Stressed and unstressed vowels in Standard Austrian German

Introduction
This study aims at investigating the phonetic realization of the stressed and unstressed vowels in two-syllabic words in Standard Austrian German (SAG), with respect to gender- and age related aspects.
Previous research has shown that in intonation languages as German, word stress is realized as a combination of diverse acoustic parameters, primarily F0, amplitude, and duration [1, 2]. Pitch is not the most reliable correlate of German word stress, instead spectral energy and duration are more likely candidates [3, 4].
While there are some studies on German word stress, SAG word stress has not been investigated so far.
In the present study, we will basically examine the stressed and unstressed syllables in a given word and to what extent they relatively differ regarding the phonetic parameters F0, intensity and duration. Reduced vowels in SAG are less centralized than reduced vowels in Standard German German (SGG). Maybe in the younger generation, due to the media and to German immigrants for example, there is a stronger influence of SGG on SAG which could also be observed in the realization of word-stress. In the present study, we firstly investigate the phonetic word-stress in older and younger, male and female SAG-speakers. In further studies we also plan to carry out a crosslinguistic comparison with the word-stress realizations of SGG speakers.

Method
Two-syllabic words nucleus position and embedded in equivalent syntactically structured sentences, read twice by 16 speakers of SAG (thereof 11 younger and 8 older and respectively at least four female and four male speakers) were analyzed concerning the phonetic realisation of the stressed and the unstressed syllables. The following parameters were extracted by STx [4]: F0, F1-F3, RMS and duration for the respective syllables as well as F0 and RMS of the word and of the sentence.

Preliminary Results
First results confirm that word-stress is realized by F0, duration, intensity, and formant qualities.
The stressed syllable is mostly realized with a lower pitch than the following unstressed syllable, but it can also be the other way round. Duration and vowel quality alone neither aren’t stable cues for the strength of a syllable, at least for the older speakers. The younger speakers centralize the unstressed vowels more than the older speakers. The most reliable criteria seems to be the intensity combined with duration.
More statistical tests are currently underway to test the results obtained so far.
Literature:


[5] Stx:  [http://www.kfs.oeaw.ac.at](http://www.kfs.oeaw.ac.at)