

Stressless languages on the margins? An acoustic study of Inuktitut

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Languages without lexical pitch-accents, stress or tone have been recognized as a possibility in word-level prosodic typology (e.g. Hyman, 2006; Jun, 2005, 2014), but are still often seen as an exceptional case. With the presence of stress being the default assumption, descriptions often ask where stress falls and what its correlates are instead of whether stress is a relevant category for the language. A case in point is the Inuit dialect continuum, where early descriptions generally assumed the presence of stress, although no consistent patterns could be identified even within one variety (see Rischel, 1974, for discussion). Acoustic research on Inuit prosody has consistently failed to support the relevance of stress (Massenet, 1980; Jacobsen, 2000; Pigott, 2012; Rose et al., 2012), but the majority of varieties have not been studied instrumentally so far.

Here, we present an acoustic analysis of three potential correlates of word-level prominence – duration, fundamental frequency (f_0) and intensity – in South Baffin Inuktitut (Uqqurmiut). The data consist of 19 short dialogues between a male and female native speaker (containing 297 orthographic words) obtained with permission from the Pirurvik Centre's online language learning website, Tusaalanga (Pirurvik Centre 2015), as well as 195 single word utterances taken from the website's glossary section. All words were manually segmented at the segment, syllable and word level using Praat (Boersma & Weenink, 2016). The dialogues were also hand-annotated for the occurrence of phrase boundaries. The dependent variables syllable duration, f_0 maximum of the vowel and mean intensity of the vowel were analyzed separately for both data sets (1121 and 1330 syllables, respectively). Independent variables were the syllable's position in the word (counted from the end, since word-final pitch movements are reported for Inuit), the rhyme type (V, VC, VV, VVC) and word length in number of syllables.

Linear mixed-effects modelling (Baayen et al., 2008; random effects: speaker, vowel quality) showed no evidence that any one syllabic position in the word was reliably marked with a combination of increased duration, f_0 or intensity in either of the two data sets, as would be expected of a primary stress location. There was also no indication of a rhythmical alternation of prominent and less prominent syllables. Rather, syllable duration significantly and gradually increased at the end of the word, while f_0 and intensity showed a consistent drop at the right word edge (cf. Fig. 1). Rhyme type affected syllable duration, with longer/heavier rhymes leading to longer durations, but not f_0 and intensity. Subsets with and without heavy syllables showed the same overall patterns, unlike what would be expected in a weight-sensitive stress system. In sum, we found no clear indication of word-level prominence. Instead, we propose that the observed patterns constitute prosodic edge-marking.

Our study thus adds to the growing body of acoustic evidence suggesting that word-level stress or accent are not relevant categories in Inuit. Whether this places Inuit on the margins of a typological distribution is an empirical question. We would like to argue that in order to obtain the data base necessary to answer this question – as well as related ones e.g. regarding the relative importance of particular acoustic stress cues – it may be helpful to remove the default assumption of word-level prosodic prominence.

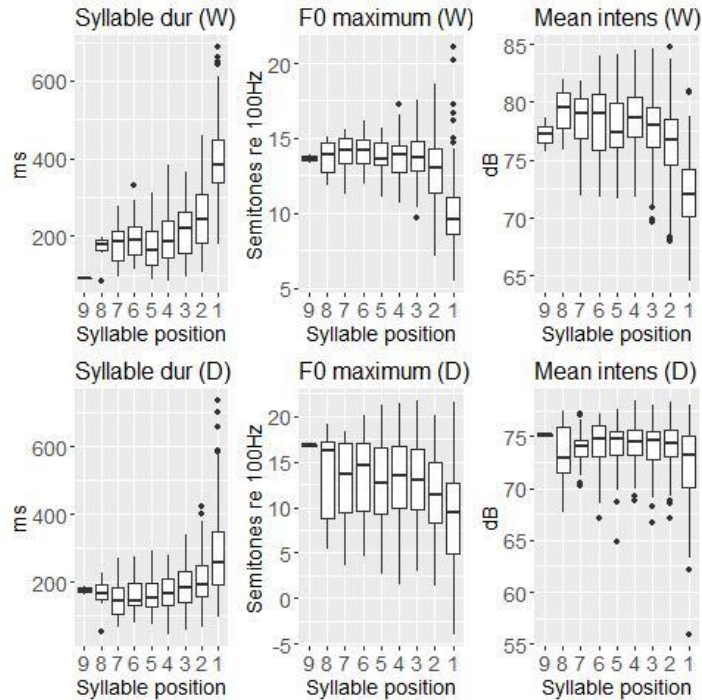


Figure 1. Boxplots of syllable duration (left panel), f0 maximum of the vowel (middle) and mean intensity of the vowel (right) for syllables in different positions in the single-word data set (top panels) and the

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