

Problem Set 10 Solutions

p. 105 Tibetan numerals

Underlying representations:

g̃jig '1'
 bshi '4'
 ŋa '5'
 rgu '9'
 b̃ju '10'

Rule: [+consonantal] → ∅ // # _____ [+consonantal]

(Word-initial consonant is deleted before another consonant; doesn't apply to /sh/)

Sample derivations:

URs: b̃ju '10'	b̃ju+bshi '14'	bshi+b̃ju '40'
Rule: ∅	∅	∅
final: j̃u	j̃u+bshi	shi+b̃ju

p. 125 Indonesian Verb Prefixes

Underlying representations:

Simple verbs:

- | | | | |
|-------------------------|-------------------|-------------------|--------------------|
| 1. lempar 'throw' | 6. nikah 'marry' | 11. kirim 'send' | 16. jahit 'sew' |
| 2. rasa 'feel' | 7. ŋaco 'chat' | 12. dɛŋar 'hear' | 17. čatat 'note' |
| 3. wakil(i) 'represent' | 8. ŋaŋi 'sing' | 13. tulis 'write' | 18. ambil 'take' |
| 4. yakin(i) 'convince' | 9. hituŋ 'count' | 14. bantu 'help' | 19. isi 'fill' |
| 5. masak 'cook' | 10. gambar 'draw' | 15. pukul 'hit' | 20. undaŋ 'invite' |

prefix: mɛŋ-

- Rules:
- nasal deletion: [+nasal] → ∅ / _____ + [+sonorant, -syllabic, -spread]
 Note: limiting the rule to [-spread] leaves nasal before /h/ (9): the rule applies only to **ORAL** resonants and glides (/h/ is laryngeal, not oral).
 - nasal harmony: [+nasal] → [α coronal, β anterior, γhigh, δ back, εlabial] / _____ + [-sonorant, α coronal, β anterior, γhigh, δ back εlabial]
 Note: limiting the rule to [-sonorant] leaves /ŋ/ before /h/ (9).
 - stop deletion: [-sonorant, -voice, -strident] → ∅ / [+nasal] + _____
 Notes: (1) limiting the rule to [-strident] leaves /č/ after the nasal (17).
 (2) (3) must follow (2) because the nasal harmonizes for point of articulation with the voiceless stop that is deleted (11, 13, 15).

Sample derivations:

mɛŋ+lɛmpar	mɛŋ+ŋaco	mɛŋ+bantu	mɛŋ+tulis	mɛŋ+hituŋ	
Rule 1	∅	∅			
Rule 2		m	n		
Rule 3			∅		
final	mɛ+lɛmpar	mɛ+ŋaco	mɛm+bantu	mɛn+ulis	mɛŋ+hituŋ

URs: Verbs: /bil-/ ‘know’, /ber-/ ‘give’, /kül-/ ‘laugh’, /kör-/ ‘see’, /kıl-/ ‘do’, /al-/ ‘take’, /tut-/ ‘hold’, /bol-/ ‘be, become’

definite past: /-di/, past participle: /-gan/

Note that the past participle of ‘hold’ is “exceptional”: we expect the /a/ to be *o insofar as the vowel in the verb stem is [+round]. I’d write a general vowel reduction rule and

$$[+ \text{syllabic}] \rightarrow \left[\begin{array}{l} \alpha \text{back} \\ \beta \text{round} \end{array} \right] / \left[\begin{array}{l} \alpha \text{back} \\ \beta \text{round} \end{array} \right] \text{Co} \text{-----}$$

Then I’d write a second rule, eliminating the roundness after a stem with /u/ in the final syllable:

$$[+ \text{syllabic}, + \text{back}, + \text{low}] \rightarrow [- \text{round}] / [+ \text{syllabic}, + \text{back}, - \text{low}]$$

Note that this rule can apply also in the case of /i/ because it’s [- round], so it would give /a/ in the suffix.

Another way to do it...with “angled brackets...might be:

$$\left[\begin{array}{l} + \text{syllabic} \\ < + \text{lo} > \text{a} \end{array} \right] \rightarrow \left[\begin{array}{l} \alpha \text{ back} \\ \beta \text{ round} \end{array} \right] / \left[\begin{array}{l} \alpha \text{ back} \\ \beta \text{ round} \\ \left\langle \begin{array}{l} + \text{high} \\ + \text{back} \end{array} \right\rangle^b \end{array} \right] \text{Co} \text{-----}$$

condition: apply only IF NOT (a AND b)

This means that the rule applies if two conditions are met at the same time:

- i. the vowel in the suffix is “low” (i.e., /a/)
- and
- ii. the vowel in the preceding syllable is “high” and “back”

If the rule doesn’t apply, then the UR /-gan/ “surfaces”...after /u/.

Finally, you need a rule to account for the devoicing of the initial stop of the suffix:

$$[- \text{sonorant}] \rightarrow [- \text{voice}] / [- \text{voice}] \text{-----}$$