

Class 7

More sound changes (and phonological processes)

10/3/19

PSet 1

- I'll post it over the next couple days.
- It will be due **Tuesday, 10/15** (feel free to submit it earlier if you want).
- ★ **For all PSets for this class:**
 - You can work with up to *one other person*.
 - You must work through the PSet by yourself before discussing it with a classmate, and you must write up your answers independently of one another.
 - On your submission, indicate who you worked with.
 - Submit your answers *as a pdf* on BlackBoard.
 - I'd prefer if they were typed. Here's one of many websites for helping type in IPA: <http://www.internationalphoneticalphabet.org/html-ipa-keyboard-v1/keyboard/>

1 Feature Change: Lenition, Fortition, Simplification, and Drift

- Last time, we looked mostly at assimilation and dissimilation:
 - Features changing to become more or less similar to a nearby sound.
- Diachronically (and, to a lesser extent, synchronically), features change for a number of other reasons as well.

1.1 Lenition and Fortition

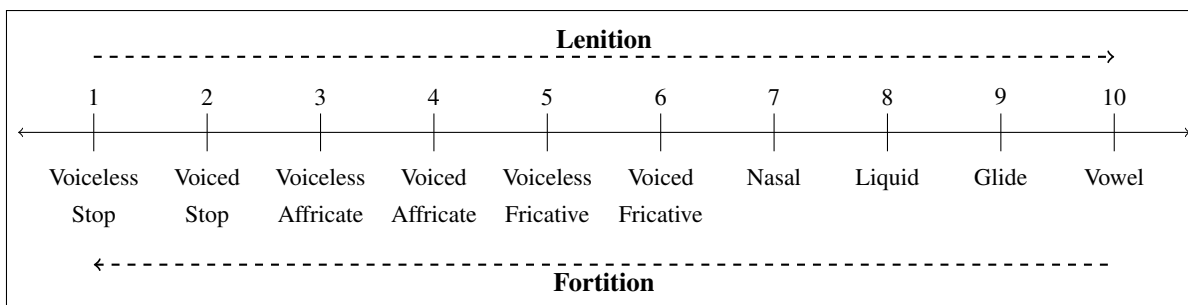
- We can characterize different *positions* in a word as **stronger and weaker**.

(1) Strong and weak positions

Strong Positions	Weak Positions
Word-initial position	Word-medial position, esp. intervocalic [word-final position is kind of intermediate]
Syllable-initial position (onset)	Syllable-final position (coda)
Stressed syllables	Unstressed syllables
Adjacent to voiceless sounds	Adjacent to voiced sounds
Adjacent to obstruents	Adjacent to sonorants

- Sounds in *weak positions* tend to become “weaker” ⇒ **lenition** (a.k.a. reduction, weakening)
- Sounds in *strong positions* tend to become “stronger” ⇒ **fortition** (a.k.a. strengthening)
- “Strength” in this context basically refers to *sonority*.
 - Higher sonority sounds are weaker, lower sonority sounds are stronger.
 - Lenition means becoming *more like a vowel*, fortition means becoming *less like a vowel*.
- Voiceless sounds are lower sonority than their voiced counterparts. Modulo this addition, (2) shows the sonority scale we saw before.

(2) Lenition, Fortition, and Sonority



- Lenition/fortition more frequently involves movements of just one or two notches on the scale, but can sometimes be substantially greater.
- NB: A voiced obstruent usually doesn't lenite to a voiceless obstruent, even if it's further along the scale (though see Crowley & Bowerman 2010:25 for a possible example of this from Kara).

1.1.1 Lenition

- Latin "rhotacism" is an example of lenition.
 - Proto-Italic *s lenited to z in Pre-Latin *between vowels*.
 - Pre-Latin z further lenited to r by the time of Latin (r was probably a flap or trill).
 - But Proto-Italic s stayed s in other positions (e.g. _# in the examples below).

(3) Latin rhotacism (Crowley & Bowerman 2010:25)

Proto-Italic 1	>	Pre-Latin	>	Latin	
*ami:ko:som	>	*ami:ko:zom	>	ami:ko:rum	'of the friends'
*genesis	>	*genezis	>	generis	'of the type'
*hono:sis	>	*hono:zis	>	honoris	'of the honor'
*flo:sis	>	*flo:zis	>	floris	'of the flower'

- The first step in Latin rhotacism was just intervocalic voicing.
 - This is an extremely common kind of lenition.
 - It happened for Latin voiceless stops into Western Romance.
 - In Spanish, these voiced stops further lenited into voiced fricatives ("spirantization").

(4) Intervocalic lenition into Spanish (Campbell 2013:37):

Latin p,t,k > Western Romance b,d,g > Spanish β,ð,ɣ / V_V

- Latin *sko:pa* > Spanish *escoba* [eskoβa] 'broom'
- Latin *nata:re* > Spanish *nadar* [naðar] 'to swim'
- Latin *ami:ka* > Spanish *amiga* [amiɣa] 'female friend'

1.1.2 Fortition

- Fortition is much rarer than lenition. One example I've found comes from Argentinian Spanish.
 - High front vowels/glides strengthen to fricatives in onset position (Baker & Wiltshire 2003).

- yate* 'yacht': /jate/ → [ʒáte]
- iato* 'hiatus': /iato/ → [játo]

1.2 Feature change due to simplification

- Features can also just change to reduce “**markedness**”.
 - *Marked* = articulatorily complex, difficult to perceive, typologically less frequent, etc.
 - *Unmarked* = the opposite of that
- (6) Examples of types of simplifications (*marked* > *unmarked*)
 - a. Place: *uvular* > *velar*, *retroflex* > *alveolar*
 - b. Phonation/airstream mechanism: *aspirated* > *unaspirated*; *ejective* > *plain voiceless*
 - c. Suprasegmentals: *long* > *short*, *nasalized vowels* > *oral vowels*
- *The real way to think about stuff like this*: it is more difficult to perceive contrasts involving “marked” sounds than unmarked sounds, so languages tend to get rid of them.
 - This is really the idea behind most sound changes and phonological processes
- When we think of it like that, a couple other changes fall into this bin:
 - (7) a. **Debuccalization** — loss of oral constriction: e.g. *f,s,x* > *h*; *p,t,k* > *ʔ*
 - b. **Final devoicing** — voiced obstruents become voiceless word-finally: e.g. /b,d,g/ → [p,t,k] / _#

1.3 Drift

- And sometimes sounds just over time. We can call this **drift**.
 - (Maybe these are just cases where haven’t exactly figured out the motivation...)
- Changes are still usually minimal by feature, just like for better motivated types of changes.

2 Some more types of deletion

2.1 Hiatus-resolving vowel deletion

- Languages tend not to like having two vowels next to each other (“hiatus”).
 - There are many ways that they repair this problem. One typical way is by deleting one of the vowels.
- This is exemplified in Tonkawa — see all of the examples where the /-oʔs/ suffix is preceded by a vowel:

- (8) Hiatus resolution in Tonkawa (Gouskova 2007)
- | | | |
|-----------------------------|------------------------|----------------------------------------|
| a. /kaa-na-oʔ/ | (káa)(nóʔ) | ‘he throws it away’ |
| b. /nes-kaa-na-oʔ/ | (nés)(káa)(nóʔ) | ‘he causes him to...’ |
| c. /kaa-na-n-oʔ/ | (káa.na)(nóʔ) | ‘he is throwing it...’ |
| d. /jaaloona-oʔ/ | (jáa)(lío)(nóʔ) | ‘he kills him’ |
| e. /naahewe-an-haaʔas/ | (náa)(hóo)(náa)(ʔás) | ‘town, city’ |
| f. /jaatse-oo-ka/ | (jáa)(tsóo.ka) | ‘you see him’ |
| g. /jaatse-aatewa-n-oʔs/ | (jáa)(tsáa.to)(nóʔs) | ‘I will see him’ |
| h. /taa-notoso-oʔs/ | (táa)(nót)(sóʔs) | ‘I stand with him’ |
| i. /we-tasa-sooʔjan-oʔs/ | (wét.sa)(sóo.ja)(nóʔs) | ‘I swim off with them’ |
| | | |
| j. /sool-tooʔxa-oʔ/ | (sóol)(tóo)(xóʔ) | ‘it drips on him’ |
| k. /sʔeelʔ-oʔs/ | (sʔéé)(lʔóʔs) | ‘I scratch it’ |
| <i>shortening after CV-</i> | | |
| l. /xa-kaa-na-oʔ/ | (xá-ka)(nóʔ) | ‘he throws it far away’
(cf. (a-c)) |
| m. /ke-jaaloona-oʔ/ | (ké-ja)(lío)(nóʔ) | ‘he kills me’ (cf. (d)) |
| n. /ke-taa-notoso-oʔ/ | (ké-ta)(nót)(sóʔ) | ‘he stands with me’ (cf. (h)) |
| o. /we-seel-oʔs/ | (wé.sʔé)(lʔóʔs) | ‘I scratch them’ (cf. (k)) |

2.2 Syllable-structure–driven consonant deletion

- Languages frequently delete consonants when they can't fit into the permissible syllable structures.

(9) Deletion in English loan adaptation from Greek

- Anicent Greek ψυχολογια [**psuk**^hologia] > Eng *psychology* [saikaladʒi]
- Ancient Greek πτεροδακτυλος [**pterodactulos**] > Eng *pterodactyl* [tɛrədæktəl]

- When this kind of deletion occurs in a coda, it often leads to **compensatory lengthening**.

- The timing slot of the consonant is transferred to the preceding vowel, making it long.

(10) Deletion with compensatory lengthening in Old Irish (Crowley & Bowern 2010:35, Campbell 2013:32)

Proto-Celtic	Old Irish	
*magl	ma:l	'prince'
*kenetl	cene:l	'kindred', 'gender'
*etn	e:n	'bird'
*datl	da:l	'assembly'
*ag-mo-	a:m	'a moving back and forth'

2.3 Haplology

- Haplology refers to deletion of a repeated (near-)identical sequence within a word.

- ★ This is a good candidate for a sound change that doesn't have a synchronic equivalent (though there are plenty of synchronic processes that reduce/disprefer identical adjacent elements).

- Mostly sporadic:

- (11) a. *probably* [prabəbli] → fast speech *probly* [prabli]
 b. **Angle-land* > *England*
 c. *pacifism* < **pacificism* (cf. *mysticism*)

3 Insertion/Epenthesis

- The main other way to fix syllable structure problems is through *inserting* a segment.

- The fancy name for this is “**epenthesis**”.

- We mostly find vowel epenthesis, but also sometimes consonant epenthesis.

3.1 Vowel insertion

→ Initial epenthesis is called “**prothesis**”. We find an example of this in Spanish and French.

- Spanish and French didn't/(don't) allow word-initial *sC*-clusters.
- It fixed(/fixes) them by epenthesizing a vowel at the beginning of the word.

- (12) a. Latin *scola* [skóla] 'school' > **escola* >
 Old French *escole* [eskole] > Modern French *école* [ekol]
 Spanish *escuela* [eskuéla]
- b. Latin *scūtum* [skú:tum] 'shield' > **eskutu* >
 Old French *escu* [esku] > Modern French *écu* [eky] 'shield, money'
 Spanish *escudo* [eskúðo]
- c. Latin *stabula* [stábula] 'stable' > **estabula* >
 Old French *estable* > Modern French *étable* [etábl]
 Spanish *estable*

- The super fancy name for vowel epenthesis in the middle of a word is “**anaptyxis**”. Campbell gives an example of this from Finnish.

(13) Eastern Finnish: $\emptyset \rightarrow [V_\alpha] / \acute{V}_\alpha \{l,r\}_C$

(14) Vowel epenthesis in Eastern Finnish (Campbell 2013:31)

Eastern dialects	Standard Finnish	
nelejæ	neljæ	‘four’
kolome	kolme	‘three’
pilikku	pilkku	‘comma, dot’
jalaka	jalka	‘foot, leg’
kylymæ	kylmæ	‘cold’
silimæ	silmæ	‘eye’

- This is also an example of “**copy epenthesis**”, because the vowel that is inserted is a *copy* of a neighboring vowel.
 - This contrasts with **default epenthesis**, which inserts a consistent default vowel (most often [ə] or [i]).
- We also do find final epenthesis. I don’t think there’s a fancy name for that.
 - Often, languages don’t like to have word-final consonants, so they insert a final vowel to avoid it.

(15) $/CVC/ \rightarrow [CVCi]$

3.2 Consonant insertion

- Consonant insertion comes in two types: regular consonant epenthesis and **excrecence**.

3.2.1 Consonant epenthesis

- Another way to fix hiatus is to insert a consonant between vowels.
 - Usually the inserted consonant is a glottal stop or a glide.

(16) Hiatus-resolving consonant epenthesis: $/V_1V_2/ \rightarrow [V_1?V_2]$

- Many languages also don’t like to have word-initial vowels, and they repair this by epenthesizing a consonant.

(17) Initial consonant epenthesis: $\#V... \rightarrow \#?V...$

- Arabic is well-known for having this pattern, as part of a more complex system.
 - Arabic doesn’t allow word-initial consonant clusters and it doesn’t allow word-initial vowels.
 - When it encounters a word-initial cluster, it epenthesizes *?i-*:

(18) Arabic initial CV epenthesis: $\#C_1C_2V... \rightarrow \#?iC_1C_2V...$

3.2.2 Excrecence

- Excrecence refers specifically to consonant epenthesis that arises between two other consonants.
 - The inserted consonant normally has a mix of features from the consonants it comes between and/or creates a better (= lower sonority) onset for the next syllable.

- This happened in the history of English:

- (19) Excrecent consonants in English
- **ml* > *mbl*: *humble* ~ *humility* (cf. *thimble* ~ *thumb* [θʌm])
 - **mr* > *mbr*: *timber* (cf. Gothic *timrjan* ‘to build’)
 - **nl* > *ndl*: *spindle* ~ *spin*
 - **nr* > *ndr*: *thunder* (cf. Gothic *þunrjan* ‘to thunder’)
 - **ns* > *nts*: *prince* [prints] = *prints*
 - **sr* > *str*: *stream* < Proto-Indo-European * \sqrt{srew} - ‘flow’

4 Metathesis

- Sometimes neighboring sounds can switch places. This is called “**metathesis**”.

- In the history of Spanish, there was a metathesis of **dl* > *ld*:

- (20) Metathesis in the history of Spanish (Campbell 2013:33–34)
- Latin *titulus* ‘title’ > *tidulo* > *tidlo* > *tildo* > Spanish *tilde* ‘title, tilde’
 - Latin *modulus* ‘small measure’ > *modulo* > *modlo* > *molde* > Spanish *molde* ‘mold, pattern’

References

- Baker, Garry K. & Caroline R. Wiltshire. 2003. An OT Treatment of Palatal Fortition in Argentinian Spanish. In Ana Teresa Pérez-Leroux & Yves Roberge (eds.), *Romance Linguistics: Theory and Acquisition*, 33–48. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Campbell, Lyle. 2013. *Historical Linguistics: An Introduction*. 3rd edn. Cambridge, MA: MIT Press.
- Crowley, Terry & Claire Bower. 2010. *An Introduction to Historical Linguistics*. 4th edn. Oxford/New York: Oxford University Press.
- Gouskova, Maria. 2007. The Reduplicative Template in Tonkawa. *Phonology* 24(3):367–396.