

Word frequency and sound change in groups and individuals

On-going sound change has almost exclusively been studied through the Apparent Time Paradigm, in which sound change is charted by analyzing the phonetic variation of speakers of different age groups and inferring from such differences the course of an on-going change in the realization of particular phonemes. Most of these changes have been studied at the level of individual segments, e.g. /t,d/ deletion, /a/ raising, and /u/ fronting, regardless of which word they occurred in, while still factoring in phonological context and phonotactic or morphological constraints (e.g. position in the syllable or position in stem or affix (cf. (Raymond, Dautricourt & Hume, 2006)). In addition to this, some phonetic variation has been observed to be specific for a sub-group of all the words containing the conditioning environment, a mechanism known as Lexical Diffusion (cf. (Wang, 1977).

In a usage based approach to sound change, e.g., (Bybee, 2001), most sound changes are seen to be gradual in the sense that they do not apply across the board to every word containing the conditioning environment, but start in high frequency words and proceed gradually through the lexicon; i.e., most sound changes are diffused lexically. This hypothesis has implications for the study of sound change through comparison of samples of speakers of different age groups. An allophone that is hypothesized to be participating in an on-going change should be attested only in words of relatively high frequency in the older generation as compared to its pattern of distribution in a sample taken from younger generations in the same speech community. Furthermore, if frequency of use is operative in the diffusion of a sound change across generations, we can also ask about the role of frequency in the diffusion of a sound change in individual lexicons over time. If individual lexicons are affected by frequency of use in the manner outlined in (Bybee, 2001), the innovative allophone should become relatively more frequent in items of lower frequency later in life.

The present study investigates the role of frequency in the phonologies of individuals and groups through the use of a sub-corpus of a Real Time study of spoken Danish. Real Time studies involve re-recording and re-analysis of the behavior of subjects from an original Apparent Time sample (see (Sankoff, 2006) for a review of the literature on Real Time studies.) This enables an investigation of the stability of phonetic behavior across the lifespan. The sub-corpus contains auditory analyses of the deletion of [w] before syllabic [ð] in the speech of 22 different subjects who were originally interviewed in the 1980s and have been re-interviewed in 2005.

The results show that the process of [w]-deletion can be seen as an on-going sound change already in the 1980s, since younger speakers are significantly more likely to participate in the process than older speakers. Word frequency emerges as a statistically significant factor: [w]-deletion is more likely in high frequency words than in low frequency words. This pattern is found both for each of the two generations studied, and also for 20 out of the 22 speakers analyzed: they are all more likely to delete [w] before syllabic [ð] in high frequency items than in low frequency items. The process was also studied in a Real Time design in which the recordings from the 1980s were compared to the recordings of the same informants made in 2005. Only 2 speakers are found to continue to participate across the lifespan, but they both increase their propensity for [w]-deletion, and the path of diffusion is correlated with word frequency. For both speakers the rate of [w]-deletion increases in high frequency words, and for one speaker, the process spreads to words of lower frequency. Taken together the results indicate that the frequency effect operates at the level of individual speaker phonologies, and that word frequency is also operative in the case of lifespan change. This supports the role of frequency in the continual shaping of the individual lexicon.

References

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