Assignment #4: Malayalam
Due Tuesday, Nov. 15 in class

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.

Etymology:
- 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, and otherwise as X (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, expect where I made notes like "('pig' must be D)".
- You may assume that lexical entries can be marked [+D, –S] or [–D,+S], and that rules or constraints can refer to those features, at least until the postlexical level (by which time such features should have been erased).

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 processes show any non-derived-environment blocking (NDEB)?
  - If so, in a rule analysis you can just stipulate that the strict cycle condition is correct (see Nov. 3 handout for definition).
  - If so, in an OT analysis you can similarly stipulate that (some? all? all at the lexical level?) markedness constraints don't apply if they are already violated in the input (this follows a proposal of McCarthy for "comparative markedness").

A lot of the processes will look kind of similar. Avoid having multiple, very similar rules/constraints 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.

Data
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 too. 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 inserted in a phonologically predictable environment.

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.

word1		word2		phrase		modifier-head	
1. waaḷə	sword	ewiṭe	where	waaḷ ewiṭe	Where is the sword?		
2. waaḷə	sword	muurṭṭakuuṭṭi	sharpened	waaḷə muurṭṭakuuṭṭi	sharpened the sword		
3. waḷa	bangle	ewiṭe	where	waḷa j ewiṭe	Where is the bangle?		
4. maaṣə	teacher	uraŋŋi	slept	maaṣ uraŋŋi	The teacher slept.		
5. maaṣə	teacher	waṉṉu	came	maaṣə waṉṉu	teacher came		
6. ḍaasi	servant	uraŋŋi	slept	ḍaasi j uraŋŋi	The servant slept.		
7. kuzi	hole	aana	elephant			kuzi-j-aana	insect sp. (lit. hole-elephant)
8. ṭookkə	gun	*just two more words that end in vowels, to help rule in/out hypotheses you may develop below*					
9. ṭikku	Tickoo						

2. Some differences between D and S stems.

word1		word2			modifier-head compound		
10. rʲati	Rati (name)	kuṭṭi	child	D	rʲati-kkuṭṭi	X-D	Ratikutti (name); **ignore [ṭ]/[t̪] difference—prob. mistake**
11. jakṣi	yakshi (demoness)	paala	pala tree	D	jakṣi-ppaala	X-D	the pala tree in which yakshi lives
12. bʱaarʲja	wife	wiiṭə	house	D	bʱaarʲja-wiiṭə	X-D	wife's house
13. manuṣjan	man	kurʲaŋŋə	monkey	D	manuṣja-kkurʲaŋŋə	X-D	human monkey/ape
14. pustakam	book	ṭaajam	paint	D	pustaka-ṭṭaajam	X-D	paint for books
15. puṣpam	flower	kuṭam	pitcher	D	puṣpa-kkuṭam	X-D	pitcher of/for flowers
16. marʲam	tree, wood	kuṭam	pitcher	D	marʲa-kkuṭam	X-D	wooden pitcher
17. marʲam	tree, wood	kutirʲa	horse	D	marʲa-kkuṭirʲa	X-D	wooden horse; **ignore [t]/[ṭ] difference**
18. marʲam	tree, wood	ṭaŋŋala	chain	D	marʲa-ṭṭaŋŋala	X-D	wooden chain
19. jakṣan	yaksha (demon)	paaṭṭə	song	D	jakṣa-ppaaṭṭə	X-D	yaksha's song
20. rʲati	Rati (name)	ḍeewi	goddess	S	rʲatii-ḍeewi	X-S	goddess Rati
21. jakṣi	yakshi (demoness)	paaḍam	foot	S	jakṣii-paaḍam	X-S	yakshi's foot
22. bʱaarʲja	wife	grʲəham	house	S	bʱaarʲjaa-grʲəham	X-S	wife's house
23. waḍɦu	bride	grʲəham	house	S	waḍɦuu-grʲəham	X-S	bride's house
24. ṭaarʲa	Tara (name)	kaaṉṭan	husband	S	ṭaarʲaa-kaaṉṭan	X-S	Tara's husband
25. manuṣjan	man	kaṇṭʰam	neck	S	manuṣja-kaṇṭʰam	X-S	human neck
26. pustakam	book	ṭarʲiṭam	story	S	pustaka-ṭarʲiṭam	X-S	history of books

	word1		word2			head1	compound	type	gloss
27.	puṣpam	flower	kumbʰam	pitcher	S	puṣpa-kumbʰam		X-S	pitcher of/for flowers
28.	marʲam	tree, wood	kumbʰam	pitcher	S	marʲa-kumbʰam		X-S	wooden pitcher
29.	t̪ii	fire	kaʈʈa	lump	D	t̪ii-kkaʈʈa		X-D	lump of fire
30.	t̪ii	fire	ɳaaɭam	flame	D	t̪ii-ɳaaɭam		X-D	flame of fire
31.	swarɳɳam	gold	paẓam	fruit	D	swarɳɳa-ppaẓam		X-D	fruit of gold
32.	swarɳɳam	gold	maẓa	rain	D	swarɳɳa-maẓa		X-D	rain of gold
33.	karʲi	charcoal	kuuʈʈaan	dish	D	karʲi-kkuuʈʈaan		X-D	coal dish
34.	karʲi	charcoal	laḍḍu	sweet	D	kari-laḍḍu		X-D	charcoal sweet (**don't worry about [r]/[rʲ]—maybe typo**)
35.	muut̪ram	urine	sʲaŋka	suspicion	D	muut̪ra-sʲaŋka		X-D	desire to urinate
36.	swarɳɳam	gold	suut̪i	needle	D	swarɳɳa-suut̪i		X-D	golden needle
37.	malarʲə	popped rice	poʈi	powder		malar-ppoʈi		X-D	powdered popped rice (**don't worry about [r]/[rʲ]**)
38.	pakalə	day	kinaawə	dream	D	pakal-kkinaawə		X-D	day dream
39.	aaɭə	man	kuuʈʈam	group	D	aaɭ-kkuuʈʈam		X-D	crowd
40.	wirakə	firewood	koɭɭi	twig	D	wirakə-koɭɭi		X-D	log for firewood
41.	kaʈukə	mustard	paat̪ram	vessel	D	kaʈukə-paat̪ram		X-D	vessel for mustard
42.	kaat̪ə	ear	kut̪t̪ə	piercing	D	kaat̪ə-kut̪t̪ə		X-D	piercing of the ear

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

	word1		word2			word3		coordinative compound		modifier-head compound	
43.	atʰan 'father'		amma 'mother'					atʰan-amma-maarʲə 'parents' **maarʲə**: plural	X-X-sf		
44.	jakṣan 'yaksha'		kinnarʲan 'kinnara'	S		gand̪ʰarwwan 'gandharwa'	S	jakṣa-kinnarʲa-gand̪ʰarww-aad̪i-kaɭə 'yakshas, kinnaras, gandharwas, etc. (demons)' **aad̪i** = 'etc.', **kaɭ** = plural **ignore** what happens at end of 'gandharwa'—requires rules not illustrated elsewhere	S-S-S-sf-sf		
45.	waaɭə 'sword'		ulacca 'pounding stick'			parʲit̪a 'shield'		waaɭ-ulacca-parʲit̪a-kaɭə 'sword, pounding stick & shield'	X-X-X-sf		

#									
46.	ulacca 'pounding stick'		waaɭə 'sword'		parʲita 'shield'		ulacca-waaɭə-parʲita-kaɭə 'pounding stick, sword & shield' **'sword' must be D**	X-X-X-sf	
47.	waaɭə 'sword'	ṭala 'head'	D						waaɭ-ṭṭala 'sword point'	X-D
48.	peṇṇə 'woman'	kuʈʈi 'child'	D						peɳ-kuʈʈi 'girl'	X-D
49.	aaṇə 'man'	kuʈʈi 'child'	D						aaŋ-kuʈʈi 'boy'	X-D
50.	aaṇə 'man'	peṇṇə 'woman'		wjaṭjaasam 'difference'			aaṇə-peṇṇə-wjaṭjaasam 'difference between men & women'	X-X-X	
51.	paalə 'milk'	ṭajirʲə 'yogurt'		weṇṇa 'butter' warggam 'group'			paalə-ṭajirʲə-weṇṇa-warggam 'the class of milk, yogurt & butter' **'group' must be D**	X-X-X-X	
52.	paalə 'milk'	paaṭram 'vessel'	D						paal-ppaaṭram 'vessel for milk'	X-D
53.	ṭempə 'copper'	paaṭram 'vessel'	D						ṭempə-paaṭram 'copper vessel'	X-D
54.	kuɭirʲə 'cold'	kaattə 'breeze'							kuɭir-kaattə 'cool breeze' **'breeze' must be S** **don't worry** about the [r]/[rʲ]	X-X
55.	ṭaɭirʲə 'tender leaf'	meeni 'body'					ṭaɭirʲə-meeni-kaɭə 'tender leaves & bodies'	X-X-sf	ṭaɭir-meeni-kaɭə 'tender body' **don't worry** about the [r]/[rʲ]	X-X-sf
56.	wirakə 'firewood'	koɭɭi 'twig'							wirakə-koɭɭi 'twig for firewood'	X-X
57.	kaaṭə 'ear'	kuṭṭə 'piercing'							kaaṭə-kuṭṭə 'piercing of the ear'	X-X
58.	peʈʈi 'box'	paṭṭaajam 'grain bin'	D				peʈʈi-paṭṭaajaŋ-ŋaɭə 'boxes and grain bins'	X-D-sf	peʈʈi-ppaṭṭaajaŋ-ŋaɭə 'grain bins used as boxes'	X-D-sf
59.	aana 'elephant'	kutirʲa 'horse'					aana-kuṭirʲa-kaɭə 'elephants and horses'	X-D-sf	aana-kkuṭirʲa 'horse that is like an elephant'	X-D

4

#	word1		word2		word3		phrase		selector	
60.	eli 'rat'		paɲɲi 'pig'		perʲiʈʈaazi 'bandicoot'		eli-paɲɲi-perʲiʈʈaazi 'rat, pig and bandicoot' **'pig' must be D**		X-X-D	
61.	sukʰam 'pleasure'		dukkʰam 'sorrow'				sukʰa-dukkʰaŋ-ŋaɭə 'pleasure and pain' **'sorrow' must be D**		X-X-sf	
62.	manuʂjan 'man'		mrəgam 'animal'		sambandʱam 'contact'		manuʂja-mrəga-sambandʱam 'interaction between man & animal' **'animal' must be D**		X-X-X	
63.	ʈaarʲa 'Tara'		kaaɳʈan 'Kantan'				ʈaarʲaa-kaaɳʈan-maarʲə 'Tara and Kantan'		X-S-sf	
64.	baalica 'girl'		baalan 'boy'				baalicaa-baalan-maarʲə 'boys and girls'		X-S-sf	
65.	bʱaarʲja 'wife'		bʱarʈʈaawə 'husband'	S			bʱaarʲjaa-bʱarʈʈaak-kan-maarʲə 'husband and wife' **ignore** the assimilations of the [w] from 'husband' and the [ɭ] from the suffix [kaɭ]		X-S-sf-sf	

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

#	word1		word2		word3		phrase	
	word1		*word2*		*word3*		*phrase*	
66.	manuʂjan	man	marʲiʈʈu	died			manuʂjan marʲiʈʈu	The man died.
67.	kaʈam	debt	koɳʈə	with	muʈinʲnʲu	destroyed	kaʈam koɳʈə muʈinʲnʲu	We are destroyed with debt.
68.	ʈaarʲa	Tara	gamiʈʈu	went			ʈaarʲa gamiʈʈu	Tara went
69.	bʱaarʲja	wife	kaarʲaɳam	reason			bʱaarʲja kaarʲaɳam	because of the wife
70.	ɳaʈi	actress	praarʈʈʰiʈʈu	prayed			ɳaʈi praarʈʈʰiʈʈu	actress prayed