Class 13: Lexical Phonology II (cyclicity, more levels)

To do
- By end of tomorrow, turn in source report and have talked to me.
- Due Tuesday: Steriade reading questions

Overview: Last time we looked at a model where phonological processes are divided into lexical and postlexical. Now we'll add more structure.

1. Observation II: carry-over from morphological base

- Long monomorphemes suggest default English stress is (ὸσ)σ...:

(Tàta)ma(góuchi) (Wìnne)pe(sáukee) (àbra)cadábra (Pàssa)ma(quóddy)
(Pòpo)ca(tépetl) (ròdo)mon(táde) (Kàla)ma(zóo)

- So why these?

recìprocálity (*rèciprocálity) munìcipálity (*mùnicipálity)
apòlogétic (*àpologétic) relìgiósity (*rèligiósity)

2. Solution: the transformational cycle

- Some or all of the lexical component is sometimes called the "cyclic" component. This goes back to an idea found in SPE, with syntactic antecedents:

"We assume as a general principle that the phonological rules first apply to the maximal strings that contain no [syntactic] brackets, and that after all relevant rules have applied, the innermost brackets are erased; the rules then reapply to maximal strings containing no [internal] brackets, and again innermost brackets are erased after this application; and so on, until the maximal domain of phonological processes is reached." (Chomsky & Halle 1968, p. 15)

3. Examples with the giant SPE English stress rule

Claim: *pérmìt* (noun) and *Kérmit* have different stress

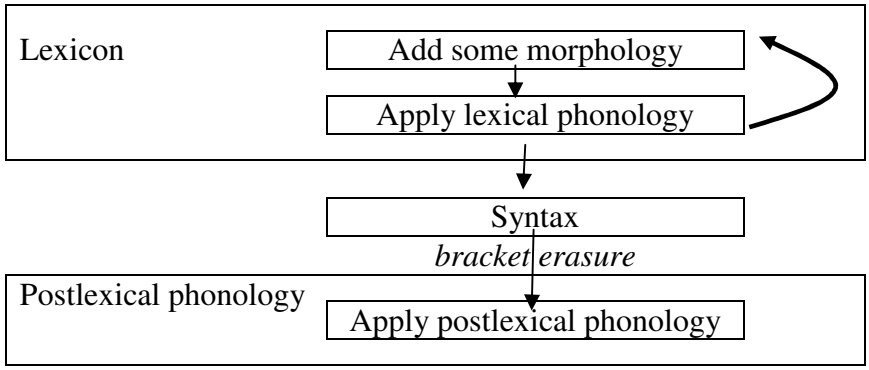
- underlying: **$[_N [_V$ per=mit $]_V]_N$**
- apply the rule to **$[_V$ per=mit $]_V$**
- → **$[_V$ per=mít $]_V$** (if there's a "=", the rule requires stress to be after it)
- erase its brackets: **per=mít**
- now the maximal internal-bracketless string is **$[_N$ per=mít $]_N$**
- apply the rule to **$[_N$ per=mít $]_N$**
- → **$[_N$ pér=mìt $]_N$** (if a noun's final morpheme is stressed, the new stress goes somewhere before that morpheme; old stress is demoted but still stressed)

4. Another classic example: even if stress itself isn't maintained, vowel quality can be

còm.p[ə]n.sá.tion	*còm.p[ɛ]n.sá.tion	*cf.*	cóm.p[ə]n.sate
còn.d[ə]n.sá.tion	còn.d[ɛ̀]n.sá.tion	*cf.*	con.d[é]nse

- Draw the brackets in for the underlying forms. Can we explain this?

5. Putting cyclicity in the model



6. Example: Chamorro Chung 1983; Crosswhite 1998

Austronesian language from Guam and Northern Marianas with 62,500 speakers

- Complementary distribution: mid Vs in closed, stressed syllables; high Vs elsewhere

lápis	'pencil'	lapés + su	'my pencil'
dæŋis	'candle'	dæŋ**é**s + su	'my candle'
hugándu	'play'	hùgand**ó**+ŋa	'his playing'
malægu**ʔ**	'wanting'	màlæg**ó**+mu	'your wanting'

- Secondary-stressed vowels are high in these examples

tintágu**ʔ**	'messenger'	t**ì**ntagó**ʔ**+ta	'our (incl.) messenger'
mundóŋgu	'cow stomach'	m**ù**nduŋgó+ŋa	'his cow stomach'

- But not in these. What do you think?

éttigu	'short'	**è**ttigó+ŋa	'shorter'
inéŋŋulu**ʔ**	'peeping'	in**è**ŋŋuló**ʔ**+hu	'my peeping'
óttimu	'end'	**ò**ttimó+ŋa	'his end'

- We also need to take care of these:

kwéntus	'to speak'	kw**i**ntús+i	'to speak to'
lókluk	'to boil'	l**u**klók + ŋa	'its boiling'
sénsin	'flesh'	s**i**nsén+ŋa	'his flesh'

7. Another reason for interleaving phonology and morphology

- Raffelsiefen 1996, 1999: many English affixes are selective about what they'll attach to

rándom	rándomìze	sálmon	sálmonìze	fóreign	fóreignìze	
síster	sísterìze	shépherd	shépherdìze	rhýthm	rhýthmìze	
corrúpt	*corruptize	ápt	*aptize	obscéne	*obscénize	
fírm	*firmize	políte	*polítize	ténse	*tensize	(1996, p. 194)

- Kiparsky's interpretation: stress rules have already applied by the time the grammar tries to attach *–ize*.

8. Observation III: two classes of affix in English (and many other languages)

suffix examples	*-al, -ous, -th, -ate, -ity, -ic, -ify, -ion, -ive, -ize*	*-ship, -less, -ness, -er, -ly, -ful, -some, -y, -ish*
stress shift?	p**á**rent *vs.* par**é**nt-al sp**é**cify *vs.* spec**í**f-ic	p**á**rent *vs.* p**á**rent-less c**á**reful *vs.* c**á**reful-ly
trisyllabic shortening?	ev[**oʊ**]ke vs. ev[**ɑ**]c-at-ive der[**aɪ**]ve vs. der[**ɪ**]v-at-ive	s[**oʊ**]l vs. s[**oʊ**]l-less-ness gr[**eɪ**]teful *vs.* gr[**eɪ**]teful-ly
velar softening?	opa[**k**]e vs. opa[**s**]-ity cliti[**k**] vs. cliti[**s**]-ize	opa[**k**]e vs. opa[**k**]ish cliti[**k**] vs. cliti[**k**]-y
prefix examples	*in-, con-, en-*	*un-, non-*
can bear main stress?	c**ó**n-template, **í**n-filtrate	-- (rarely)
obligatory assim. of nasal?	i**l-**legal, co**m**-prehend	u**n-**lawful, no**n**-plus
both		
attach to bound morph.?	caust-ic, con-flict	-- (rarely)
ordering	act-iv-at-ion-less-ness[1], non-in-com-prehens-ible[2]	
semantics	riot *vs.* riot-ous margin *vs.* margin-al	riot *vs.* rioter fresh *vs.* fresh-ness

Prefixes that come in two flavors: *re-*, *de-*, *sub-*, *pre-*; (also homophones: there are two totally different *–y*s) and of course there are exceptions…

[1] "the correspondingly predicted near-**activationlessness** of the reaction" (www.pnas.org/cgi/content/full/101/46/16198)
[2] "great cast, snappy dialogue, non-boring **non-incomprehensible** non-insane plotting" (www.thepoorman.net/archives/002732.html)

9. Solution in Lexical Phonology: lexical component is broken into *levels*

...each with their own WFRs and phonological rules

- WFR = word formation rule (i.e., a morphological operation). Could be adding an affix, could be something else (e.g., *sing* → *sang*).

English (amalgam of Kiparsky 1982a; Kiparsky 1982b, Mohanan 1986, who proposes 4 levels for English):

Level 1	WFRs	irregular inflection (tooth/teeth) "primary" derivational affixes (*-al*, *-ous*, *-ant*, *in-* etc.), including some Ø affixes
	Phon. rules (selected)	stress (*paréntal*) trisyllabic shortening (*op**a**city*) obligatory nasal assimilation (*i**l**legal*) syllabification, including rule that C syllabified in onset if followed by V (*cyc**l**ic*) velar softening (*electri**c**ity*)
Level 2	WFRs	secondary derivational affixes (*-ness*, *-er*, *un-*, etc.) compounding (*blackbird*)
	Phon. rules	compound stress (*bláckbìrd*) n → Ø / C__]# (*dam**n**ing* vs. *dam**n**ation*) g → Ø / __ [+nas]# (*assi**g**ning* vs. *assi**g**nation*[3])
Level 3	WFRs	regular inflectional affixes (*-s*, *-ed*, *-ing*)
	Phon. rules	sonorant resyllabification is only optional __V (*cyc**l**ing*)
Postlexical	Phon. rules	aspiration, tapping (no morphology occurs after the lexical component, so no WFRs)

Compare to the OT version you read about (Kiparsky 2000), with just 2 lexical levels (Stem and Word)

- If a word bears *n* affixes from the same level, it goes through that level's phonology *n* times.
- The output of each level (or, depending on the author, the output of each cycle) is a lexical item. (Everyone clear on the difference between cycle and level?)

  - How does this explain why Level 2 affixes can't attach to bound roots?

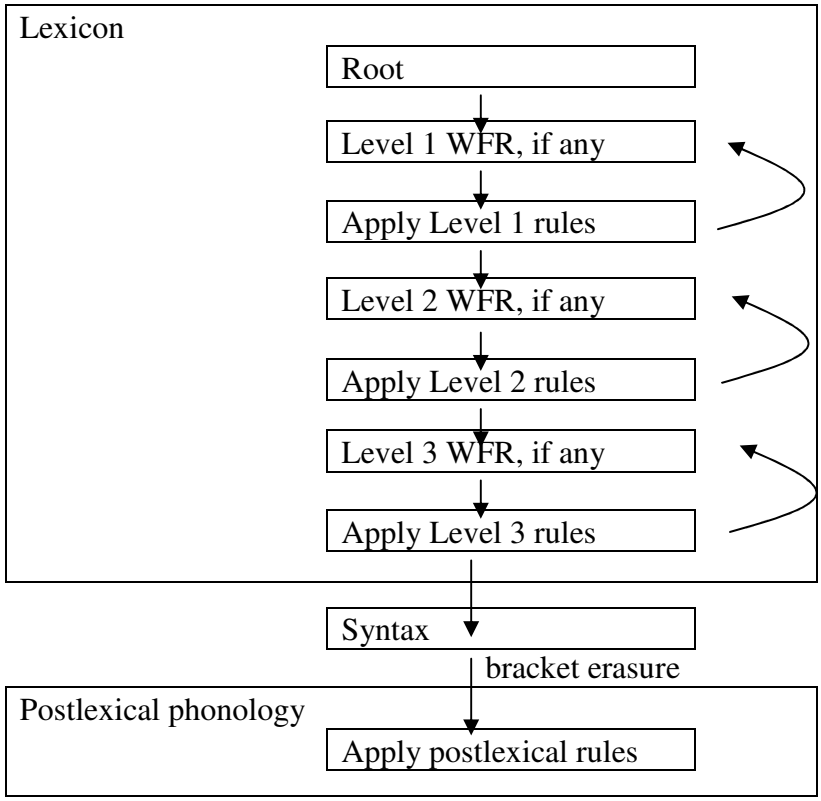
  - Compare the derivations for *damnation* [dæmn-eɪʃən] and *damning* [dæm-ɪŋ].

  - How is this (disputed!) asymmetry in compounds explained in the model?

tooth marks	teeth marks	claw marks	*claws marks
louse-infested	lice-infested	rat-infested	*rats-infested

[3] though also some problematic cases like ?*assigner*. For a completely different view of all this, see Hay 2003.

10. Putting it all together



Should the root pass through the Level 1 rules first thing? Or should it first undergo a Level 1 WFR (if there is one), as illustrated? Not clear (empirical question).

In adapting the theory to OT ("Stratal OT"), Kiparsky tends to employ just two lexical levels: **Stem Level** and **Word Level**, plus a Postlexical Level (e.g., Kiparsky 2000).

11. Exercise, if time: Conservative European Spanish again (based on Harris 1983)

- Palatal and alveolar nasals and laterals contrast:

ka.**n**a	'grey hair'	po.**l**o	'pole'
ka.**ɲ**a	'cane'	po.**ʎ**o	'chicken'

- But the contrast is neutralized in some environments

dezðe**ɲ**+ar	'to disdain'	donθe**ʎ**+a	'maiden'
dezðe**ɲ**+os+o	'disdainful'	donθe**ʎ**+a+s	'maidens'
dezðe**n**	'disdain (N)'	donθe**l**	'swain'

- What about these forms—what can we conclude about levels in Spanish? Try writing a derivation that orders morphological operations and phonological rules.

dezðe**n**+es	'disdain (N, plural)'	donθe**l**+es	'swains'

Next time. Some general issues in lexical phonology; too-many-solutions problem.

References

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