

Nuuchahnulth Stress

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1 Introduction

- **Goal:** describe the major stress patterns in Nuuchahnulth and provide account in Optimality Theory.
- Thanks to Katie Fraser, speaker of Ahousaht dialect and consultant for Field Methods course at UVic, Spring 2002.
- Nuuchahnulth is a Southern Wakashan language spoken on the west coast of Vancouver Island.
- Stress is one of many phonological phenomena which focus on the first two syllables (Werle 2002).
- Previous analyses of Nuuchahnulth stress are based on Sapir’s fieldwork.
- It has been described by Stonham (1999) and Wilson (1986).
 - Wilson: “stress falls on the first syllable, unless it is light and the second syllable is heavy, in which case the second syllable receives stress. There are no secondary stresses marked in the data” (p. 288)
 - Stonham: same generalization but also reports “secondary stress occurs on alternating syllables from the primary stress” (p. 61)
- Data in this paper is from field methods course at University of Victoria in 2002.
- Data shows slightly different stress pattern than Stonham describes.
- **Structure:** Section 2 presents data; an Optimality Theoretic analysis is given in section 3; finally, I conclude in section 4.

2 Data

- There are two main stress patterns in Nuuchahnulth:

Pattern 1 $\acute{\sigma}\sigma\grave{\sigma}\sigma\grave{\sigma}\dots$

Pattern 2 $\sigma\acute{\sigma}\sigma\grave{\sigma}\sigma\grave{\sigma}\dots$

- Secondary stress is as Stonham (1999) describes.

- Heavy = CVV(C) or CVN(C)

- Monosyllabic words all get stressed

- (1) 1. 'kuḥ 'hole'
2. 'k^wiis 'snow'

- Words with heavy initial syllable and light second syllable have primary stress on the first syllable

- (2) 'quu.ʔas 'person'
'taat.ṅa.ʔis 'children'
'siič.pax,ṁinh.ʔi 'the cougars'
'yaa.ʔa,ka.ʔat,ʔick.ʔaʔ 'They love you (sg.)'

- In words with a light initial syllable and a heavy second syllable, primary stress is on the second syllable

- (3) ʔu.ʔiičḥ 'summer'
ha.'wiiqḥ.siš 'I am hungry'
hi.'ʔaa.suk,ʔiš '3sg. is on (something)'
nu.'nuuk.ʔaqḥ,ʔiš.ʔaʔ 'They will sing'
hiʔ.'pii.ʔaq,ʔi.ʔat,ʔiš '3sg. is behind him'
či.'čuu.ʔa.pa.tu,k^wi.niš '3sg. got cut up for us'

- Hypothesis 1: Primary stress falls on leftmost heavy syllable

- Counterexamples:

- (4) ʔik.'ši.ʔi,kuuk 'you punched (someone)'
'ča.pac,ṁinh.ʔi 'the canoes'
ma.'ʔiḥ.kac,ṁinh 'little boys'

- Hypothesis 2: Primary stress falls on initial syllable unless it is light and the second is heavy.

- Problem: when first two syllables are the same weight, either may be stressed.

- (5)
- | | |
|---|--|
| 'qu.ʔas 'person' | ṁuks.'yi 'rock' |
| 'ta.ṅa.ʔis 'child' | na.'wa.yas 'someone hanging around outside' |
| 'hi.ta,wii.ta 'get out of' | hi.'šu.k ^w i.niš 'We all (did something)' |
| 'ʔu.na,ḥaq.ʔis,ʔiš '3sg. is really small' | ʔu.'caḥ.tak,siš.ʔaʔ 'I am moving towards them' |
| 'ḥaa.k ^w aaḥ 'young woman' | ʔiiḥ.'ʔiiš '3sg. is big' |
| 'quut.quu,ʔas 'people' | ḥaa.'wii.ḥaḥ 'young men' |

- Patterns of primary stress found:

(6)

| | |
|---------------------------------|---------------------------------|
| # $\acute{\sigma}$ σ ... | # σ $\acute{\sigma}$... |
| #LL... | #LL... |
| #HH... | #HH... |
| #HL... | #LH... |

3 Analyses

- Secondary stress assignment depends on primary stress assignment.
- Derivationally ‘top down’, but derivational systems like Hayes (1995) and Halle & Idsardi (1995) work ‘bottom up’.
- Many other languages are ‘top down’ (van der Hulst 1996).
- Assignment of primary and secondary stress can differ in a single language
 - QS primary, QI secondary – eg. English, Dutch
 - QI primary, QS secondary – eg. Finnish, Tübatulabal
- ‘Top down’ can be translated to OT by ranking constraints on primary stress above general stress constraints.
- Constraints on primary stress:

WSP-Primary: primary stress must occur on a heavy syllable.

Align-Hd-L: Align(Hd-Ft, L, PrWd, L) foot containing primary stress is at the left edge of the word.

- ALIGN-HD-L \gg WSP-PRIMARY

(7)

| | čapac [˘] m [˘] in [˘] ʔi | ALIGN-HD-L | WSP-PRIMARY |
|----|--|------------|-------------|
| a. | ([˘] ča.pac)m [˘] in [˘] ʔi | | * |
| b. | ča.pac.([˘] m [˘] in [˘] ʔi) | *! | |

- Assume Nuuchahnulth foot-type is trochee.

Trochee: Align(Ft, L, $\acute{\sigma}$, L) Feet are left-headed.

- ALIGN-HD-L \gg WSP-PRIMARY \gg TROCHEE

(8)

| | $\text{ʔaʔii}^{\dot{c}}\text{im}$ | ALIGN-HD-L | WSP-PRIMARY | TROCHEE |
|----|---|------------|-------------|---------|
| a. | $\text{ʔa.ʔii}^{\dot{c}}\text{im}$ | | | * |
| b. | $(\text{ʔa.ʔii})^{\dot{c}}\text{im}$ | | *! | |
| c. | $\text{ʔa}(\text{ʔii.}^{\dot{c}}\text{im})$ | *! | | |

- Constraints to get iterative secondary stress:

Parse- σ : Syllables are parsed by feet.

Ft-Bin: Feet contain two syllables.

- PARSE- σ \gg FT-BIN

(9)

| | $\text{ʔaat}^{\dot{n}}\text{a}^{\dot{r}}\text{is}$ | PARSE- σ | FT-BIN |
|----|---|-----------------|--------|
| a. | $(\text{ʔaat.}^{\dot{n}}\text{a})^{\dot{r}}\text{is}$ | | * |
| b. | $(\text{ʔaat.}^{\dot{n}}\text{a})^{\dot{r}}\text{is}$ | $\sigma!$ | |
| c. | $\text{ʔaat.}^{\dot{n}}\text{a.}^{\dot{r}}\text{is}$ | | * |

- Solution: FT-BIN \rightarrow FT-MAX, FT-MIN (Everett 1996)

Ft-Max: Feet have no **more** than two syllables

Ft-Min: Feet have no **less** than two syllables

- PARSE- σ \gg FT-MAX \gg FT-MIN

(10)

| | $\text{ʔaat}^{\dot{n}}\text{a}^{\dot{r}}\text{is}$ | PARSE- σ | FT-MAX | FT-MIN |
|----|--|-----------------|--------|--------|
| a. | $(\text{ʔaat.}^{\dot{n}}\text{a})^{\dot{r}}\text{is}$ | | | * |
| b. | $(\text{ʔaat.}^{\dot{n}}\text{a})^{\dot{r}}\text{is}$ | *! | | |
| c. | $(\text{ʔaat.}^{\dot{n}}\text{a.}^{\dot{r}}\text{is})$ | | *! | |

- Secondary stress should not immediately follow a heavy second syllable, but the existing constraints permit it.

(11)

| | $\text{ʔaʔii}^{\dot{c}}\text{imaq}^{\dot{r}}\text{itk}$ | PARSE- σ | FT-MAX | FT-MIN |
|----|---|-----------------|--------|--------|
| a. | $(\text{ʔa.ʔii})^{\dot{c}}(\text{imaq.}^{\dot{r}}\text{itk})$ | *! | | |
| b. | $\text{ʔa}^{\dot{c}}(\text{ʔii})(\text{imaq.}^{\dot{r}}\text{itk})$ | | | * |

- Need a constraint to prohibit stress clash:

NoClash: Don't stress two adjacent syllables.

- NOCLASH \gg PARSE- σ

(12)

| | $\text{ʔaʔii}^{\downarrow}\text{ci}^{\downarrow}\text{maqʔitk}$ | NOCLASH | PARSE- σ | FT-MAX | FT-MIN |
|----|--|---------|-----------------|--------|--------|
| a. | $\text{ʔa.}^{\downarrow}\text{ʔii}^{\downarrow}\text{ci}^{\downarrow}(\text{,maq.ʔitk})$ | | * | | |
| b. | $(\text{ʔa.}^{\downarrow}\text{ʔii}^{\downarrow})(\text{,ci.maq})(\text{,ʔitk})$ | *! | | | * |

- Constraint ranking so far:

(13) ALIGN-HD-L \gg WSP-PRIMARY \gg TROCHEE \gg NOCLASH \gg PARSE- σ \gg FT-MAX \gg FT-MIN

- Options for lexical stress: cophonologies (Inkelas 1999) or constraints on a subset (Pater 2000)
- Cophonologies seem unwarranted, since no other phonological phenomena are involved in these words.
- Extrametricality constraint on set of words S_1 .

NonInitial-S₁: The first syllable of a word in the set S_1 is not stressed.

(14) ALIGN-HD-L \gg WSP-PRIMARY \gg NONINITIAL-S₁ \gg TROCHEE \gg NOCLASH \gg PARSE- σ \gg FT-MAX \gg FT-MIN

4 Conclusion

- Looked at new primary data and found non-phonologically determined stress in addition to the previously described stress system.
- Restriction of primary stress to the first two syllables and primary stress quantity sensitivity are accounted for in Optimality Theory by primary specific constraints which dominate more general constraints on stress in the rankings.

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