

Rhythmic Convergence and Divergence in two Swiss German dialects

Elisa Pellegrino^{1,2}, Hanna Ruch¹, Thayabaran Kathiresan², Volker Dellwo²

¹*URPP Language and Space, University of Zurich,*

²*Department of Computational Linguistics, University of Zurich*

A sizeable body of research has showed that during social interactions speakers accommodate to their interlocutors, either by becoming more similar (convergence) or by accentuating individual differences (divergence) [1]. With respect to existing evidence of rhythmic adjustments in response to the interlocutor's age and cognitive development [2], in the present study we test the hypothesis that rhythmic modifications are not only unidirectional but that interlocutors are likely to mutually adapt their rhythmic characteristics over the course of a conversation or after increased exposure to a dialogue partner. One excellent testing ground for studying rhythmic accommodation is represented by the linguistic situation of German-speaking Switzerland. Swiss German dialects, differ for segmental features, speech rate and intonation contours [3-7] as well as for their rhythmic characteristics, measured acoustically in terms of the durational variability of consonantal and vocalic intervals [8]. Particularly, the two Swiss German dialects under study (Grison and Zurich German) present three durational crucial differences, leading to a different rhythmic organisation of the two dialects. Compared to Zurich German (ZH), Grison German (GR) presents: opens syllable lengthening (OSL), intervocalic sonorants gemination (ISL) and unreduced word-final ending (Red@) (cf. Table 1).

To study rhythmic accommodation in a dialect contact situation, we used a corpus composed of: 18 audio-recorded dialogues between ZH and GR speakers while performing a diapix task, and 18 pre- and 18 post-dialogue recordings (picture naming task and retelling a story based on a comic), these two latter performed individually by ZH and GR participants [9]. To determine whether ZH and GR speakers produce the rhythmic contrasts more similarly after participating in the diapix task, we extracted the lexical items instantiating the three target durational contrasts from the pre- and post dialogue recordings; in pre-dialogue recordings we measured the cross dialectal differences in three ratio measures devised to capture the rhythmic differences between the two dialects (OSL: ratio between stressed and unstressed vowel within the same word; - ISG: ratio between intervocalic sonorants in -CCe words and in -Ce words; - Red@: the ratio between word-final ending and stressed vowel) (fig. 2) and then we measured difference in distance within a pair (*ddpair*) in the three ratio measures before and after the interaction.

Results based on picture naming task showed that, despite the significant cross-dialectal differences in the three durational contrasts in pre-dialogue session [ISG: $t(34) = -7.816$, $p < 0.001$; OSL: $t(\text{test}) (34) = p < 0.001$; Red@: $t(34) = 3.161$, $p = 0.03$], pairs do not shift consistently the production of the three durational contrasts after the dialogue. Visually, some pairs seem to converge more than others, but the results of statistical analysis (one-way ANOVA, with "Pair" as Factor) report no significant cross-pair differences in the three durational characteristics (*ddpair* in ISG: $F(17, 72) = 1,52$, $p = 0.119$; *ddpair* in OSL: $F(17, 126) = 0.793$, $p = 0.698$; *ddpair* in Red@: $F(17, 252) = 1.480$, $p = 0.102$). In light of Trudgill's assumption that short term accommodation may bring about language change [10], the results of this study will shed light on which acoustic features of the two dialects play a role in dialectal levelling and diffusion of linguistic innovations. Although these findings cannot be over-interpreted, as they are based only on words pronounced in isolation, they can be taken as an indication that durational contrast, unlike vowel quality, are probably too subtle to be perceived and thus to be imitated.

Dialect feature	Example with translation	GR		ZH	
OSL	Sohle 'sole'	V:	['so:lə]	V	['solə]
ISG	Pille 'pill' / Sonne 'sun'	l/n	['pille]/['sunne]	l/n	['pilə]/['sunə]
Red@	Suppe 'soup'	ɐ	['suppə]	ə	['suppə]

Table 1. Examples of items in GR and ZH for the three durational contrasts (adapted from [11])

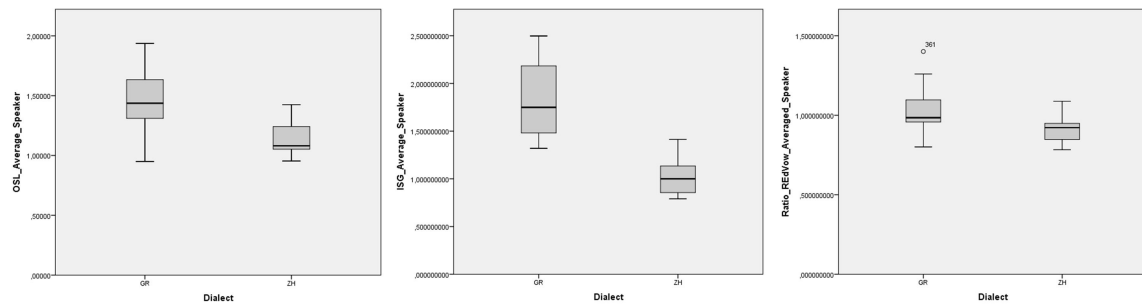


Figure 1. Cross dialectal differences in three durational contrasts averaged per speaker (left: ISG, centre: OSL; right: Red@)

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