When dialect words compete for activation

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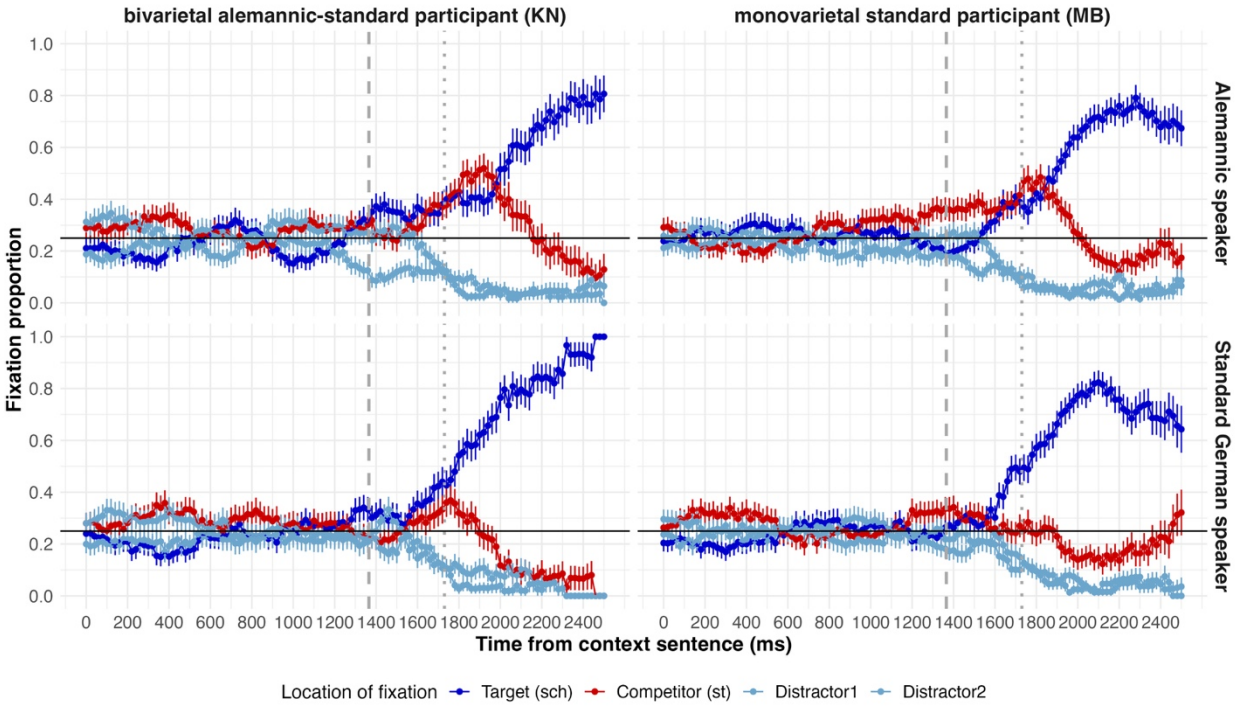
In the south of Germany, many speakers grow up with a regional variety (dialect) and Standard German, SG [1,2]. Often, standard and dialectal word forms are closely related (e.g. SG [ʔast], Alemannic [ʔaʃt], 'branch') and speakers switch [3]. We tested whether bivarietal participants routinely activate dialectal word forms, resulting in generally increased lexical competition or whether the activation is influenced by the respective speaker/variety [4]. Based on research on bilingualism [5], we predict more activation of dialectal word forms when hearing a dialectal speaker. To test these predictions, we conducted a visual-world eye-tracking experiment with printed words [6] and monitored fixations to target words containing a postalveolar fricative [ʃ] (e.g. *Maschen*, realized as [ˈmaʃən] in *both* Alemannic and SG), to dialectal cohort competitors (e.g. *Masten*, produced as [ˈmaʃtən] in Alemannic but as [ˈmastən] in SG). The coda [ʃt] realization is a salient feature of the Alemannic dialect, which is widely known.

We tested 37 German speakers (16 speakers with Alemannic experience, tested in Konstanz, 21 without Alemannic experience as controls, tested in Marburg). We used 32 cohort pairs (e.g. *Maschen-Masten*). In 16 experimental trials, the target contained orthographic <sch> (pronounced as [ʃ] irrespective of variety), the cohort competitor <st> (pronounced as [ʃt] in Alemannic and [st] in SG), and two unrelated distractors. To avoid strategic effects, in 16 distractor trials, the <st>-word was the target (pronounced as [st] by both speakers). There were 16 filler trials that contained cohort competitors that were not mentioned and 16 filler trials with unrelated words. Hence, 25% of the trials had the <st>-word as target, 25% the <sch>-word, 50% neither <st> nor <sch>-words. Words on screen were matched for length in characters and lexical frequency. Position of targets, competitors and distractors were counterbalanced across conditions. The target words were embedded in the carrier phrase *Das nächste Wort ist* 'The next word is', recorded by a SG speaker from Hamburg ([d̥as ˈneːç**st**ə ˈvo͡ːɐtɪ**st**]) and by an Alemannic speaker ([ˈsnɛk**ʃt**ə ˈvo͡ːɐtɪ**ʃ**]). The carrier phrases had a Levenshtein distance [7] of 8 and contained the [st]-[ʃt] alternation twice; targets were produced in SG. Speaker variety (Standard, Alemannic) was manipulated within-subjects but between-items. Preview time of the words was 2s.

Fixations were extracted at 250Hz and processed with VWPre [8,9]. Fig 1 shows the fixations to the four types of words, split by *group* (monovarietal, bivarietal) and speaker *variety* (Standard, Alemannic). Fixations to the target word were analyzed using general additive mixed models [10], with smooths for the interaction between *group* and *variety*, random smooths for event (participant, item) and random slopes for speaker variety. Autocorrelation was modelled with the rho-parameter. Model comparisons showed that the interaction model was superior to a model with main effects only. Target fixations were higher with the standard speaker (i.e. less competition from dialect word), in particular for monovarietal participants. The effect of speaker variety was smaller for bivarietal participants, but significant between 1833-2053ms (while processing the fricative [ʃ]).

The results show that bivarietal participants activated the dialectal word forms more than monovarietal participants. That is, they fixated printed words with <st> when hearing target words with [ʃ], indicating that they activated the Alemannic pronunciation (which contains [ʃ]) and not the SG pronunciation (which does not contain [ʃ] but [s]). Bivarietal participants activated dialectal word forms *even for the Standard German* speaker, suggesting *higher overall activation for dialectal word forms*, possibly due to the alternation between Alemannic and SG in the study. For the Alemannic speaker, both listener groups activated the dialectal word forms *to a similar extent.* This replicates a general flexibility of dealing with accent variation [11] for SG participants. This is noteworthy because the Alemannic speaker was not using the Alemannic pronunciation for <st> words throughout. We are currently testing the roles of dialect strength (carrier phrases with fewer segmental differences between Alemannic and SG), language mode (two Standard German speakers), and active dialect usage to better understand the conditions in which dialectal word forms are activated for bivarietal participants.

Figure 1: Fixations to the <sch> target, dialectal <st>-competitor and distractors (light blue). First vertical line indicates start of target word, second line average end of the fricative [ʃ].



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