Homework

- Read Chapter 10
- For Monday 4/18
  - Do exercise 10.1, 10.3
Phonology

- Derived environment rules
- Cyclicity
- Strict Cycle Condition
  A cyclic rule may apply to a string just in case either of the following holds:
  - the rule makes crucial reference to information in the representation that spans the boundary between the current cycle and the preceding one, or
  - the rule applies solely within the domain of the previous cycle but crucially refers to information supplied by a rule operating on the current cycle.
Interfaces

• One picture of the phonology/morphology interface
  • Lexicon builds a bracketed structure
  • Phonology applies to successively larger units, respecting the Strict Cycle Condition
  • But, morphological rules only seem to be sensitive to the outermost layer of derivation
Interfaces

- A morphological solution: Bracket Erasure
- In order to preserve cyclicity, we need to interleavemorphology and phonology
- Lexical phonology: some phonological rules apply in thelexicon
Lexical phonology

- **Trisyllabic Laxing**
  
  | divine  | divinity |
  | serene  | serenity |
  | profane | profanity|
  | rite    | ritual   |
  | penal   | penalize |

- This rule only applies in derived environments
  
  nightingale, stevedore, ivory

  and not even in all derived environments

  bravery, mightily, pirating, (privacy)
Lexical phonology

- Even with affixes that usually trigger TSL, there are sporadic exceptions
  
  obesity

- TSL is a *lexical* phonological rule

- TSL is maps phonemes onto phonemes (*structure preservation*)

- It is not especially natural from a phonetic point of view
Lexical phonology

• Compare TSL with the flap rule in (American) English

• It applies everywhere

  atom, meeting

• It even applies across word boundaries

  what is wrong?

• No lexical exceptions

• Not reflected in orthography or salient to speakers

• Not structure preserving

• Post-lexical rule
Lexical phonology

• Different kinds of derived environments trigger different phonological rules

• Phonological processes distinguish two types of rules:
  • Type 1: -ity, in-, -ical, -ion, -ian, -al, -y, -ous, ive
  • Type 2: -ness, un-, -ly, re-, -ize, -able, -ful, -y, -ism

• One class of affixes triggers stress shift:
  
  réal  realtà  náatural  náaturalness
  cómedy  comédián  accomápany  accomápaniable
  phótógraph  phótógraphy  ríckets  ríckety
  pseúdonym  pseúdónymy  bóunty  bóuntiful
Lexical phonology

- TSL
  - maniacal, divinity, globular

- Assimilation
  - illegal, irregular
  - unlawful, unreal

- Type 1 affixes can apply to stems, while Type 2 affixes apply to words
  - submit, deduce, friction
  - rewash, subhuman, kindness
Lexical phonology

• Type 1 affixes occur inside Type 2 affixes
  *hopefulness
  *infriendly
  *kindnessical

  naturalness
  unproductive
  Rastafarianism

• Level Ordering hypothesis
Level ordering

LEXICON

Dictionary

Level 1 morphology → Level 1 phonology

Level 2 morphology → Level 2 phonology

Level n morphology → Level n phonology

Syntax → Post-lexical phonology
Level ordering

• For English
  • Level 1: integrated affixes, irregular inflection
  • Level 2: neutral affixes, compounding
  • Level 3: regular inflection
  • Post-lexical: clitics

• Other languages may (in theory) differ, but in practice they don’t seem to
Level ordering

• This model accounts for many facts about English morphology

• Irregular (but not regular) inflection occurs inside compounds

  mice infested, *rats infested
toothmarks, *nailsmarks

• Endocentric compounds take irregular inflection, but not exocentric compounds

  milk teeth, *saberteeth
field mice, *Mickey mice
Level ordering

- English stress depends on category
  - Verbs have stress on the last syllable
    - _usúrp_, _cavórt_
  - Nouns have stress on the second-to-last syllable
    - _cárrot_, _dónkey_

- V to N conversion
  - _tormént_\textsubscript{V} → _tórmant_\textsubscript{N}
  - _recórd_\textsubscript{V} → _récord_\textsubscript{N}

- N to V conversion
  - _páttern_\textsubscript{N} → _páttérn_\textsubscript{V} (*páttérn_\textsubscript{V})
Level ordering

- According to stress assignment:
  - V to N conversion is at level 1
  - N to V conversion is at level 2
- As expected, N to V conversion is much more general than V to N conversion ("verbing weirds language")
- The result of N to V conversion will always have regular inflection
- Verbs in -ing/-ink are usually irregular, but not if derived from a noun
  - flung, stung, wrung, rang, sang, sank, stank
  - ringed, winged, inked
Level ordering

- Noun compounds can become verbs at level 2
  
  *to grandstand, to wallpaper, to snowball*

- Verb compounds can’t become nouns at level 1
  
  *an aircondition, *a stagemanage

- Regular vs. irregular inflection

<table>
<thead>
<tr>
<th>Noun</th>
<th>Verb</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>grandstanded</td>
<td>withstood</td>
<td>3</td>
</tr>
<tr>
<td>stand(_V) → stand(_N)</td>
<td>stand(_V) → stood(_V)</td>
<td>1</td>
</tr>
<tr>
<td>grand+stand(_N)</td>
<td>with+stood(_V)</td>
<td>2</td>
</tr>
<tr>
<td>grandstand(_N) → grandstand(_V)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>grandstand(_V)+ed → grandstanded</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
Level ordering

• Zero-derived nouns get level 1 affixes, but zero-derived verbs only get level 2 affixes
  
  V to N  contractual, murderous, rebellious  
  N to V  *figurive, *patternance, *crusadatory, *cementant
           placement, commissionable, riveter, masquerading

• V to N to V is possible, but not N to V to N

  to protést    a prótest    to prótest
  to discóunt   a díscount   to díscount
  to digést     a dígest     to dígest
  to compóund   a cómpound   to cómpound
Level ordering

• There are a few examples that look like N to V to N conversions

  sweat to sweat a sweat
  shit to shit a shit

• These are best seen as two separate nominalizations of an underlying verb (notice irregular inflection!)

• Also note exceptional level 1 N to V conversion:

  brood to breed a breed
  food to feed a feed
Level ordering

- Some assumptions
  - Zero affixes can’t attach to non-zero affixes
  - Bracket Erasure
- Non-zero derived verbs can’t be the basis for zero-derived nouns
  - *a demonstrate, *a clarify
- Level 1 derived nouns can form zero-derived verbs
  - to pressure, to engineer
- But level 2 derived nouns can’t
  - *to beating, *to nationalist
Lexical phonology interleaves morphology and phonology, which partially explains the Strict Cycle Condition

The rest of the SCC follows from the Elsewhere Condition

If we treat lexical entries as identity rules, they will block the application of other rules at the same level

\[
\begin{array}{cccc}
[\text{halut}-i] & [\text{vete}] & [\text{tila}] & \text{first cycle} \\
\_ & \_ & \_ & \text{raising} \\
\_ & \_ & \_ & t \rightarrow s \\
[\text{halut-i}] & [\text{vete#}] & [\text{tila}] & \text{second cycle} \\
\_ & \text{veti} & \_ & \text{raising} \\
\text{halusi} & \text{vesi} & \_ & t \rightarrow s \\
\end{array}
\]
Lexical phonology

• Level ordering and the elsewhere principle can explain a lot about English phonology

• But, there are lots of remaining problems

• Technical problems with phonological analyses

• How many levels?
Lexical phonology

- A rule syllabifies word final sonorants
  
  *simple, double, prism*
  
- Blocked by level 1 and level 2 affixes
  
  *simplify, simplicity, simply, coupler, coupling, burglar, wrinkly*
  
  but not compounding or inflection
  
  *double edged, doubling*
  
- Resyllabification occurs after level 2 derivation
  
  *logicality, dialectology*
  
  *pickaxes, hot oil*
Lexical phonology

- So, compounding must be on level 3 and regular inflection on level 4
- But, compounding was on level 2 for a reason
  - reaircondition, hardheartedness, *motorcyclic
- A loop?