LINGUISTICS 407
Historical Linguistics **LECTURE #4**

THE COMPARATIVE METHOD

Three types of comparison:

1. time dimension → genealogical classification
   ↓
   languages are studied for relationships with their earlier stages (for sub-branches)

   e.g., English is examined with regard to ME, OE and PGmc;
   PGmc is examined with regard to PItalic, etc., and PIE

2. languages are compared for characteristics that are widespread → typological classification
   ↓
   the dimension of time is disregarded!

Typological studies are concerned to learn "about the general characteristics of humanity" (Meillet, 1925): i.e., the results of these studies serve as guidelines for reconstructions (we do not reconstruct languages without vowels, etc.).

3. languages are compared by considering geography, social contacts, etc.

   e.g., considering geography and the possibility of contact will determine the extent of genealogical comparison: it would be useless to compare Sumerian with Haida.

The three types of comparisons differ, but they complement one another!

Comparative method (CM): the procedure for determining earlier forms (protoforms); these forms are unattested.

The relationship between two or more related languages is established by comparing forms with the objective of reconstructing the earlier form from which they developed.

Examples: British English, American English, Australian English forms of *atom* are compared for reconstructing the etymon, using the *triangulation procedure*

/ǽtəm/

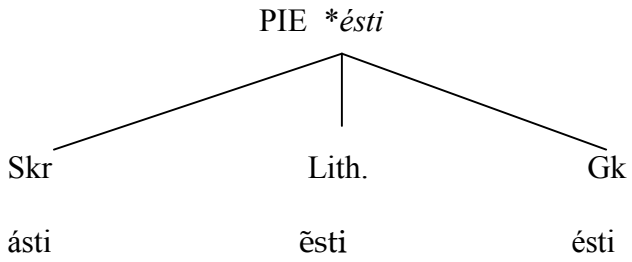
American English	British English	Australian English
[ǽɾəm]	[ǽtəm]	[ǽtəm]

First step: Based on the BE and AuE reflexes, proposing those forms for the *etymon* of this word.

Further steps: Are there other words undergoing the same process?
fat/fatter, etc.

Role of stress!

Role of environment: *faster* (consonant cluster), *button, kitten* (syllabic consonant), etc.



Problem: Skr *a*

PIE *e* > Skr *a*

Explanation: evidence in Skr reduplication; in the Skr perfect, the reduplication is made with the initial consonant plus *a*, e.g., *tatána* from the root *tan* 'strech'
However, the perfect of the root *kr* 'make' is *cakara* -- palatalization, from a following front vowel (see the cognates)!
Thus, the reconstruction of the PIE with a front vowel is plausible!

COMPARATIVE METHOD PROCEDURE

A	**B**	**C**	
siza	*sesa*	*siza*	'strawberry'

1. **Compile cognate sets, eliminating borrowings**

   (A cognate of a word is another word which has descended from the same source; cognates are similar in form and meaning).

2. **Determine sound correspondences** which exist between sounds in the same position in the words in each cognate set.

position	**A**	**B**	**C**
1	s	s	s
2	i	e	i
3	z	s	z
4	a	a	a

3. Reconstruct a sound for each position

a. Total correspondence

If all languages exhibit the same sound in some position in a cognate set, reconstruct that sound.

In the example, in positions 1 and 4, each of the languages has the same sound, so we reconstruct *s* for position 1 and *a* for position 4.

**s--a*

b. Natural development

For each of the remaining positions, reconstruct the sound which would have undergone the most *natural* sound change.

For example, in a position between vowels, the change of a stop to fricative at the same point of articulation is very common (more natural!), the reverse is less common. Thus, if one cognate contains a stop and the other contains a fricative, the stop should be reconstructed.

Common sound changes:

- voiceless sounds become voiced between vowels and before or after voiced consonants
- consonants become palatalized before front vowels
- consonants become voiceless at the end of words
- consonant clusters are simplified
- vowels become nasalized before nasals
- fricatives become [h]
- [h] deletes between vowels

In the example, we reconstruct *s* because *s* > *z* is a natural change (voiceless sounds become voiced between vowels)

c. Majority rules

Reconstruct the sound which occurs in the greatest number of languages being compared.

In the example, for position 2 we reconstruct *i*.

The proto-language form is **sisa*

4. Check for regularity of sound change

Although the procedure outlined in steps 1-3 can be used to reconstruct a proto-form, we have to check to see if the results are *consistent* across the whole collection of cognate sets.

Sound change is regular, and therefore we should be able to give each daughter language (A, B and C in the example) a list of sound changes which applied regularly to all words in the proto-language -- *Regularity Hypothesis*!

A	**B**	**C**	gloss	Proto-language
siza	sesa	siza	strawberry	**sisa*
sizu	sisu	sizu	pitchfork	**sisu*

Confirm that steps 1-3 produce **sisu* for 'pitchfork'.
Problem: in position 2 we posited a **i* > *e* change for language B. This would mean that the **i* in *sisu* should also become *e* in language B. Because both instances of **i* occur in the same environment, it is not possible to add a condition to the rule.

Solution: we have to reverse the decision made in step 3, making our reconstruction for 'strawberry' **sesa*. This way the sound changes listed below can apply regularly, giving the correct forms.

A	**B**	**C**
*s > z/ V___ V *e > i	none	*s > z /V ___ V *e > i

THE COMPARATIVE METHOD APPLIED TO INDO-EUROPEAN OBSTRUENTS

Voiceless and voiced ***orders*** of the labial, dental and velar ***series*** in Latin and Greek:

Study the Handout: *Obstruents of Greek and Latin*

Latin, Greek obstruents < PIE on the basis of I, II, III

Study the Handout: *The development of obstruent systems in Greek and Latin from PIE*

On the basis of data in IV we cannot posit an earlier form: cognates from Gmc and Indic are examined with the Latin and Greek forms:

Study the Handout: *PIE obstruents*

The obstruent system reconstructed for PIE was based mainly on four dialects: Gmc, Skr, Latin and Greek

Study the Handout: *The reconstructed PIE obstruents*

THE COMPARATIVE METHOD APPLIED TO THE GERMANIC OBSTRUENTS

The relationship between PIE and Gmc obstruents was pointed out first by Rask (1818); Grimm (1822) made this relationship explicit.

GERMANIC OBSTRUENTS: GRIMM'S LAW

a. voiceless stop > voiceless fricative

PIE *p *t *k > Gmc. *f θ x/h*

b. voiced stop > voiceless stop

PIE *b *d *g > Gmc. *p t k*

c. voiced aspirated stop > voiced stop

PIE *bh *dh *gh > Gmc. *b d g*

Study the Handout!

Problems: Exceptions!

i. voiceless stops never become fricatives when they follow a fricative:

Goth. *sparwa*, Gk *sparásion* 'sparrow'
Goth *stains*, Gk *sta* 'stone'
Goth *skaθis*, Gk. *a-ske:the:s* 'undamaged'

Important generalization is missed -- sounds must be examined in context!!!

ii. Grassman's Law: aspirated stops become unaspirated before an aspirated stop in the following syllable in Greek and Sanskrit.

Sanskrit cannot be equated with PIE -- a common fallacy! Sanskrit has undergone major changes as have all IE dialects!

Study 10.30 on pp. 210-211 and 12.14 on p. 253.

iii. PIE voiceless stops sometimes appear as Germanic voiced stops

Goth. *fadar* < PIE *pater* 'father'

Verner's Law:

voiceless stops between vowels > voiced stops or fricatives , when the preceding vowel is unaccented

Accent and other suprasegmental phenomena have to be examined!

Study the Handouts: *PIE obstruents with examples and PIE obstruents into Proto-Germanic*

When studying the relationships between two or more languages, *all* environments must be considered. As a result, we find a variety of relationships.

Study 15.5-15.8, pp. 339-341.

Shortcomings of the comparative method:

a. reconstructions are not precise phonetically:

on the basis of Gk *ph* = Gmc *b* = Slav *b* = Lat *b* = Skr *bh* = Arm *bh* < PIE *bh*

but we do not know how *bh* was pronounced!

Also, we do not know, how PIE labiovelars were pronounced!

b. does not take into consideration that PIE was not uniform: e.g., forms in Baltic and Slavic that are expected to have sibilants, have a velar instead:

Lith. *akmuð* , OCS *kamy* but: Skt *aśma:n,* Av. *asman* 'stone'

GERMANIC OBSTRUENTS: REFINEMENT OF THE COMPARATIVE METHOD

Grimm's Law → exceptions!

1. PIE voiceless stops remained unchanged after Gmc fricatives

(see above)

It is important to examine immediate environments and observe phonetic characteristics → development of articulatory phonetics!

2. Gmc voiced fricatives and stops = IE voiced stops (instead of voiced aspirated stops): cognates in Skr should have had initial aspirates!

   Grassman's Law: in Indic and Greek there was a dissimilation process; when there were aspirates in two successive syllables, one had been dissimilated.

Consequence: the "irregularity" is not to be attributed to Gmc, but to the supposedly more archaic Skr and Greek.

It is not enough to examine immediate environments: syllables and/or the entire word should be considered!

3. PIE voiceless stops had become voiced fricatives in Gmc rather than voiceless fricatives.

(see above)

Verner's Law: PIE voiceless stops become PGmc voiceless fricatives; these when in voiced environments become voiced when not immediately preceded by stress (the existing voiceless fricative *s* also undergoes this rule).

Suprasegmentals also have to be considered when comparing forms!

THE NEOGRAMMARIAN HYPOTHESIS

"sound change takes place according to laws that admit of no exception"

the solutions of the exceptions to Grimm's Law, especially Verner's explanation, served as justification for the Neogrammarian Hypothesis:

IF ALL FACTS ARE TAKEN INTO CONSIDERATION AND ANALYZED ACCORDINGLY, ONE COULD FORMULATE *EXCEPTIONLESS LAWS FOR LANGUAGE CHANGE*.

Brugmann criticized those linguists who concentrate on abstract patterns without paying enough attention to living languages. The Neogrammarians did not assume that sound changes operate in all lexical sets -- e.g., they excluded onomatopoeic words.

USE AND AMPLIFICATION OF THE COMPARATIVE METHOD

When Grimm formulated his rules, he only used three general classes:

T (Tenues), A (Aspiratae), and M (Mediae). These classes do not represent speech sounds that are articulated similarly. In order to indicate which actual sounds took part in the rules (summarized in Grimm's Law), these speech sounds are now represented by phonetic symbols:

PIE *p t k* k^{w} > PGmc *f* $\int$ *p* χ χ^{w}

This rule refers to IE voiceless stops that was found in all environments except after PIE *s* and PGmc *f* $\int$ *p* χ χ^{w} < PIE voiceless stops.

Assumption: developing allophones → sound change (in sub-classes)

Example: in Greek the labiovelars have developed three sets of allophones:

PIE	k^{w} g^{w} $g^{w}h$	>	Gk *p b* φ	before *a, o*
PIE	k^{w} g^{w} $g^{w}h$	>	Gk *t d* θ	before *i e*
PIE	k^{w} g^{w} $g^{w}h$	>	Gk *k g* χ	before *u*

Another assumption: only one feature of the allophone is changed, thus rules may be stated in distinctive features -- PIE voiced stops > PGmc voiceless stops

[-continuant] > [-voiced]

Problems:

- We do not know the details with regard to the sound systems of earlier languages -- e.g., in pre-Germanic there were three contrasting sets, but we have little evidence of distinctive features for the members of each set.

- We do not know whether *all* members of a set underwent change at the same time; consequently, using distinctive features in representing sound change may not reveal how the process of sound change actually took place.

Can typology help to resolve this issue? Discuss!

PIE *b*: infrequent occurrence --- will be discussed later.