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# Assignment 3 – OT Review

## Due: March 20, 2008

### 1 Syllable Structure

These typological facts come from Blevins (1996).

	onsets	codas	possible syllables (excluding complex onsets and codas)
Arabela, Siona, Piro, Hua	required	forbidden	CV
Totonac, Klamath, Nisqually, Tunica, Sedang, Dakota, Thargari	required	allowed, but not required	CV, CVC
Pirahã, Mazateco, Fijian, Cayuvava	allowed, but not required	forbidden	V, CV
English, Gilyak, Finnish, Tamazight Berber, Cairene Arabic, Spanish, Italian, Mokilese, Cuna	allowed, but not required	allowed, but not required	V, CV, VC, CVC

Let the UR alphabet be  $\{C,V\}$ . Let the SR alphabet be  $\{C,V,.\}$ . The dot ‘.’ represents the syllable boundary. Consider the following four constraints.

ONSET	One violation for each onsetless syllable.
NOCODA	One violation for each syllable with coda.
MAX	One violation for each segment in UR with no SR correspondent.
DEP	One violation for each segment in SR with no UR correspondent.

1. Pick two rankings of these constraints, and provide tableaux for underlying forms  $/CV/$ ,  $/V/$ , and  $/CVC/$ , showing their winners and some rival candidates. Which of the above language types do your rankings correspond to, if any?
2. What hypothetical language types are missing from this typology?
3. Explain why, with these four constraints, underlying  $/CVCV/$  never surfaces as  $[CVC.V]$ .

Note that if we add the constraints COMPLEXCODA, COMPLEXONSET, which penalize structures  $CC]_{\sigma}$  and  $_{\sigma}CC$ , respectively, the typology becomes even larger.

## 2 Tibetan

### Data

The following data is from Halle and Clements (1983).

$\widehat{d}zu$	‘ten’
$\widehat{d}zig$	‘one’
$\widehat{d}zug\widehat{d}zig$	‘eleven’
$\widehat{f}i$	‘four’
$\widehat{d}zub\widehat{f}i$	‘fourteen’
$\widehat{f}ib\widehat{d}zu$	‘forty’
$\widehat{g}u$	‘nine’
$\widehat{d}zurgu$	‘nineteen’
$\widehat{g}ub\widehat{d}zu$	‘ninety’
$\widehat{\eta}a$	‘five’
$\widehat{d}zu\widehat{\eta}a$	‘fifteen’
$\widehat{\eta}ab\widehat{d}zu$	‘fifty’

### Directions

Provide an OT account of the Tibetan data that covers the following points. Follow Bruce Hayes’ tips for writing up phonological analysis. Make sure you:

- Describe in words any alternations you see.
- Explain the morpheme order. How does Tibetan form *teen* (X+10) and *ty* (X \* 10) numbers?
- Give the underlying form for each morpheme (ten, one, four, nine, five).
- Say which markedness constraint(s) force(s) the alternations you observe.
- Think of various other ways that the markedness constraints could have been satisfied and say which faithfulness constraint(s) would be violated in those cases. You may find it helpful to use MAX-C/\_\_\_\_V (“don’t delete a C that was underlyingly prevocalic”)
- Argue for constraint rankings using mini tableaux.
- Give summary tableaux for at least one plain numeral (10, 1, 4, 9, or 5), one *-teen* numeral (11, 14, 19, or 15), and one *-ty* numeral (40, 90, or 50).

### 3 Manam Stress

#### Data

1.	pá.tu	‘stone’
2.	á.e	‘leg’
3.	tó.li	‘three’
4.	ú.di	‘banana’
5.	ʔé.u	‘dog’
6.	né.gu	‘mine’
7.	ri.gí.na	‘mat’
8.	gi.rí.ʔi	‘fault’
9.	ta.né.p <sup>w</sup> a	‘chief’
10.	a.nú.a	‘village’
11.	ʔa.lé.a	‘month’
12.	so.ʔá.i	‘tobacco’
13.	a.é.gu	‘my leg’
14.	ʔu.ŋí.da	‘our ears’
15.	i.gé.re	‘he wrote’
16.	si.ŋá.ba	‘bush’
17.	wà.u.wá.u	‘new’
18.	ʔò.a.dé.ʔa	‘then’
19.	bò.a.zí.ŋa	‘hole’
20.	mò.a.rú.ŋa	‘all’
21.	ì.mo.ná.ʔo	‘he ate’
22.	ì.bo.ʔá.u	‘it is bent’
23.	i.mò.a.tú.bu	‘it is heavy’
24.	i.mò.a.ná.ʔo	‘he ate’
25.	i.bò.a.ʔá.u	‘it is bent’
26.	ta.nè.p <sup>w</sup> a.tí.na	‘real chief’
27.	yu.nà.u.tí.na	‘he hit me a lot’
28.	máj	‘bird’
29.	a.téŋ	‘carton’
30.	u.zém	‘I chewed them’
31.	mà.la.bóŋ	‘flying fox’
32.	i.rà.ʔa.míŋ	‘it is bad for you’
33.	ʔa.nán.da	‘ours’
34.	mòm.b <sup>w</sup> a	‘victory leaf’
35.	mòm.b <sup>w</sup> a.tí.na	‘real victory leaf’
36.	i.zùŋ.ʔá.ʔi	‘he hid them’
37.	i.dàn.dàn.la.lá.ʔo	‘he keeps crawling away’

#### Instructions

Develop an OT analysis of the Manam stress system. Again, follow Bruce Hayes’ tips on writing up phonology exercises.

## Hints and Tips

- Use (1-27) to figure out how the basic stress system works, then look at (28-37) to see what happens when heavy syllables come into the picture.
- I would approach the analysis with feet. If you want to use Gordon’s (2002) non-foot based constraints, you may, but remember that those were designed for quantity-insensitive stress patterns, so you may have to adjust his constraint set in some way. The following tips only apply to those who use a foot-based approach.
- Constraints to consider using:

TROCHAIC	Assign a violation for any non-trochaic foot
IAMBIC	Assign a violation for any non-iambic foot
PARSE-SYL	Assign a violation for every syllable not in a foot
FOOT-BIN	Assign a violation for every foot that is not bimoraic/bisyllabic (you decide which)
ALIGN(F <sub>T</sub> ,L,W <sub>D</sub> ,L)	Assign a violation for each syllable separating a left foot boundary from the left word edge
ALIGN(F <sub>T</sub> ,L,W <sub>D</sub> ,R)	Assign a violation for each syllable separating a left foot boundary from the right word edge

- You will almost certainly need additional constraints, but this will get you started. (You can also state undominated constraints that you do not need to put in your tableaux, e.g. “I will only consider those candidates whose syllable boundaries are aligned with foot boundaries...”. Also, you don’t have to worry about the syllable structure constraints here.)
- Suggested rival candidates to consider (it’s up to you to determine the footings of the actual outputs)—if you take care of these, your analysis is thorough enough.

1: \*(pa.tú)

7: \*(río.gi)na

23: \*(ì.mo)a(tú.bu), \*i(mó.a)(tù.bu) [*this is different from the winner!*]

29: \*(á.teŋ), \*(à)(téŋ)

31: \*ma.(lá.boŋ)

35: \*(mòm)(bwá.ti)na, \*(mòm)(bwà.ti)(ná)

37: up to you

- Be sure that all foot boundaries are shown in all candidates in your tableaux.

## 4 Alignment and -um- infixation in Tagalog

We have seen the use of ALIGN constraints in stress patterns. ALIGN constraints have also been used to explain why, in some languages, certain morphemes appear as infixes in some words, but as prefixes in other words. For example, in Tagalog (from Kager 1999):

/um + alis/	<b>u</b> malis	‘leave’
/um+tawag/	<b>tum</b> awag	‘call, pf., actor trigger’
/um+gradwet/	<b>grum</b> adwet	‘graduate’

This can be analyzed with an alignment constraint

ALIGN(*um*,L,Word,L) One violation for each segment separating the left edge of *um* from the left edge of the word.

Rank this constraint with one or more syllable structure constraints to account for the position of the affix *-um-* in the Tagalog words above. Is there anything appealing about your analysis (consider how the affix position would be determined in a rule-based system). Is there anything unappealing about this analysis?