

MODELLING INTERLOCUTOR LINGUISTIC COMPETENCE IN LINGUISTIC UPDATING

Wenyi Zhang (The Chinese University of Hong Kong) & Zhenguang G. Cai (The Chinese University of Hong Kong)
wenyi.zhang@link.cuhk.edu.hk

People constantly update the label they use to refer to an object based on their recent linguistic experience [1,2]. For instance, speakers have an increased tendency to repeat a particular referential expression (e.g., *bus* instead of *coach*) if their interlocutor has previously used that expression. Similarly, listeners identify referents more quickly when their interlocutor repeatedly uses a particular expression. By updating form-meaning associations, listeners can increase the ease of comprehension for interlocutors. In this study, we ask whether such updating is sensitive to the linguistic competence of the interlocutor. If linguistic updating facilitates communicative success, we should expect more updating by comprehenders if their interlocutor is linguistically less competent [3]. Specifically, we examined whether comprehenders update form-meaning associations to a greater extent when comprehending a less competent interlocutor (a child) than when comprehending a more competent one (an adult). To test this hypothesis, we first primed participants with a semantic relatedness judgement task and then tested them with a visual world eye-tracking experiment.

The experiment consisted of a priming phase and a testing phase. In the priming phase, forty-eight Mandarin-speaking participants listened to sentences spoken by either an adult or a child Mandarin speaker. A sentence had either a preferred name (e.g., *xi₁hong₂shi₄*, “tomato”; tomatoes are ripe in summer) or a dispreferred name (e.g., *fan₁qie₂*, “tomato”) of an object. Participants then decided whether a probe was semantically related to the sentence. In the testing phase, participants looked at a visual scene consisting of three objects: a target (e.g., *fan₁chuan₂*, “sailing boat”), a competitor whose dispreferred name (appeared in the priming phase) shared phonological onset with the name of the target (e.g., *fan₁qie₂*, “tomato”), and a distractor. They then heard a spoken word (e.g., *fan₁chuan₂*, “sailing boat”) and clicked on the mentioned object. If participants update their form-meaning associations based on prior input, there should be a strengthened link between *fan₁qie₂* and the concept of tomato when they heard *fan₁qie₂* (instead of *xi₁hong₂shi₄*) in the priming phase. Crucially, if linguistic updating is modulated by the linguistic competence of the interlocutor, then the effect is expected to be larger when the interlocutor is a child than when it is an adult.

We used growth curve analyses to capture changes in fixation proportions on the competitor starting from the spoken word onset to the end of the first character (e.g., *fan₁* in *fan₁chuan₂*). A logistic mixed-effect model revealed a significant interaction of condition and interlocutor, indicating that the overall fixation proportion difference between the primed and unprimed conditions was larger in the child than in the adult interlocutor condition. Separate analyses showed that when hearing a child, listeners tended to fixate more on the competitor in the primed (i.e., hearing *fan₁qie₂* in the priming phase) than in the unprimed condition; however, no such difference was found when hearing an adult. Our results suggest that listeners update their form-meaning associations to a greater extent when the interlocutor was linguistically less competent, presumably because this helps boost communicative success.

References. [1] Brennan, S. E., & Clark, H. H. (1996). *J Exp Psychol: Learn Mem Cogn*, 22(6), 1482-1493. [2] Barr, D. J., & Keysar, B. (2002). *J Mem Lang*, 46(2), 391–418. [3] Cai et al. (2021). *J Mem Lang*, 121, 104278.