

Assignment #4: Malayalam

Due Friday, Nov. 6

The data below illustrate some alternations in Malayalam. Your job is to use the tools of **lexical phonology** to account for why some of the alternations don't apply in certain morphological contexts.

- You can use **rules or OT**; your choice.
- Either way, you'll have to make a proposal about how many **levels** there are in the lexical component of Malayalam phonology, decide which morphological operations belong to which level, and decide which rules apply at which level(s) of the lexical phonology, or in the postlexical phonology.

Malayalam is a Dravidian language but has been heavily influenced by Sanskrit. I've marked words as D (Dravidian origin) or S (Sanskrit origin) whenever the source gave that information (sometimes that information is phonologically relevant, sometimes not). In some cases D could mean that the word is treated by the language as Dravidian even if it actually came from Sanskrit, and vice versa. In the cases where the etymology is not given, you may assume that D and S words behave the same. You may assume that lexical entries can be marked [+D, -S] or [-D, +S], and that, at least until the postlexical level (where such features are thought to be erased), rules can be sensitive to those features.

Be sure to discuss...

- At what stage in the derivation can or must morphological bracketing and/or abstract features like [D] and [S] be erased? (Remember that once information is gone, it's gone—it can't come back later in the derivation.)
- Do the lexical rules show any non-derived-environment blocking (NDEB)?
 - If so, in a rule analysis you can just stipulate that the rules of Level *i* won't apply if their structural description is already present before the Level-*i* morphology has been applied.
 - If so, in an OT analysis you can similarly stipulate that (some? all?) markedness constraints don't apply if they are already violated in the input.

A lot of the rules look kind of similar, which normally is a danger sign. In this case, avoid having very similar rules when you can, but don't worry if your solution still includes some.

Data are from Mohanan (bibliographic info available later if you want). Some consonant allophony is not indicated. As always, the order in which you present your solution doesn't have to reflect the order in which the data are presented.

Please don't be alarmed by the large number of words! They're there to show each pattern repeatedly, not because every word requires its own analysis.

1. In order for some of the data to make sense, you will first need an analysis of the following schwa/zero alternations. Analyze the glide/zero alternations also, for contrast. I am writing spaces or hyphens on either side of the glides so as to avoid committing to any morphological affiliation, but the glides do not represent a distinct morpheme—they are phonologically predictable.

Note: Even though they don't form a natural class, [m] and [n] are the only consonants that are allowed to be word-final (on the surface) in this language.

The gemination in 17—see also 106 and 143—won't make sense till you've seen later data.

<i>word</i>		<i>inflected</i>		<i>phrase</i>		<i>modifier-head</i>	
1. ewiṭe	where						
2. waaḷə	sword			3. waaḷ ewiṭe	Where is the sword?		
4. muurṭṭakuuṭṭi	sharpened			5. waaḷə muurṭṭakuuṭṭi	sharpened the sword		
6. waḷa	bangle			7. waḷa j ewiṭe	Where is the bangle?		
8. uraṇṇi	slept						
9. maaṣə	teacher			10. maaṣ uraṇṇi	The teacher slept.		
11. waṇṇu	came			12. maaṣə waṇṇu	teacher came		
13. ḍaasi	servant			14. ḍaasi j uraṇṇi	The servant slept.		
15. aana	elephant						
16. kaaṭə	forest					17. kaaṭṭ-aana	wild elephant (lit. forest-elephant)
18. kuṣi	hole					19. kuṣi-j-aana	insect sp. (lit. hole-elephant)
20. ṭookkə	gun	21. ṭookk-inte	gun-poss				
22. ṭikku	Tickoo	23. ṭikku-w-inte	Tickoo-poss				

2. Some differences between D and S stems.

<i>word</i>			<i>modifier-head compound</i>		
24. r ^j aṭi	Rati (name)				
25. jakṣi	yakshi (demoness)				
26. b ^ḥ aar ^j ja	wife				
27. waḍ ^ḥ u	bride				
28. manuṣjan	man				
29. puṣṭakam	book				
30. puṣpam	flower				
31. mar ^j am	tree, wood				
32. jakṣan	yaksha (demon)				
33. kuṭṭi	child	D	34. r ^j aṭi-kkuṭṭi	X-D	Ratikutti (name); ignore the [ṭ]/[t] difference—probably a mistake
35. paala	pala tree	D	36. jakṣi-ppaala	X-D	the pala tree in which yakshi lives
37. wiiṭə	house	D	38. b ^ḥ aar ^j ja-wiiṭə	X-D	wife's house
39. kur ^j aṇṇə	monkey	D	40. manuṣja-kkur ^j aṇṇə	X-D	human monkey/ape
41. ṭaa ^j am	paint	D	42. puṣṭaka-ṭtaa ^j am	X-D	paint for books

43. kuṭam	pitcher	D	44. puṣpa-kkuṭam	X-D	pitcher of/for flowers
			45. mar ^ḷ a-kkuṭam	X-D	wooden pitcher
46. kutir ^ḷ a	horse	D	47. mar ^ḷ a-kkuṭir ^ḷ a	X-D	wooden horse
48. paattə	song	D	49. jakṣa-ppaattə	X-D	yaksha's song
50. dēewi	goddess	S	51. r ^ḷ aṭii-dēewi	X-S	goddess Rati
52. paadam	foot	S	53. jakṣii-paadam	X-S	yakshi's foot
54. gr ^ḷ əham	house	S	55. b ^ḥ aar ^ḷ jaa-gr ^ḷ əham	X-S	wife's house
			56. waḍ ^ḥ uu-gr ^ḷ əham	X-S	bride's house
57. kaṇṭ ^ḥ am	neck	S	58. manuṣja-kaṇṭ ^ḥ am	X-S	human neck
59. tar ^ḷ iṭam	story	S	60. puṣṭaka-tar ^ḷ iṭam	X-S	history of books
61. kumb ^ḥ am	pitcher	S	62. puṣpa-kumb ^ḥ am	X-S	pitcher of/for flowers
			63. mar ^ḷ a-kumb ^ḥ am	X-S	wooden pitcher
64. taar ^ḷ a	Tara (name)				
65. kaanṭan	husband	S	66. taar ^ḷ aa-kaanṭan	X-S	Tara's husband
			67. taar ^ḷ aa-kaanṭan-maar ^ḷ ə	X-S-sf	Tara's husbands (- maar^ḷ = plural)
68. ṭii	fire				
69. kaṭṭa	lump	D	70. ṭii-kkaṭṭa	X-D	lump of fire
71. ṇaalam	flame	D	72. ṭii-ṇaalam	X-D	flame of fire
73. swarṇam	gold				
74. pazam	fruit	D	75. swarṇa-ppazam	X-D	fruit of gold
76. maza	rain	D	77. swarṇa-maza	X-D	rain of gold
78. kar ^ḷ i	charcoal				
79. kuutṭaan	dish	D	80. kar ^ḷ i-kkuutṭaan	X-D	coal dish
81. laḍḍu	sweet	D	82. kari-laḍḍu	X-D	charcoal sweet (don't worry about the [r]/[ṛ] —maybe a typo in the source)
83. muuṭram	urine				
84. s ^ḷ aṇka	suspicion	D	85. muuṭra-s ^ḷ aṇka	X-D	desire to urinate
86. suuṭi	needle	D	87. swarṇa-suuṭi	X-D	golden needle
88. poṭi	powder				
89. malar ^ḷ ə	popped rice		90. malar-ppoṭi	X-D	powdered popped rice

91. pakalə	day				
92. kinaawə	dream	D	93. pakal-kkinaawə	X-D	day dream
94. aa ə	man				
95. kuuttam	group	D	96. aa -kkuuttam	X-D	crowd
97. wirakə	firewood				
98. kol li	twig	D	99. wirakə-kol li	X-D	log for firewood
100. kaɽukə	mustard				
101. paaɽram	vessel	D	102. kaɽukə-paaɽram	X-D	vessel for mustard
103. kaaɽə	ear				
104. kuttə	piercing	D	105. kaaɽə-kuttə	X-D	piercing of the ear
		D	106. kaaɽə-kur ^j aŋŋ-an	X-D	wild monkey; cf. 16, 39 (-an derives masc. sg. Ns)
107. taŋŋala	chain	D	108. mar ^j a-ttaŋŋala	X-D	wooden chain; cf. 31

3. Malayalam also has multiply headed compounds that have a coordinative meaning. Carefully compare the coordinative compounds below to the modifier-head compounds below and those already seen above; some of the differences are subtle.

<i>word</i>			<i>coordinative compound</i>			<i>modifier-head compound</i>		
109. att ^h an	father							
110. amma	mother		111. att ^h an-amma-maar ^j ə	X-X-sf	parents			
112. kinnar ^j an	kinnara	S						
113. gaṇḍ ^h arwwan	gandharwa	S	114. jakṣa-kinnar ^j a-gaṇḍ ^h arww-aadi-ka ə	S-S-S-sf-sf	yakshas (cf. 32), kinnaras, gandharwas, etc. (demons) (aadi = ‘etc.’, ka = plural) ignore what happens at end of ‘gandharwa’—requires rules not illustrated elsewhere			
115. ulacca	pounding stick							
116. par ^j iṭa	shield		117. waa -ulacca-par ^j iṭa-ka ə	X-X-X-sf	sword (cf. 2), pounding stick & shield			
			118. ulacca-waa ə-par ^j iṭa-ka ə	X-X-X-sf	pounding stick, sword & shield			
119. ṭala	head	D				120. waa -ṭṭala	X-D	sword point (lit. sword-head)
121. wjaɽjaasam	difference							
122. peṇṇə	woman					123. peṇ-kutti	X-D	girl (cf. 33) ¹

¹ You have limited data on what happens to nasal-obstruent clusters where the nasal doesn't delete (#123, 126, 148, 149, 158, 163, 228, 232, maybe a couple of others). So feel free to formulate fairly arbitrary-seeming rules (*ŋk* does this, *mk* does that...), and focus on capturing the differences between different types of morpheme boundary.

124. aaṇə	man		125. aaṇə-peṇṇə-wjaṭjaasam	X-X-X	difference between men & women	126. aaṇ-kuṭṭi	X-D	boy (cf. 33)
127. ṭajir ^j ə	yogurt							
128. weṇṇa	butter							
129. warggam	group							
130. paalə	milk		131. paalə-ṭajir ^j ə-weṇṇa-warggam	X-X-X-X	the class of milk, yogurt & butter	132. paal-ppaaṭram	X-D	vessel for milk (cf. 101)
133. tempə	copper					134. tempə-paaṭram	X-D	copper vessel
135. kaattə	breeze							
136. kuḷir ^j ə	cold					137. kuḷir-kaattə	X-X	cool breeze (‘breeze’ must be S)
138. meeni	body							
139. ṭalir ^j ə	tender leaf		140. ṭalir ^j ə-meeni-kaḷə	X-X-sf	tender leaves & bodies	141. ṭalir-meeni-kaḷə	X-X-sf	tender body
142. puuṭṭa	cat					143. kaattə-puuṭṭa	X-X	wild cat (lit. forest-cat), cf. 16
						144. wirakə-kolli	X-X	twig for firewood, cf. 98, 97
						145. kaatə-kuṭṭə	X-X	piercing of the ear cf. 103, 104
146. petṭi	box							
147. pattaajam	grain bin	D	148. petṭi-pattaajan-ṇaḷə	X-D-sf	boxes and grain bins	149. petṭi-ppattaajan-ṇaḷə	X-D-sf	grain bins used as boxes
		D	150. aana-kuṭir ^j a-kaḷə	X-D-sf	elephants and horses, cf. 15, 46	151. aana-kkuṭir ^j a	X-D	horse that is like an elephant, cf. 15, 46
152. eli	rat							
153. paṇṇi	pig							
154. per ^j ittaazi	bandicoot	D	155. eli-paṇṇi-per ^j ittaazi	X-X-D	rat, pig and bandicoot			
156. suk ^h am	pleasure							
157. dukk ^h am	sorrow		158. suk ^h a-dukk ^h aṇ-ṇaḷə	X-X-sf	pleasure and pain			
159. mrəgam	animal							
160. samband ^ḥ am	contact		161. manuṣja-mrəga-samband ^ḥ am	X-X-X	interaction between man & animal, cf. 28			
162. kaantaṇ	Kantan	S	163. ṭaar ^j aa-kaantaṇ-maar ^j ə	X-S-sf	Tara and Kantan, cf. 64			
164. baalica	girl							

165. baalan	boy	S	166. baalicaa-baalan-maar ^{jə}	X-S-sf	boys and girls		
167. b ^h art ^h taawə	husband	S	168. b ^h aar ^j jaa-b ^h art ^h taak-kan-maar ^{jə}	X-S-sf-sf	husband and wife, cf. 26 (ignore the assimilations of the [w] from ‘husband’ and the [l] from the suffix [ka])		

4. Compare the data above to forms with inflectional and derived affixes:

<i>word</i>		<i>inflected</i>		<i>derived</i>	
169. awa ^{lə}	she	170. awa ^{lə} -kkə	to her		
171. awar ^{jə}	they	172. awar ^{jə} -kkə	to them		
173.		174. akal-um	will recede	175. akal-t ^h ta	distance
		176. akal-un ^h nu	recedes		
177.		178. pakar ^j -um	will spread	179. pakar-t ^h ta	spreading
		180. pakar ^j -un ^h nu	spreads		
		181. kul ^j ir ^j -um	will feel cold, cf. 136	182. kul ^j ir-mma	coldness
		183. kul ^j ir ^j -un ^h nu	feels		

5. Here is an alternation that applies to sonorants:

<i>word</i>			<i>inflected</i>		<i>derived</i>		<i>modifier-head</i>	
184. waja ^{lə}	field							
185. n ^h ellə	paddy						186. n ^h el-waja ^{lə}	paddy field
187. kalla	stone		188. kall-inte	stone- <i>genitive</i> (-inte = genitive)				
189. pra ^h ima	statue	S?					190. kal-pra ^h ima	stone statue
191. ara	room						192. kall-ara	stone room
193. palla	tooth	D?	palla-ka ^{lə}	teeth			194. aana-ppall-an	elephant-toothed man cf. 15
195. po ^h ti	powder	D					196. pal-ppo ^h ti	tooth powder (X-D)
197. muna	corner							
198. ka ^h ṇə	eye		199. ka ^h ṇə-ka ^{lə}	eyes			200. ka ^h ṇ-muna	corner of the eye
201. warggam	group		202. pe ^h ṇə-ṇṇa ^{lə}	women cf. 122 I don't know why the suffix is this way; ignore it	203. pe ^h ṇ-an	womanish man	204. pe ^h ṇ-warggam	female species (?)
							205. pe ^h ṇ-amma	wife's mother cf. 110

6. Here is an alternation that applies to [t] and [r] only—those forms with ‘forest’ from above should make sense now. Don’t worry about features in this rule (or pair of rules).

<i>word</i>		<i>coordinative compound</i>		<i>modifier-head</i>	
206. maaṭə	cow				
207. ʔozuttə	stable				
208. aaṭə	sheep	209. aaṭə-maaṭə-kaṭə	sheep and cows	210. aattə-ʔozuttə	sheep shed
211. wakkə	edge				
212. rooṭə	road			213. roottə-wakkə	roadside
214. ʔozilaali	laborer				
215. ʔumaṭə	burden			216. ʔumattə-ʔozilaali	porter
217. kaṭṭilə	cot				
kampi	metal rod				
218. kajarə	rope	219. kajarə-kampi-ṭaṅṅala-warggam	the set of rope, metal rod and chain	220. kajattə-kaṭṭilə	cot made with rope
221. koṭṭa	basket				
222. ʔawarə	trash			223. ʔawattə-koṭṭa	trash can
224. ʔoorə	rice			225. ʔoottə-paaṭram	lunch box, cf. 101 (X+D!! make sure this form works)

7. Some more phrasal data. Check that your analysis generates them correctly.

<i>word</i>		<i>phrase</i>	
226. manuṣjan	man		
227. marʔittu	died	228. manuṣjan marʔittu	The man died.
229. kaṭam	debt		
230. koṅṭə	with		
231. muṭinʔu	destroyed	232. kaṭam koṅṭə muṭinʔu	We are destroyed with debt.
233. gamittu	went	234. ʔaarʔa gamittu	Tara went
235. kaarʔaṇam	reason	236. bʰaarʔa kaarʔaṇam	because of the wife
237. naṭi	actress		
238. praartʰittu	prayed	239. naṭi praartʰittu	actress prayed