Intonation in Kwadacha (Fort Ware Tsek’ene)

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Looking west (upriver), Ingenika R. (Indinii gàh)
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Kwadacha language

- Kwadacha = anglicization of *Kwùdàtə* ‘White R.’
- Also known as Fort Ware *Tsek’ene* (Sekani)
- dialect of *Tsek’ene* with many words borrowed from Kaska (language spoken to north)

Map from Denniston 1981
Organization

• Background
  – Intonation in Dene languages
  – Tone within words in Kwadacha
• Intonation contours in Kwadacha
  – Declarative
  – Interrogative
  – Uncertainty
• Conclusions and future work
Intonation

looking north, up the Rocky Mountain Trench, above Fort Ware BC
Intonation

• = sentence level tone patterns
  – á (high tone)
  – à (low tone)

• Intonation marking in ‘autosegmental-metrical model’ (term from Ladd 1996)
  – T* = tones aligned to stressed syllables
  – T% = tones aligned with edges of sentences/ clauses
  – T- = tones aligned with edges of smaller phrases
Intonation in Dene languages

• Issue: do tonal Dene languages have intonation contours?
• Tonal Dene languages already have lexical tone marking
Navajo

• Tonal (syllable-final *ʔ > low tone)

• McDonough (2003) ‘The Prosody of Interrogative and Focus Constructions in Navajo’

  – noted ‘observations by native speaking linguists (Willie p.c., Austin-Garrison p.c.) that Navajo has no tonal intonation’

  – instrumentally studied declarative, interrogative, and focus constructions

    • concluded ‘no systematic patterns of intonation can be construed for these utterances’
# Intonation in other Dene languages

<table>
<thead>
<tr>
<th></th>
<th>declarative</th>
<th>yes/no question</th>
<th>imperative</th>
<th>wh-question</th>
<th>coordination</th>
<th>dependent clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slave (Rice 1989)</td>
<td>L%</td>
<td>H%</td>
<td></td>
<td></td>
<td>H-</td>
<td>H-</td>
</tr>
<tr>
<td>Tanacross (Holton 2005)</td>
<td>H* L%</td>
<td>H* H%</td>
<td>L* L%</td>
<td>H+L* L%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dena’ina (Tuttle and Lovick 2007)</td>
<td>L%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Tanacross and Slave are tonal; syllable-final *ʔ > high tone
- Slave and Dena’ina descriptions recast in terms of the autosegmental-metrical model
- Dena’ina L% confirmed in quantitative study
Tanacross

- Of interest because intonation interacts with lexical tone
Rightward H-Spread

- Lexical tone rule, interacts with intonation
  - ‘When a high tone (or rising tone, which is underlying composed of a low-high tone sequence) precedes a low tone prefix syllable, the high tone generally spreads to the following syllable.’ (p. 257)

\[
\begin{array}{c}
H \\
| \backslash \\
V \\
\end{array}
\quad
\begin{array}{c}
L \\
\backslash \\
V \\
\end{array}
\quad
\begin{array}{c}
H \\
\backslash \backslash \\
V \\
\end{array}
\]
Rightward H tone spread

• Low tone prefix (underlyingly toneless) preceded by low tone stem remains low
  sè:y nɛkʔɛh
  sè:y n-ɛkʔɛh
  knife thm-1sg-see:impf
  ‘I see the knives.’

• Low tone prefix preceded by high tone stem becomes high
  ℓóx nɛkʔɛh
  ℓóx n-ɛkʔɛh
  fish.hooks thm-1sg-see:impf
  ‘I see the fish hooks.’
Rightward H tone spread blocked by H

‘A high tone may continue to spread rightward so long as no stem syllables intervene, however high tone does not spread to a pre-stem syllable which precedes a high tone stem syllable, as first noted by John Ritter (p.c.).’ (p. 260)

• uʔéɬ ōʔhdah
  uʔéɬ  ō-ih-dah
  3s-with cj-1sg-stay.impf
  ‘I’m staying with him’

• uʔéɬ vɨhdáʔ
  uʔéɬ  v-ih-dáʔ
  3s-with cj-1sg-stay.perf
  ‘I stayed with him’
The Tanacross wh- question contour

- Pitch track for wh- question with high tone stem
- Holton: intonational L* replaces stem’s lexical H, so H spread from noun [dí] ‘what’ to prefix syllable [i̯h] can take place (will not be blocked by stem H)
- (SH: wh- question contour therefore probably L*, not H+L*)

```
dí i̯h t’é:θ
lexical tone H    L
intonation       H
H+L* ↑          L%
```

‘what are you frying?’
Tanacross summary

- Intonational tones can interact with lexical tones, even replacing them
Word-level tones in Kwadacha

Above Fort Ware, looking west up the Finlay R. towards Prairie Mountain.
Guide to Kwadacha orthography

• Vowels
  – Basic vowel qualities
    • ii = [i]  oo = [u]
      i  = [ɪ]  wu  = [ʊ]
      e  = [e]  o  = [o]
      u  = [ə]~[ʌ]
      a  = [ɑ]
  – Long versions of some vowels (relatively uncommon)
    • iiii = [iː]
      oooo = [uː]
      ee  = [eː]
      aa = [ɑː]
• Consonants:  kh [x]; lh [ɬ]
• Tones
  – ̀ = low tone vowel; e.g. è
  – ̆ = high tone vowel; e.g. e
  – ̀̆ = rising tone vowel; e.g. ëë
  – ̀̀ = falling tone vowel; e.g. ëè
Kwadacha tones

• Low tone < *ʔ; e.g.
  – *tšaʔ ‘beaver’ (Leer 1987) > tsà’
  – lhàwìì ‘once’

• High tone; e.g.
  – *ya: ‘sky’ (Krauss and Leer 1982) > ya
  – lhawìì ‘stop it’

• Rising tone
  – Prefix syllables mostly; e.g. dåahts’ii ‘you (pl.) sit’
  – cf. high dahyusè’ ‘overhead snow (on branches, etc.)’

• Falling tone (rare)
  – Stem *waːn’-e: ‘edge’ (Krauss and Leer 1982) taàmah ‘shore’
  – Prefix syllables dulhaàghsusla ‘I set them (traps)’
  – cf. high dulhaghts’ùsla ‘we set them (traps)’
Tone and word-final glottal stop

- Word-final glottal stop is predictable from low tone in nouns and verbs
  - ts’à’ ‘dish’
  - -bè’ ‘pick berries’
- For adverbs, postpositions, contrast between word-final final 0, ‘
  - lhùdò ‘dying, setting’
  - k’udà’ ‘still, yet’
Status of H tone

• Some prefix syllables are not specified for tone
  – **ah**- 2pS
    • **utsùn aht’ès** ‘you (pl.) are frying meat’
    • Contour tone not created when vowels are deleted:
      – **ka îîlhah** ‘he is working’
      – **ka àhlhahq** ‘are you (pl.) working?’

• Other prefixes are specified for tone
  – **ii/a**- gh-conjugation
    • **nùts’ats’ut** ‘we fell down’
    • **nàats’ut** ‘he fell down’

• Assumption: all vowels surface with H tone if not specified for tone underlyingly or assigned a tone
Intonation contours in Kwadacha
Research question and hypothesis

• Research question
  – Can all systematic aspects of pitch patterns at the sentence level in Kwadacha be accounted for with lexical tones alone (as in Navajo)?

• Hypothesis
  – No. There are three intonation contours:
    • ‘Declarative’: H* L%
    • Yes/no question: L% H%
    • Uncertainty: HL%
  – Hypotheses based on observations of elicited data, one text
Declarative

• What happens to pitch in sentences whose words all have same lexical tone?
  – All H lexical tones
    • *Mary diih kiiduts.*
      chicken 3s.plucked
      ‘Mary plucked a chicken.’
    • cf. H stem in:
      Ma kuniidudz-a?
      who 3s.plucked.you-\textit{wh}
      ‘Who plucked you?’
Declarative intonation

• H* L% ‘declarative’ intonation contour
  – H* links to leftmost H tone syllable of verb (up-stepping lexical H)
  – L% links to word-final syllable of sentence (creating final falling tone)

• Sentence types using this contour
  – Declaratives (one clause)
  – Wh- questions
  – Yes/no questions (if morphologically formed)
ma  ku  n ii  d u  dza

lexical: H  H  H  H  H  H

intonational: H*  L%
A textual example

Kusk’eh zəḥ khutawnyeh-ii
in this way only 3s.is.raising.us-*nom
uwute’e khutawoonehyheh.
well they’re.raising.us
‘They did a good job raising us the way they
did.’ (Abou 1999)
L- at right edges of smaller phrases?
Kusk’eh zqh \textit{u}h\textsubscript{AdvP} khusutawuyehii\textsubscript{i} uwute’e khusutawooneyhyheh.
Yes/no questions

• Morphological
  – -o
    • diinh’àlho ‘are you going to chew it (right away)?’
      cf. diinh’àlh ‘you’re going to chew it (right away)’
  – ko…(-o)
    • ko nu’iintsèt?
      Q you.ate.something
      = ko nu’iintsèd-o?
      Q you.ate.something-Q
    • ‘Did you eat?’
Intonational yes/no questions

– *Mary kuniiduts?*
  3s.plucked.you
  ‘Did Mary pluck you?’
– *Mary èh k’ìnints’ulh?*
  with you.walk around blindly
  ‘Are you walking around blindly with Mary?’
cf. *Nu’èh k’ìts’idnuts’ùlh.*
  with.you we.walk around blindly
  ‘We’re walking around blindly with you.’
Yes/no question contour

• L%  H%
  – L% aligns to leftmost lexical L of question
  – otherwise to left edge of question
Mary ku nii duts?

lexical
H H H H H H

intonational
L% H%

Time (s)

Pitch (Hz)

0 30 1.28073
Mary èh k’ì nin ts’ulh?

**Lexical:**
- H H L L H L

**Intonational:**
- L% H%

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![Spectrogram and pitch track](image-url)
Uncertainty

• Semantics of la vs. so̱sa
  – la in Kwadacha: assertion with certainty, focus
  – la cognates in other Dene languages
    • Kaska: ‘lā is used to assert that something occurred or is true’ (Pat Moore (p.c.))
    • Tsuut’ina: la is the ‘inferential particle’ (Sapir 1925:192)
    • Western Apache lá supplies ‘an emphatic reading, consistent with focus, to the preceding DP’ in non-wh contexts (Potter 1997:138-139)
    • Navajo, lá, often glossed “Evid” (evidentiality particle), ‘denotes primarily that the idea which it modifies has just occurred to one, just been discovered, or just been brought to one’s attention. It is often translatable by English phrases such as I find, I found, I discovered.’ (Young and Morgan 2000: 305).
• Toohgwuna la.
  hide bag certainty
  ‘It’s a moose hide bag (with hair left on).’

Cf. copula with cliticized la
last’e ‘I am’
lant’e ‘you are’
looht’e ‘he/she/it is’
lats’iiht’e ‘we are’
laht’e ‘you (pl.) are’
laghiiht’e ‘they are’
(used in positive or negative sentences, but not questions)
soq...-ìì uncertainty

- semantic opposite of la
  - ‘maybe, might’
  - la and soq/sa never occur in same sentence
- ‘variants’: sa, dèsq, kwùsq, kòòsq
- -ìì used after consonant-final verbs
  - 0 after vowel-final verbs
Uncertainty contour

• HL%
  – aligned with right edge of verb stem
    • prefix stem
      H     L
      • L replaces H stem tone
      • H does not replace L prefix tone: HL created

• Uncertainty contour required in sentences with so and variants (but not limited to such sentences)
• *Edna la usanii mewuyàh.*
  certainty alone 3s.is.suffering
  ‘It’s Edna who is suffering alone.’
• *Edna sq ìdè’è usanii mewuyàhìì.*
  uncertainty back alone 3s.is.suffering
  ‘It might be Edna who’s suffering alone back there.’
• Yìnònè *Mary* la k’ànustà.
  across certainty I.see.her
  ‘I (definitely) see Mary across there.’

• Yìnònè *Mary* sq k’ànustà.
  across uncertainty I.see.her
  ‘That might be Mary I see across there.’
• **Uyii la **dàna dèt’è.  
  that  certainty money 3s.has  
  ‘That guy (definitely) has money.’

• **Uyii so** dàna dèet’è.  
  that  uncertainty money 3s.has  
  ‘That guy might have money.’
Uyii  sóc dàna  dëet’è.

lexical

intonaional

H H H L H L H

H L%
A textual example

• Dèsqùkwùne nàghuda-ne
  I wonder those they.are.living-rel.pl
dèsqkoodidìì.
  I wonder they.think about.it
  ‘I wonder what those who are still living are thinking about that now.’ (Abou 1999)

• Cf. kwùjoo nadidii ‘he’s saying it again’
Dè só, úkwúne nàghuda ne dè só, koo di dìì.
Conclusions

• 3 hypothesized intonation contours
  – ‘Declarative’: H* L%
  – Yes/no question: L% H%
  – Uncertainty: HL%
Future research

• Quantitative investigation
  – More speakers
• More textual data
• More sentence types
  – embedded clauses
  – coordinate structures
  – postposed constituents
Musii cho

Looking up the Finlay River towards Prairie Mountain; village of Fort Ware on the right

Speakers Mike Abou, Edna McCook, Mary Charlie
Funding provided by
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Coordinate structure

- Wootunudindah ii tl’q̱h dawdinh’ą.  
  ‘Go among them and ask them.’ (Abou 1999)
Wootunudin dahii tl’qh daw dinh ’q.