inter alia*), as well as sensitivity to prosodic boundaries (Krivokapić et al. 2017, *inter alia*), and a strong link between gesture and pragmatic prominence (Türk & Calhoun 2024, *inter alia*). This study explores how linguistic factors shape coordination in Hungarian by addressing two questions: (1) In a language where prominence is not primarily marked by pitch accents, how are co-speech and speech gestures (F0, vowel, and consonant gestures) coordinated? (2) How do prosodic boundaries influence the timing and coordination of speech and co-speech gestures under varying pragmatic conditions?

We conducted a semantically-pragmatically controlled production study in which Hungarian speakers were asked to gesture while producing question–answer pairs under specific focus (second occurrence, broad, confirmation, corrective) and topic (aboutness, contrastive) conditions, where the target word (*Mima*) in each utterance followed either a word boundary or an intonational phrase boundary (see (1) below for broad focus with a word boundary).

- (1) **Q:** *Mi történt ma a versenyen?* [What happened at the competition today?]
A: *Ma Mima bebetonozta a hírnevét.* [Today Mima cemented her reputation.]

Data from 7 participants were collected using electromagnetic articulography (EMA), along with concurrent acoustic and video recordings, allowing for detailed prosodic and kinematic analyses. Data is currently analyzed.

As the first study of its kind on Hungarian, this work contributes to a growing body of research on gesture-speech synchrony and the phonetics of gestures, and expands our understanding of multimodal speech production with typologically new data.

References: • Carignan, C., Esteve-Gibert, N., Lævenbruck, H., Dohen, M., & M. d'Imperio (2024). Co-speech head nods are used to enhance prosodic prominence at different levels of narrow focus in French. *The Journal of the Acoustical Society of America*, 156(3), 1720–1733. • Krivokapić, J., Tiede, M. K., & M. E. Tyrone (2017). A kinematic study of prosodic structure in articulatory and manual gestures: Results from a novel method of data collection. *Laboratory phonology*, 8(1). • Türk, O., & S. Calhoun (2024). Phrasal synchronization of gesture with prosody and information structure. *Language and Speech*, 67(3), 702–743.