

Sibilants in Italian/Tyrolean bilingual speakers

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Goal: This paper presents an UTI-based study on /s/ in Italian as spoken in South Tyrol, a bilingual region on the border between Italy and Austria. More specifically it focuses on /s/ in /s/C(C) clusters as produced by sequential or simultaneous Italian/Tyrolean bilingual speakers. The main aim is to describe the articulatory patterns for /s/ in Italian under different conditions and to discuss how they vary according to the nature and the degree of bilingualism of the speaker so to offer new data for the discussion on the sociophonetics of bilingual speakers, in particular as regards covert articulations.

Method: Lingual articulatory data are captured using an Ultrasonix™ SonixTablet ultrasound system coupled to a transducer operating at 5 MHz (FOV: 112,76°; Depth: 8-9cm; Scanlines: 64) and linked to the Articulate Instruments AAA software for data acquisition at a temporal resolution of 122/166Hz. Tongue profiles are compared using the approach proposed by Davidson (2006) to determine whether or not tongue shapes for articulation under different conditions are significantly different (SS ANOVA) and, in case, to assess which sections of the tongue profiles are statistically different (Bayesian confidence intervals).

Data: Five adult female speakers of the same age and from the same city but with different degrees of bilingualism are recorded while reading a list of 40 Italian words containing the sibilant /s/ followed by /p/, /t/ or /k/ or followed by /pr/, /tr/ or /kr/ in word-initial as well as in word-internal position. Es.: /skanno/ '(l) slaughter; /skranno/ 'high-backed chair; /baska/ 'Basque; /askra/ 'ancient town in Boeotia. **Results:** The inter-speaker comparison of tongue profiles at the fricative acoustic midpoint shows that the informants resort to different articulatory patterns: the covert apical vs. laminal distinction (Fig. 1) plays a role in contrasting /s/ as produced by monolingual speakers against /s/ as produced by bilingual speakers. This differentiation has negligible effects on the acoustic output in the data under scrutiny. These results are relevant to the discussion on the role of bilinguals in promoting sound change, especially as regards a speaker-oriented theory of sound change.

The across-speakers comparison of intra-speaker difference for /s/ tongue profiles under different conditions shows that: (i) as for each possible /sC/ combination in the dataset, the significance of the degree of differentiation in tongue profiles for the same cluster is different across the speakers, but independent from the degree of bilingualism; (ii) as for each possible /sCr/ combination in the dataset, the significance of the degree of differentiation in tongue profiles for the same cluster is the same across the speakers, hence independent from the degree of bilingualism; (iii) as for word-initial vs. word-internal allophones the significance of the degree of differentiation in tongue profile is the same across speakers, hence independent from the degree of bilingualism. These preliminary results are relevant to the discussion on the role of instru-

mental articulatory techniques in dialectology and sound change, in particular because they provide new insights concerning sociolinguistic variation in the light of the debate on what is planned by the speaker or due to the anatomical and physiological properties of the tongue.



Figure 1: Apical vs. laminal articulation of /s/ in a monolingual and a bilingual speaker respectively