

Phoneme Categorization after Speaking with a Bite Block

Xinyu Zhang, Esther Janse

Radboud University

The processes of speech production and speech perception are closely intertwined. Existing research on how articulator displacement affects speech perception usually has the setup where participants perform a perception task while the configurations of their articulators are changed (e.g., external force applied on the jaw in Nasir & Ostry 2009) i.e., the articulator manipulation happened during the perception task. We investigate whether and how the experience of having spoken with an altered articulatory configuration has any consequences for phoneme categorization after the manipulation has been removed. Furthermore, we ask whether having heard one's own production during the manipulated production affects this potential shift.

Participants were randomly assigned to a bite-block or a no-bite-block group. The bite block inhibited tongue height movement. All participants first read non-words without the bite block, after which they were tested on their categorization of the phonemes /ɪ/ and /ɛ/ embedded in monosyllabic Dutch words (perception pre-test). Then, dependent on their group assignment, participants would either speak with or without the bite block. An additional group assignment determined whether participants (in both bite-block and no-bite-block groups) would either hear their own speech productions or not, i.e., speaking either with ordinary auditory feedback or with speech-shaped noise to mask their auditory feedback. A post-test identical to the perception pre-test followed for all groups. By comparing categorization responses between pre-test and post-test for all bite block and auditory feedback combinations, we will be able to answer our research questions. Results will be discussed.