

THE METHOD OF INTERNAL RECONSTRUCTION

How can we have knowledge about unattested ancestral languages?

Internal reconstruction is a process in which we apply our knowledge of language change so as to *reverse linguistic history*. We can do so by looking for synchronic evidence which points to earlier linguistic change.

Such evidence will consist of variation between forms which can be plausibly assumed to originally have had invariant structures.

Internal reconstruction attempts to reduce synchronic variation to earlier invariance.

Examples:

a. German

- | | | |
|----|--------------------------------|--------------------------|
| 1. | <i>Bund</i> [bunt] ‘alliance’ | <i>Bunde</i> [bunde] Pl. |
| 2. | <i>bunt</i> [bunt] ‘colourful’ | <i>bunte</i> [bunte] Pl. |
| 3. | <i>Rad</i> [rat] ‘wheel’ | <i>Räder</i> [räder] Pl. |
| 4. | <i>Rat</i> [rat] ‘advice’ | <i>Räte</i> [räte] Pl. |

The voiceless alternant of words such as (1) and (3) appears only in word-final position. We may assume that at an earlier stage in the history of German, stems like *Bund* had only one phonetic shape, that with a final voiced segment.

A historical change can thus be reconstructed:

$d > t / _____\#$

In German, voiced obstruents have limited distribution: they never occur in word-final position. Such limitations in distribution may confirm that a sound change may have taken place.

b. Ancient Greek

- | | | |
|----|---|---------------------------|
| 1. | <i>legon</i> ‘speaking’ (Nom.Acc.Sg.ntr.) | <i>legontos</i> (Gen.Sg.) |
| 2. | <i>meli</i> ‘honey’ (Nom.Acc.Sg.ntr.) | <i>melitos</i> (Gen.Sg.) |
| 3. | <i>pai</i> ‘boy’ (Voc.Sg.) | <i>paidos</i> (Gen.Sg.) |
| 4. | <i>gunai</i> ‘woman’ (Voc.Sg.) | <i>gunaikos</i> (Gen.Sg.) |

Genitive marker: *-os* ; hence, the *t*, *d* and *k* must belong to the stem of these words. The historical explanation for the absence of word-final stops in these forms is that there must have been a process in which word-final stops were deleted.

t > Ø / _____#
d > Ø / _____#
k > Ø / _____#

In the above two examples the internal reconstruction was not complicated because no development -- subsequent to those having produced the alternations -- had intervened to obscure the changes under which these alternations were introduced.

More commonly, the facts are not so simple: the cumulative effect of multiple sound change often complicates the synchronic system in such a way that apparently conflicting data may complicate the process of internal reconstruction.

Example:

In Ancient Greek, there was a sound change: s > Ø / V__V

geneos (Gen.Sg.) *genessi* (Dat.Pl.) ‘race’

Genitive marker: *-os*

Dative Plural marker: *-si* (compare *phulak-* ‘guard’ and *phulaksi* Dat.Pl.)

However, there appear conflicting data in Ancient Greek: e.g., *ambrosia* ‘elixir of life’ where the $s > \emptyset / V_V$ change did not take place.

If it can be shown that an intervocalic *s* has been reintroduced by a development postdating the one that eliminated intervocalic *s* in words like *geneos*, the linguist will

- (i) confirm the $s > \emptyset / V_V$ change, and
- (ii) will also have established the relative chronology of these developments.

In the case of *ambrosia*, the root *bros-* occurs with a *t-* in place of *s* in related words like *ambrotos* ‘immortal.’ This *t/s* alternation is represented in a substantial number of words, such as *ploutos* ‘wealth’ and *plousios* ‘wealthy.’

In every such case, the alternant is followed by *i*. The *t/s* alternation is synchronically automatic and can be assumed to reflect the historical development t > s/ ____i (palatalization process!!!)

If all *s* historically derived from *t* are restored, as in **ambrotia*, words like *ambrosia* no longer contradict the hypothesis about the loss of *s* intervocalically -- this process was fully complete before a separate development reintroduced intervocalic *s*.

INTERNAL RECONSTRUCTION APPLIED TO INDO-EUROPEAN ROOTS

Most IE roots are of CeC- structure, e.g., **bher-* ‘bear’ **g^wem-* ‘come’ and **sed-* ‘sit’

There are IE roots, however, that have only one consonant: e.g., **eg-* ‘lead’ **dhē-* ‘place’ and **es-* ‘be’

Saussure (1879) suggested, on the basis of internal reconstruction, that these roots had originally CeC- structure, and the missing consonants have subsequently been lost.

Subsequent evidence from Hittite proved Saussure's hypothesis correct: in Hittite there are reflexes of the lost consonants -- these are referred to as 'laryngeals'.

Therefore we reconstruct the above roots as *PIE *heg-* (instead of *eg-), PIE **dhe?* – (instead of *dhē-) and PIE **ʔes* instead of *es-).

Study 3.16-3.21, pp. 62-64.

Vowel variations in PIE roots have reflexes in many IE languages which are the results of ablaut processes, and were accounted for through internal reconstruction.

Ablaut: morphologically conditioned variations within a paradigm.

Example: English *sing, sang, sung, song*: between the consonants a different vowel appears depending on the morphology of the word, i.e., Pres. Tense, Past Tense, Past Participle, Noun (derived from the verb). These vowels < IE ablauting vowels.

Ablaut variants of a root are termed *grades*. Example for PIE grades:

*set- *sit*

<i>e</i> -grade (full grade)	*sed-
<i>o</i> -grade	*sod-
<i>zero</i> grade	*sd- (no ablauting vowel!)
lengthened <i>e</i> -grade	*se:d-
lengthened <i>o</i> grade	*so:d-

Study the descendant forms of these ablauting roots: 4.15, pp. 79-80.

Study 4.12- 4.14, pp.79-80.

LIMITATIONS OF INTERNAL RECONSTRUCTION

The phenomenon of *merger* points to the most serious limitation of internal reconstruction.

MERGER: Replacement of two or more contrastive segments by a single segment.

Absolute merger: the total loss of phonological distinction.

Absolute merger is unrecoverable through internal reconstruction, unless one of the segments itself functioned to condition a change that preceded the merger -- this is the case of the Skt. merger of *e* and *a*: the merger is unconditioned, but the earlier existence of *e* is indicated by its effect on preceding velar stops -- e.g., the perfect of the root *kr* 'make' is *cakara* -- palatalization, from a following front vowel (see Lecture #4).

Example of unrecoverable absolute merger:

There are four vowels reconstructed for PGmc: **i* **e* **u* **a*; PIE had five vowels: **i* **e* **u* **o* **a*. Gmc. lost the distinction between **o* and **a*. The merger was unconditional, and there is no trace of evidence in Gmc. that *a* reflects two earlier distinct

segments. Thus, from internal reconstruction alone it is impossible to recover the vowel system from which Gmc. vowels are derived.

Study 10.14, p. 205.

Partial merger: the loss of one or more phonological distinctions in some specifiable phonetic environment.

Example of partial merger:

Skt. aspirated voiced stops have merged with unaspirated voiced stops as a result of partial merger -- the earlier system of aspirated voiced stops can be recovered through internal reconstruction:

Perfect tense in Skr. and Gr. may be formed with reduplication:

Skr. *dadau* ~ Gk. *dedo:ka* ~ Latin *dedi*: *give*

PIE **bhu:-* *become* > Skr. *babhu:va* ~ Gr. *pephu:ka* (of *phu:o*: *develop*).

Important: when roots with an aspirate are reduplicated in Skr. and Gk., the prefixed consonant is *not* aspirated.