The influence of segmental and suprasegmental errors on the intelligibility of non-native speakers of Dutch

Johanneke Caspers
Leiden University Centre for Linguistics
j.caspers@hum.leidenuniv.nl

In the field of second language acquisition research the overall interest in pronunciation is relatively limited. Within the group of researchers that do take an interest in pronunciation, many adhere to the idea that prosodic errors are more detrimental to intelligibility of non-native speakers than segmental errors. This view can be found in recent handbooks for foreign language teaching as well. However, the empirical basis for this is rather weak, since it is mainly based on studies involving pronunciation judgments rather than measuring functional intelligibility.

The current study reports on a series of experiments testing the influence of stress errors and segmental errors on the intelligibility of words produced by advanced speakers of Dutch as a second language (DSL-speakers) with either French or Mandarin Chinese as mother tongue. Words in four conditions were gathered:

(1) with a stress position error and a segmental error (phoneme substitution)
(2) with a stress error
(3) with a segmental error
(4) without a stress or segmental error

The stimuli were presented to native Dutch listeners in three separate tasks:

(a) foreign accent judgment
(b) orthographic transcription (functional intelligibility)
(c) word naming (‘repeat the word as fast as you can’)

The results show that suprasegmental errors do not outweigh segmental errors, but a combination of the two types of errors is much more detrimental to the intelligibility of words produced by the Chinese than by the French DSL-speakers (32% versus 75% intelligibility). The Chinese DSL-speakers are on average less intelligible than the French speakers and they receive higher foreign accent scores. However, in the condition without errors (4) both groups are equally intelligible (almost 100%). For the French DSL-speakers, especially segmental errors affect intelligibility, while for the Chinese speakers segmental and stress errors have roughly the same degree of influence, and the effects are additive. This suggests that the specific L1 is of great importance to the impact of segmental and suprasegmental errors on the intelligibility of non-native speakers. The reaction time measurements on the recognized words reflect the results reported above: words in conditions 2 and 3 are recognized more slowly than words in condition 4, and a combination of errors has the largest effect on processing time, especially for the Chinese speakers.

The results suggest that a more ‘foreign’ – but intelligible – generic pronunciation leads to a greater impact of (supra)segmental errors than a less ‘foreign’ pronunciation, indicating that the assumption that prosodic errors per se are more threatening to intelligibility than segmental errors is incorrect.