

THE RELATION BETWEEN SENTENCE PROSODY AND WORD PROSODY

Summary of Moderator's Introduction

Eva Gårding, Swedish Research Council for Humanistic and Social Sciences and Phonetics Department, Lund University

The contributions to this symposium cover different kinds of prosodic systems and represent different methods of analysis and description. As a moderator I am taken aback by this variety but it may of course help us reach the goal set by the organizers: A pursuit of universal features in the relation between word prosody and sentence prosody. This requires a certain minimum of common terminology for the basic concepts and aspects of prosody. In my summaries and the points suggested for discussion I have used terms from the table below. Synonyms from other authors have been put within parentheses.

Word level	Sentence level	
	local effect	overall (general) effect
tone:	tone (term. junct.):	intonation:
contour tones	downglide	downdrift (declination)
level (static)		absence of downdrift
H (High)	upglide	
L (Low)		
accent (stress):	accent (stress)	
pitch accent		
?		
Citation form (ideal manifestation, ideal shape): a lexical item plus declarative sentence intonation and sentence accent		
Basic form: abstract representation or concrete form freed of other prosodic features		

SummariesThai. A. Abramson

The author is mainly interested in the question of whether the effects of sentence prosody are strong enough to weaken or destroy the lexical tones, the shapes of which have been derived from citation forms. Apart from perturbation from initial consonants there is perturbation from neighbouring forms. Also, in compounds one tone may be replaced by another (sandhi). In running

speech the tones are preserved but their shapes may undergo severe distortions. Sentence intonation can be marked locally by final particles and final sentence tone (terminal junctures), e.g. rising pitch for doubt, falling for finality, sustained for continuation and/or by overall effects. The author examines interspeaker frequency shifts in terminal junctures, expressed as percentages of voice range. Sentence accent is marked by lengthening, increase of amplitude and ideal tone shapes.

Some Southern Nigerian Languages. K. Williamson

The seven languages reported on have two basic tones, H and L. Two have distinctive downstep, H[↓]H versus HH. Tone rules express sequential modifications such as downdrift and coarticulation, glides between discrete tones and in one case replacement (cf sandhi in Thai). Sentence type can be marked locally (sentence tone) by an added L or H, or by replacement, or by overall intonational effects, e.g. downdrift or absence of downdrift, or by combinations of local and overall features. There is no consistent pitch signal for statement or question in these languages. Yet, statement is generally formed by downdrift of the basic tones, whereas for question some sentence-rule has to be added. Exclamations are uniform: a larger range by raising H's. Sentence accent is not mentioned.

Some American Indian Languages, etc. E.V. Pike

The author examines accent (stress) at word and sentence level in nine languages which use two or more contrastive tones. The tonal contrasts occur in both accented and unaccented syllables in eight of the nine languages. One language, Fasu, has tonal contrasts only on accented syllables. Apart from special allotones, such as raised H or lowered L, loudness and length (in consonant or vowel) mark the accented syllable. There are language-dependent rules for the distribution of word and sentence accent. Word accent is connected with the first, last or penultimate syllable of the stem. Sentence accent may fall on the last word accent or on any accented syllable, or it may have a separate manifestation, added to the final syllable. In some of the languages downdrift is reported for statement and downdrift + upglide for question. The prepause syllable has a special tone system for attitudes in two of the languages. Glottal stop, expressing finality, belongs in one of them, along with final-syllable upglide denoting politeness.

Swedish. G. Bruce

The author presents and modifies a model for Swedish intonation (Bruce and Gårding 1978). In this model the word accents (A1, A2) have been analysed as HL's with similar but differently timed Fo-correlates. There are dialectal differences but the HL occurs later in A2 than in A1 in all cases. Sentence accent is manifested as a wide pitch range with dialect-dependent distribution rules. In the main dialect areas a separate H is added after the word accent HL, in other dialects the wide range is obtained together with the accented syllable. Statement intonation is expressed as a progressing downdrift of H's and L's. The author argues that the Fo drop has a stepwise rather than a gradual downdrift. The downsteps cooccur with the accented syllables. Sentence intonation, then, has a systematic influence on Fo-values of H's and L's with higher values for earlier positions in the utterance.

Danish. N. Thorsen

A descriptive model of sentence intonation in Copenhagen Danish is presented. It does not take account of the word accents, stød (A1) and non-stød (A2). Sentence intonation is defined as a line described by the pitch of the accented syllables. An accented syllable and the following unaccented ones form a stress group in which the accented syllable is low in pitch and the unaccented syllables rise above and fall below the sentence-intonation line. This line is steeply falling for declarative sentences and level for unmarked questions. Sentence intonation has a systematic influence on the Fo course in the stress groups, in that the rise from stressed to unstressed syllable is larger in questions than in statements. The author rejects sentence accent but accepts emphatic or contrastive stress with manifestations common to many languages: a raising of pitch on the emphatic syllable at the expense of surrounding accents, i.e. shrinking of pre-emphatic and deletion of post-emphatic pitch movements in connection with accents.

Dutch. 't Hart and R. Collier

Each word has a lexical accent whose location can be predicted by rule. Under the influence of intonation it may be manifested as pitch movement. The authors study the interaction between intonation and accentuation. Two principles are discussed. According to the first, the overall pitch contour is obtained by adding

autonomous accentual pitch movements to autonomous pitch movements associated with sentence type, such as downdrift (declination) for statement and downdrift plus final upglide for question. This is rejected in favour of a second principle according to which the accents only determine the location of the pitch movements. Their nature (rise, fall, etc.) and order are determined by the chosen intonation pattern.

Czech. P. Janota

Janota reports on a series of tests with bisyllabic synthetic stimuli. When both syllables have the same pitch value, the first is judged as accented 85% of the time. A small increase or decrease of F_0 in the second syllable raises the number of accent votes for this syllable from 15 up to about 60%. With a larger change of F_0 , the number of such votes goes down. Responses to similar items, used to evaluate sentence intonation, show that precisely the stimuli with the large F_0 deviations are effective cues to intonation. Stimuli with a moderate or substantial increase of F_0 are judged as continuative statements and questions, respectively, and those with a decrease of F_0 as statements.

Suggested points for discussion

1. Universality of prosodic units

It may be fruitful to accept different degrees of universality, e.g. universal for similar function and similar acoustic correlates for all languages, and near-universal for corresponding conditions in almost all languages. As a third degree I suggest generality, requiring similar function, similar acoustic correlates and many languages.

Sentence intonation is a universal. This may be considered as a postulate. On the other hand, the contributions to this symposium and other communications show that statement intonation expressed as downdrift is merely a generality. The same holds for question intonation expressed as an absence of downdrift (Thorsen, Williamson).

Is sentence accent a universal? Is the lack of sentence accent in the description of some languages (Thorsen, Williamson) due to some possibilities in these languages to express deictic function at the sentence level in a non-prosodic way? Or is their description an artefact due to difference of analysis and tradition?

2. Principles for the analysis of the interaction between sentence prosody and word prosody. In recent work on Swedish intonation, basic forms of prosodic units have been isolated, after a phonological analysis, and rules for their combinations have been formulated (Bruce).

Other methods have also been mentioned. Is it possible to find a common framework applicable to all prosodic systems?

3. Universal features in the interaction between sentence prosody and word prosody.

't Hart and Collier demonstrate that for Dutch, sentence intonation is primary to word prosody. Is this a universal feature if we take primary in the following sense: In production sentence prosody precedes and sets the scale for word prosody. On the other hand, the degree to which word prosody interferes varies from very little as in Czech to something quite drastic as in Thai. Dutch seems to occupy an intermediary position and a 2-accent system like Swedish or Danish is closer to Thai.

Tone rules are a formal convenient way of expressing both co-articulation and the influence of sentence prosody on word prosody (see e.g. Williamson and her references). How universal are the tone rules?

4. Additional questions

Accent or Tone. In her description of various tonal languages Pike mentions one, Fasu, which has tonal contrasts (H, L) only on stressed syllables. What is the difference between a tonal language like Fasu and an accent language like Swedish in which the stressed syllables in some analyses (e.g. Malmberg) also have been represented by H versus L?

Accents and accents. Are there different physiological mechanisms behind different kinds of accent, e.g. the small pitch movements noted in Czech (Janota) and the larger ones typical of Germanic languages (Bruce, Thorsen, 't Hart and Collier). Or are they merely weak and strong manifestations of the same phenomenon?

Note

Two books have just come out which may be relevant for the discussion:

Fromkin, V. (ed.) (1978): Tone. A Linguistic Survey, Academic Press.

Greenberg, J. (ed.) (1978): Universals of Human Language. Volume 2. Phonology, Stanford University Press.