

## AN INVESTIGATION OF VARIOUS ASPECTS OF DANISH INTONATION

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### Abstract

The relationship between linguistic stress and fundamental frequency, and the intonation contours, in short declarative, interrogative, and non-terminal sentences in Advanced Standard Copenhagen Danish are established on the basis of acoustical analyses of recordings by four subjects.

There is a close and simple relationship between stress and fundamental frequency ( $F_0$ ): a stressed syllable and all succeeding unstressed syllables within the same simple sentence constitute a tonal unit with a relatively low stressed syllable followed by a high-falling tail of unstressed syllables. This unit is termed a stress group. The difference between declarative, non-terminal, and interrogative sentences is first and foremost a difference between the course of  $F_0$  through the stressed syllables: in declarative sentences the stressed syllables form a smoothly slanting slope. In statement questions the stressed syllables have the same (high)  $F_0$ , i.e. a "flat" contour. Other types of questions and non-terminal clauses have slopes in between these two extremes.

Perception experiments on parts of the corpus, involving 14 listeners, have shown that utterances which differ only in their intonation contours can be identified with rather great certainty as being either declarative, non-final, or interrogative, in complete accordance with the actual course of  $F_0$ , and further, that the vital information about the intonation contour, i.e. sentence type, is contained in the last stressed syllable, which is only to be expected, since this is the point where different contours are most widely separated.

A material which is to shed light on the tonal manifestation of emphasis for contrast and emotive emphasis is presently being analyzed. A cursory investigation of this material seems to indicate that, in comparison with the "neutral" case, the "emphatic" syllable is raised considerably in frequency, and at the same time the fundamental frequency variation in the neighbouring stress groups is radically reduced, the more so the more emphatic the syllable in question is.