

Class 12

Case studies in comparative reconstruction

10/22/19

Take-home midterm due by noon on 10/28
No class on 10/24

1 Today's agenda

- Review plan for the midterm
- Cover any questions from the PSet
- Finish up Grimm's Law
- Saussure and the Indo-European "Laryngeals"

2 Grimm's Law

- Last time, we established the correspondence sets:

(1) Correspondence sets

| | Skt | AGk | Lat | Goth | Eng | <i>context?</i> | <i>Proto-Indo-European</i> |
|----------|----------------|----------------|-----|------|-----|-----------------|----------------------------|
| Set # 1 | p | p | p | f | f | (elsewhere ↓) | |
| Set # 10 | p | p | p | p | p | / C_ | |
| Set # 2 | t | t | t | θ | θ | (elsewhere ↓) | |
| Set # 11 | t | t | t | t | t | / C_ | |
| Set # 3 | ʃ | k | k | h | h | (elsewhere ↓) | |
| Set # 12 | — | — | k | k | k | / C_ | |
| Set # 4 | b | b | b | p | p | | |
| Set # 5 | d | d | d | t | t | | |
| Set # 6 | j | g | g | k | k | | |
| Set # 7 | b ^h | p ^h | f | b | b | | |
| Set # 8a | d ^h | t ^h | f | d | d | / #_ | |
| Set # 8b | d ^h | t ^h | d | d | d | / V_V | |
| Set # 9a | h | k ^h | ∅ | g | g | / #_ | |
| Set # 9b | h | k ^h | h | g | g | / V_V | |

→ Using these correspondence sets:

- (2)
- a. Reconstruct the proto-phonemes in PIE
 - b. Identify all the sound changes
 - c. Figure out any subgroupings that might exist

3 The Indo-European “Laryngeals”

- Through comparative reconstruction (...plus some internal reconstruction), you can sometimes reconstruct sounds that have completely disappeared. This is what happened with the Indo-European “laryngeal” consonants.

3.1 Preliminaries

- The Indo-European languages had an extensive system of “ablaut”: *short vowels delete in some morphological contexts.*

- This leads to alternations like the following from Sanskrit:

- (3) Sanskrit singular~plural alternations in the perfect tense:

| Singular | Plural |
|------------------------|-----------|
| ji-ge:t ^h a | ji-gy-ur |
| ju-jo:ṣ-a | ju-juṣ-ur |
| da-darç-a | da-dṛç-ur |
| ja-gam-a | ja-gm-ur |

→ When the root vowel is followed by a sonorant consonant in the singular, the plural usually shows just a reflex of the consonant (the vowel is deleted).

- ★ We call the categories that have the vowel the **full grade**
- ★ We call the categories that don’t have the vowel the **zero grade**.

- We find a wide range of outcomes for the (V)R sequences in the Indo-European daughter languages.
 - These are the outcomes in Greek and Sanskrit:

- (4) Full grade ~ zero grade alternations (in pre-consonantal position)

| Greek | Sanskrit | PIE |
|--------------|-------------|---------------|
| <i>ei~i</i> | <i>e:~i</i> | <i>*ei~*i</i> |
| <i>eu~u</i> | <i>o:~u</i> | <i>*eu~*u</i> |
| <i>er~ar</i> | <i>ar~ṛ</i> | <i>*er~*ṛ</i> |
| <i>el~al</i> | <i>ar~ṛ</i> | <i>*el~*ṛ</i> |
| <i>en~a</i> | <i>an~a</i> | <i>*en~*ṇ</i> |
| <i>em~a</i> | <i>am~a</i> | <i>*em~*ṁ</i> |

- We can derive the Greek and Sanskrit outcomes with the following rules:

- (5)
- PIE *e > Skt a
 - PIE *l > Skt r
 - PIE *Ṇ > Skt a, Grk a
 - Pre-Skt *ai, *au > Skt e:, o:
 - Pre-Grk *l, *ṛ > Grk al, ar

3.2 Other correspondences...

- But then some people noticed that there were other cognate sets with different kinds of correspondences:

(6) Cognate forms for three roots in IE

| | Sanskrit | Greek | Latin |
|---------|---|---|--------------------|
| 'place' | da-d ^h a:mi : hi-ta:s | ti-t ^h e:mi : t ^h e-tos | fe:k-i: : fa-k-tus |
| 'give' | da-da:mi : di-tis | di-do:mi : do-tos | do: : da-tus |
| 'stand' | ta-st ^h a:mi : st ^h i-tis | hi-sta:mi : sta-tos | sta:-men : sta-tus |

(7) Correspondence sets

| Sanskrit | Greek | Latin |
|----------|--------|--------|
| a:~i | = e:~e | = e:~a |
| a:~i | = o:~o | = o:~a |
| a:~i | = a:~a | = a:~a |

3.3 Explaining the correspondences

- All of these can be characterized as an alternation between a long vowel and a short vowel, but there's a lot of different vowel qualities going on.
- In the late 19th century, Ferdinand de Saussure noticed that there might be an analogy with the Sanskrit *e:~i* and *o:~u* alternations.

(8) $*eu > o: : u :: *eX > a: : i$

- In Sanskrit, it looks like there could be just a single *X*, since all the outcomes in all three pairs of correspondences are identical.
- But Greek and Latin seem to distinguish among the sets
 - Greek has three different outcomes in both the full grade and the zero grade
 - Latin has three different outcomes in just the full grade
- So Saussure realized that you needed three different *X*'s.

(9) Preliminary reconstruction

| Sanskrit | Greek | Latin | PIE |
|----------|--------|--------|-------------------------------------|
| a:~i | = e:~e | = e:~a | < *eH ₁ ~*H ₁ |
| a:~i | = o:~o | = o:~a | < *eH ₂ ~*H ₂ |
| a:~i | = a:~a | = a:~a | < *eH ₃ ~*H ₃ |

★ Reconstructing three different phonemes would entail the following sets of changes:

- /H₁/, /H₂/, /H₃/ alter the vowel quality of the preceding vowel:

(10) a. /e/ → [e] / _H₁
 b. /e/ → [a] / _H₂
 c. /e/ → [o] / _H₃

- Sanskrit merges PIE **e, *a, *o* > *a* (see above), so these affects are obscured in Sanskrit, but stick around in Greek and Latin.

- /H₁/, /H₂/, /H₃/ later delete in all languages and yield *compensatory lengthening*:

(11) *VH > V:

- The syllabic versions yield the same vowel quality effects in Greek:

(12) a. /H₁/ → [e] / C_C
 b. /H₂/ → [a] / C_C
 c. /H₃/ → [o] / C_C

- But in Sanskrit and Latin, they yield just a single reflex: Skt *i* and Lat *a*.
- This means that Sanskrit and Latin independently underwent sound changes that merged the syllabic H's.

(13) a. PIE *H₁, *H₂, *H₃ > Pre-Sanskrit *Ḥ > Sanskrit *i*
 b. PIE *H₁, *H₂, *H₃ > Pre-Latin *Ḥ > Latin *a*

- There are many more systematic correspondences within the IE languages that support a consistent distinction between three different H's.

3.4 Confirming the existence of the laryngeals

- People came to refer to these three H's as the "laryngeals", hypothesizing that they might be some sort of sound made in the back of the throat (perhaps similar to some of the sounds in the Semitic languages).
 - Shortly after Saussure (and others) made these hypotheses, *Hittite* was discovered and deciphered.
 - Hittite is the oldest attested Indo-European language, belonging to a previously unknown branch of Indo-European called Anatolian.
 - It is written in a version of cuneiform borrowed from the Akkadians (who borrowed it from the Sumerians).
 - When Hittite was deciphered, lo and behold, in some of the places where Saussure had reconstructed one of these *H consonants, Hittite had a real consonant!
 - Specifically, *H₂ was consistently written with a sign that Akkadian used to write dorsal/pharyngeal fricative.
- ⇒ This is direct evidence that **confirms** Saussure's hypothesis, which had been based purely on comparative and internal reconstruction.