Prominence
Acoustic and lexical/syntactic correlates

In spoken language some words are perceived as more prominent than others. Without these differences in prominence spoken language is unclear and boring.

In this PhD thesis both acoustic and lexical / syntactic correlates of perceived prominence are discussed. *Prominence* is defined at the word level and naïve listener judgements are used as the norm. It is related both to pitch accent and lexical (word) stress. One of the findings in this thesis is that naïve listeners are able to mark word prominence rather consistently on isolated Dutch sentences.

A selected set of acoustic input features is used for classification of prominent words using feed-forward neural networks. On the basis of an optimally selected set, we obtained an accuracy of 79% in prominence classification on a test set containing 1000 sentences.

Using l*exical / syntactic* input features (such as word class, word length and position of the word in the sentence), which are derived from text only, an algorithm to predict prominence is developed. The predicted prominence agrees with the perceived prominence in 81% of the cases for the set test.

The results show that acoustic and linguistic correlates of prominence can be determined automatically and can be used to accurately predict prominence. Statistical agreement measures show that prominence prediction on the acoustic as well as on the lexical / syntactic input level is undistinguishable from prominence assignment by naïve listeners. For phonetics this PhD thesis gives insight into the human recognition process of prominence. For speech technology, knowing the prominent and non-prominent words may be useful, for instance, to disambiguate the meaning in two similar sentences.

This book is of interest for researchers in the fields of phonetics, prosody and speech technology.

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