

Synchronic variation in the production of Polish sibilants and its implications for diachronic change

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The purpose of the present study was to investigate the production of the three voiceless Polish sibilants /s ɕ ʃ/ of L1-Polish speaking children in comparison with sibilant productions of L1-Polish speaking adults. The more general aim was to link the results to a potential neutralization of /s ɕ/ which has been observed in several Polish non-standard varieties (Nowak, 2006) as well as in Mandarin Chinese (Duanmu, 2000). The /s ɕ/-contrast is primarily cued by differences in the spectral properties, more precisely the sibilant's spectral center of gravity (high CoG in /s/, low CoG in /ɕ/). The /ɕ ʃ/-opposition, on the other hand, is maintained by means of different transitions into the following vowel, with a lower F2 locus in /ɕ/ and a higher F2 locus in /ʃ/ (Lisker, 2001; Nowak, 2006; Bukmaier et al., 2014). Bukmaier & Harrington (2015) collected acoustic and EMA data (fleshpoints on the tongue, lips, and jaw) from nine L1-Polish speaking adults. The results of this study pointed towards greater instability of the retroflex sibilant /ɕ/. Li (2008) compared adult sibilant productions with those of children aged 3 to 7 in English, Japanese and Mandarin Chinese. She found that although children use language specific categorization cues to separate the sibilants in production their categories overlap to a greater extent than those of adults both with respect to M1 and F2. A possible reason for this finding could be that children pass through stages in which articulation is characterized by global gestures (e.g. CV transitions) to stages where static aspects of sound production are focused in the course of speech development. These earlier studies on sibilant productions in adults and children are the motivation for the present research question of whether children's sibilant productions further push the neutralization of the three-way Polish sibilant contrast by showing more overlap in their sibilant production. More specifically, we hypothesize, that children show greater overlap especially for /s ɕ/ regarding CoG and F2 compared to adults.

In order to test this, we elicited sibilant productions of L1-Polish speaking children (5-6 years of age) and L1-Polish speaking adults (20-30 years of age) using a picture-naming and reading task, respectively. Preliminary results show, consistent with the studies mentioned above, that apart from the greater overlap in sibilant productions of children, the general pattern of children's sibilant productions match the fricative productions of adults. Additionally, the greater overlap between the sibilant categories, and particularly the greater resemblance of /s ɕ/ in the analyzed acoustic features (M1 and F2), in children provides further evidence for the greater instability of the retroflex sibilant and a possible merger of the /s ɕ/ contrast.

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