Voice Onset Time in bilingual Italian-German children. Evidence from perception and production

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Exposure to more than one language influences children's phonemic development (Kehoe & Kannathasan, 2021) and bilingual children's neural commitment to their two languages and hence their phoneme processing abilities vary in accordance with the relative amount of exposure to each language (Sebastián-Gallés & Bosch, 2002). Event-related potentials (ERPs), specifically Mismatch Responses (MMRs), can be used to investigate phoneme processing abilities as they index automatic neural discrimination of speech contrasts (Yu et al., 2019). By combining neurophysiological and behavioral measures we examine the perception and production of Voice Onset Time (VOT) in bilingual Italian-German children and their monolingual peers. While German contrasts short lag and long lag, Italian contrasts short lag and voicing lead. We examine whether bilinguals' phonetic/phonological systems for the two languages develop independently or whether they influence each other, and what role language input plays in the formation of phonetic/phonological categories. Forty five-year-olds (16 monolingual German and 24 bilingual Italian-German children) were tested eliciting the neurophysiological potential MMR to VOT contrasts in bilabial stop consonants. The short lag stop, common to both languages, was used as the standard. Four deviant VOTs were selected: 92 ms and 36 ms lag for German; 112 ms and 36 ms lead for Italian. A picture-naming task was used to elicit productions of 10 word initial stops in each language. Language background was assessed using a parent questionnaire. Monolingual and bilingual groups behave similarly when processing German long lag and Italian voicing lead VOT. The lack of a bilingual advantage in processing voicing lead suggests that bilingual five-year-olds were not automatic in discriminating Italian contrasts (Yu et al. 2019). Measures of VOT for Italian and German words were consistent with this interpretation. Specifically, the children showed mastery of German VOT but variability in Italian VOT. Evidence of crosslinguistic interaction was observed.

References

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