Tonal alignment features in Orkney and Shetland dialects

This study summarizes the results of a pilot analysis exploring the intonational phonology of the Orkney and Shetland dialects in Scotland, where analyses of intonational features have so far been restricted to phonetic descriptions of a few words (Van Leyden & Van Heuven, 2006). It identifies typically-used tunes and their alignment features in each dialect, based on the recording of a word list (163 words consisting of both monosyllabic and polysyllabic words), read material, and spontaneous speech.

We analyze the typical tunes of Orkney and Shetland for LH and LHL, respectively, and these tunes are realized based on the stressed syllables of most content words in an utterance, spreading from the stressed syllable to the unstressed syllables immediately preceding the next stressed syllable, or to the utterance-final syllable.

Regarding tonal alignment patterns, examining monosyllabic words reveals that these tunes are only realized on vowels or sonorant consonants. In Orkney, CVC[+son] words are realized with the first L tone on the vowel and the second H tone on the sonorant consonant, while CVC[-son] words are realized with the two tones only on the vowel. In Shetland, on the other hand, CVC[+son] words are realized with the last L tone on the final sonorant and the first two LH tones compressed in the vowel, while CVC[-son] words are realized only with the first two tones compressed in the vowel.

The abovementioned features are considered to be reflecting the syllable structures of each dialect. In Orkney, only vowels and sonorant consonants can occupy a mora position, so in the case of CVC[-son] words, the vowel takes up two mora positions, causing possible lengthening of the vowel. In contrast, Shetland allows obstruents to occupy mora positions, which makes the vowel short due to closed syllable shortening (Kaye, 1990) (Figure 1) and carry only the first two LH tones instead of the three.

Furthermore, examining polysyllabic words reveals that the speakers' Tone Bearing Unit (TBU) varies for both Orkney and Shetland dialects. Some take moras, while others take syllables as TBU. In Orkney, this difference is reflected in the interpolation patterns between the two tones. For the Shetland dialect, we assume the stress to weight principle (Prince, 1990) applies, such as in the cases of several Scandinavian varieties (Riad, 1995), whereby the stressed syllable must be bimoraic. The mora-based speakers always realize the first two LH tones in the stressed syllable (Figure 2), while the syllable-based speakers basically pronounce each tone in each syllable (Figure 3).

This study argues that tonal alignment patterns of intonation contours are determined by the language-specific combination of several factors, such as stress, sonority, and duration, as those of tone languages are analyzed so (Zhang, 2004; Gordon, 2004).
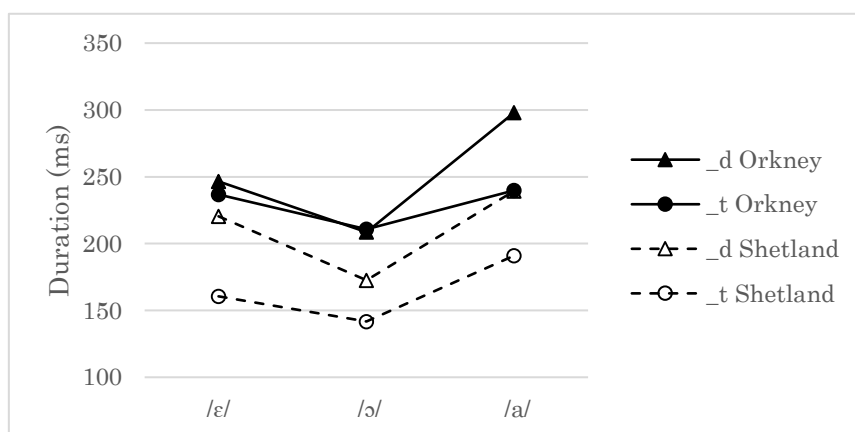
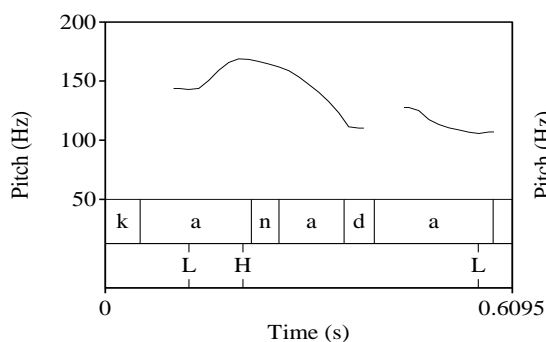***Figure 1*. Average duration of /ɛ/, /ɔ/, /a/ before /t/ and /d/ in each dialect**

***Figure 2*. Pitch track of the word *Canada* read by a mora-based Shetland speaker**
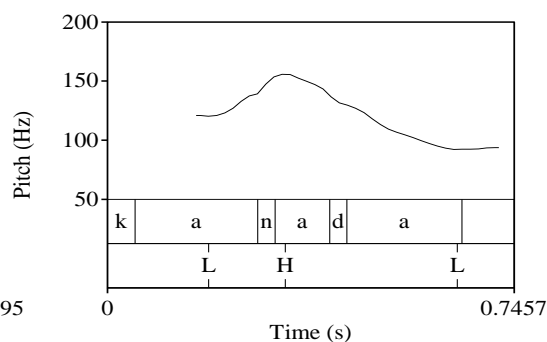

***Figure 3*. Pitch track of the words *Canada* read by a syllable-based Shetland speaker**

References

Gordon, M. (2004). Syllable weight. In B. Hayes, R. Kirchner, & D. Steriade (Eds.), *Phonetically Based Phonology*. (pp. 277-312). Cambridge: Cambridge University Press.

Kaye, J. (1990). Coda licensing. *Phonology, 7,* 301-330.

Prince, A. (1990). Quantitative consequences of rhythmic organization. *Proceedings of the Chicago Linguistic Society 26*, 355-398.

Riad, T. (1995). The Quantity shift in Germanic: A Typology. *Amsterdamer Beiträge zur Älteren Germanistik 42*, 159-184.

Van Leyden, K., & Van Heuven, V. J. (2006). On the prosody of orkney and shetland dialects. *Phonetica*, *63*(2-3), 149–174.

Zhang, J. (2004). The role of contrast-specific and language-specific phonetics in contour tone distribution. In B. Hayes, R. Kirchner, & D. Steriade (Eds.), *Phonetically Based Phonology*. (pp. 157-190). Cambridge: Cambridge University Press.