Class 4: A pause for some practice

- Palauan HW on rules will be due *Tuesday* (Jan. 20)
- I'll post another homework Tuesday night on OT.
- Study questions on Anderson and Kaplan might as well be delayed till Thursday (Jan. 22)

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1. A recipe for attacking a phonology problem (rule version)

a) Looking at just the a few forms, make a guess as to where the morpheme boundaries are.
b) Based on that, make a guess as to the morphemes' underlying forms.
c) Identify **alternations**: a morpheme (stem or affix) that seems to have more than one surface form.
d) Make a conjecture as to what in the environment is conditioning the alternation.
e) Can you turn it into a rule? If you can't figure out the features yet, just use curly brackets: {i, u}
f) Test the mini-grammar you've got so far on some more forms. Eventually it will probably break.
   ▪ If a surface form undergoes more changes than your grammar says it should, you probably need to add a new rule.
   ▪ If a surface form undergoes fewer changes than your grammar says it should, you probably need to reorder your rules (to get bleeding or counterfeeding), or make the rule more specific.
g) When you have more than one rule, think about whether their order could ever matter. What kind of form would you need to test the order? See if such a form is in the data, and test both orders.
h) **When you get stuck**, be prepared to go back and questions any of your assumptions
   ▪ Maybe the morpheme boundaries are in the wrong place
   ▪ Maybe an underlying form is wrong (it could be any of a morpheme's surface forms, or someting cobbled together from multiple surface forms)
   ▪ Maybe a rule is too specific or too general

2. Try it on these Farsi data (from Odden 2005)

singular		*plural*	
1.	zæn	zænɑn	'woman'
2.	læb	læbɑn	'lip'
3.	hæsud	hæsudɑn	'envious'
4.	bæradær	bæradærɑn	'brother'
5.	bozorg	bozorgɑn	'big'
6.	mæleke	mælekeɑn	'queen'
7.	valede	valedeɑn	'mother'
8.	kæbire	kæbireɑn	'big'
9.	ɑhu	ɑhuɑn	'gazelle'
10.	hamele	hameleɑn	'pregnant'
11.	bat͡ʃe	bat͡ʃegɑn	'child'
12.	setare	setaregɑn	'star'
13.	bænde	bændegɑn	'slave'
14.	ɑzade	ɑzadegɑn	'freeborn'
15.	divane	divanegɑn	'insane'

3. Try it on these Finnish data (from Odden 2005)

	nominative sing.	partitive sing.	
16.	ɑːmu	ɑːmuɑ	'morning'
17.	vɑlo	vɑloɑ	'light'
18.	solu	soluɑ	'cell'
19.	riekːo	riekːoɑ	'willow grouse'
20.	kipːo	kipːoɑ	'scoop'
21.	korkeɑ	korkeɑɑ	'tall'
22.	jɑko	jɑkoɑ	'act of dividing'
23.	kɑtu	kɑtuɑ	'street'
24.	lento	lentoɑ	'flying'
25.	omenɑ	omenɑɑ	'apple'
26.	sɑːrto	sɑːrtoɑ	'blockade'
27.	kɑlɑ	kɑlɑɑ	'fish'
28.	særø	særøæ	'infraction'
29.	hymy	hymyæ	'smile'
30.	kesæ	kesææ	'summer'
31.	kømpelø	kømpeløæ	'clumsy'
32.	hylky	hylkyæ	'shipwreck'
33.	kylmæ	kylmææ	'cold'
34.	hylly	hyllyæ	'shelf'
35.	jæːtelø	jæːteløæ	'ice cream'
36.	nækø	nækøæ	'sight'
37.	æiti	æitiæ	'mother'
38.	isoæiti	isoæitiæ	'grandmother'
39.	risti	ristiæ	'cross'
40.	lehti	lehtiæ	'leaf'
41.	væki	vækiæ	'people'
42.	jærvi	jærveæ	'lake'
43.	typːi	typːeæ	'nitrogen'
44.	kivi	kiveæ	'stone'
45.	nimi	nimeæ	'name'
46.	mæki	mækeæ	'hill'
47.	reki	rekeæ	'sleigh'

4. Ramping up the difficulty a bit: Karok

Language isolate from California, very few speakers (Lewis 2009). Data from Bright 1957, via Kenstowicz & Kisseberth 1979.

- Remember to think about what your choices are for underlying representations—if one choice isn't working, try another.

	imperative	*1ˢᵗ person singular*	*3ʳᵈ person singular*	
48.	pasip	nipasip	ʔupasip	'shoot'
49.	si:tva	niʃi:tva	ʔusi:tva	'steal'
50.	kifnuk	nikifnuk	ʔukifnuk	'stoop'
51.	suprih	niʃuprih	ʔusuprih	'measure'
52.	ʔifik	niʔifik	ʔuʔifik	'pick up'
53.	ʔaktuv	niʔaktuv	ʔuʔaktuv	'pluck at'
54.	ʔaxjar	nixjar	ʔuxjar	'fill'
55.	ʔiʃkak	niʃkak	ʔuskak	'jump'
56.	ʔikʃah	nikʃah	ʔuksah	'laugh'
57.	ʔiʃriv	niʃriv	ʔusriv	'shoot at a target'
58.	ʔuksup	nikʃup	ʔuksup	'point'

- 'Laugh' and 'point' might be problematic. These data could help: [tapak-suru] 'to slice off', [ʔikrivip-ʃuru] 'to run off'

5. Even tougher: Serbo-Croatian, pasted from Kenstowicz & Kisseberth (1979), pp. 74-75

6. Serbo-Croatian. For purposes of this problem the data have been simplified in several respects. First, vowel length has not been indicated. Second, the accent has been simplified in the following ways: In forms that are transcribed with an accent, the location of the accent is predictable by rule; it need not be indicated in the lexicon for these words. Words which are transcribed without an accent belong to a different accentual class. For them the accent must be indicated in the lexicon. Also, for words transcribed with an accent, there is a later rule that retracts the accent one syllable to the left. Thus, a form that we transcribe as *mladá* has accent on the initial syllable phonetically. Finally, in this problem we are only concerned with the location of the accent; we do not indicate whether the accent is rising or falling in pitch.

Account for the alternations in the data with an ordered set of rules. Be sure to include a rule of accent placement for all words transcribed with an accent. Provide derivations for *múkao*, *muklá*, *kradém*, and *kráo*.

Adjectives

Masc.	Fem.	Neuter	Plural	Gloss
mlád	mladá	mladó	mladí	'young'
púst	pustá	pustó	pustí	'empty'
bogat	bogata	bogato	bogati	'rich'
béo	belá	beló	belí	'white'
mío	milá	miló	milí	'dear'
zelén	zelená	zelenó	zelení	'green'
križan	križana	križano	križani	'cross'
jásan	jasná	jasnó	jasní	'clear'
ledan	ledna	ledno	ledni	'frozen'
dóbar	dobrá	dobró	dobrí	'kind'
bodar	bodra	bodro	bodri	'alert'
veseo	vesela	veselo	veseli	'gay'
ustao	ustala	ustalo	ustali	'tired'
múkao	muklá	mukló	muklí	'hoarse'

Verbs

1 sg. pres	masc. past	fem. past	neuter past	Gloss
tepém	tĕpao	teplá	tepló	'wander'
skubém	skúbao	skublá	skubló	'tear'
tresém	trésao	treslá	tresló	'shake'
vezém	vézao	vezlá	vezló	'lead'
pletém	pléo	plelá	pleló	'plait'
kradém	kráo	kralá	kraló	'steal'
metém	méo	melá	meló	'sweep'
vedém	véo	velá	veló	'lead'
pečém	pékao	peklá	pekló	'bake'
žežém	žégao	žeglá	žegló	'burn'

6. Makonde data (from Odden 2005)

- **Use OT**—basically the same procedure, except once you think you know what's conditioning an alternation, instead of writing a rule, try our tableau recipe (repeated below for reference)

Acute accent in these examples marks stress, whose position is predictable

Repeated imperative		*Past*	*Imperative*		
59.	amáŋga	amíle	áma		'move'
60.	taváŋga	tavíle	táva		'wrap'
61.	akáŋga	akíle	áka		'hunt'
62.	patáŋga	patíle	póta		'twist'
63.	tatáŋga	tatíle	tóta		'sew'
64.	dabáŋga	dabíle	dóba		'get tired'
65.	aváŋga	avíle	óva		'miss'
66.	amáŋga	amíle	óma		'pierce'
67.	tapáŋga	tapíle	tépa		'bend'
68.	patáŋga	patíle	péta		'separate'
69.	aváŋga	avíle	éva		'separate'
70.	babáŋga	babíle	béba		'hold like a baby'
71.	utáŋga	utíle	úta		'smoke'
72.	lukáŋga	lukíle	lúka		'plait'
73.	lumáŋga	lumíle	lúma		'bite'
74.	uŋgáŋga	uŋgíle	úŋga		'tie'
75.	iváŋga	ivíle	íva		'steal'
76.	pitáŋga	pitíle	píta		'pass'
77.	imbáŋga	imbíle	ímba		'dig'
78.	limáŋga	limíle	líma		'cultivate'

- Start with the <u>winning candidate</u> and the <u>fully faithful candidate</u>.
- If the winning candidate ≠ the fully faithful candidate…
  - Add <u>the markedness constraint(s)</u> that rule out the fully faithful candidate.
  - Add the <u>faithfulness constraints</u> that the winning candidate violates.
  - Think of <u>other ways to satisfy the markedness constraints</u> that rule out the fully faithful candidate. Add those candidates, and the faithfulness and markedness constraints that rule them out. How far to take this step is a matter of judgment .
- If the winning candidate = the fully faithful candidate, then you are probably including this example only to show how faithfulness prevents satisfaction of a markedness constraint that, in other cases, causes deviation from the underlying form.
  - Add that markedness constraint.
  - Add one or more candidates that satisfy that markedness constraint.
  - Add the faithfulness constraints that rule out those candidates.

7. Another OT exercise: Metaphony (just the two easy cases—we'll do hard ones later)

- From Walker 2005: Romance langauges in which suffix vowels spread their [+high] feature to the stem.

Foggiano/Pugliese (Ethnologue classifies as dialect of Italian). Vowel inventory: i,e,ɛ,a,u,o,ɔ

pét-e	'foot'	pít-i	'feet'
móʃʃ-a	'soft (fem.)'	múʃʃ-u	'soft (masc.)'
kjén-a	'full (fem.)'	kjín-u	'full (masc.)'
grɔ́ss-a	'big (fem.)'	grúss-u	'big (masc.)'

Veneto (~ 6 million speakers in Italy/Slovenia/Croatia and Brazil) Same vowel inventory.

véd-o	'I see'	te víd-i	'you see'
kór-o	'I run'	te kúr-i	'you run'
prɛ́t-e	'priest'	prɛ́t-i	'priests'
bɛ́l-o	'beautiful (masc. sg.)'	bɛ́l-i	'beautiful (masc. pl.)'
mɔ́d-o	'way'	mɔ́d-i	'ways'
gát-o	'cat'	gát-i	'cats'

Next time: More OT: correspondence theory; targets vs. processes

References
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