

Tonal alignment and focus in Mawng

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The Australian language Mawng has rich pitch accent distribution, as also observed in the nearby languages Bininj Gun-Wok (Bishop 2002, Bishop & Fletcher 2005) and Iwaidja (Birch 2002, Birch 2003). Mawng, a non-Pama Nyungan language of the Iwaidjan language family, is spoken by around 300 people and is still being acquired by children. Singer (2006b, 2006c) suggests that narrow and/or contrastive focus can be expressed in Mawng by means of intonation, in the form of a special focus pitch accent on the focussed word and it is this pitch accent which is the focus of our study.

Mawng is spoken adjacent to Bininj Gun-wok, the Australian language for which we have the most comprehensive intonational description at present (Bishop 2002, Bishop & Fletcher 2005), however Mawng and Bininj Gun-wok are quite different typologically. The percentage of shared cognates is low, phoneme inventories differ significantly and Mawng is much less polysynthetic than Bininj Gun-wok. The two languages are only distantly genetically related although being in intense contact (Evans 2000).

Work on the description of Mawng intonation is still at an early stage. Initial transcriptions used a single tone (H*) and a single level of intonational phrasing. The presence of a pitch accent on a word alone is not indicative of its information status in Mawng: all nouns and verbs receive a pitch accent. The use of steep pitch excursions in contexts of contrastive focus suggest that a special pitch accent is being used to encode emphasis and focus in Mawng. Bishop and Fletcher (2005) describe the tonal inventory of Bininj Gun-wok, and mention a special L+H* tone used in the Gundjeihmi dialect of Bininj Gun-wok to signal emphasis or narrow focus in narratives. However, Bishop (2002) describes relative pitch scaling as the main means of encoding focus and other aspects of information structure in Bininj Gun-wok.

It is possible therefore that the ‘special focus pitch accent’ identified in Mawng differs from the neutral pitch accent only in scaling, as has also been observed in Egyptian Arabic (Hellmuth 2006a), another language with rich pitch accent distribution. Alternatively, it may be that the focus pitch accent in Mawng differs from the neutral pitch accent in both scaling and alignment properties, suggesting a potential difference of phonological or prosodic representation in focus contexts (whether a different pitch accent, as has been observed in other languages, or peak retraction due to insertion of a phrasal boundary). The aim of the present study is to determine the scaling and alignment properties of Mawng pitch accents in both neutral and non-neutral contexts.

Particular methodological issues must be faced however when dealing with an unwritten, endangered language. In most European languages whose intonation has been studied in detail, the alignment and scaling of pitch accents has been investigated by means of experimental studies using carefully controlled stimuli presented to speakers in written form, and alignment properties observed in ‘lab’ speech studies of this type have been shown to be parallel to those observed in semi-spontaneous speech (Lickley et al 2006). Collection of controlled data of this type is problematic in an unwritten language, although not impossible, but it is another question

whether such 'lab' speech recordings are of sufficient value to a speech community whose language is endangered to warrant their collection over and above more naturalistic materials.

The ideal solution would be to establish alignment and scaling properties on the basis of naturalistic or (semi-)spontaneous data. However, intonational phonologists have relied on carefully controlled stimuli for good reason since the scaling and alignment of intonational pitch peaks is known to be influenced by a wide range of factors in the surrounding environment. For example, F0 is likely to be affected by variation across target words in both intrinsic and phonological vowel length (Steele 1986, House 1989) and in duration and voicing of consonants (Rietveld & Gussenhoven 1995). At the prosodic level, variation in syllable type (Ladd et al 2000, Hellmuth 2006b), proximity of a prosodic boundary (Steele 1986, Silverman & Pierrehumbert 1990, Prieto et al 1995) and stress clash (Silverman & Pierrehumbert 1990) are all known to influence peak alignment.

A few studies have attempted to gauge the influence of these factors in quantitative analysis of the alignment of F0 in (semi-) spontaneous speech. In one such study Peters (2005) pre-selects tokens from a large base corpus so that they are roughly uniform (sonorant open syllables bearing a nuclear H*) and categorises each token according to a list of factors which are then used in a multiple regression analysis to determine their influence on peak alignment. His overall findings yield generalisations about inter-dialectal differences in peak alignment in German.

The present study implements similar methodology in order to determine whether peak alignment in Mawng pitch accents varies according to neutral or non-neutral contexts. We have access to two types of data: i) semi-spontaneous data elicited from visual stimuli using the Questionnaire on Information Structure (Skopeteas et al 2006); ii) spontaneous data from spoken narratives (Singer 2006a). The semi-spontaneous data has the advantage of hopefully providing a relatively large number of tokens in focus/non-focus pairs, whilst the spontaneous data will allow us to determine qualitatively whether the same generalisations hold in both spontaneous and elicited speech.

Our paper presents the results of the quantitative study of Mawng tonal alignment in focus contexts in the context of the general intonational system of Mawng, which will also be presented in brief. We discuss the results of the quantitative analysis in the light of current debate on intonational tonal alignment.

This study makes an important contribution to our understanding of the intonational phonology of Mawng in general and of the prosodic expression of focus in Mawng in particular. In addition, we believe that this paper contributes to the development of appropriate quantitative methodology to support adequate phonological descriptions of the intonation of unwritten and endangered languages.

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