# Class 4
# Axininca Campa continued

10/5/17

## 1 Stress

### 1.1 Data

- Basic pattern: "left-to-right iambs" = stress on even numbered syllables counting from the left

(1) Basic Stress Data (odd syllable parity words)
(McCarthy & Prince 1993:159; taken from Payne, Payne, & Santos 1982)

| | |
|---|---|
| hinóki | 'arriba (por el río)' |
| iˇch̥ìkakína | 'él me ha cortado' |
| iráawanàti | 'su caoba' |
| apàniróini | 'solo' |
| añàawáitirìka | 'cuando hablamos con él' |

- Not sensitive to morphological constituency

→ If foot structure is built up at the "suffix level", it is eliminated ("deforestation"; Liberman & Prince 1977) and recalculated at the word level (M&P Appendix A.1).

· This on its own is reason to be skeptical of M&P's analysis.

- The final syllable (really, mora) can't be stressed. In even parity words, this variably leads to:
  · a final lapse, or
  · a secondary stress on the penult which results in a clash with the antepenult

(2) Final Stresslessness (p. 160)

| | |
|---|---|
| kimítaka ∼ kimítàka | 'quizá' |
| hotítana ∼ hotítàna | ''el me metió' |
| irániri | 'su cuñado' |
| čʰóokiro | 'hormiga de árbol' |
| cʰirìnitakòiyanáakani | 'la noche les sobrevino' |

- In disyllabic words, this leads to stress on the first syllable, even though that is usually disallowed.

(3) Initial stress in disyllables (p. 160)

| | |
|---|---|
| círi | 'brea de árbol' |
| máto | 'polilla' |
| cʰími | 'colpa' |

- Heavy syllables are always stressed (undominated WSP)
  - Can cause a clash (by syllable) when there are two adjacent heavy syllables
  - Can cause initial lapses when the third syllable is heavy and the first two are light

(4) Heavy syllables in odd numbered syllables always stressed
(data from Spring 1990:65, citing Payne, Payne, & Santos 1982)

| | |
|---|---|
| máinawo | 'senorita' |
| máawoni | 'to all, every' |
| íiriki | 'green, unripe' |
| nowawàitáiyani | 'we have continued eating' |

- Final diphthongs are stressed

(5) Final Diphthongs (M&P 164)

| | |
|---|---|
| kitìšitàkotái | 'la mañana les sobrevino' |
| àatái | 'iremos' |

- No final long vowels, except in monosyllables

(6) Final long vowels in monosyllables (M&P 164)

| | |
|---|---|
| míi | 'otter' |
| sóo | 'sloth' |
| šáa | 'anteater' |

- Underlying long vowels shortened in final position (even if it leads to initial stress)

(7) Final Shortness (stress marks inferred) (p. 165)

| UR | Noun | 'my' + Noun | |
|---|---|---|---|
| /sampaa/ | sámpa | no-sampáa-ti | 'balsa' |
| /sawoo/ | sáwo | no-sawóo-ti | 'case' |
| /c$^{h}$imii/ | c$^{h}$ími | no-c$^{h}$imíi-ti | 'ant' |
| *Compare* | | | |
| /sima/ | síma | no-simá-ni | 'fish' |
| /čokori/ | čokóri | no-čokóri-ti | 'armadillo' |

## 1.2 Foot-free analysis

- Left-to-right alternating by syllable, starting on second syllable:

(8) a. **NONINITIALITY**: Assign a violation if the initial syllable(?)/mora(?) is stressed.
b. **NONFINALITY**: Assign a violation if the final syllable(?)/mora(?) is stressed.
c. ***CLASH**: Assign a violation for each pair of adjacent stressed syllables(?)/moras(?).

d. ***LAPSE**: Assign a violation for each pair of adjacent unstressed syllables(?)/moras(?).

- In odd syllable parity words (with no heavy syllables in odd numbered syllables), all of these constraints can be satisfied fully.

(9) Odd syllable parity words, no heavy syllables

| /ič$^{h}$ikakina/ | NONINITIALITY | NONFINALITY | *CLASH | *LAPSE |
|---|---|---|---|---|
| a. ☞ ič$^{h}$ìkakína | | | | |
| b. ìč$^{h}$ikàkiná | *! | *! | | |
| c. ìč$^{h}$ikákina | *! | | | *! |
| d. ìč$^{h}$ikàkína | *! | | *! | |
| e. ìč$^{h}$ikakína | *! | | | *! |

- All words must bear a stress

(10) **CULMINATIVITY**: Assign a violation if a word has no stress.

- NONFINALITY ≫ NONINITIALITY forces initial stress in disyllables.

(11) Disyllables

| /mato/ | CULMINATIVITY | NONFINALITY | NONINITIALITY | *CLASH | *LAPSE |
|---|---|---|---|---|---|
| a. ☞ máto | | | * | | |
| b. mato | *! | | | | * |
| c. mató | | *! | | | |
| d. màtó | | *! | * | * | |

(12) Crucial ranking: CULMINATIVITY, NONFINALITY ≫ NONINITIALITY

- Variable behavior in the penult of even parity words.
  - · Variable ranking between *CLASH and *LAPSER
  - · Can't be regular *LAPSE because we don't see same variation in word-internal position
  - · *LAPSEL must outrank (at least) *LAPSER to ensure position of lapse

(13) a. ***LAPSER**: Assign a violation if the final two syllables(?)/moras(?) are unstressed.
b. ***LAPSEL**: Assign a violation if the first two syllables(?)/moras(?) are unstressed.

(14) Even syllable parity words, no heavy syllables

| /kimitaka/ | NONFIN | NONINIT | *LAPSEL | *CLASH | *LAPSER | *LAPSE |
|---|---|---|---|---|---|---|
| a. ☞ kimítaka | | | | | * | * |
| b. ☞ kimítàka | | | | * | | |
| c. kimìtaká | *! | | | | | |
| d. kìmitáka | | *! | | | | |
| e. kimitáka | | | *! | | | * |

- Most forms are given without the stress clash; I will assume that that is default behavior.
  - This means *CLASH ≫ *LAPSER
  - Makes no difference to rest of the analysis. I now omit *LAPSER.

(15) Crucial ranking (assuming default treatment is lapse at end):
  a. NONFINALITY, NONINITIALITY, *CLASH ≫ *LAPSE
  b. *LAPSEL ≫ *LAPSER

- Words get initial stress if initial syllable is heavy, in violation of NONINITIALITY.

(16) **WSP**: Assign a violation for each heavy syllable which is not stressed.

(17) Initial heavy syllables

| /maawoni/ | WSP | NONFINALITY | NONINITIALITY | *CLASH | *LAPSE |
|---|---|---|---|---|---|
| a. ☞ máawoni | | | * | | * |
| b. maawóni | *! | | | | |
| c. máawonì | | *! | * | | |
| d. máawòni | | | * | *! | |

(18) Crucial ranking: WSP ≫ NONINITIALITY, *CLASH, *LAPSE

- WSP can cause a clash when there are two adjacent heavy syllables.
- WSP can cause a lapse — even at the left edge — when there is a heavy syllable in an odd numbered syllable, e.g. 3rd syll preceded by two lights.

(19) Heavy 3rd syll / adjacent heavy syllables

| /nowawaitaiyani/ | WSP | NONINITIALITY | *CLASH | *LAPSEL | *LAPSE |
|---|---|---|---|---|---|
| a. ☞ nowawàitáiyani | | | * | * | ** |
| b. nòwawàitáiyani | | *! | | | * |
| c. nowàwaitáiyani | *! | | | | * |
| d. nowàwàitáiyani | | | **! | | * |

(20) Crucial ranking: WSP ≫ *CLASH ≫ *LAPSEL

- The same interactions correctly predict medial lapses under certain configurations with a heavy syllable in an odd numbered syllable
  - Position of lapse requires *LAPSEL
  - *LAPSEL must be ranked below NONINITIALITY and WSP — these rankings follow from transitivity through *CLASH.

(21) Medial lapses

| /c$^{h}$**irinitakoi**yanaakani/ | WSP | NONINITIALITY | *CLASH | *LAPSE | *LAPSEL |
|---|---|---|---|---|---|
| a. ☞ **c$^{h}$irìnitakòi**yanáakani | | | | ** | |
| b. **c$^{h}$irinìtakòi**yanáakani | | | | ** | *! |
| c. **c$^{h}$ìrinìtakòi**yanáakani | | *! | | * | |
| d. **c$^{h}$irìnitàkòi**yanáakani | | | *! | * | |
| e. **c$^{h}$irìnitàkoi**yànaakáni | *!* | | | | |

- Final diphthongs are stressed.
  - If NONFINALITY is defined over syllables, then WSP ≫ NONFINALITY
  - I'll argue below that it isn't; it's defined over moras.

(22) Final diphthongs

| /aatai/ | WSP | NONFINALITY | NONINITIALITY | *CLASH |
|---|---|---|---|---|
| a. ☞ àatái | | * | * | * |
| b. áatai | *! | | * | |
| c. aatái | *! | * | | |

## 1.3 Final shortening

- Long vowels are not allowed at the end of a (prosodic) word,
- Unless that word is monosyllabic.
- There are no light monosyllabic words.

- We can derive this from:

(23) CULMINATIVITY, NONFINALITY($\mu$) ≫ *V:# ≫ IDENT[+long]-IO/MAX-$\mu$-IO

- I'm going to use asymmetric Ident constraints for length, i.e. IDENT[+long]-IO and IDENT[-long]-IO, rather than symmetric IDENT[long]-IO because we're going to need a difference between lengthening processes and shortening processes.

(24) Final shortening

| /sampaa/ | CULM | NONFINALITY($\mu$) | *V:# | NONINIT | IDENT[+long]-IO |
|---|---|---|---|---|---|
| a. sampáa | | | *! | | |
| b. sámpaa | | | *! | * | |
| c. sampaa | *! | | * | | |
| d. sampá | | *! | | | * |
| e. ☞ sámpa | | | | * | * |
| f. sampa | *! | | | | * |

(25) Length retained (/required) in monosyllables

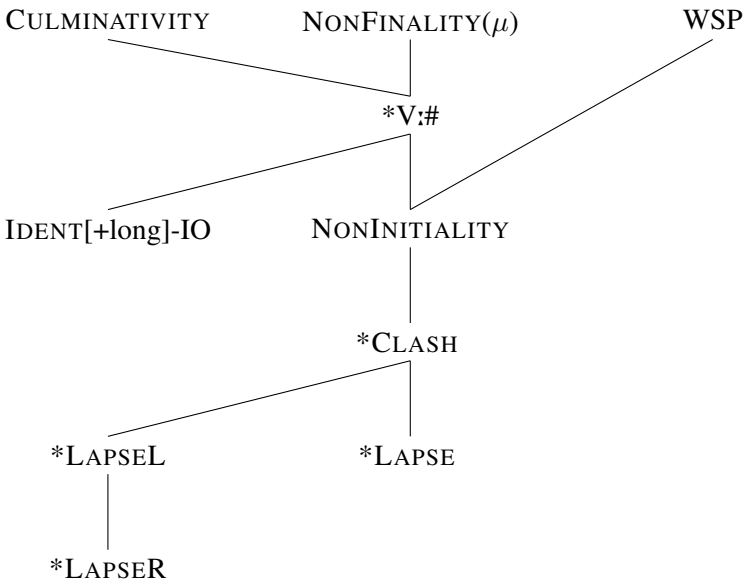
| /soo/ | CULM | NONFINALITY($\mu$) | *V:# | NONINIT | IDENT[+long]-IO |
|---|---|---|---|---|---|
| a. ☞ sóo | | | * | * | |
| b. só | | *! | | * | * |
| c. soo | *! | | * | | |
| d. so | *! | | | | * |

- There are no monomoraic words in the language. NONFINALITY($\mu$) can guarantee this.
  - If NONFINALITY($\mu$) (and CULMINATIVITY) dominates IDENT[**-long**]-IO, DEP-IO, and/or MPARSE ('Assign a violation for the null parse'), then any monomoraic candidate will be suboptimal.

- The sources I've seen don't report any alternations in nouns that allow us to see how subminimal noun/adjective roots would be treated.

## 1.4 Ranking summary

(26) Hasse diagram




## 1.5 What you can't fix with augmentation

- We see a number of violations of relatively high ranked constraints, which could be alleviated by syllable (*ta*) epenthesis, but aren't.

- Final long vowels in monosyllables

(27) DEP-IO $\gg$ *V:#

| /soo/ | NONFINALITY($\mu$) | DEP-IO | *V:# | NONINIT |
|---|---|---|---|---|
| a. ☞ sóo | | | * | * |
| b. sóo*ta* | | *!* | | * |

- Stressed initial syllables (follows from transitivity)

(28) DEP-IO ≫ NONINITIALITY

| /mati/ | NONFINALITY($\mu$) | DEP-IO | NONINIT |
|---|---|---|---|
| a. ☞ máti | | | * |
| b. matí*ta* | | *!* | |

- Final lapses (also follows from transitivity )

(29) DEP-IO ≫ *LAPSE

| /maawoni/ | NONFINALITY($\mu$) | DEP-IO | NONINIT | *LAPSE |
|---|---|---|---|---|
| a. ☞ máawoni | | | * | * |
| b. máawonì*ta* | | *!* | * | |

# 2 My (attempt at an) analysis

- There's at least two things I don't like about M&P's analysis
  1. Their reliance on prosodic words and feet for which there's no independent evidence
  2. Their DISYLLABLE constraint for the reduplicant.

- I think I can mostly re-work the prosodic word/feet stuff using the above stress analysis + Base-Derivative faithfulness.
- I have no way around DISYLLABLE yet.

## 2.1 Augmentation and BD-faithfulness

- M&P's insight is that the augmented forms act like they have properties of prosodic words.
  - Namely, they require bimoraicity.
- We saw that you can derive this from NONFINALITY($\mu$) in freestanding words.

- **Problem:** verbal roots are inherently bound
  - There are no forms where the verbal root appears without suffixes,
  - and each suffix consists of at least one vowel.
  - So there are no freestanding forms where the verbal root could be augmented to satisfy NONFINALITY($\mu$).

- **Wonky solution:** Claim that the grammar has access to such a form, and use it as base for Base-Derivative faithfulness.
  - I'll call this the *morphological base* [MBase], to distinguish it from the *base of reduplication* [RBase].
  - **Note:** the derivative will not be faithful to stress properties, even though we're using stress considerations to motivate augmentation.

- We derive augmentation to minimality in the same way as we did within M&P's analysis, except using NONFINALITY($\mu$) rather than SUFFIX-TO-PROSODICWORD.

(30) Augmentation of /CV/ to MBase [CV*ta*]

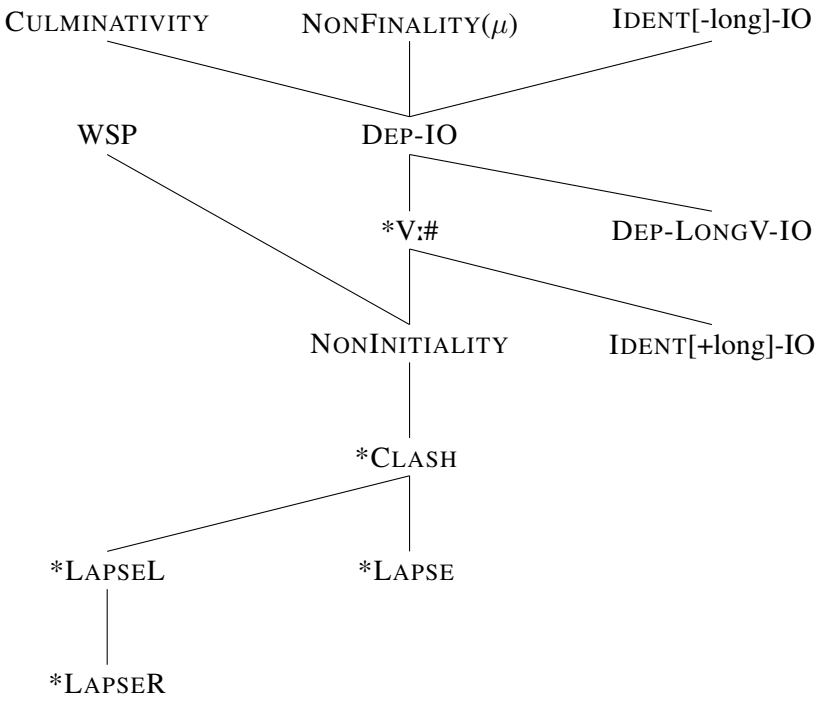
| /na/ | NONFINALITY($\mu$) | IDENT[-long]-IO | DEP-IO |
|---|---|---|---|
| a. ná | *! | | |
| b. náa | | *! | |
| c. ☞ nát*a* | | | ** |

(31) Augmentation of /C/ to MBase [C*aa*]

| /n/ | NONFINALITY($\mu$) | IDENT[-long]-IO | DEP-IO | DEP-LONGV-IO |
|---|---|---|---|---|
| a. p*á* | *! | | * | |
| b. ☞ p*áa* | | | * | * |
| c. p*áta* | | | **!* | |

- I assume that this is the same way that subminimal noun/adjective roots would be treated; but there's no evidence as far as I know.

(32) Hasse diagram




- These MBases serve as the B in a BD correspondence relation with the forms that undergo suffixation.
- Augmentation happens when phonotactics call for / allow epenthesis.
  - CV*ta* are protected by MAX-C-BD
  - C*aa* are protected by IDENT[+long]-BD

(33) Augmentation of /CV/ before C-initial suffix

| INPUT: /na, -piro-/ MBASE: [nata] | MAX-C-BD | IDENT[+long]-BD | IDENT[-long]-IO | DEP-IO |
|---|---|---|---|---|
| a. na-piro- | *! | | | |
| b. naa-piro- | *! | | * | |
| c. ☞ na*ta*-piro- | | | | ** |

(34) Augmentation of /C/ before C-initial suffix

| INPUT: /p, -piro-/ MBASE: [paa] | MAX-C-BD | IDENT-[+long]-BD | IDENT-[-long]-IO | DEP-IO | DEPV:-IO |
|---|---|---|---|---|---|
| a. p*a*-piro- | | *! | | * | |
| b. ☞ p*aa*-piro- | | | | * | * |
| c. p*ata*-piro- | | *! | | *** | |

- This predicts no augmentation before V-initial suffixes

(35) No "augmentation" (just *t*-epenthesis) for /CV/ before V-initial suffix

| INPUT: /na, -aanc$^{h}$i-/ MBASE: [nata] | ONSET | MAX-C-BD | IDENT-[+long]-BD | IDENT-[-long]-IO | DEP-IO |
|---|---|---|---|---|---|
| a. na.aanc$^{h}$i- | *! | * | | | |
| b. naa.aanc$^{h}$i- | *! | * | | * | |
| c. na*ta*.aanc$^{h}$i- | *! | | | | ** |
| d. ☞ na*t*aanc$^{h}$i- | | | | | * |
| e. naa*t*aanc$^{h}$i- | | | | *! | * |
| f. na*tat*aanc$^{h}$i- | | | | | ***! |

- The independent need for consonant epenthesis satisfies MAX-C-BD.
- Nothing motivates additional epenthesis; MAX-V-BD must be ranked below DEP-IO.

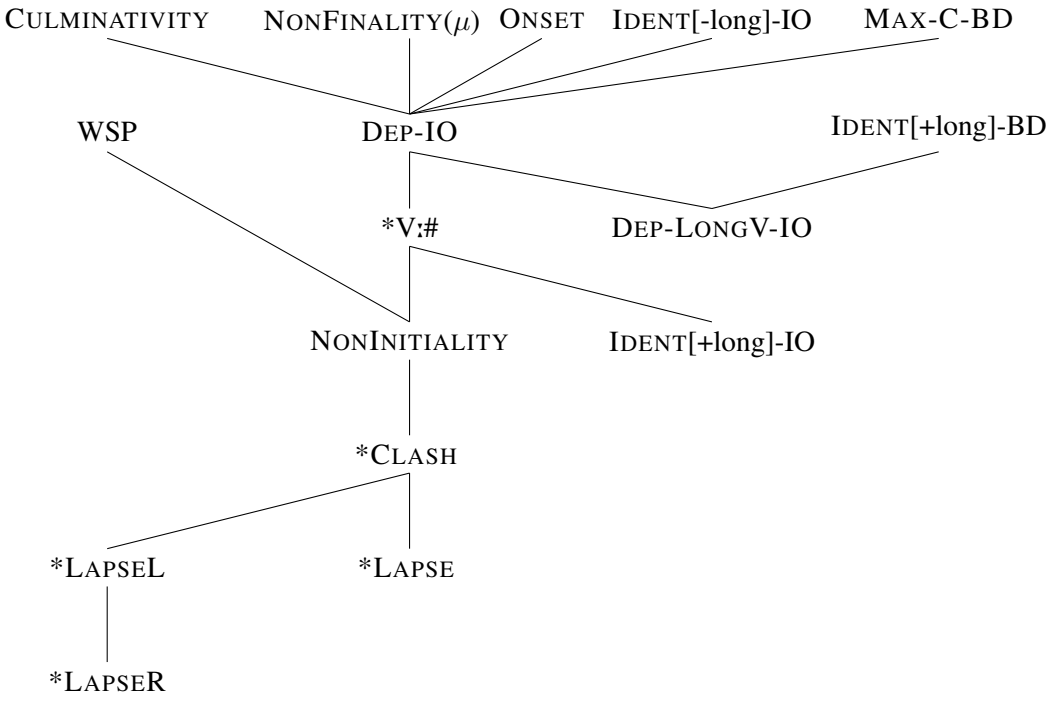
(36) No epenthesis) for /C/ before V-initial suffix

| INPUT: /p, -aanc$^{h}$i-/ MBASE: [paa] | ONSET | MAX-C-BD | IDENT-[+long]-BD | IDENT-[-long]-IO | DEP-IO |
|---|---|---|---|---|---|
| a. p*a*.aanc$^{h}$i- | *! | | * | | * |
| b. p*aa*.aanc$^{h}$i- | *! | | | | * |
| c. p*ata*.aanc$^{h}$i- | *! | | * | | *** |
| d. p*at*aanc$^{h}$i- | | | *! | | ** |
| e. p*aat*-aanc$^{h}$i- | | | | | *!* |
| f. p*atat*-aanc$^{h}$i- | | | *! | | **** |
| g. ☞ p-aanc$^{h}$i- | | | | | |

- (g) escapes IDENT[+long]-BD violation by not having a vowel in correspondence with the MBase.

- **Local Summary**: Effect of SUFFIX-TO-PWD recreated through Base-Derivative faithfulness.
  - **Pro:** Doesn't rely on otherwise unmotivated and non–surface-true prosodic structure.
  - **Con:** Requires positing as base a non-occurring form; stipulates faithfulness to the specific properties created by augmentation.

(37) Hasse diagram




- **Next time:** analysis of reduplication

## References

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