The role of rhythm in accommodation processes during conversation: Preliminary results

Leonardo Barón Birchenall and Noël Nguyen
(Aix Marseille University,Aix-en-Provence, France)

In spoken language communication, *accommodation* refers to the many processes employed by talkers to adapt to each other. Within these processes, phonetic *convergence* is associated with an increase in similarity in speech patterns across talkers. In some theoretical frameworks, phonetic convergence occurs in an involuntary and immediate manner rather than intentionally (Louwerse et al., 2012). The present work focuses on the interplay between speech rhythm and phonetic convergence in an interactive task. More specifically, given that repetitions of a speech stimulus can reduce the time and neural activation needed for its processing, and that multiple repetition significantly enhance memory and learning (Falk et al., 2014), we propose that *the use of regular rhythmic structures during conversations produce more convergence between speakers with respect to irregular rhythmic structures*.

To test this hypothesis, we created a set of stimuli consisting of four groups of 16 nine-syllable Spanish sentences each. We used four types of words (oxytones, paroxytones, proparoxytones and unstressed words). Each of the four groups had a particular rhythmic structure, as follows (stressed syllables are represented by a big X, unstressed syllables by a small x): (1) regular structure, three feet, head to the right: xxXxxXxxX; (2) regular structure, three feet, head to the left: XxxXxxXxx; (3) irregular structure, three feet, head to the right: xxXxXxxXx; (4) irregular structure, four feet, head to the left: XxXXxxxXx. We tested two dyads of speakers separately in a reading - repetition task in which each participant had to read a sentence and the other one had to immediately repeat it. Participants alternated between reading and repeating the sentences. The order of presentation of the four groups was randomized. A rhythmic distance score, proposed by Späth et al. (2016), was then used to determine the degree of convergence between the interlocutors' rhythms.

Resulting data indicate that regular left foot headed rhythmic structures generate more convergence between interlocutors than irregular left foot headed ones (with respect to metrical timing patterns). Right foot headed rhythmic structures data show a more complex pattern. Implications for current models of phonetic convergence in speech will be discussed

References:

Falk, S., Rathcke, T., & Dalla Bella, S. (2014). When speech sounds like music. *Journal of Experimental Psychology: Human Perception and Performance*, *40*(4), 1491-1506.

Louwerse, M., Dale, R., Bard, E., & Jeuniaux, P. (2012). Behavior matching in multimodal communication is synchronized. *Cognitive Science*, *36*(8), 1404-1426.

Späth, M., Aichert, I., Ceballos, A., Wagner, E., Miller, N., & Ziegler, W. (2016). Entraining with another person's speech rhythm: Evidence from healthy speakers and individuals with Parkinson's disease. *Clinical Linguistics and Phonetics*, *30*(1), 68-85.

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