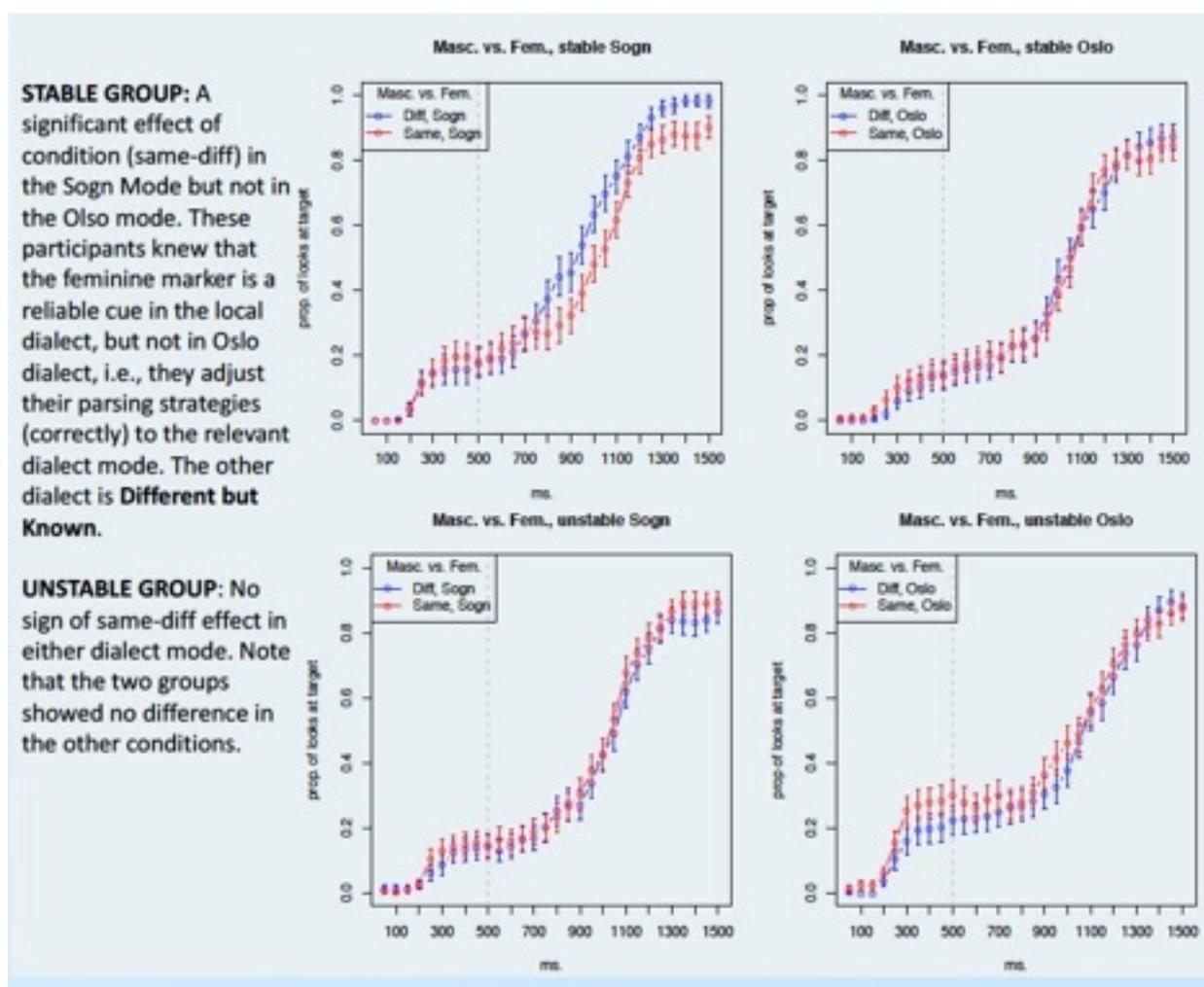**Using eye tracking to assess separation of grammars in bi-dialectal speakers**

The impact of an L2 on an L1 has been studied in psycholinguistics and L2 research, and there is a growing consensus that the L1 of an individual can be affected on all levels due to influence from a later acquired L2 (Schmid et al. 2007, Chang 2012 etc), often with a simplification of the L1 as the outcome (Seliger and Vago 1991). These studies have often focused on language attrition in individuals, and have rarely asked the question what the consequences are for the language in the society. On the other hand, sociolinguists, historical linguists and typologists have all observed the factor of language contact in language change. Today, one of the most salient processes of language change is dialect levelling, taking place as a result of speakers in dialect areas being exposed to a national language, either through media (both written and spoken), increased migration and schooling, resulting in simplification and instability (at least temporally) of the dialects (Trudgill 2011). There is however very little research that ties the insights from the findings on attrition (or L2 on L1 influence) with the observed change through language contact/dialect levelling. This paper reports on the effect of dialect mode in the use of grammatical gender markers in predictive processing. Students from a high school in Sogn in central Western Norway (n: 42, age: 18) took part in two eye tracking experiments (VWP), one with spoken stimuli presented in the local dialect, and one with stimuli presented in the Oslo dialect (which is as close to a national standard as you get). The Sogn dialect is highly associated with the minority written standard Nynorsk, while the Oslo dialect is close to the majority written standard, Bokmål. The schooling language in Sogn is Nynorsk, and the students have a strong preference for writing Nynorsk. The students are taught Bokmål from age 14, but since they are exposed to Bokmål in the national media, they are effectively bidialectal/ bilingual from an early age. Both written standards make an obligatory distinction on indefinite articles between Masculine (M) and Neuter (N), but the Feminine-Masculine distinction is not obligatory in Bokmål, and most Oslo speakers use the M article for both F and M nouns, both in spoken and written language. The M-F distinction is however obligatory in Nynorsk, and stable in the spoken Sogn dialect. The purpose of the study is to investigate if dialect speakers were able to use gender cues in both the "native" dialect (Sogn) and the "second/standard" language (Oslo/Bokmål) to predict upcoming nouns and further if it possible to distinguish stable bi-dialectal systems from attrited/composite systems among the participants. The experiment contained four lists of each 32 items, where each item consisted of two images: a target and a distractor that either matched or did not match with the target (Same vs. Diff condition), and a spoken instruction to look at a target picture. The following gender contrasts were used: (1) Feminine target - Masculine distractor, (2) M target - F dist., (3) N target- M dist., and (4) M target - N dist.. Each participant took the test in both dialect modes (order counterbalanced, different lists), with a 10 minute break between the test. The participants were split in to two groups based on the responses from a questionnaire: a stable group that reported that they spoke roughly in the same way as their school peers and their parents (n=19), and an unstable group that reported that they either spoke different from peers or parents (or both) (n=23). The groups did not differ in their production of the M/F articles (very few errors in both groups), but the stable group used significantly more traditional dialect markers in their speech than the unstable group. In the analysis of eye tracking data, we found a main effect of condition for both groups (p < 0.001, logistic lmer): in the diff condition, both groups had significantly more looks at a target compared the same condition (measured under a critical period of 600 ms); and

an interaction between condition and gender:Masc-Fem (p < 0.001), but a three way interaction cond * mode * gender(Masc-Fem) was only found for the stable group (p < 0.01): as illustrated in the graphs on the page below, neither of the groups use the Masc. article as a predictor when contrasted with a feminine noun in the Oslo mode, but the unstable group has further carried the Bokmål Masc-Fem instability to their native dialect. We hypothesize that children who are used to some amount of linguistic variation in their daily lives (home vs. school) are less likely to treat a later encountered national standard (written/spoken) as different language, and are thus more likely to build up a composite grammar (simplified), while children who are exposed to mainly one dialect can acquire two stable grammars.

STABLE GROUP: A significant effect of condition (same-diff) in the Sogn Mode but not in the Olso mode. These participants knew that the feminine marker is a reliable cue in the local dialect, but not in Oslo dialect, i.e., they adjust their parsing strategies (correctly) to the relevant dialect mode. The other dialect is **Different but Known.**

UNSTABLE GROUP: No sign of same-diff effect in either dialect mode. Note that the two groups showed no difference in the other conditions.

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