

Figure 1. The upper part of the figure shows the pruned version of a decision tree and the lower part of the figure shows a magnification of a part of the tree.

Acknowledgements

The research reported in this paper is carried out at the Centre for Speech Technology, a competence centre at KTH, supported by VINNOVA (the Swedish Agency for Innovation Systems), KTH and participating companies and organisations. The work was supported by the Swedish Graduate School of Language Technology, GSLT.

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Are Verbs Less Prominent?

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Abstract

The perceived prominence of three parts of speech (POS), nouns, verbs and adjectives, in three utterance positions, initial, intermediate and final, were examined in a perceptual experiment to see whether previously observed reductions in prominence of intermediate items were the result of positional effects or because words in this position belonged to the same POS, namely verbs. It was found that the perceived prominence of all three POS was reduced in intermediate position, and that the effect of POS membership was marginal, although adjectives tended to be slightly more prominent than nouns and verbs.

1 Introduction

In a previous study of the perceived prominence of accented words in Standard Southern British English (SSBE) (Jensen, 2003; 2004) it was found that, in short sentences, accented words in utterance initial and utterance final position are generally perceived as more prominent than accented words in an intermediate position. This is in accordance with traditional descriptions of intonation in SSBE and has also been observed in German (Widera, Portele & Wolters, 1997) and, at least with regard to utterance initial position, Dutch (Streefkerk, 2001). In utterances with multiple intermediate accented lexical items these seemed to form an alternating strong – weak pattern, and the complete pattern of the entire utterance was explained (in part) as reflecting the *intermediate accent rule*, which states that “any accented syllables between onset and nucleus are liable to lose their accent” (Knowles, 1987: 124).

However, it was suggested to me that the observed pattern might not be a general property of the prosodic structure of utterances (or phrases), but rather a reflection of lexical/semantic properties of the sentences employed in the study. Most of these were of the type *Bill struck Ann* and *Sheila examined the patient carefully*, i.e. SVO structure with a verb as the second lexical item. Some studies have noted a tendency for verbs to be perceived as less prominent than other lexical items in various languages: Danish (Jensen & Tøndering, 2005), Dutch (Streefkerk, 2001) and German (Widera, Portele & Wolters, 1997), so the reduction in perceived prominence, which was particularly noticeable immediately following the first accent of the utterance, could be the result of an inherent property of verbs.

The present study examines whether the tendency towards intermediate accent reduction can be reproduced in utterances with varying lexico-syntactic structure and addresses the following question: does the perceived prominence of a lexical item vary as a function of its part of speech (POS) membership independently of the position of this item in an utterance? Specifically, are verbs, in their function as main verbs in a clause, *inherently* less prominent than (some) other parts of speech?

2 Method

Since the perceived prominence of words in utterances depends on factors other than the ones studied here, most importantly information structure, it is necessary to find an experimental design which limits the influence of these factors to the smallest possible minimum. This effectively rules out studies of spontaneous speech, since the influences of information structure and the lexical content of the accented words are likely to mask the effects of location within an utterance. A relatively large corpus of spontaneous speech would be required to bring out these effects, which is not practical when measurements of perceived prominence are elicited through the ratings of multiple listeners (see below). Instead, the research question outlined above is addressed through a simple design involving read speech.

Verbs are compared with two other POS categories, namely nouns and adjectives. While verbs are often found to be less prominent than other lexical items, nouns and adjectives are consistently found to be among the most prominent words. The inclusion of these word classes should therefore maximise any potential difference between verbs and "other lexical items". A number of sentences were constructed, each of which contained three lexical items, one verb, one noun and one adjective, which were all expected to be accented. All six possible combinations were used, with two examples of each type, giving a total of 12 different sentences. Some examples of sentences from the material: *The children claimed they were innocent* (noun – verb – adj); *The little girl was crying* (adj – noun – verb); *He admitted she was a beautiful woman* (verb – adj – noun).

The decision to include all logical possibilities means that some of the sentence types are more common, or "natural", than others and also poses certain restrictions on verb forms, for example when they occur in final position. However, this should not have any negative influence on the research question as it is formulated above. Using this design, each POS occurs four times in each of the three positions in the sentence.

The 12 sentences were recorded onto a computer by three speakers of Southern British English, giving a total of 36 utterances, which were presented to the raters via a web page, one utterance per page. The raters could hear the utterance as many times as they wanted by pressing a "play" button, and indicated their judgment by selecting the appropriate scale point for each lexical item and then clicking a "submit" button. A four-level scale was used, from 1 to 4, with 1 representing "low degree of emphasis" and 4 representing "high degree of emphasis". A four-level scale has been demonstrated to be preferable to commonly used alternatives such as a binary scale or a 31-level scale (Jensen & Tøndering, 2005). The lower end of the scale was represented by 1 rather than 0 here to signal that all words were expected to have some degree of emphasis, since function words were excluded. Note also that the word *emphasis* was used in the written instructions to the untrained, linguistically relatively naive listeners, but refers to the phenomenon which elsewhere I call perceptual prominence and not (just) to higher levels of prominence, such as contrastive emphasis. The notion of "emphasis" (i.e. perceptual prominence) was both explained and exemplified in the online instructions.

23 raters participated in the experiment, all students of English at the Copenhagen Business School.

3 Results

The reliability of the data as a whole is good, with a Cronbach's α coefficient of 0.922. However, reliability coefficients for any group of three or five raters were relatively low, which indicates some uncertainty on the part of individual raters.

The overall ratings averaged over POS membership and position in the utterance are displayed in Figure 1.

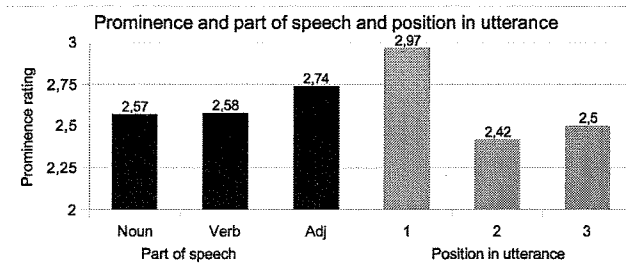


Figure 1. Prominence ratings based on 36 utterances (12 sentences \times three speakers) averaged over POS and *position in utterance*. Each bar represents average scores of 12 utterances as perceived by all 23 raters on a scale from 1 to 4.

Average ratings for the three utterance positions and three parts of speech are all between 2.42 and 2.97 on the scale from 1 to 4. With regard to the effect of POS membership verbs were not found to be less prominent than nouns, but they were rated slightly lower (by 0.16 on the scale from 1 to 4) than adjectives. The difference is significant (one-tailed t-test, $p < 0.05$). Adjectives were also in general found to be significantly more prominent than nouns (two-tailed t-test, $p < 0.001$), which was not predicted (hence the use of two-tailed probability).

As expected, words in second position are perceived as less prominent than words in initial position by approximately 0.5 on the scale from 1 to 4. The difference is significant (one-tailed t-test, $p < 0.001$). Somewhat surprisingly, words in final position are only slightly more prominent (by 0.08) than words in second position, and the difference is only just significant (one-tailed t-test, $p < 0.05$). The difference between initial and final position is highly significant (two-tailed t-test, $p < 0.001$). This pattern, and in particular the low prominence ratings of words in final position was not expected, but it is partly caused by the fact that so far only *utterance* position has been taken into consideration. In some cases the speaker (particularly one) divided these short utterances into two phrases, which may obviously have an effect on the expected prominence relations (as produced by the speakers and perceived by the listeners). Therefore, phrase boundaries were evaluated by three trained phoneticians (including the author) and assigned to the material in those cases where at least two out of three had perceived a boundary. This process divides all accented words up into three categories in accordance with traditional British descriptions of English intonation: *nucleus*, which is the last accented word of a phrase; *onset*, which is the first accented word in a phrase with more than one accent; and *intermediate* (my terminology) which is any accented word between onset and nucleus. Figure 2 displays prominence ratings for these three positions both across all three parts of speech and for each POS separately.

The overall pattern of prominence ratings according to phrase position is similar to the patterning according to utterance position in Figure 1 (24 out of 36 cases are identical), but words in intermediate position are more clearly less prominent than words in phrase final (nucleus) position. All differences between onset, nucleus and intermediate position are highly significant ($p < 0.001$). If we examine the results for the three parts of speech separately we can see that verbs and adjectives behave similarly: onset and nucleus position are (roughly) equally prominent ($p > 0.1$) but intermediate accents are less prominent ($p < 0.01$). The difference is larger for verbs than for adjectives. For nouns, however, the onset position is significantly more prominent than both intermediate and nucleus accents ($p < 0.001$) while the latter are equally prominent ($p > 0.1$).

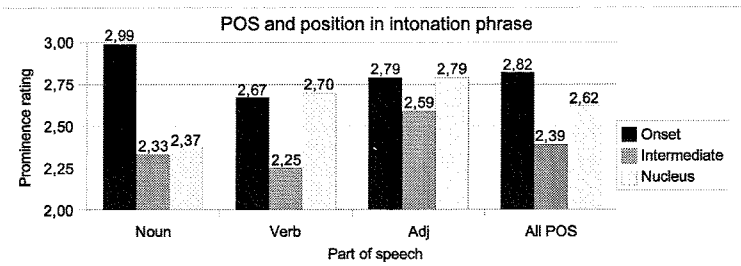


Figure 2. Prominence ratings for the three parts of speech in three different positions in the intonation phrase.

4 Conclusion

There is a clear effect of phrase position on the perceived prominence of lexical items for all three POS, nouns, verbs and adjectives, such that words in intermediate position are less prominent than words in onset (initial) or nucleus (final) position (nouns in nucleus position excepted). The effect noted in Jensen (2004) – reduction of perceived prominence of intermediate accents – is therefore replicated here and is not likely to have been the result of a certain syntactic structure with verbs in intermediate position.

With regard to the effect of POS membership it seems that adjectives are generally slightly more prominent than verbs or nouns. This may be the result of a certain affective content of (some or all of) the adjectives. Although care had been taken to avoid overly affective adjectives, it is difficult to control for minor variations of this parameter.

The interpretation of the results is complicated by the fact that nouns were rated as very prominent in onset position but markedly less so in nucleus position. Such a difference was not found in similar sentences in Jensen (2004), and I have no immediate explanation for this observation.

The question raised in the title and introduction of this paper must therefore be answered somewhat tentatively: while verbs were found to be slightly less prominent than adjectives, the difference was rather small. And while verbs were found to be as prominent as nouns overall, they were less prominent in onset position but more prominent in nucleus position. The implications of this surprising result awaits further investigation.

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Variation and Finnish Influence in Finland Swedish Dialect Intonation

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Abstract

Standard Finland Swedish is often described as having Finnish-like intonation, with characteristic falling pitch accents. In this study, it is found that the falling pitch accent occurs with varying degrees of frequency in different Finland Swedish dialects, being most frequent in the dialects that have had the greatest amount of contact with Finnish, and less frequent (though in many cases still part of the intonational system) elsewhere.

1 Introduction

It is generally known that the Swedish dialects of Finland, with the exception of western Nyland (Selenius, 1972; Berg, 2002), have lost the historical word accent contrast between Accent 1 and Accent 2. What is less clear is what kinds of intonational systems the dialects have developed, and how these relate to the previous word-accent system on the one hand, and contact with Finnish (often via Finnish-influenced prestige Swedish varieties) on the other. In their prosodic typology of Swedish dialects, Bruce & Gårding (1978) classified Helsinki Swedish as type 0 (Far East), with falling pitch throughout the word, and western Nyland as type 2A (Central). As for other rural Finland Swedish dialects, subsequent research (Selenius, 1978; Svärd, 2001; Bruce, 2005; Aho, ms.) has suggested that many fit neither category straightforwardly.

The purpose of the present study is to gauge how widespread the falling pitch accent is in Finland Swedish. It may be taken as a sign of Finnish influence, since it is the basic pitch accent in Finnish (see e.g. Mixdorff et al., 2002) but generally not attested in Sweden. Since the investigated dialects appeared to have intonational inventories with multiple pitch accents, unlike the lexical-accent dialects of Sweden, a quantitative component was undertaken to assess the frequency of falling pitch accents intradialectally. The results should be seen as preliminary due to the limited size of the corpus, but they point to some interesting questions for future research.

2 Materials and methods

The materials used here were archaic dialect recordings, consisting of interviews and spontaneous narratives, from the CD accompanying Harling-Kranck (1998). The southern dialects included in the study were, from east to west, Lapträsk (eastern Nyland; fi. Lapinjärvi), Esbo (central Nyland; fi. Espoo), Kimito and Pargas (eastern Åboland; fi. Kemiö and Parainen, respectively). The northern dialects, south to north, were Lappfjärd (southern Österbotten; fi. Lapväärtti), Vöra (central Österbotten; fi. Vöyri), and Nedervetil (northern Österbotten; fi. Alaveteli). There was one speaker per dialect. The speakers, all female, were born between 1880 and 1914 and were elderly at the time of recording (1960s-1980s).