The roles of syllabic and sub-syllabic units in Mandarin spoken word production: An EEG study

This study aims to examine the phonological encoding processes in Mandarin spoken word production and to compare the roles of syllabic and sub-syllabic units, by using a primed naming paradigm with EEG recordings. Previous studies have found that segments are effective planning units in European languages (Damian & Dumay, 2009; Meyer, 1991; Schiller, 2008). However, segment-level relatedness often failed to facilitate behavioral performance in Mandarin spoken word production (Chen, Chen, & Dell, 2002; Chen & Chen, 2013; Qu, Damian, & Kazanina, 2012), while syllable-level relatedness showed robust effects (Chen, Lin, & Ferrand, 2003; O'Seaghdha, Chen, & Chen, 2010). It remains debatable whether different phonological units are adopted in planning English and Mandarin speech, since the null effect of segment-level relatedness might be due to the lack of sensitivity in behavioral measurements. Thus, a more sensitive measurement EEG was used in the current study to compare the effects of syllable-level and segment-level relatedness on brain responses of native Mandarin speakers during a picture naming task. Preliminary results show that both syllables and segments play roles in Mandarin spoken word production.