Word Frequency and Segment Deletion in Individual Speakers

Usage based approaches to sound change (e.g. Bybee (2002)) have shown that reduction affects high frequency word forms before low frequency word forms. This is supported by studies of corpora of speech from a variety of languages and has also been observed as a general tendency in reductive changes arising in Copenhagen Danish throughout the 20th century.

This study examined the word form frequency effect at the level of both groups and individuals through an apparent time study and a real time study of the deletion of [w] before syllabic [ð] in Copenhagen Danish. The process was studied in the speech of 22 speakers representing two generations of middle class speakers from Copenhagen, Denmark, who were all originally recorded in 1987 and re-recorded in 2006. All occurrences of [w] before syllabic [ð] were classified auditorily and the results were analyzed using mixed effects multiple logistic regression, controlling for stress and phonetic context. In the original 1987 recordings, deletion of [w] occurred in 76 % of tokens and was more likely in high frequency word-forms than in low frequency word-forms at the group level and younger speakers were more likely than older speakers to delete [w] in relatively low frequency word-forms, indicating a change in progress. The word frequency effect was also observed at the level of individual speakers with all speakers being more likely to delete [w] in high frequency word forms than in low frequency word forms. The results from the study of the re-recordings of the same speakers from 2006 showed that the tendency for deletion of [w] increased to 87 % of tokens, becoming obligatory in high-frequency word forms and spreading to word forms of lower frequency that did not show [w] deletion in the original recordings. The speakers who showed a statistically significant increase in their propensity for [w] deletion across the two recordings were all found to follow the pattern of word frequency: they not only showed obligatory deletion of [w] in high frequency word forms, but the process had also spread to words of lower frequency.

Taken together, these findings suggest that the word frequency effect in sound change is not only true of general patterns in groups of speakers, but also obtains for the individual speaker, even when speakers continue to participate in a change in progress across the lifespan. Hence, the results support an exemplar based model of lexical representation in the minds of individual speakers where representation of word forms is updated incrementally on the basis of the individual’s experiences with hearing and producing words.