Phrase- and word-level prosody in Kwak'wala

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This paper explores definitions for categorizing word- and phrase-level prosody in Kwak̓wala. Defining prosodic domains may help to determine where written word boundaries should be in community orthographies. This will help reflect the underlying assumptions that Kwak̓wala speakers in the written language. This paper shows that word-level prosody can best be observed in terms of the domain of stress. That is to say, if a morphologically bound group has one nucleus with a marked stress prominence, it should constitute one word. This paper also shows that pitch and intensity resets indicate phrase-level prosody.

1 Background

It is necessary to is to create a working definition of what "word" means in a morphological sense in order to set boundaries for intonation. Boas gives a starting basis of analysis by arguing that pronouns, conjunctional, and adverbial terms (which express tense and mode) are attached as suffixes to roots to create complete words. These terms appear often in combination and are applied in most cases in definite order (Boas 1947, p234). Under this polysynthetic analysis of Kwak̓wala, a definition of word-level prosody would require a close look at the prosodic relationship of these suffixes to their affixing stems, juxtaposed to the prosody of the following root.

Prosodic boundaries may be more difficult to find when segmented by morphology or syntax. An important conflict arises from the competing assumptions that the division of sentences into smaller prosodic phrases will reflect syntactic constituency. Much of the literature on this issue are attempts to explain 'mismatches' between prosodic structure and syntactic/semantic constituency, (Ladd, 2008) which becomes one of this paper's questions in relation to Kwak̓wala which this paper also seeks to address.

If Boas' polysynthetic analysis as described above is applied (stems + pronouns, conjunctional and adverbial terms), there would in many cases, cease to be any distinction between phrase- and word-level prosodic domains. Additionally, enclitics behave in a way that create a mismatch between the prosody of these phrases and the syntax, in the way Ladd described as potentially problematic. These enclitics denote Case, Location, Determiners,

Visibility, and Temporal features (Chung 2007)

Prosodic phrases are frequently assumed to have an internal prosodic structure of some sort (Ladd, 2008), often defined systematically as: syllable > foot > mora > prosodic word > prosodic phrase > intonation phrase. This paper focuses on the prosodic word > prosodic phrase relationship of this hierarchy.

2 Data

All data was collected from 2010 fieldwork as part of the Field Methods course at the University of British Columbia, taught by Henry Davis. Two strategies are employed to attempt to accurately observe world-level prosodic constituencies. One is by passively observing natural speech in the form of narratives, and the other through constructed sentences of roots + 'affixes', growing in length.

In an attempt to define prosodic words against prosodic phrases, stress domain is used to signal word boundaries. This means that all morphology which appears to submit to a stem in terms of stress prominence will be considered a prosodic word, and other pieces of morphology containing their own stress prominence will be considered a separate prosodic word. The criteria for word stress are most efficiently determined by a rigorous phonetic study in change of pitch, duration and intensity. This paper, however, relied on human ear, consultant intuition and negative feedback to define these prosodic boundaries.

3 Prosodic phrases

Prosodic constituents are in round brackets, and a syntactic constituent is in square brackets:

(1) ([ʔump-ẇəɬə -q̇ən] [-oχ) (ʔeḵaḵ-ala ʔaχ]
father-late -Comp -Loc take care-Cont Dummy
[- ənoχ) (ṅə-ṅəgɛ)]
-1plPoss Red-mountain
'Our late father was taking care of our mountain'

(2) ([naχe-ċimas] [-a-χ-a) (ẇap])
drink-should -Acc-Det water
'You're supposed to drink the water'

(3) ([ləmis) (gaχu'i][-da) (ʔixpoʔom-a] [-laχ-ənoχ) (guk^{w}])
then come-Det fruit-Obj Prep-1pPL house
'Then the fruit was brought up to our house'

(4) ([ʔiƙaƙ-ala ʔaχ]-[-ənoχ) (ṅi-ṅəgɛ]) ([(ɬawis ṅəgɛ])
mind-Cont Dummy-1pPL Red-mountain angry mountain
'To look after our mountains, Angry Mountain'

(5) ([ʔaχ cu'i][-da) (dzupɛud][-q-ənoχ) (dzupɛda-χ-a-da)
Dummyput-Det canning -Comp-1pPL can-Case-Obl-Det
(ʔixpoʔomas])
fruit
'Everyone was told to can the fruit'

4 Placement of pauses

A pause is marked by //:

(6) ([ṅaχ-əs laχ]-[a-da) (xʷaƙʷɛne]) ([la-la laχ-a-daχ] //
drink-2p Prep-Acc-Det canoe when-go Prep-Acc-Det
[χo-da) (gukʷ])
Case-Det house
'You drink when you're on the canoe going to the house'

(7) ([naχ]-[a-da // -χ (ẇap]-[ɋɛ-ʔɛ) (ṅəgɛ] // -[χa)
drink-obj-Det-Acc water-Comp-Obj mountain-Det
(ʔikɛ-s-oχ)
good-Obj-Loc
'Drink the water so Mountain is happy'

(8) ([qəyuɬ-wəɬɛʔ] // [-χ -ən) (ʔump-wɛɬ -ən]) ...
long -Past -Case-1p father-former -1p
'Long ago my late father...'

(9) ([gaχ-i][-noχ) (ʔump] // [-qɛ) ([ẇiƙɛ] [-laχ -is)
come-Vis-Acc father-Comp happened -LocP-ReflexivePoss
(bot-ɛs])
boat-Obj
'Our father came, he went by his own boat'

5 Prosodic Words[1]

A stress domain is indicated by round brackets, and a syntactic constituent is in square brackets. Stressed syllables are marked with an acute accent.

(10) ([míc-a]) ([gáχən])
kiss-3p 1pIndP
'She kissed me'

(11) ([míc-a]-[χa) (bəgʷánəm])
kiss-3p -Det man
'She kissed a man'

(12) ([míc-a) (gánəm]-[χa) (bəgʷánəm])
kiss-3p probably-Det man
'She probably kissed a man'

(13) ([míca) (gánəm) (kás]-[χa) (bəgʷánəm])
kiss-3p probably Quant.-Det man
'She probably really kissed a man'

(14) ([míc-a)(gánəm) (kás-dzi] -[χa) (bəgʷánəm])
kiss-3p probably Quant.-Grand. -Det man
'She probably gave the man a really big kiss'

(15) ([míca) (gánəm) (kás-dzi)(ɬ̓íi] -[χa) (bəgʷánəm])
kiss-3p probably Quant.-Grand.Fut -Det man
'She'll probably give the man a really big kiss'

(16) ([həm̓-x?íd-ən])
eat-Past-1ps
'I ate'

(17) ([həm̓-x?íd-ən]-[χa) (?ábəls])
eat-Past-1ps-Det apple
'I ate an apple'

[1] Note, data (1)-(9) were passively recorded narratives, and (10) to (20) were contrived sentences.

(18) ([həm̓-x?íd-ən]-[χa) (ƛ̓aχʷstu) (?ábəls])
eat-Past-1ps-Det red apple
'I ate a red apple'

(19) (həm̓-x?íd-ən]-[χa) (?íxp̓ala) (ƛ̓aχʷstu) (?ábəls])
eat-Past-1ps-Det delicious red apple
'I ate a delicious red apple'

(20) ([həm̓-x?íd-ən]-[χa) (?íxp̓ala) (ƛ̓áχʷstu) (dzì-kas)
eat-Past-1ps-Det delicious red Grand-Quant
(?ábəls])
apple
'I ate a really big delicious red apple'

6 Analysis

The striking occurrence observed in the above sentences was the mismatched distribution of the enclitics (Case, Det, and person suffixes) between the prosody and syntax/semantics (Anderson 1984, p25). (1) through (5) show this mismatch explicitly in the suffixes "-oχ", "-aχa", "-da", and "-ənoχ," where each is prosodically dependant on a previous root, but is involved in the syntactic constituent of the following root.

Examples (6) through (9) show that the consultant was able to insert a thoughtful pause exactly at the syntactic break, before the enclitics. Crucially this pause could only occur in this position, or directly before the root (at the beginning of the utterance) where a pause would be expected. These pauses disrupted the prosodic word directly before the enclitics, but never resulted in a pitch or intensity reset on the enclitic. Much less, pausing within the syntactic constituency did not seem to interfere with the normal pitch and intensity declination observed in examples (1) to (5). This appears to indicate that Kwak̓wala speakers are able to maintain two levels of overlapping constituency, one prosodic and one syntactic, without confusing or disrupting each other.

The examples (10) to (20) show that enclitics "-χa" may never take stress, even when an otherwise trochaic foot pattern might allow it to. This sometimes leaves yet another unstressed syllable in the beginning of the following root. In example (14), "-χa" appears after the prosodic word "kás-dzi" and before the word "bəgʷánəm." It would be prosodically possible for "-χa" to take stress (as shown below) but never does.

*(kás dzi) -(χá be) (gʷánəm)
σ σ -σ σ σ σ

In (11) to (15), the determiner "-χa" is dependent on previous prosodic words for stress, never taking stress itself. (16) to (20) show that prosodic words, as defined by stress domain, incorporate the enclitics as dependant on the stress of the stem: (həm̓-x?ídən-χa) where "-ən-χa" are enclitics, and "həm̓-x?íd" is the stem. The examples (10) through (20) also show that some morphemes which Boas assumed to be suffixes in fact have prominent stress. Under the analysis that prosodic words are defined by their ability to be uttered with prominent stress, such morphemes as gánəm, kás-dzi/dzi-kás (Boas 1947, p234), must be considered as words.

What remains to be further explored is the exceptional way in which the enclitics behave in Kwak̓wala. These clitics are the units which create the mismatch in prosody and syntax, at both the word and phrase level. Theoretically, enclitics may be forced into this mismatch in order to place prosodic prominence on lexical roots. Prosodic phrases are marked with initial pitch and intensity resets, and Kwak̓wala might want to highlight lexical items by making them always sentence initial in order to give emphasis to lexical items over functional categories. This may be a strategy to counter the semantic richness of functional categories denoting: Case, Location, Determiners, Visibility, and Temporal features (Chung 2007). However, making up for semantic richness by giving prosodic richness is not something found in the literature, but may be a provocative idea. Also, if words are defined by stressed units, as is shown, then such things as modals and temporal markers must be considered as words in their own right. Further research on the nature of word stress is needed in Kwak̓wala to shed more light on prosodic constituencies.

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