Class 8: The cycle, part II

To do: Start Chamorro assignment (due in a week)

1. **Observation:** two classes of affix in English (and many other languages)

<table>
<thead>
<tr>
<th>suffix examples</th>
<th>-al, -ous, -th, -ate, -ity, -ic, -ify, -ion, -ive</th>
<th>-ship, -less, -ness, -er, -ly, -ful, -some</th>
</tr>
</thead>
<tbody>
<tr>
<td>stress shift?</td>
<td></td>
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<tr>
<td>trisyllabic shortening?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>prefix examples</th>
<th>in-, con-, en-</th>
<th>un-, non-</th>
</tr>
</thead>
<tbody>
<tr>
<td>can bear main stress?</td>
<td></td>
<td></td>
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<tr>
<td>obligatory place assimilation?</td>
<td></td>
<td></td>
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<tr>
<td>both</td>
<td></td>
<td></td>
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<tr>
<td>attach to bound morphemes?</td>
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<tr>
<td>ordering</td>
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<tr>
<td>semantics</td>
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</table>

(prefixes that come in two flavors: re-, de-, sub-, pre-; and of course there are exceptions...)

2. **Solution:** level ordering

Lexical component is broken into *levels* with different Word-Formation and phonological rules.

*English* (Kiparsky 1982 with material from Mohanan 1986, who proposes 4 levels for English):

**Level 1**

WFRs
- “primary” (i.e., irregular) inflection (tooth/teeth)
- primary derivational affixes (-al, -ous, -ant, in- etc.), including some Ø affixes

Selected phonological rules
- stress
- trisyllabic shortening (*opacity*)
- obligatory nasal assimilation (*illegal*)
- velar softening (*electricity*)

**Level 2**

WFRs
- secondary derivational affixes (-ness, -er, un-, etc.)
- compounding (blackbird)

Selected phon. rules
- compound stress
- \( n \rightarrow \emptyset / C_\_] \# \) (damning vs. damnation)
- \( g \rightarrow \emptyset / \_ [+nas] \# \) (assignment vs. assignation)

**Level 3**

WFRs
- “secondary” (regular) inflectional affixes (-s, -ed, -ing)

Selected phon. rules
- optional sonorant resyllabification \( \_ ] V \) (cycling)

**Postlexical**

Selected phon. rules: aspiration, tapping
(no morphology occurs after the lexical component, so no WFRs)
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?

3. Revised model

<table>
<thead>
<tr>
<th>Lexicon</th>
<th>Root</th>
<th>Apply Level 1 rules</th>
<th>Level 1 WFR, if any</th>
<th>Apply Level 2 rules</th>
<th>Level 2 WFR, if any</th>
<th>Apply Level 3 rules</th>
<th>Level 3 WFR, if any</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntax</td>
<td></td>
<td></td>
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<tr>
<td>Postlexical phonology</td>
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</tbody>
</table>

(Should the root really through the Level 1 rules first thing? Not clear.)

- Let’s compare some derivations: assignment vs. assignable; damnation vs. damning. What assumptions to we have to make about which WFRs belong to which levels?

- Morphology question: In this model, what rules out *spier and *inhabiter? *cattles? *oxens?
How is the compound asymmetry explained in this model?

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

4. Example: European Spanish palatals again

Palatals become alveolar when syllable-final/not prevocalic (though palatal lateral has been lost in most dialects):

- dezδen+ar ‘to disdain’
- donθελ+a / donθελ+j+a ‘maiden’
- dezδen+oso ‘disdainful’
- donθελ+a+s / donθελ+j+a+s ‘maidens’
- dezδen ‘disdain (N)’
- donθel ‘swain’

*but:*

- dezδen+es ‘disdain (N, plural)’
- donθel+es ‘swains’

What is going on in the last rule? What can we conclude about levels in Spanish?

5. Another example: German dorsal fricatives (based loosely on Merchant 1996)

Formulate the basic rule governing distribution of x/ç

- maızox ‘Masoch’
- ?íç ‘I’
- oınux ‘eunuch’
- fprɛç+t ‘speak!’
- ?ax ‘oh!’
- kɔç+ɔ ‘cooks’
- fpraix ‘language’
- byç+ɔ ‘books’
- kɔx ‘cook’
- riç+nɔn ‘to smell’
- bux+ɔn ‘book-GEN’
- çemi: ‘chemistry’
- ku:x+ɔn ‘cake-EN’
- ftraïç+t ‘he/she paints’
- bux+οn ‘booking’
- riç+nɔn ‘to smell’
- kɔux+ɔn ‘to smoke’
- mılç ‘milk’
- taux+ɔn ‘to dive’
- kɔlçɔ:ɔ ‘collective farm’
- ɾax+ɔn ‘to observe’
- du:ç ‘through’
- zu:x+tɔ ‘s/he searched’
- manç ‘some’
- maızox+ıʃ ‘Masoch-ish’
- çina ‘China’
- knox+ıç ‘boney’
- çaos ‘chaos’
- fpræx+ıç ‘(mono-)lingual’
- çolɛsterin ‘cholesterol’
- da:x+artıç ‘roof-like’
- çemi: ‘chemistry’
- raux+ıç ‘smoky’
- çartıma ‘charisma’

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1 Merchant, Jason (1996). Alignment and fricative assimilation in German. Linguistic Inquiry 27. Further issues: (1) There are also some [x] inside monomorphemic words. Merchant suggests that all follow short vowels, and therefore are syllabified as syllable-final. (2) Some apparently monomorphemic words need to be treated as bound root+suffix. (3) Umlaut must apply before fricative assimilation, to bleed it; this suggests umlaut applies at Level I, which may lead to problems for the strict cycle condition.
We now encounter some problem data:

<table>
<thead>
<tr>
<th>Affix</th>
<th>Stem</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ku:</td>
<td>+çɔn</td>
<td>'little cow'</td>
</tr>
<tr>
<td>fiːuɔ</td>
<td>+çɔn</td>
<td>'little woman'</td>
</tr>
<tr>
<td>mama+çɔn</td>
<td></td>
<td>'mommy'</td>
</tr>
<tr>
<td>bio:+çɛːmɪkə</td>
<td></td>
<td>'bio-chemist'</td>
</tr>
<tr>
<td>noyro+çiruk</td>
<td></td>
<td>'neuro-surgeon'</td>
</tr>
<tr>
<td>indo+çina</td>
<td></td>
<td>'Indo-China'</td>
</tr>
<tr>
<td>ma</td>
<td>+çɔn</td>
<td>'masochist'</td>
</tr>
<tr>
<td>oynu+çismus</td>
<td></td>
<td>'eunuchism'</td>
</tr>
<tr>
<td>oynu+çizirɔn</td>
<td></td>
<td>'to make into a eunuch'</td>
</tr>
<tr>
<td>parɔ+ç:i</td>
<td></td>
<td>'parish'</td>
</tr>
<tr>
<td>parɔ+ç:ial</td>
<td></td>
<td>'parochial'</td>
</tr>
</tbody>
</table>

Let's see if we can create a lexical-phonology analysis. I suggest the following ingredients:

- two levels; we’ll have to decide which affixes belong to which level
- a cyclic syllabification rule at all levels
- a slight modification of the fricative rule; we’ll also have to decide what at level(s) it applies

(There are a few lexical exceptions, like [x]utzpa ‘chutzpa’ and [x]atschaturjan ‘Khachaturian’—suggestions for how we could deal with them?)