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Task complexity and speech-gesture production: A cross-linguistic analysis of L1 and L2 narratives

Abstract:
This study investigates the extent to which cognitive demands influence the use of representational co-speech gesture in L1 and L2, and further examines the role language competency, task complexity, and cross-linguistic transfer play in gesture production. In order to obtain a more robust understanding of linguistic-gesture representation from cognitive perspectives, this study tests two hypotheses about the role of gesture in speech production: the Lexical Access Hypothesis, which holds that gesturing aids in lexical access, and the Information Packaging Hypothesis, which holds that gesturing aids in conceptualization. Sixty participants with Mandarin Chinese as L1 and English as L2 were recruited in this study, with 30 advanced (C1) and 30 low-intermediate (A2-B1) English proficiency levels. Each participant was shown a cartoon first and required to retell the story once in Mandarin Chinese and once in English. Based on the Triadic Componential Framework (Robinson, 2005, 2007), the order was counterbalanced so as to establish a control group and an experimental group with prior knowledge and planning time as independent variables.

The data analysis first explores co-speech gestures, investigating the extent to which representational gesture (iconic, deictic and metaphoric gestures) differ between L1 and L2 among speakers at different L2 proficiency levels. It was found that English proficiency has a significant effect on gesture production, while no significance was found between L1 and L2 gesture production. In the task that requires higher cognitive demands, both advanced and low-intermediate groups use more gestures in L2 narratives. In particular, significantly more iconic gestures and representational gestures were produced. To explore cross-linguistic influence, three aspects were investigated: manner-path gestures, path gestures, and manner-highlighting gestures. It can be observed that there is L1/L2 convergence and a bi-directional cross-linguistic influence in L2 speakers’ narrative descriptions of motion. The examination of the co-occurrence of speech and gesture has provided a key insight into the second language cognition and the interplay between the two models of communication.