

Age dependent differences in the production of the phonemic vowel length contrast in two regional varieties of German

Many varieties of German (e.g. Standard German, Saxon, etc.) distinguish between phonemic long and short vowels (e.g. /bitən/, ‘to request’ vs. /bi:tən/ ‘to offer’) and the acoustic cues to this contrast are vowel duration and vowel quality. Bavarian is distinct from other German varieties as that there is a correlation between vowel quantity and the underlying voicing (which is cued, among others, by the stop duration) of the subsequent stop: underlying voiced stops - which are phonetically shorter than voiceless stops - are preceded by long vowels and vowels before voiceless stops are always short.

Lameli (2004) and Wagener (2002) present some evidence that younger speakers of German dialects produce less dialect features and tend to a more standard-like pronunciation. Incomplete neutralization of a phonemic contrast (e.g. Port & O’Dell, 1985) may be an indicator of a sound change in progress if the degree of neutralization (or maintenance) of a contrast is different for two generations of one speech community. The main purpose of this study was to investigate the extent to which the vowel length contrast is neutralized or maintained in the speech of older versus younger Bavarian speakers when they produce speech of a Standard German variety. To do this, we investigated the vowel length contrast in minimal pairs such as *bitten* (/bitən/) vs. *bieten* (/bi:tən/) and *Hölle* (/hœlə/, ‘hell’) vs. *Höhle* (/hø:lə/, ‘cave’) taken from a corpus that contained read speech by 40 older (i.e. older than 50 years) and younger (i.e. younger than 50 years), Bavarian and Saxon speakers. We measured the vowel and stop duration in these minimal pairs and calculated the difference between the vowel to stop duration ratios (henceforth, VC ratio) of underlying long and short vowels.

The prediction was that the vowel quantity together with the type of post-vocalic stop voicing would be different in the two varieties and the two Bavarian age groups. Commensurate with the way that the vowel quantity contrast is produced in their broad dialects, we expected Saxon speakers to maintain the length contrast (but to produce a more voiced-like obstruent irrespective of the underlying vowel length of the preceding vowel). As far as the older Bavarian speakers were concerned, there were two possible outcomes. The first was that they would neutralize the quantity contrast towards a short vowel before the voiceless stop in *bitten* vs. *bieten*. The second was that they would maintain it indirectly by producing a voiced stop in the latter thereby causing a phonetic lengthening of the preceding vowel: that is under this second scenario the contrast would be [bitən] vs. [bi:dən] in which the lengthened [i:] is a phonetic consequence of [d]. Based on the assumption that dialectal features are less pronounced in younger speakers of German dialects (Lameli, 2004; Wagener, 2002), we predicted that younger Bavarian speakers would maintain the quantity contrast without varying the underlying voicing, i.e. the length of the subsequent stop.

Our results support the second hypothesized outcome: older Bavarian speakers maintained the vowel length contrast to a greater extent than did Saxon speakers and the mean difference between the VC ratio in words with underlying long and short vowel was significantly greater for old than young Bavarian speakers. While there were no significant differences between young and old Saxon speakers, young Bavarian and Saxon speakers showed similar VC ratio differences between long and short vowels. Furthermore, older Bavarian speakers even lengthened sonorant consonants (/l/, /n/) after underlying short vowels to a greater extent than the other speaker groups, indicating that older Bavarian speakers applied the vowel length rule to other contexts which do not differ in underlying voicing in Standard German (they are always voiced). The results suggest that there is a sound change in progress in Bavarian: a two-contrast system in which vowel quantity and stop voicing can be freely combined evolves presumably under the Standard German influence.