What are the driving forces behind sound change in Swiss German?

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Switzerland has played a leading role in dialect documentation. Most noteworthy is the world-renowned *Linguistic Atlas of German-speaking Switzerland* [1, henceforth *Atlas*], documenting Swiss German (SwG) dialects in the middle of the 20th century. In recent decades, studies carried out on a limited set of localities have observed that this documentation is no longer up to date. In terms of phonetic features, [2], for example, reports that the areal distribution of aspirated plosives has expanded since the creation of the *Atlas*. Similarly, /l/-vocalization – originally a feature of Western SwG dialects – has expanded [3, 4, 5]. In the domain of vowels, [6] show that regional distributions of Old Upper German <iu> have changed dramatically when compared to the *Atlas*: the Zürich variant <tüüf> appears to have spread south and west. What is currently missing is a large-scale, multi-locality analysis of sound change on multiple variables over the past decades. And, more importantly, a thorough explanation of the driving forces behind those changes.

In the current study, 1000 speakers from the SDATS database [7] were investigated. Participants came from 125 localities across German-speaking Switzerland. Eight participants per locality were collected, four females, four males – two age cohorts: 500 60+yo and 500 20-35yo. Four items were investigated: two vowels and two consonants. (1) Umlaut before <gg> and <ck>, as in *Rücken*. (2) Old Upper German <iu> before a labial or a velar, as in *tief*. (3) 'Staub's Law', where /n/ before a fricative can be omitted and, in the process, lengthens or diphthongizes the preceding vowel (e.g., Zins [tsɪns], [tseːs], [tseis] etc.). And (4) preservation of the geminated realization of MHG <nn>. Due to the COVID-19 pandemic, data was mostly collected remotely via smartphones and Zoom [7]. Participants saw picture prompts which they were asked to name in their dialect; coding was performed auditorily, and data was compared to the *Atlas* [1]. Linear regressions were used to model the effects of sociodemographic, regional, and personality-related factors on sound change.

The linear regression showed effects of age, region, linguistic mobility, education, as well as identity (dialect pride). Compared to the *Atlas*, the older cohort showed less mean change than the younger cohort (13.5% vs. 24.3%). The canton of Grisons showed the most change (37%), followed by Central Switzerland (24%), Aargau (23%) – least change was found in Northwestern Switzerland (10%) (see Figure 1). More mobile speakers showed more change $(F(1, 1.16) = 30.3)$. Speakers with tertiary education showed less change than those with non-tertiary education (18% vs. 19.5%), and speakers who were proud of their dialect showed less change $(F(1, .27)=6.9)$. Further, there was between-item variation, with Staub's law showing the most change (32.2%), followed by Old Upper German <iu> (27.1%), the Umlaut before <gg> or <ck> (11.2%), and the geminate (5%) (see Figure 2).

There are many potential explanations for these findings. The effect of apparent time change was expected; what is somewhat surprising is the substantial change in the Southeast. Perhaps this is diffusion of the Chur (capital of that region) variant towards these locations – some of which, historically, happen to be locations with Walser dialect spoken. Effects of mobility and dialect pride, too, behave as expected. As for the between-item effects, geminate consonants remain relatively unchanged compared to the *Atlas* – which is surprising, given that geminate realization has been largely abandoned in both standard German and German dialects, even in the South [cf. 8, 9]. By the time of the conference, we will have analyzed additional phonetic variables which – taken together – will provide an even fuller picture of sound change in Swiss German.

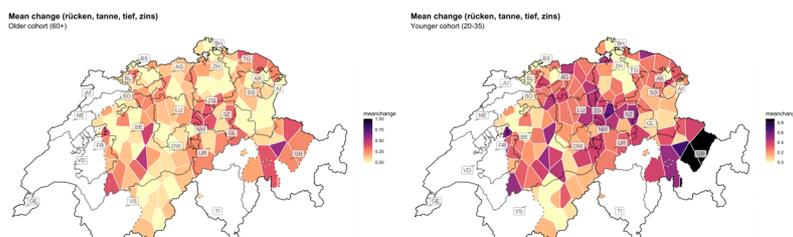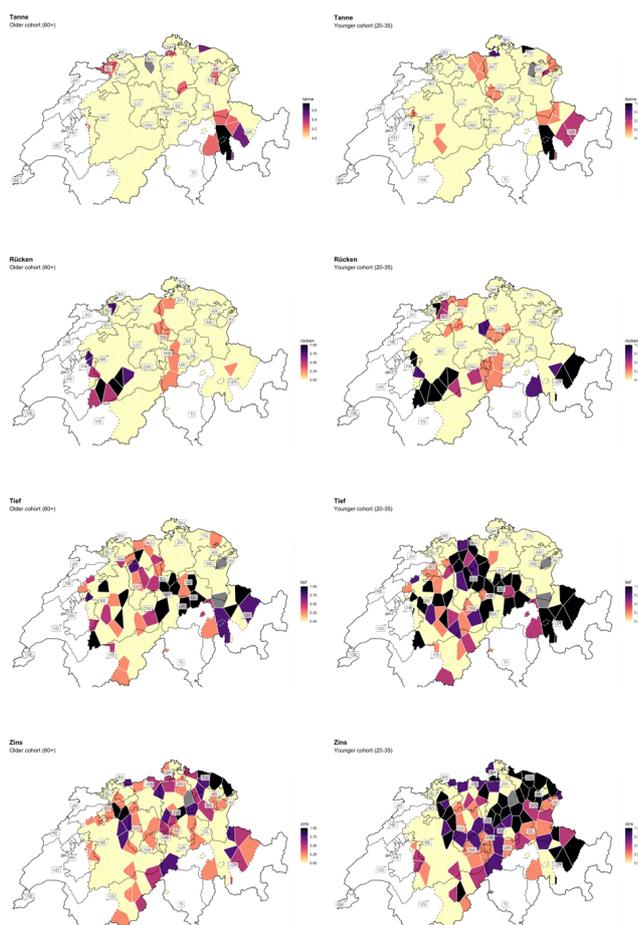Figure 1. *Mean change across the four variables by age cohorts.*

Figure 2. *Rates of change in the variables by age cohorts, listed in ascending degree of overall change.*

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