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Language-general prelexical basis of the labial-coronal perceptual asymmetry: evidence from Dutch and Japanese infants

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Coronals have a special status in many phonological systems, and it is often assumed they have an unmarked or underspecified place of articulation (Paradis & Prunet, 1991). This special phonological status has typically been associated with lexical underspecification. This is reflected in perceptual asymmetries, such as the detection of a labial that is mispronounced as a coronal, but not a coronal that is mispronounced as a labial, by both children (Fikkert, 2010) and adults (Lahiri & Reetz, 2010).

Interestingly, a comparable perceptual asymmetry has recently been reported in six-month-old infants for the contrast /paan/-/taan/ (Dijkstra & Fikkert, 2011). As infants at this age are generally considered 'universal listeners' (e.g., Eimas, Siqueland, Jusczyk, & Vigorito, 1971), this suggests a *prelexical* basis, at least for the labial-coronal perceptual asymmetry.

As *prelexical* does not necessarily equal *pre-experience*, a crucial open question remains if the observed asymmetry is language-specific, or rather general across languages. The current project therefore compares the perception of the contrast in the word-medial consonant cluster /ompa/-/onta/ in Dutch and Japanese.

At present, 16 four-month-old and 16 six-month-old Dutch infants, as well as 13 four-month-old and 16 six-month-old Japanese infants were assessed on their discrimination of the contrast in the word-medial consonant clusters of the non-words /ompa/-/onta/. Eight tokens of each /ompa/ and /onta/, recorded by a native speaker of Dutch, were chosen as stimuli. In a slightly modified version of the Central Fixation paradigm (Werker et al., 1998), half of the infants were habituated to tokens of /ompa/, whereas the other half were habituated to /onta/, while they fixated on a central screen. Both groups were then presented with new /ompa/ and /onta/ tokens, while the visual stimuli remained unchanged. The test /onta/ constituted a 'switch' for the /ompa/-habituated infants, whereas it mapped onto the 'same' category for the /onta/ infants, and vice versa. A mixed ANOVA revealed that infants looked longer to 'switch' trials [$F(1,53) = 6.27$, $p = 0.015$], but that this effect interacted with the type of habituation stimulus [$F(1,53) = 8.93$, $p = 0.004$]. Infants increased their looks during switch trials when habituated to /ompa/ ($p < .001$), but not when habituated to /onta/ ($p = .649$). Neither the between-subject factors language and age nor any interactions between them reached significance, suggesting that infants across languages and age groups find it harder to hear a switch from coronal to labial than vice versa (Figure 1).

This work provides support for a prelexical and language-independent basis of the labial-coronal asymmetry, contributing an important piece to the puzzle of the etiology of the special status of coronals in the phonologies of the world.

Figures

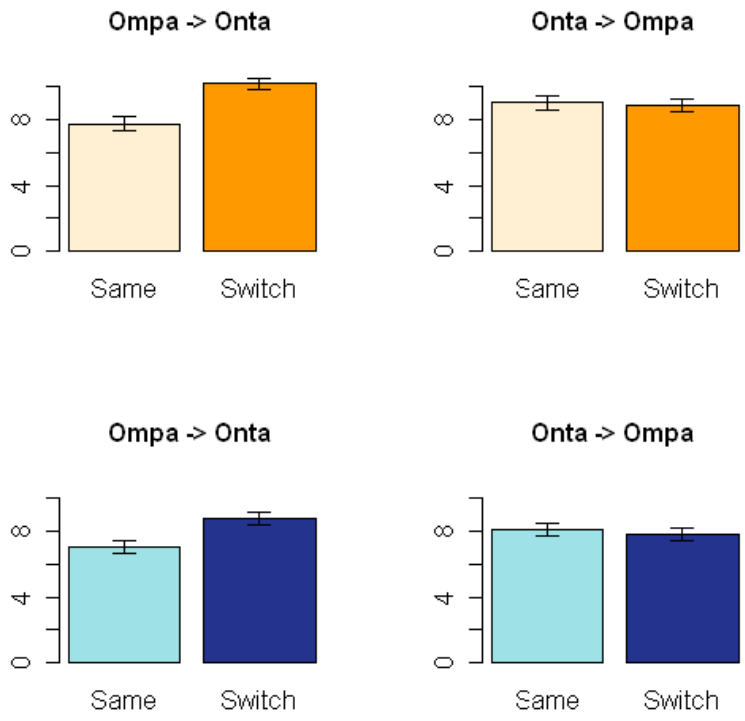

Figure 1. Infants' looking times (s) to same and switch trials by stimulus presentation order and language. Upper (orange) row represents Dutch infants, lower (blue) row represents Japanese.

References

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