INTD0111A

The Unity and Diversity of Human Language

Lecture #15
April 6th, 2009

Announcements

- The Writing Code screening this Thursday at 7pm.

Transition

- Phonetics is the study of speech sounds in human language.
- There are two types of sounds: consonants and vowels.
- Consonants are described in terms of place of articulation, manner of articulation, and voicing.
- Vowels are described in terms of tongue height, tongue advancement, lip rounding, and tenseness or laxness of the vocal tract.

Some unfinished business from last time: Diphthongs

- Two sounds (often a vowel and a glide) may combine together to form a **diphthong** (that is, a compound vowel). Examples of diphthongs in English are given below:

  [aj] as in *die* [aw] as in *now*
  [ɔj] as in *toy*

English vowel chart

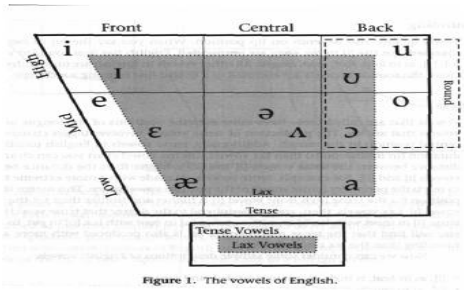


Figure 1. The vowels of English.

Phonetic Transcription

Word	Transcription
raining	[ɹeniŋ]
lecture	[lɛktʃəɹ] or [lɛkʃəɹ]
sounds	[sawndz]
???	[fənɛtɪks]

Speech production and coarticulation

- So far, we described sounds as if they are articulated in isolation. Of course, this is not the case in connected speech. Sounds are typically produced while more than one articulator are active.
- As a result of coarticulation, sounds may get to affect other sounds in speech.
- These are called ***articulatory processes***.

Assimilation: Regressive

- Assimilation is an articulatory process whereby a sound is made "similar" to a neighboring sound.
- Vowel nasalization in English is an instance of **regressive** assimilation:
  can't [kʰæ̃nt]

Assimilation: Progressive

- Assimilation can also be **progressive**, as in nasalization in Scots Gaelic:
  [nẽ:l] "cloud"
  [mũ:] "about"

Assimilation in voicing

- Assimilation may also take place in voicing features. In English, liquids and glides get "devoiced" after voiceless stops. Devoicing is marked by a "◌̥" underneath the sound:
  please [pl̥iz] *proud* [pr̥awd]
- Similarly, voiceless sounds may become voiced in the neighborhood of voiced sounds, e.g., Dutch *af* [ɑf] (="over") is pronounced with a [v] in the words *afbellen* (=cancel) and *afdekken* (=cover).

Assimilation in place of articulation

- Nasal consonants typically assimilate to the place of articulation of the following sound. From English:
  possible → impossible [mp]
  tangible → intangible [nt]
  complete → incomplete [ŋk]
- Question: Is this a case of regressive or progressive assimilation?

Assimilation in place of articulation

- Now, let's look at these German data:

Careful speech		Informal speech	
laden [la:dən]	→	[la:dn]	"to invite"
loben [lo:bən]	→	[lo:bm]	"to praise"
backen [bakən]	→	[bakŋ]	"to bake"

- What's going on here?

Dissimilation

- Dissimilation is an articulatory process whereby two sounds are made less similar. From English:
  fifths [fɪfθs] → [fɪfts]

Deletion

- Deletion is a process which removes a sound from certain phonetic contexts. From English:
  suppose [səpʰówz] → [spówz]
- Deletion may also occur as an alternative to dissimilation for some speakers in words like *fifth*:
  fifths [fɪfθs] → [fɪfs]

Epenthesis

- Epenthesis is a process that inserts a sound within an existing string of sounds. From English:
  something [sʌmθɪŋ] → [sʌmpθɪŋ]
  length [lɛŋθ] → [lɛŋkθ]
- In Turkish, a sequence of two initial consonants is not allowed. As a result, a vowel is epenthesized to break the consonant cluster:
  "train," which is borrowed from English, is pronounced as [tiren]

Metathesis

- Metathesis is a process that changes the order of sounds, e.g.,
  "comfortable" pronounced as [kʌmftərbəl]
- Children learning English will typically produce metathesis forms, e.g., *spaghetti* pronounced as [pəskɛɾi].

Vowel reduction

- In many languages, vowels in unstressed syllables undergo reduction, typically appearing instead as the weak vowel [ə]:
  Canada [kʰænədə]
  Canadian [kʰənejdiən]

Phonological Change

- As it turns out, phonological change in human languages happens due to one or more of these articulatory processes.
- Let's look at examples.

Assimilation

Old Spanish [semda] → Modern Spanish [senda] "path"
Early Latin [inpossiblis] → Late Latin [impossiblis]
Early OE [stefn] → Later OE [stemn] "stem"

Dissimilation

Late Latin [amna] → Spanish [alma] "soul"

Latin [arbor] → Spanish [arbol] "tree"
Italian [albero]
(but cf. French *arbre*).

Epenthesis

Earlier OE [ganra] → Late OE [gandra] "gander"

Latin [schola] → Spanish [escuela] "school"

Metathesis

Earlier OE [waps] → Late OE [wasp] "wasp"

- Also at a distance:
  Latin *mīrāculum* → Spanish *milagro*

Vowel deletion

- A vowel may be deleted from a word, resulting in *apocope* (if the vowel is final) or *syncope* (if the vowel is medial):
- Apocope:
  Latin [ōrmáre] → French [orner] "decorate"
- Syncope:
  Latin [pérdere] → French [perdre] "lose"

Consonant deletion

- Consonants may also delete from a word giving rise to another instance of phonological change:
  Old and Middle English had [kn] and [gn], but the initial consonant underwent deletion.
- And of course French provides a great example of loss of word-final consonant deletion:

gros	[gro]	"large"
chaud	[šo]	"warm"

Substitution

- Substitution involves the replacement of one sound with another similar sound:
  - MidE [x] → ModE [f] in "laugh"
  - Standard English [θ] → Cockney [f] in "thin"

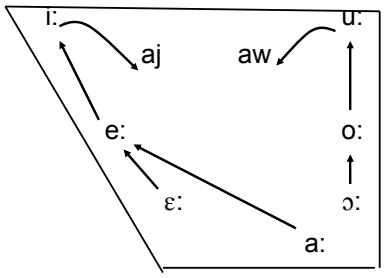
Phonological Shift

- A phonological shift is a change in which a series of sounds is systematically modified so that their organization with respect to each other is altered.
- A well known example of this phonlogical change is the so-called *Great Vowel Shift* (GVS) in the history of English, where the seven long vowels underwent the series of modifications between 1400-1600, as shown in the following table:

The Great Vowel Shift

Shift			Example			
MidE		ModE	MidE		ModE	
[i:]	→	[aj]	[mi:s]	→	[majs]	"mice"
[u:]	→	[aw]	[mu:s]	→	[maws]	"mouse"
[e:]	→	[i:]	[ge:s]	→	[gi:s]	"geese"
[o:]	→	[u:]	[go:s]	→	[gu:s]	"goose"
[ɛ:]	→	[e:]	[brɛ:k]	→	[bre:k]	"break"
[ɔ:]	→	[o:]	[brɔ:k]	→	[bro:k]	"broke"
[a:]	→	[e:]	[na:mə]	→	[ne:m]	"name"

The Great Vowel Shift



The Great Vowel Shift

- We can see effects of the GVS in the alternation between long and short vowels in word pairs like those below:
  - *please-pleasant*
  - *serene-serenity*
  - *sane-sanity*
  - *crime-criminal*

The Great Vowel Shift

- The alternation is the result of the GVS taking place after the Early Middle English Vowel Shortening rule affected the second word in each pair. When the GVS occurred, it affected only the first word of each pair since it was the one that had the long vowel by then.

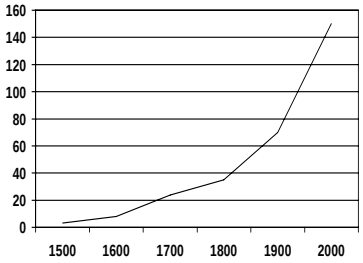
Spread of change through the language

- A linguistic change may manifest itself at first in a few words, and then gradually spreads through the vocabulary of the language. We call this *lexical diffusion*.

Lexical Diffusion

- A good example of lexical diffusion from English has to do with an ongoing change in the stress pattern of words such as *convert*, which can be either a noun or a verb.
- Originally, the stress fell on the second syllable of such words, regardless of their lexical category.
- In the second half of the 16th century, three words, *rebel*, *outlaw*, and *record*, came to be pronounced with the stress on the first syllable when used as nouns. And this stress shift has "diffused" ever since.

Diffusion of stress shift in English



Non-gradual Diffusion: Cuban Spanish

- But not all phonological changes involve gradual diffusion. Some changes affect all instances of the sounds involved rather immediately.
- For example, the weakening in Cuban Spanish of [s] to [h] in syllable final-position applies to all instances where [s] occurs in that position:

Spanish Spanish	Cuban Spanish	
[filismente]	[filihmente]	"happily"
[estilo]	[ehtilo]	"type"

Spread of change through the population

- For a language change to take place, the innovation must be accepted by the linguistic community.
- So, even though children acquiring English produce *goed*, the form was never accepted.
- Similarly, *throve* is not accepted as the past tense form of *thrive* (cf. drive-drove).

Spread of change through the population

- Social pressures often play an important role in the spread of a particular innovation.
- For example, when a change takes place in the speech of a high prestige group, it may gradually start spreading to other groups, and ultimately to the whole linguistic community.

Spread of change through the population

- The loss of postvocalic [r] along the east coast of the US is a famous example.
- Pronunciations such as [fa:] for [fa:r] originated in parts of England in the 17th and 18th centuries.
- It spread along the east coast of the US by the children of the New England gentry who brought these pronunciations back with them from British schools, as well as the newly arrived immigrants who enjoyed high social status as colonial administrators and church officials.
- As a result, the innovation was widely imitated and spread along much of the east coast and the south.

Spread of change through the population

- But social pressures also limited the spread of that innovation.
- In Pennsylvania and other Midland states the most prestigious group of settles were Quakers from northern England, an area that retained postvocalic [r].
- Similarly, in Canada, the influence of Scottish and Irish settlers, whose dialect retained the [r], limited the spread of the innovation to those areas there were in contact with New England, e.g., Nova Scotia and New Brunswick.
- Interestingly, now it's looking like "r-less" pronunciations have become stigmatized and we see an opposite trend for [r] restoration.

Summary of language change and transition to "reconstruction"

- To sum up, a language undergoes change in its lexicon as well as all components of grammar (morphology, syntax, phonology, and semantics).
- Over time, these changes might become considerable enough to the point where we become unable to tell if two historical varieties of the same language are actually related. Luckily, though, historical linguists developed ways to establish historical relations among languages. We discuss this on Wednesday.

Next class agenda

- How to reconstruct ancient languages? Read Fromkin et al's section on this.
- Why do languages change? Read the last few sections of Baker's Chapter 7. Also, read the section in Fromkin et al's chapter on "Why do languages change?".