

PERCEPTUAL EVALUATION OF PROSODIC RULES

Rolf Carlson and Björn Granström

In another paper to this symposium rules have been given that describe timing regularities in a limited set of Swedish sentences consisting of acute accented words. (1)

Based on observations on a FO analysis of the same sentence material tentative rules for intonation have been designed. These rules presuppose a falling sentence intonation contour upon which are superimposed positive excursions initiated in stressed vowels and generally reaching their peaks during unstressed segments. These maxima are proportional to the duration of the initiating vowels.

The FO rules are hence applied after the duration rules which have been supplemented with a rule taking account of observed lengthening in initial positions.

To look into the generality and communicative relevance of the rules arrived at they were used in producing synthetic speech. This synthesis was compared with human speech and with an alternative rule synthesis basically devoid of prosodic rules except a sentence final modification.

The sentences chosen did not contain any sentence from the observed material but had a less restricted structure. Listeners were asked to report the stress pattern in terms of stressed and unstressed syllables and also to indicate word boundaries. The result shows that the described rules used in speech synthesis gave the most accurate stress pattern identification and also contributed in word boundary judgement and hence they appear to serve a definite perceptual function.

Litterature:

- (1) Rapp, K. 1973. On Segment Durations in Words and Phrases. This symposium

Carlson R., Granström B., Lindblom B., and Rapp K. 1972. Some Timing and Fundamental Frequency Characteristics of Swedish Sentences: Data, Rules and a Perceptual Evaluation. STL-QPSR 4, 11-19