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### Phonetics in the German classroom: Learning Umlaut

The front rounded vowels of German /y ʏ ø œ/ are very difficult for English speakers to learn, since these phonemes are not part of the English phonological inventory. In both perception and production, these phonemes are often confused with their minimally contrastive back rounded pairs /u ʊ o ɔ/. Most introductory German textbooks focus little on mastering these sounds, and mostly on production rather than on perception. Previous research in phonetics linking perception and production suggests that a focus on perception may help us to teach non-native sounds more efficiently. Flege (1999) cites several studies that found moderate though statistically significant correlations between perception and production of non-native sounds. Additional studies (e.g. Bradlow et al 1999) have shown that listeners can be trained to perceive non-native sounds. These studies suggest that by using focused practice in perception, students may be able to improve both perception and production skills. Most of the aforementioned studies focus on the acquisition of English by advanced second language learners. Few studies to date have investigated this relationship in beginning or intermediate learners in a foreign language classroom. In this paper I present evidence for a correlation between perception and production from my investigation of the perception and production of front rounded vowels by English speakers learning German in a foreign language classroom.

16 Native English speakers studying German at the third to fifth semester level at the University of Michigan took part in the study. (All had begun learning German in high school or college). Production was measured using a word list; perception was measured using a forced-choice identification task, which required listeners to respond to stimuli recorded from a native speaker. In contrast to many other studies which use repeated instances of different vowels within one phonetic environment, e.g. /bVt/, the stimuli for this study consisted of a variety of different German words, partly because this wealth of minimal pairs does not exist in German, but more importantly to mask the intent of the study as much as possible, in order to elicit more natural responses from the learners.

A modest correlation between perception and production was found ( $r = 0.484$ ,  $p < 0.05$  (one-tailed)). The results also shed light on how the learners are forming their Interlanguage phonetic categories. The results from this study show that learners perceived the tense vowels /y ø/ (mean 83%) significantly better than the lax /ʏ œ/ (mean = 72%). The learners also produced tense vowels where lax vowels were expected in 19% of the tokens; this suggests that the learners are over-generalizing. In addition, learners had little trouble distinguishing between /i ɪ/ and /y ʏ/, and never produced /i ɪ/ instead of /y ʏ/, in agreement with Rochet's (1995) findings. Overall, this study shows that perception can have an effect on production, and this relationship should be exploited in teaching methods. In addition, the distinction between tense and lax front rounded vowels must be explicitly taught to learners of German.

#### References:

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