Tone-prominence interaction in Hän

Blake Lehman, University of California, Los Angeles

AMP 2018, University of California, San Diego

blakelehman@ucla.edu

Background

- Interaction between the realization of lexical tone and the placement of stress is a well-documented phenomenon in a wide variety of languages [1,2]
- In such interactions, it has been claimed to always be the case that higher degrees of stress are attracted to higher tones, and vice versa [3].
- Hän (Athabaskan) has lexical tone and default final stress [4]
  - There are two interactions between tone and stress:

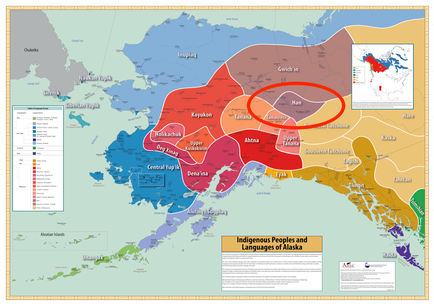
(1) a. Lexical low tone is prevented from spreading to a **nuclear stressed syllable** (rightmost stressed syllable in an Intonational Phrase(IP))
b. If a stressed syllable is underlyingly low-toned, stress shifts to the left

- Previous descriptions of Hän do not account for (1a), in particular the domain of interaction
- Tone-stress interaction at the level of the IP has not yet been documented for any other language

Research Question

What is the domain of tone-stress interaction in Hän?

Hän background



(Krauss et al. 2011)

- (Northern) Athabaskan
- <10 speakers
- 2 dialects
  - Eagle
  - Tr'ondëk Hwëch'in
- Data used here comes from 2 speakers of Eagle dialect
- **SOV word order**
- Complex verbal morphology
  - stem is always final element of verb word

Tone

- 4 surface tones: low, high, rising falling:

Surface tone	Example
Low	*shär* 'knot'
High	*shär* 'bear'
Rising	*jëjǔu* 'moose'
Falling	*łää* 'very much'

- Tonal system has been analyzed as privative − low tone is marked, high tone is default [5,6]
- There is a process of tone spread − low tone spreads one syllable to the right:

(3) *Hëtr'ùhnòhtänn* 'We teach'
1PL.teach.IMPFV

L
|
Hëtr'uhnohtänn → H L H
Hëtr'uhnohtänn

Tone-prominence interaction

Blocking of low tone spread

- Low tone spread is blocked on a nuclear stressed syllable (rightmost stressed syllable in Intonational Phrase(IP))

(4) *Jii ts'à' chèzhaa* 'This beaver went away'
this beaver go.away.3SG.PFV

L L
| |
[Jii ˈts'a' cheˈzhaa]$_{IP}$ → H L L H
[Jii ˈts'a' cheˈzhaa]$_{IP}$

- Most examples of L spread locking look like (4) − tone spread blocked on an IP-final verb stem
  - This makes it difficult to determine whether nuclear stress blocks L spread, or verb stems specifically block L spread
- Two things we expect to find if noun/verb asymmetry is due to word order:
  - IP-final noun in which low tone spread is blocked
  - non-IP-final verb in which low tone spreads onto final syllable (stem)

Low tone spread blocking in nouns

- In natural speech, nouns rarely appear in IP-final position
- In more careful speech, each word frequently forms its own IP
  - Diagnosed by final-syllable lengthening and pause
  - **In such cases, stressed syllables in noun block low tone spread**

(5) L H H H H H
[[**Nä**ˈ**ghayy**]$_{IP}$ [thee kąyy däˈtlaa]$_{IP}$]
frog rock on jump.3SG.PFV
'The frog jumped on the rock'

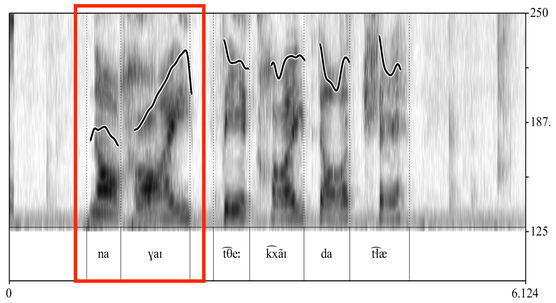


Figure 1: IP-final noun blocks low tone spread

- Compare the more natural production of (5) below:
  - no lengthening of *−ghayy*, no pause
  - low tone is able to spread

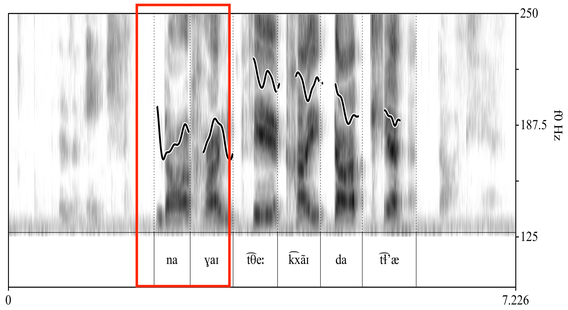


Figure 2: IP-medial noun allows low tone spread

Low tone spread in verbs

- If blocking of low tone spread is not asymmetrical with respect to verbs and nouns, we also expect to see low tone spread in non-IP-final verbs
- **In (6), verb *nè'ąyy* 'she stole' is non-IP-final, L spreads**

(6) L L H H H L H
[John Mary ling **neˈąyy** ˈhaa]$_{IP}$ [wëkˈeww ˌhonˈlɨi̯]$_{IP}$]
John Mary dog.POS steal.3SG.PFV for angry be.3SG.IMPFV
'John is angry because Mary stole his dog.'

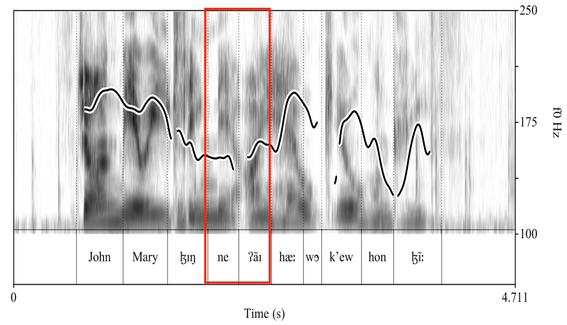


Figure 3: IP-medial verb allows low tone spread

- Compare the careful production of (6) below:
  - lengthening of *−ąyy*, short pause
  - low tone fails to spread

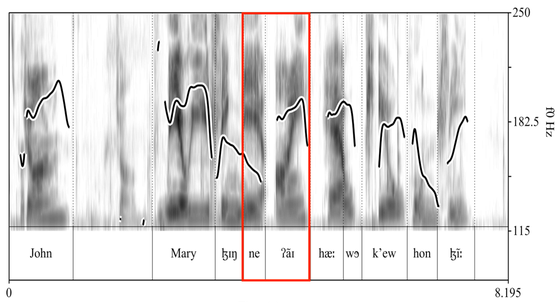


Figure 4: IP-final verb blocks low tone spread

Possibility of boundary tone

- Another possible explanation of failure of L to spread to nuclear stressed syllable is that an H% boundary tone overwrites the IP-final L
- However, this is unlikely, as many Hän words have final syllables with low tone, and these low tones are not overwritten by an H%

(7) L H L
[Shëling niˈąyy]$_{IP}$
my.dog.POS steal.2SG.IMPFV
'You are stealing my dog'

Analysis

Blocking of low tone spread

- Builds on de Lacy's [1,2] account of tone-prominence interaction

(8) *HD(IP)/L: Assigns violation when head syllable of IP is associated with low tone

Bounded L spread

- Builds on Kaplan's [7] account of bounded H spread

(9) TROUGHDELAY: Realization of low tone requires two syllables

L L [Jii ts'a' chezhaa]$_{IP}$	SPECIFY T	OCP(L)	*HD(IP)/L	TROUGH DELAY	*SPREAD
H L L H ☞ a. [Jii ts'a' cheˈzhaa]$_{IP}$		*		**	
H L L b. [Jii ts'a' cheˈzhaa]$_{IP}$		*	*!	*	*

Conclusions and Future Research

Conclusion

- Blocking of low tone spread in Hän is due to a dispreference for the co-occurrence of low tone and nuclear stress
- Apparent asymmetry in behavior of nouns and verbs due only to frequency of occurrence in IP-final position
- Preference for prominent elements to associate with higher tone extends though prosodic hierarchy, up to and including Intonational Phrase

Future research

- Nature of low tone spread in Hän − is it actually analogous to peak delay in languages with H spreading?
- Intonation − are there any cases where a boundary tone surfaces in Hän?

References

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