We present a sociophonetic investigation of rhotics in bilingual speakers based on articulatory data collected through the Ultrasound Tongue Imaging technique. By means of this study we want to focus attention on recurring context-independent variations in tongue position and shape that in a language contact situation might trigger the often reported front-to-back sound change in rhotics. In particular we want to draw attention to postdorsum backing, front retraction and dorsum bunching. Thus our research focuses on patterns of realization of /r/ amongst six adult simultaneous bilinguals who have been exposed to the two languages spoken in South-Tyrol, namely Italian and the Tyrolean Dialect, since their birth; and four late sequential bilinguals in the same two languages who become the control group.

We record three repetitions for each test word -namely real disyllabic words in isolation, which contain CRV sequences- an analyze them as follows: firstly the rhotic is identified on the base of the acoustics; secondly the tongue surface at the rhotic point in each token is traced and defined in terms of x-y coordinates; thirdly tongue shapes are compared and distances between tongue curves are computed.

Preliminary data show that as for late sequential bilinguals there is no strong categorical distinction between rhotics as articulated in the two languages (be it a dorsal or a coronal rhotic): tongue position and shape almost coincide and present broadly comparable root, dorsum and tip contours. Therefore sequential bilinguals behave like second language learners and transfer the articulatory gesture of their dominant language to the other language (see Fig. 1)

On the other hand simultaneous bilinguals act in a completely different manner: the amount of variations in postdorsum backing and dorsum bunching in rhotics as articulated in the two language is significant, even when acoustic outcomes are comparable as in the case of fricatives (see Fig. 2).

Preliminary articulatory data on categorical differentiation in simultaneous bilingual like these help shed light on the initiation of sound change in bilingual communities and will be discussed on the base of Flege's Speech Learning Model (1995), who claims that age-related changes might affect the way the two languages` phonetic subsystems interact so that early bilinguals are more likely to establish new phonetic categories for each sound of the two languages than late bilinguals are -at least to the extent that the bilinguals perceive the two sounds as dissimilar.
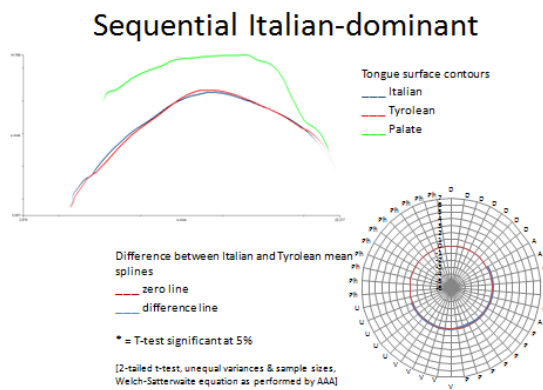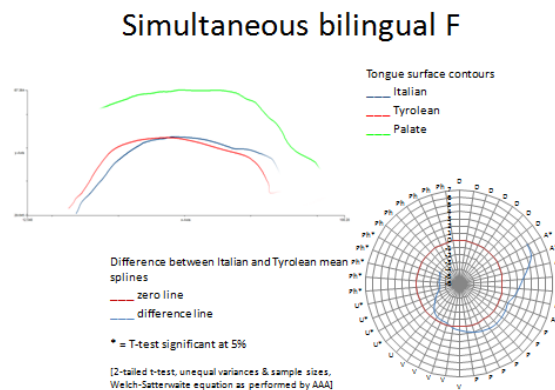


Figure 1

Figure 2