Class 12: Levels and Cyclicity

To do
- Turn in your primary-vs-secondary-source report this week.
- No HW! Work on project

0. Two preliminaries
- Mid-course feedback
- Goal-directed reading
- IPA tone marks, FYI (I was forgetting that they're a bit confusing)

Overview of this week: Phonological generalizations vary on many dimensions—productivity and automaticity, conscious accessibility, domain of application (e.g., word vs. phrase)—but they seem to cluster in two areas of the space. We'll see a proposal for capturing this by dividing the phonology into two main levels, and then elaborate this structure.

1. Observation I: two kinds of rules

English "trisyllabic shortening"

op[ej]k	op[æ]c-ity	
s[ej]ne	s[æ]n-ity	
ser[iː]ne	ser[ɛ]n-ity	
obsc[iː]ne	obsc[ɛ]n-ity	
div[aj]ne	div[ɪ]n-ity	
prof[aw]nd	prof[ʊ]nd-ity	
[ow]men	[ɑ]min-ous	
kin[iː]sis	kin[ɛ]t-ic	
interv[iː]ne	interv[ɛ]n-tion	

cf.

	[ow]men-ful
	div[aj]n-able
	op[ej]c-ating
ob[iː]se	ob[iː]s-ity
	n[aj]tingale
	how op[ej]que is it?

English tapping (a.k.a. flapping)

corro[d]e	corro[ɾ]ing
mee[t]	mee[ɾ]ing
i[d]yllic	i[ɾ]yll
a[tʰ]omic	a[ɾ]om
di[d]	You di[ɾ] it.
wha[t]	Wha[ɾ] a day!

	trisyllabic shortening	tapping
exceptions?		
sensitive to morphology?		
applies across word boundaries?		
creates sounds not in phoneme inventory?		
characteristic of English-speakers' L2 accents?		
obvious to untrained native speaker?		

2. Some other rules in English that exhibit one syndrome or the other
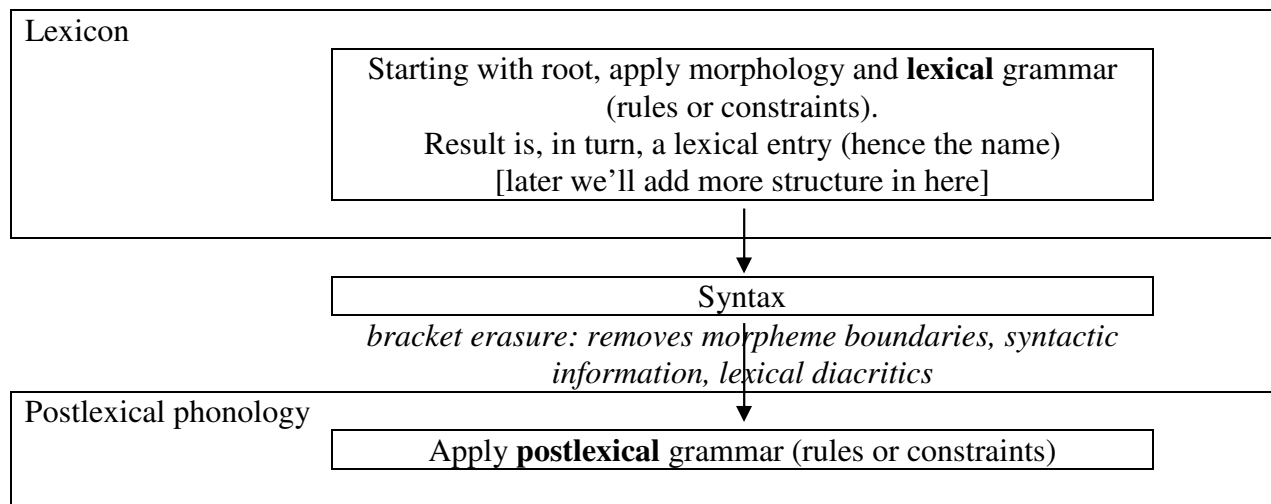
Resembles trisyllabic shortening
- <u>velar softening</u>: *electri[k]* vs. *electri[s]ity*
- <u>obligatory nasal assimilation</u>: *i**l**-legal*, *co**m**-prehend*

Resembles tapping
- <u>aspiration</u> of voiceless stops
- optional <u>palatalization</u>: *I mi**ss** **y**ou. Go**t** **y**our sweater? Di**d** **y**ou want fries with that?*
- <u>coda-l-velarization</u>: *fee**l*** vs. *leaf*

3. Explanation in Lexical Phonology
- Really, a theory of morphology and phonology.
- Founding works: Chomsky 1965; Kean 1974; Allen 1978; Mascaró 1976; Pesetsky 1979; Kiparsky 1982; Kiparsky 1985; Mohanan 1986.

Lexicon

> Starting with root, apply morphology and **lexical** grammar
> (rules or constraints).
> Result is, in turn, a lexical entry (hence the name)
> [later we'll add more structure in here]

↓

Syntax

bracket erasure: removes morpheme boundaries, syntactic information, lexical diacritics

↓

Postlexical phonology

> Apply **postlexical** grammar (rules or constraints)

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o   Why can't postlexical rules have <u>exceptions</u>?

o   Why can't postlexical rules be <u>sensitive to morphology</u>?

o   Why don't lexical rules <u>apply across word boundaries</u>, and why do postlexical rules?

- "Structure preservation": a rule is called *structure preserving* iff the segments it outputs are in the phoneme inventory
  - o   Can you guess why lexical rules must be structure-preserving?

- L2 accent: Although it doesn't follow directly from the model, the idea is that because postlexical rules are automatic and can't be turned off according to morphological or lexical information, they somehow also don't get turned off when speaking another language.

- Intuitions: The claim is that when making judgments about whether sounds are the same or different, speakers look at a lexical entry, not a surface form.

See Goldrick & Rapp 2007 for neurolinguistic evidence of a lexical-postlexical dissociation, and a literature review of other psycholinguistic investigations of the putative distinction.

4. This can also solve *some* opacity problems, in its OT version

- Recall Baković/McCarthy's Yokuts counterbleeding example from last time. In classic OT, it would be tough to rule out *[ʔilil]:

		/ʔiliː+l/
long lowering	[+long] → [–high] /	ʔileːl
shortening	V → [–long] / ___ C#	ʔilel
		[ʔilel]

  - o   But, if Long Lowering is a lexical rule, and Shortening is postlexical,[1] it works—try it.

(of course, we should see other evidence that the two processes happen in these two levels)

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[1] or at least at a later level than lowering

- Some other problematic cases we've seen so far could be solved this way—the trick is to check whether the "early" changes really look lexical and the "late" change really look postlexical.

- <u>Self</u>-counterfeeding and <u>self</u>-counterbleeding are still not predicted in general!

5.   <u>Observation II</u>: carry-over from morphological base
- Long monomorphemes suggest default English secondary stress is initial:

| Tàtamagóuchi | Wìnnepesáukee | àbracadábra | Pàssamaquóddy |
| Pòpocatépetl | ròdomontáde | Kàlamazóo |

o So why these—thoughts about how they're different?
  recìprocálity (*rèciprocálity)   munìcipálity (*mùnicipálity)
  apòlogétic (*àpologétic)   relìgiósity (*rèligiósity)

6.   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)

7. Examples with the giant SPE English stress rule
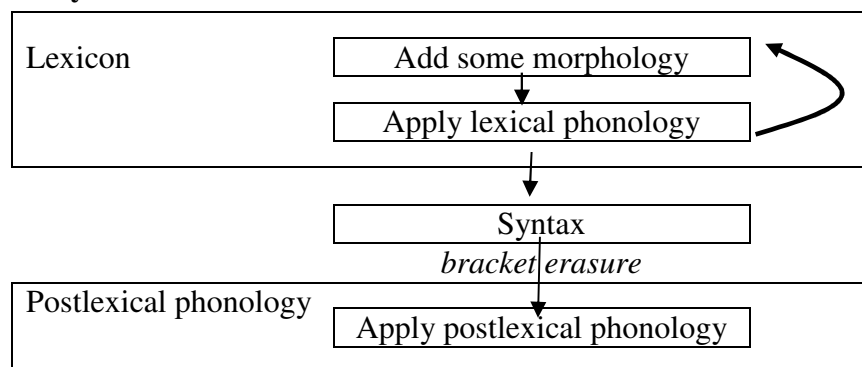Claim: *pérmìt* (noun) and *Kérmit* have different stress
- underlying: **[N [V per=mit]V]N**
- apply the rule to **[V per=mit]V**
  (if there's a "=", the rule requires stress to be after it)
                                   →   **[N [V per=mít]V]N**
- erase the innermost brackets   →   **[N per=mít]N**
- apply the rule to **[N per=mít]N**
  (if a noun's final morpheme is stressed,
  the new stress goes somewhere before
  that morpheme; old stress is demoted
  but still stressed)
                                   →   **[N pér=mìt]N**

8. 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 *or*   còn.d[ɛ]n.sá.tion   *cf.*   con.d[ɛ]nse

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

9. Putting cyclicity in the model

| Lexicon | Add some morphology |
| | Apply lexical phonology |

Syntax

bracket erasure

| Postlexical phonology | |
| | Apply postlexical phonology |

10. 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

lá.pis	'pencil'	la.p**és**.+su	'my pencil'
dǽ.ŋis	'candle'	dæ.ŋ**és**.+su	'my candle'
hu.gán.du	'play'	hù.gan.d**ó**+n.ɲa	'his playing'
ma.lǽ.guʔ	'wanting'	mà.læ.g**óʔ**.+mu	'your wanting'

- Secondary-stressed vowels are high in these examples

tin.tá.guʔ	'messenger'	tìn.ta.góʔ.+ta	'our (incl.) messenger'
mun.dóŋ.gu	'cow stomach'	mùn.duŋ.gó+n.ɲa	'his cow stomach'

o   But not in these (and cf. the unstressed examples). What do you think?

ét.ti.gu	'short'	èt.ti.gó+n.ɲa	'shorter'
i.néŋ.ŋu.luʔ	'peeping'	i.nèŋ.ŋu.lóʔ.+hu	'my peeping'
ót.ti.mu	'end'	òt.ti.mó+n.ɲa	'his end'

11. 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	*obscenize
fírm	*firmize	políte	*politize	ténse	*tensize (1996, p. 194)

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

Next time: multiple *levels* within the lexical component

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