

Review: Part I.
Phonological Processes (Supplement, Part 1)

A. ASSIMILATION

The influence of one segment upon another so that the sounds become more alike or identical.

1. *Consonant assimilates vowel features*

Brazilian Portuguese:

| | |
|------------------------|------------------|
| dadu | <i>given</i> |
| madri ^ɲ a | <i>godmother</i> |
| modernu | <i>modern</i> |
| unidu | <i>united</i> |
| guarda | <i>guard</i> |
| ḋzi ^ɲ neiru | <i>money</i> |
| od ^ʒ iu | <i>hatred</i> |
| ver ^ɲ ḋzi | <i>green</i> |
| verda ^ɲ ḋzi | <i>truth</i> |
| grã ^ɲ ḋzi | <i>big</i> |

Palatalization of the alveolar stop before [i].

Russian:

| | | | |
|-------|------------------|-----------------------|----------------|
| stol | <i>table</i> | stol ^j e | Loc.Sg. |
| vkus | <i>taste (N)</i> | vkus ^j en | <i>tasty</i> |
| dar | <i>gift</i> | dar ^j it | <i>to give</i> |
| dom | <i>house</i> | dom ^j isko | <i>cottage</i> |
| bomba | <i>bomb</i> | bomb ^j it | <i>to bomb</i> |

Palatalization of consonants before front vowels.

Nupe (a West African language):

| | | | |
|-------------------|--------------|-------------------|--------------|
| eg ^j i | <i>child</i> | eg ^w u | <i>mud</i> |
| eg ^j e | <i>beer</i> | eg ^w o | <i>grass</i> |

Palatalization of consonants before front vowels;
labialization before rounded vowels.

2. *Vowel assimilates consonant features*

Russian:

| | |
|--------|---------------------|
| ɛtat | <i>this (Masc.)</i> |
| ʃɛst | <i>pole</i> |
| ɛra | <i>era</i> |
| ʒɛst | <i>gesture</i> |
| jɛlʲ | <i>fir-tree</i> |
| jesʲtʲ | <i>there is</i> |
| dvʲerʲ | <i>door</i> |
| dʲenʲ | <i>day</i> |

The vowel [ɛ] is *raised* before palatalized consonants.

English:

| | | | |
|-----|-----|-------|------|
| see | [i] | seen | [ĩ] |
| cat | [æ] | can't | [æ̃] |

Nasalization: the vowels are nasalized when adjacent to a nasal consonant in the same syllable.

Chatino (spoken in Mexico):

| | | | |
|-------|---------------|-------|----------------------|
| tijéʔ | <i>lime</i> | t̥ihí | <i>hard</i> |
| kinó | <i>sandal</i> | k̥sú | <i>avocado</i> |
| suwí | <i>clean</i> | s̥ʔwá | <i>you send</i> |
| laʔá | <i>side</i> | t̥aʔá | <i>fiesta</i> |
| ngutá | <i>seed</i> | k̥utá | <i>you will give</i> |
| kít | <i>fire</i> | k̥itá | <i>you will wait</i> |

Unstressed vowels become *voiceless* between voiceless consonants.

3. Consonant assimilates consonant features

English:

emphasis
invisible
independent
infant
input
imbalance
uncle
inconceivable

The nasal consonant becomes *homorganic* with the following consonant.

Yoruba (spoken in West Africa):

| | | | |
|-----|---------------|------|---------------------|
| ba | <i>hide</i> | mba | <i>is hiding</i> |
| fɔ | <i>break</i> | mfɔ | <i>is breaking</i> |
| tɛ | <i>spread</i> | ntɛ | <i>is spreading</i> |
| sun | <i>sleep</i> | nsun | <i>is sleeping</i> |
| kɔ | <i>write</i> | ŋkɔ | <i>is writing</i> |
| wa | <i>come</i> | ŋwa | <i>is coming</i> |

The nasal consonant becomes *homorganic* with the following consonant.

English:

| | | | |
|--------|-----|--------|-----|
| cups | [s] | cubs | [z] |
| raced | [t] | raised | [d] |
| backs | [s] | bags | [z] |
| backed | [t] | bagged | [d] |

The endings for the Plural, the third person singular and the past tense agree in voicing with the preceding consonant.

4. Vowel assimilates vowel features

Hungarian:

Dat.

| | | |
|--------|---------------|-----------|
| kert | <i>garden</i> | kertnek |
| fal | <i>wall</i> | falnak |
| ember | <i>man</i> | embernek |
| vi:z | <i>water</i> | vi:znek |
| könyv | <i>book</i> | könyvnek |
| asztal | <i>table</i> | asztalnak |

Vowel Harmony: the vowel in the suffix agrees in backness with the stem vowel.

Turkish:

| | | | |
|-------|--------------|---------|-----------------|
| dış | <i>tooth</i> | dışım | <i>my tooth</i> |
| ev | <i>house</i> | evim | <i>my house</i> |
| gönül | <i>heart</i> | gönülüm | <i>my heart</i> |
| göz | <i>eye</i> | gözüm | <i>my eye</i> |
| baş | <i>head</i> | başım | <i>my head</i> |
| kol | <i>arm</i> | kolum | <i>my arm</i> |

Vowel Harmony: the vowel in the suffix agrees in backness and roundness with the stem vowel.

Icelandic:

Infinitive

Past Part.

| | | |
|-------|--------|--------------|
| taka | tekin | <i>take</i> |
| draga | dregin | <i>drag</i> |
| vaksa | veksin | <i>grow</i> |
| aka | ekin | <i>drive</i> |
| vaða | veðin | <i>wade</i> |
| gefa | gefin | <i>give</i> |
| vega | vegin | <i>lift</i> |

Umlaut: back vowels are fronted before certain suffixes containing a front vowel.

German:

| | | | |
|------|---------------|----------|------------------|
| Gast | <i>guest</i> | Gäste | <i>guests</i> |
| Rat | <i>advice</i> | Räte | <i>advices</i> |
| Jahr | <i>year</i> | jährlich | <i>annual</i> |
| gut | <i>good</i> | gütig | <i>kind</i> |
| Not | <i>need</i> | nötig | <i>necessary</i> |

| |
|-------------------------------------------------------------------------------------------------|
| <p><i>Umlaut</i>: back vowels are fronted before certain suffixes containing a front vowel.</p> |
|-------------------------------------------------------------------------------------------------|

Old English:

foot/feet
goose/geese
mouse/mice

Umlaut was productive in Old English.

Assimilation may be:

- (i) progressive (left-to-right)
e.g., plot [p] cry [ɹ]
- (ii) regressive (right-to-left)
e.g., bean [i]

| |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Vowel Harmony: A type of progressive assimilation, in which the first vowel in a sequence constitutes the conditioning factor for subsequent vowels.</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| |
|----------------------------------------------------------------------------------------------------------------|
| <p>Umlaut: Change in the quality of a vowel due to the anticipated influence of a subsequent vowel.</p> |
|----------------------------------------------------------------------------------------------------------------|

B. DISSIMILATION

Dissimilation is a phonological process in which two segments become less similar to each other.

Slovak:

| Masc. | Fem. | Neuter | |
|------------|------------|------------|------------------|
| kruti: | kruta: | krute: | <i>cruel</i> |
| slovenski: | slovenska: | slovenske: | <i>Slovak</i> |
| ľu:ti | ľu:ta | ľu:te | <i>merciless</i> |
| zat'ati: | zat'ata: | zat'ate: | <i>stubborn</i> |
| druhi: | druha: | druhe: | <i>other</i> |
| tata:rski | tata:rška | tata:rske | <i>Tartar</i> |
| ri:žǵ | ri:žǵa | ri:žǵe | <i>genuine</i> |

Dissimilation in vowel length: Explain!

| Latin | → | English |
|------------|---|---------|
| peregrinus | | pilgrim |
| purpur | | purple |

Dissimilation – a sequence of [r] sounds becomes a sequence of [l] and [r].

English:

fifth [fθs] → [fts]

Dissimilation: a sequence of three fricatives becomes fricative/stop/fricative.

C. DELETIONS AND INSERTIONS: Syllable Structure Processes



They result in a simpler syllable or,
the preferred syllable structure: CV

1. *Deletions*

Tibetan:

| | |
|------------|----------|
| d̥zu | ten |
| d̥zig | one |
| d̥zugd̥zig | eleven |
| ʃi | four |
| d̥zubʃi | fourteen |
| ʃibd̥zu | forty |
| gu | nine |
| d̥zurgu | nineteen |
| gubd̥zu | ninety |
| ŋa | five |
| d̥zuŋa | fifteen |
| ŋabd̥zu | fifty |

Word-initial consonant clusters are simplified by deleting the first consonant.

French:

| | | | |
|-----------|-------------|---------------|--------------|
| petit ami | [pətit ami] | petit tabloux | [pəti tablo] |
| nos amis | [noz ami] | nos tableaux | [no tablo] |

A word-final consonant is dropped if the following word begins with a consonant.

| | | | |
|-----------|-------------|---------|---------|
| le garçon | [lə ɡarsɔ̃] | l'ami | [lami] |
| la fille | [la fij] | l'arbre | [larbr] |

The vowel of the definite article is deleted if the following word starts with a vowel.

2. Insertions (=epenthesis)

Hypothetical language:

Gen.Sg.

| | | |
|-------|---------|---------------|
| dubok | dubokut | <i>glass</i> |
| sanut | sanutut | <i>boy</i> |
| depe | depet | <i>flower</i> |
| soldi | soldit | <i>place</i> |
| kopis | kopisut | <i>hat</i> |
| siru | sirut | <i>toy</i> |
| wokub | wokubut | <i>sun</i> |

The vowel [u] is inserted to break up a consonant cluster.

Hanunoo (spoken in the Philippines):

| | | | |
|-------|--------------|--------|----------------------|
| ?upat | <i>four</i> | ?upati | <i>make it four</i> |
| ?unum | <i>six</i> | ?unumi | <i>make it six</i> |
| ?usa | <i>one</i> | ?usahi | <i>make it one</i> |
| tulu | <i>three</i> | tuluhi | <i>make it three</i> |

The consonant [h] is inserted to break up a vowel cluster.

Latin:

| | | |
|--------|----------------------|---------------------|
| patris | <i>father</i> (Gen.) | <i>pater</i> (Nom.) |
| agri | <i>field</i> (Gen.) | <i>ager</i> (Nom.) |
| libri | <i>book</i> (Gen.) | <i>liber</i> (Nom.) |

The vowel [e] is inserted to break up word-final consonant clusters.

English:

central, centre
cyclic, cycle

A schwa is inserted to break up word-final consonant clusters.

D. LENITIONS (=weakening) and FORTITIONS (=strengthening)

1. *Lenitions*

Southeast Ambrym (a Malayo-Polynesian language):

Poss.Sg.3.

| | | |
|------|-------|--------------|
| hil | hilin | <i>hair</i> |
| vaŋ | vaŋen | <i>belly</i> |
| luh | luhon | <i>tooth</i> |
| asou | asoun | <i>wife</i> |
| he | hen | <i>land</i> |

Apocope: deletion of the word-final vowel.

Saami (a Finno-Ugric language):

Loc. /-st/

| | | |
|----------|-------|---------------|
| miäccest | miäcc | <i>forest</i> |
| koaðest | koað | <i>tent</i> |

Apocope: deletion of the word-final vowel.

Hypothetical language:

Plural

| | | |
|--------|---------|---------------|
| serati | sertimt | <i>wall</i> |
| varude | vardemt | <i>cloth</i> |
| filatu | filtumt | <i>key</i> |
| gete | getemt | <i>cherry</i> |
| fuka | fukamt | <i>name</i> |
| sipeto | siptomt | <i>knee</i> |

Syncope: a word-internal vowel is deleted.

| | | | |
|---------|---|--------|---------------|
| Latin | → | French | |
| populus | | peuple | <i>people</i> |
| tabula | | table | <i>table</i> |

Syncope: a word-internal vowel is deleted.

English:

chocolate, nursery, etc.

Syncope: a word-internal vowel is deleted.

| | |
|-----------------|------------------------------------------------------------------------------------|
| Apocope: | The loss of a final unstressed vowel -- weak position! |
| Syncope: | A vowel is deleted word-internally when it occupies a weak position (=unstressed). |

Maltese:

| Sg.3. | Pl.3. | |
|-------|--------|----------------|
| kien | kienu | <i>was</i> |
| sa:m | sa:mu | <i>fasted</i> |
| die? | die?u | <i>tasted</i> |
| za:r | za:ru | <i>visited</i> |
| bies | biesu | <i>kissed</i> |
| mes | messu | <i>touched</i> |
| ḍʒar | ḍʒarru | <i>carry</i> |
| sen | sennu | <i>sharpen</i> |
| hak | hakku | <i>scratch</i> |
| ʃa? | ʃa??u | <i>crack</i> |

| |
|---------------------------------------------------------------------------------------|
| <i>Consonant weakening: long consonant become short word-finally – weak position!</i> |
|---------------------------------------------------------------------------------------|

2. Fortitions

Hypothetical language:

Acc.

| | | |
|---------|----------|--------------|
| e'mani | 'eimanid | <i>man</i> |
| 'eilata | e'latad | <i>tree</i> |
| e'ruhi | 'eiruhid | <i>bread</i> |
| 'ougitu | o'gitud | <i>foot</i> |
| o'dali | 'oudalid | <i>chair</i> |
| o'buta | 'oubutad | <i>bug</i> |

| |
|-----------------------------------------------------------------------|
| <i>Diphthongization: first-syllabic stressed vowels diphthongize.</i> |
|-----------------------------------------------------------------------|

| | | | |
|-------|---|---------|--------------------|
| Latin | → | Italian | |
| bona | | buona | <i>good</i> (Fem.) |
| nova | | nuova | <i>new</i> (Fem.) |

Diphthongization: the short vowel in Latin becomes a diphthong in Italian.

Diphthongization: Stressed vowels and tense vowels are strong vowels; they frequently diphthongize – *fortition* (strengthening process).

E. COALESCENCE

Two adjacent segments are replaced by a single one which shares features of the two original ones.

1. Consonant coalescence

Korean:

| | | | | | |
|-----|---------------|------|---------------|----------------------|----------------------|
| nak | <i>fall</i> | hwa | <i>flower</i> | nak ^h wa | |
| | | | | | <i>fallen flower</i> |
| kup | <i>bend</i> | hita | (Caus.) | kup ^h ita | |
| | | | | | <i>to bend</i> |
| noh | <i>to lay</i> | ta | (verb ending) | not ^h a | |
| | | | | | <i>to lay eggs</i> |

When a stop and [h] are adjacent, they are replaced by an aspirated stop.

2. Vowel coalesce

| | | | |
|------------|---|----------|-----------------|
| Latin | → | Spanish | |
| aidificium | → | edificio | <i>building</i> |
| causa | → | cosa | <i>thing</i> |
| paupere | → | pobre | <i>poor</i> |

ai, au become [e] and [o] -- the resulting vowel has the same value for backness and roundness as the original high vowel.

3. Coalescence of vowel and consonant

French:

| | | | |
|------------|--------------------|--------|-------------|
| [plɛnə] | <i>full</i> (Fem.) | [plɛ̃] | (Masc.) |
| [tɔnalitɛ] | <i>tonality</i> | [tɔ̃] | <i>tone</i> |

A vowel and a nasal consonant becomes a nasal vowel when the consonant is word-final.

F. METATHESIS

Two segments may interchange.

Hebrew:

| | | | |
|-------|-------------------|-------------|---------------------------|
| kabel | <i>to accept</i> | lehit-kabel | <i>to be accepted</i> |
| pater | <i>to fire</i> | lehit-pater | <i>to resign</i> |
| sames | <i>to use for</i> | lehis-tames | <i>to use</i> |
| sader | <i>to arrange</i> | lehis-tader | <i>to arrange oneself</i> |

Metathesis: s and t interchange when adjacent.

Hypothetical language:

| | | |
|-------|------------|--------|
| | | Loc. |
| semre | <i>hut</i> | sermes |
| difni | <i>bed</i> | dinfis |
| kabru | <i>cup</i> | karbus |
| vepto | <i>box</i> | vetpos |

Metathesis: Word-internal consonants interchange.
