

September 20, 2005

CLASS 6: MORPHOLOGY AND PHONOLOGY

PROSODIC MORPHOLOGY AND SOME MORPHOPHONOLOGICAL PROCESSES

interaction of morphology and phonology: **morphophonology / morphophonemics**
(focus of the relevance will be on *allomorphy* and *prosodic morphology*)

- basic (phonological) terminology: *onset* — *nucleus* — *coda*

Consider the English **past tense affix -ed** (see also Class 1 handout and next class):

- (1) a. [d]: *blamed, triggered, realized, sighed, rubbed*
b. [t]: *jumped, yakked, shushed, quaffed, itched*
c. [əd/ɪd]: *aided, loaded, hoarded, knighted, projected*

The **underlying past tense morpheme** is [d]:

- [t] is the result of **assimilation** and
- the vowel in [əd/ɪd] of **epenthesis**.

Assimilation:

Said to occur when one segment takes one or more phonetic characteristics of another one (“phonetic characteristics” — such as nasality, place of articulation, voicing, and so on):

- **progressive assimilation** is said to take place when the characteristic spreads forward;
- **regressive assimilation** is said to occur when the characteristic spreads backwards.

Epenthesis:

A process that inserts a segment in a given environment.

Consider the **genitive affix -os** in Classical Greek, attached to the nominal stem:

- (2) a. ait^hiops ‘Ethiopian’ ait^hiopos ‘of an Ethiopian’
b. p^hleps ‘vein’ p^hlebos ‘of a vein’

[You may ignore the term **hiatus** for another process, which doesn’t exist in English, as well as the **phonotactic constraints** discussed, *root-and-pattern* and *reduplication*. The same goes for the terms *exaptation*, *conjugation*, *leveling*, *analogy*, and *variable*.]

PRIMARY VS SECONDARY AFFIXES

The prime goal of today's class is the distinction into **primary vs secondary affixes** — alternatively known as **class 1 vs class 2 affixes** or even **level 1 vs level 2 affixes**.

Primary and secondary affixation:

In general, affixation involves the addition of an affix to a base to derive morphologically complex words. Morphologists generally assume that there are two kinds of affixes:

- **Primary affixes** attach to a morpheme (+) boundary, so closer to the root
- **Secondary affixes** attach to a word (#) boundary, so they attach to a stem

(3) Primary suffixes: +ion, +ity, +y, +al, +ic, +ate, +ous, +ive...
Primary prefixes: de+, re+, sub+, in+, con+, pre+, en+, be+...

(4) Secondary suffixes: #ness, #less, #hood, #ful, #ly, #y, #like...
Secondary prefixes: de#, re#, sub#, un#, non#, semi#, anti#...

The two classes of affixes give rise to **different phonological effects**:

- ❶ primary suffixes cause **stress shift** (they may even **attract stress**, if they are prefixes), while secondary suffixes are **stress neutral**:

(5)		<u>Primary</u>	<u>Secondary</u>
	productíve	product+ív+ity	prodúct+ive#ness
	fínite	ín+finite	non#fínite

- ❷ primary affixes may undergo **automatic phonological processes**, as the result of their attachment, while secondary affixes **may not**:

(6)	a.	in+edible , *in-eatible	un#eatable , *un#edible
	b.	il+legal , *inlegal	un#lawful , *ul#lawful
	c.	con+tain	non#basic , non#racial
	d.	cor+rect , *con+rect	* nom#basic , * nor#racial

(7)		<i>in+</i>	<i>un#</i>	
	a.	irrèparable	unrepáirable	(cf. repáir)
	b.	irrèvocable	unrevókable	(cf. revóke)

(8) inept, inert — *unept, *unert (but: *impalpable*, *impossible*)

(On Friday we'll talk about **productivity**; but if you think about it, take any adjective which doesn't have a common negated form prefixed by either — you'll see that it's more likely that you can negate it with *un#* than *in+*: *unferocious*, *unwet*, *undead*, etc.)

Affix Ordering Generalisation:

Primary affixes always occur inside secondary affixes, i.e. they appear nearer to the root.

(9) *hope#ful+ity, *ir+re#fill#able,

Consider next some interesting contrasting issues between **+able** and **#able**:

(10) *compáre* [kam'pær]:
 +able: **cómpar**+able ['kæmp(ə)rəb] — not *cómparable*: 'unlike'
 #able: **compár**#able [kam'pærəb] — not *compáreable*: 'not possible to compare'

(11)

	+able	#able
a.	defensible	defendable
b.	perceptible	perceivable
c.	divisible	dividable

(12)

	+able	base	#able	base
a.	cultivable	cultiv	cultivable	cultivate
b.	educable	educ	educatable	educate
c.	irrigable	irrig	irrigatable	irrigate
d.	navigable	navig	navigatable	navigate
e.	demonstrable	demonstr	demonstratable	demonstrate

Note a **further difference** between (primary) +able and (secondary) #able:

- in words of the form *X#able*, *X* must be a transitive verb (*cultivate*-class, (12))
- not so with *X+able*: *possibile* (Lt. *posse* 'to be able'), *risible* (Lt. *ride:re* 'to laugh')

The Level Ordering Hypothesis in a theoretical approach to **capture all these facts**:

(13) *The Level Ordering Hypothesis (LOH)*

Level I: +affixation (primary)
 Stress Rules
Level II: #affixation (secondary)
Level III: compounding
Level IV: regular inflection

(14) passion fruit, passion fruits — *passion fruit#y, *com+passion fruit

Some **problems** with the *Level Ordering Hypothesis*:

- **some compounds** such as: *systems analyst*, *student affairs manager*...
- **words like *organization***: the suffix *-ize* is secondary, but it occurs inside the primary suffix *-ion*; the same holds for words ending in *-ability* and *-istic*.

THE BRACKETING PARADOX

(15) *ungrammaticality*:

- a. un- [grammatical -ity] (according to the LOH)
 b. [un- grammatical] -ity (because *un-* only attaches to adjectives)

The second bracketing is also favoured by the actual interpretation of the word: *ungrammaticality* is the condition that refers to something being *ungrammatical*; according to the first bracketing what *un-* negates is the state of *grammaticality*. More:

- (16) a. hydro- [electric -ity]
 b. [hydro- electric] -ity
- (17) a. macro- [economi -ic]
 b. [macro- economy] -ic
- (18) a. nuclear [physic -ist]
 b. [nuclear physic] -ist
- (19) a. un- [happy -er]
 b. [un- happy] -er

THE CYCLE

The *LOH* turned out to be **too restrictive**, as it **incorrectly rules out possible word formations**, and furthermore **gives rise to bracketing paradoxes**. At the same time we want to maintain **some notion of ordering**, while *allowing for the same rule to apply more than once* in the derivation.

It has been proposed that rules can apply in a **cycle**, or in a **cyclic domain**. In other words, each application of the relevant rule constitutes a single cycle. Thus while the same rule can apply again and again, i.e. on different cyclic domains, it cannot, however, reapply on a previous defined cycle. This is the **Strict Cycle Condition (SCC)**.

The results of cyclic phonology have also been extended to the **interaction with morphology**, thus revising the *LOH*. This revision is partly attributed to the proposal that the set of cyclic phonological rules applied every time a morphological operation took place. (This gave rise to what was later known as **lexical phonology**.)

Related to the notion of the cycle is that of the **Elsewhere condition**, which basically ensures that the more specific rule will apply before the more general one. In other words, we state the specific rule and then say that the more general one applies in all the other cases, i.e. elsewhere. (Recall the rules for English passive or past-tense formation.)

How does the cycle solve the **problem of bracketing paradoxes**?

Consider the case of *ungrammaticality*, which is assigned the following **two representations**:

(20) [[un- grammatical] -ity]: meaning, attachment properties of *un-*.

(21) [un- [grammatical -ity]] : LOH

Affixation of *-ity* causes **stress shift** (a phonological rule), so *-ity* is a Primary affix. Let us call it **cyclic**, while *un-* is noncyclic. We **start** by attaching *un-* to the adjective *grammatical*:

- (22) a. un- grammatical NO CYCLE (NO MS Rules)
 b. [ungrammatical]-ity CYCLE defined
 c. ungrammaticality Main Stress, cyclic rule