Background

- Individuals vary in tongue shape for /r/ (Mielke et al. 2010) and /s/ (Bladon and Nolan 1977)
- /r/ can be retroflex (tip up) or bunched (tip down) (Lawson et al. 2011)
- /s/ can be apical (tip up) or laminal (tip down)
- Individuals may have one, other, or both
- Brunner et al. (2009) found flatness of palate correlated with reduced articulatory variability

Questions

- What contexts condition variation of /r/ and /s/?
- Does the articulation of either /r/ or /s/ predict the articulation of the other?
- How does amount of variability relate to palate shape?

Hypotheses

- Tip orientations of /r/ and /s/ pattern together
- Individuals with flatter palates exhibit less articulatory variability than those with domed palates

Methods

- Word reading task; carrier phrase “I’m a ______”
- Lingual ultrasound with simultaneous synchronized audio
- Ultrasonix SonixTablet using a C9-5/10 microconvex transducer at 107 fps held in place with stabilization helmet
- Swallow to obtain palate trace
- Plaster dental casts

Stimuli

rah, Rome, ream, bar, bore, beer
sob, sew, sea, boss, dose, piece

Participants

- 20 (6 male) native monolingual speakers of California English
- 18-35 years old

Selected References


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