

Some evidence against the concept of ease of articulation

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Introduction

Quite some phonetic and phonological theories are based on a concept which assumes that speech behavior is an activity which tries to balance the needs of the speaker and the needs of the listener. The needs of the listener are quite well defined, the needs of the speaker, however, are less well thought through. It is usually assumed that the speakers are implicitly or explicitly trying to exert as little effort as possible while speaking, i.e., to deviate as little as possible from a neutral vocal tract configuration. In this concept, the needs of the speaker and the needs of the listener are conceived as antagonistic.

However, if a speaker deliberately tries to exert as little effort as possible while speaking, i.e., if he/she tries to avoid articulation as much as possible (=deviate as little as possible from a neutral vocal tract configuration), the result is not an increased application of processes usually termed as ease of articulation, but, on the contrary, a very unsystematic application of all sorts of processes.

In forensic speaker recognition, it happens that suspects are unwilling to give a voice sample. However, in order not to be accused of having refused this demand, they try to stir the articulators as little as possible from the neutral vocal tract configuration. In this situation, the intention of the speaker can be very imprecisely defined as “only depart from the neutral vocal tract configuration as much as is absolutely necessary to give the impression of a properly pronounced segment”. For the speaker, such an imprecise intention is difficult to translate into articulatory realism.

Method

Two suspects (one speaker of Crioulo, Guinea Bissau, and one speaker of Pidgin English, Nigeria) who had to give a voice sample were asked to repeat sentences in their respective languages four times and to speak spontaneously. For the repeating sentences task, a time span of about a quarter of an hour lies between the respective repetitions, so that the speaker is unable to remember the articulation he has produced in the previous repetition(s) of the same sentence. In this task, both speakers try to avoid articulation as much as possible (in the above mentioned sense). Acoustic phonetic analyses have been performed using STx (<http://kfs.oeaw.ac.at>). For vowels, F1, F2, and F3 have been extracted by means of Linear Predictive Coding (46 ms window length, 95% overlap), rendering, in dependence of the length of the vowel, 30 to 150 measuring points for each vowel. Duration measurements and analyses of phonological processes have been carried out as well.

Results

Process application takes place contrary to phonological, socio-, and psychophonological observations: in the most formal task, the repeating sentences task, more reduction processes are applied than in the less formal task (spontaneous speech). Additionally, more reduction processes are applied when attention is high as compared to a situation when attention is already low. It is especially the lack of consistency in the production of the utterances which points to articulatory avoidance.