Sanskrit as an Indo-European language

Harald Wiese

University of Leipzig

Overview

- Introduction: a personal and Leipzig biased view
- The Leipzig school of Indo-European studies
- My favourites
  - Vowel gradation and *gata*
  - Secondary palatalization and *ūḍha*
  - Laryngeals and the nasal infix classes
  - Laryngeals and *bhūta*
  - Grassmann's law and *bhotsyati*
  - Vedic accent and nhg. *Vater* versus *Bruder*
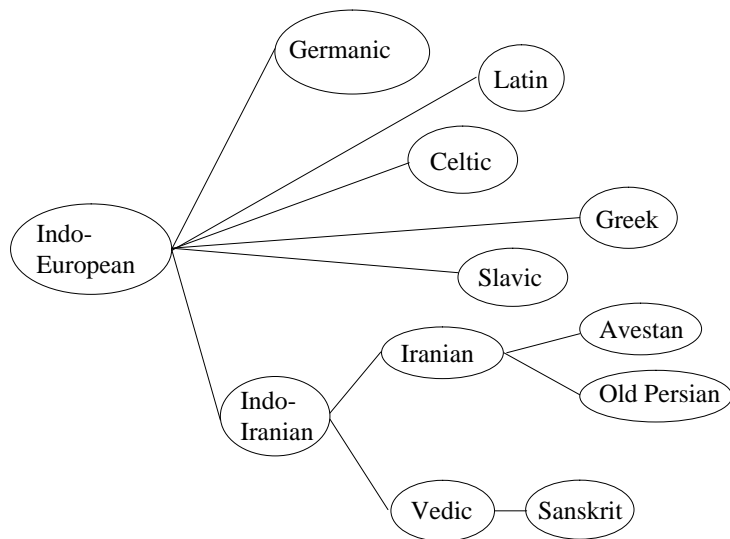- Conclusion

Introduction
Beauty is in the eye of the beholder

- Goldmann: Sandhi and the other terrors of Sanskrit

- Sanskrit is *madhura* for different people for different reasons.
- For me, Sanskrit is beautiful because it is regular.
  - ...
  - Pāṇini
  - ...
  - the Leipzig school of Indo-European studies
  - ...

Introduction

Language trees

The Leipzig school of Indo-European studies
August Schleicher

- Sound laws and reconstruction of the Indo-European language by
  - August Schleicher (1821 - 1868), professor in Prag and Jena
  - August Friedrich Pott (1802 – 1887), professor in Halle
- Schleicher's uses an asterisk to indicate reconstructed forms
- Schleicher invents language trees.
- The title of Schleicher's main work is

  Compendium der vergleichenden Grammatik der Indo-Europeanen Sprachen. Kurzer Abriß der Indo-Europäischen Ursprache, des Altindischen, Alteranischen, Altgriechischen, Altitalischen, Altkeltischen, Altslawischen, Litauischen, und Altdeutschen

- Schleicher composed an Indo-European fable.

The Leipzig school of Indo-European studies

Karl Brugmann and the neogrammarians

- Leipzig school = Junggrammatiker (neogrammarians):
  - Schleicher's pupil August Leskien (1840 – 1916), a renowned slavicist
  - the younger philologist Karl Brugmann (1849 – 1919)
- Leipzig world-wide center of Indo-European studies from about 1890 to 1920.
- Lautgesetzstreit:
  - "Junggrammatiker" slightly derogative term earned in their quarrel with Friedrich Pott from Halle and Brugmann's teacher Georg Curius.
  - The bone of contention: The older researchers distinguished between regular and irregular sound changes. In contrast, the younger generation insisted on the "Ausnahmslosigkeit der Lautgesetze" (sound laws valid without exception).

The Leipzig school of Indo-European studies

Indo-European vowel system

Following Franz Bopp, August Pott and Georg Curtius assumed that the Indo-European language knew three short vowels, *a, *i and *u also found in Sanskrit.

The Junggrammatiker contradicted.

- Indo-European vowels *a, *e and *o collapsed into Indo-Iranian a,
- while Old Greek preserved the Indo-European vowels particularly well.
- Their argument was based on the Ausnahmslosigkeit.
    - If Sanskrit a were to reflect the Indo-European state of affairs, sound laws should tell under which conditions Indo-European *a turned into Greek a, e or o.
    - However, such sound laws are not to be found. Hence, the Leipzig-school researchers claimed

Vowel gradation

$$\text{ie. } i \;\rightarrow\; \text{oi.} \left\{ \begin{array}{ll} i, & \text{bef. consonant} \\ y, & \text{bef. vowel} \end{array} \right.$$

Therefore: *gacchāmy aham.*

$$\text{ie. } ai/ei/oi \rightarrow \text{oi.} \left\{ \begin{array}{ll} \hat{e} \text{ (normally written as } e), & \text{bef. consonant} \\ ay, & \text{bef. vowel} \end{array} \right.$$

Therefore: *nêtṛ / nayati* or *muneḥ / munaye*

$$\text{ie. } \bar{a}i/\bar{e}i/\bar{o}i \rightarrow \text{oi.} \left\{ \begin{array}{ll} \hat{a}i \text{ (normally written as } ai) & \text{bef. consonant} \\ \bar{a}y, & \text{bef. vowel} \end{array} \right.$$

Therefore: *tasmâi / tasmāy adadāt*

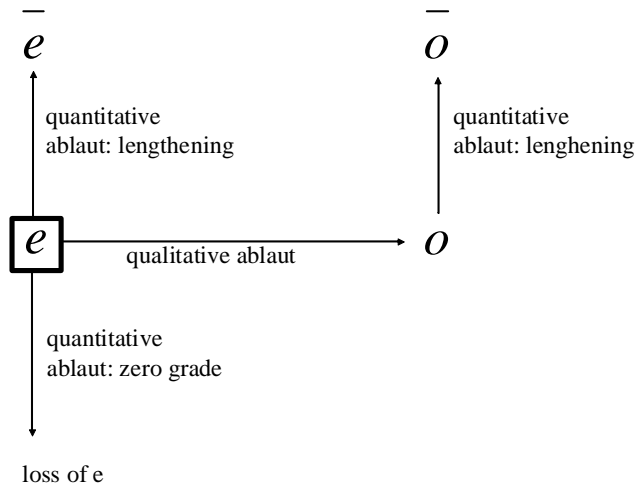# Vowel gradation

cum grano salis/more or less:

- *svara* (zero grade)
- *guṇa* (normal grade: *e* or *o*-grade)
- *vṛddhi* (lengthened *e*-grade or the lengthened *o*-grade *ō*)

Example:

- *budh* is zero grade (also PPP: *bud-dha*)
- *bôdh-a-ti* is full grade
- *bâud-dha* ("concerning understanding, Buddhist") is lengthened grade

Vowel gradation

Indo-European

Vowel gradation

Ie. roots

- begin and end in a consonant
- have root vowel *e*
- that may be followed by a half vowel or *r, l, n, m:*

ie.	oi.	$\sqrt{}$	example
CeC	*CC*	*pat*	*a-pa-pt-a-t*
CeiC	*CiC*	*kṣip*	*kṣip-ta*
CeuC	*CuC*	*yuj*	*yuk-ta*
CerC	*C ̥r C*	*sṛp*	*sṛp-ta*
CenC	*?*		
CemC	*?*		

Comparing words like

- in-credible
- un-believable
- a-śraddheya

Brugmann postulates syllabic *n* and *m* in IE, written $\underset{\circ}{n}$ and $\underset{\circ}{m}$.
Compare e. *bottom̥* or nhg. *Besn̥*.

Sound law:

$$
\text{ie. } \underset{\circ}{n} \rightarrow
\begin{cases}
\text{oi.} & \begin{cases} an & \text{bef. vowel} \\ a & \text{bef. consonant} \end{cases} \\[2ex]
\text{ogr.} & \begin{cases} an & \text{bef. vowel} \\ a & \text{bef. consonant} \end{cases} \\[2ex]
\text{lat.} & \begin{cases} in & \text{word-initial} \\ en & \text{otherwise} \end{cases} \\[2ex]
\text{e. } un \sim \text{nhg. } un
\end{cases}
$$

Vowel gradation

examples for syllabic n in initial position

- Latin-based FW: *in-effektive*, *im-perfect*
- Greek-based FW:
  - before consonant: *a-theist*
  - before vowel: *an-archy*
- Sanskrit
  - before consonant: *a-gatika* "without way out", *a-putrá* "without son"
  - before vowel: *an-antá* "without end", *an-ātma-jña* "not knowing oneself"

Vowel gradation

examples for syllabic n in non-initial position

$$\text{ie. } {}^{*}\acute{k}\mathring{m}t\acute{o}m \longrightarrow \begin{cases} \text{oi. } \acute{s}at\acute{a}m \\ \text{ogr. } he\text{-}katon \\ \text{lat. } centum \\ \text{e. } hund\text{-}red \end{cases}$$

gata

in zero grade

Brugmann's solution:

ie.	oi.	√	examples (all zero grade)
CeC	*CC*	*pat* (full grade)	*a-pa-pt-a-t*
CeiC	*CiC*	*kṣip*	*kṣip-ta*
CeuC	*CuC*	*yuj*	*yuk-ta*
CerC	*Cr̥C*	*sṛp*	*sṛp-ta*
CenC	*Cn̥C*	*han* (full grade)	*ha-ta*
CemC	*Cm̥C*	*gam* (full grade)	*ga-ta*

gata

but labdha

The formation of the PPP follows the general pattern

$$\text{zero-grade root} + \textit{ta}$$

- also: *vap* + *ta* —> *up-ta*

  But: zero grade of "just *e*" between consonants not possible!
  Therefore PPP in full grade
- with Bartholomae's law: *labh* + *ta* —> *lab-dha*
- with *i*: *pat* + *ta* —> *pat-i-ta*

Vowel gradation in English

In English, strong verbs exist to the present day. The root vowel undergoes changes:

e-grade *en*: *sing* (e. *i* as in ie. **esti* → ai. *asti* ∼ e. *is*)
o-Stufe *on*: *sang* (compare ie. **oktō* → lat. *octō* ∼ nhg. *acht*)
zero grade: *sung*

Primary and secondary palatalization I

Indo-European   Sanskrit

$$k'$$ $\xrightarrow{\text{primary palatalization}}$ s'

$$k \,/\, k^w$$ $\xrightarrow{\text{before dark vowel}}$ k

$\xrightarrow[\text{before light vowel}]{\text{secondary palatalization}}$ c

$$g'$$ $\xrightarrow{\text{primary palatalization}}$ j

$$g \,/\, g^w$$ $\xrightarrow{\text{before dark vowel}}$ g

$\xrightarrow[\text{before light vowel}]{\text{secondary palatalization}}$ j

Primary and secondary palatalization II

primary palatalization:

$$\text{ie. } {}^*\acute{k}mtóm \rightarrow \begin{cases} \text{oi. } \textit{śatám} \\ \text{ogr. } \textit{he-katon} \\ \text{lat. } \textit{centum} \\ \text{gth. } \textit{hund} \end{cases}$$

secondary palatalization:

$$\text{ie. } {}^*\textit{ke-kōr-a}$$
$$\rightarrow \quad \text{oi. } \textit{ca-kār-a}$$

Primary and secondary palatalization III

secondary palatalization before ie. *e*

$$\text{ie. } {}^{*}sr\mathring{g}\text{-}e\text{-}ti$$
$$\rightarrow \quad \text{oi. } sr\!j\text{-}a\text{-}ti$$

no palatalization before ie. *o*

$$\text{ie. } {}^{*}ser\acute{g}\text{-}o\text{-}s$$
$$\rightarrow \quad \text{oi. } sarg\text{-}a\text{-}\d{h}$$

Important for vowel controversy!

ū-ḍha

The PPP *ū-ḍha* from *vah*, *vah-a-ti* ("to flow, to drive") goes back to ie. *$veǵh$*:

> *veǵh-to* (zero grade and *to*-marker of past participle)
> $\rightarrow$ *ujh-ta* (primary palatalization)
> $\rightarrow$ *uj-dha* (aspiration shift)
> $\rightarrow$ *uz-dha* (before voiced consonant)
> $\rightarrow$ *uẓ-dha* (ruki)
> $\rightarrow$ *uẓ-ḍha* (forward cerebral assimilation)
> $\rightarrow$ *ū-ḍha* (*z* drops with comp. lengthening).

Similarly *lī-ḍha*

Like *lab-dha*, no zero grade possible:

> *seǵh-to* (full grade and *to*-marker of past participle)
> $\rightarrow$ *sajh-ta* (primary palatalization)
> $\rightarrow$ *saj-dha* (aspiration shift)
> $\rightarrow$ *saz-dha* (before voiced consonant)
> $\rightarrow$ *so-dha* (like *manobhiḥ*)

Thus, cerebral is irregular here (due to analogy).

History of Indo-European studies and laryngeals

- Ferdinand de Saussure (1857-1913) (a Swiss) studies in Leipzig
- Being 21 years of age, he published the „Mémoire sur le système primitif des voyelles dans les langues indo-européennes".
  - Laryngeals in Indo-European
  - Argument: peculiarities of the Old Indian verbal classes
  - Nowadays, laryngeals are accepted.
  - Hittite (discovered in Anatolia after de Saussure's death) confirms laryngeals.
- After leaving Leipzig, de Saussure went to Paris and finally became professor in Geneva.
- Nowadays, de Saussure is known to many as the founder of modern linguistics.

The nasal infix classes

The four classes 5, 7, 8, and 9 show a nasal element. The most ancient constellation can be seen in class 7. Consider *yuj, yunakti:*

yu	-	*na*	-	*k*	-	*ti*
beginning of oi. root in zero grade		sign (strong form)		final root consonant		ending (3. pers. sg.)

At first sight, the other classes do not exhibit an infix into the oi. root:

√	3. pers. sg.	1. pers. pl.	translation
śak	*śak-nô-ti*	*śak-nu-mas*	to be able
tan	*tan-ô-ti*	*tan-u-mas*	to stretch
pū	*pu-nā-ti*	*pu-nī-mas*	to purify

The nasal infix classes

class	*gaṇa* sign	$\sqrt{}$	3. pers. sg.	future	infinitive
7	*na*	*yuj*	*yu-na-k-ti*	*yôk-ṣyati*	*yôk-tum*
9	*nā*	*pū*	*pu-nā-ti*	*pavi-ṣyati*	*pavi-tum*

De Saussure: both verbs are similarly constructed. Two differences:

1. *nā* versus *na*
2. The infinitive form of *pū* shows *i*..
   (Traditional Sanskrit grammarians also noted this *i*. They call *pū* a *sêṭ* root (*sêṭ* ← *sa-iṭ*).

The nasal infix classes

De Saussure postulated a sound *H* with two effects:

1. *H* leads to the lengthening of *na* to *nā*.
2. *H* turns into *i* between consonants.

Then,

class	*$ga\d{n}a$ sign	√	3. pers. sg.	future	infinitive
7	*ne	*yug̑	*yu-ne-k-ti	*yeu-k-sy-a-ti	*yeuk-tum
9	*ne	*puH	*pu-ne-H-ti	*peu-H-sy-a-ti	*peuH-tum

The nasal infix classes

Consider

$$\textit{śru, śṛ-ṇô-ti } (\text{``he hears''}).$$

and compare

class	*sign	√	3. pers. sg.	sign
7	*ne	*yuǵ → yuj	*yu-ne-k-ti → yu-na-k-ti	na
5	*ne	*ḱlu → *śru	*ḱl-ne-u-ti → śṛ-ṇô-ti	nô

The nasal infix classes

Traditionally,

class	$\sqrt{}$	3. pers. sg.	*gaṇa* sign
8	*tan*	*tan-ô-ti*	*ô*

The 8. class borrowed *nô* from the 5. class and we have to split differently:

tn̥-nô-ti —> *ta-nô-ti*

Laryngeals
sound laws

Laryngeals between consonants:

$$\text{ie. } CHC \rightarrow \text{oi. } CiC$$

Laryngeals after vowels:

$$\text{ie. } iH/uH/eH/oH \rightarrow \text{oi. } \bar{\imath}/\bar{u}/\bar{a}/\bar{a}$$

Laryngeals after syllabic n:

$$\text{ie. } C\mathring{n}H \rightarrow \text{oi. } C\bar{a}$$

bhūta

ie. root in full grade *bheuH*
PPP in zero grade:

       bh e̸uH-to (zero grade and *to*-marker of past participle)

$\rightarrow$ *bhū-ta* (*H* makes *u* long)

Infinitive in full grade

        bheuH-tum

$\rightarrow$ *bhav-i-tum* (*H* between consonants)

jāta

ie. root in full grade *ǵenH*
PPP in zero grade:

> *ǵǵnH-to* (zero grade and *to*-marker of past participle)
> → *jṇH-to* (primary palatalization)
> → *jā̆-ta* (*ā̆*, not *a*, due to *H*)

Agent noun in full grade

> *ǵenH-tor*
> → *jan-i-tar* (*H* between consonants)

Similarly *khā̆-ta* versus *khanitar*

Aspiration shift (due to Bartholomae)

ie. *dh t* $\rightarrow$ oi. *d dh*

ie. *bh t* $\rightarrow$ oi. *b dh*

ie. *gh t* $\rightarrow$ oi. *g dh*

- oi. *budh* with PPP *bud-dha*
- oi. *labh* with PPP *lab-dha*

Aspiration shift (due to Bartholomae)

But, in future forms with *sy*:

$\qquad\qquad$ ie. *dh s(y)*

$\rightarrow$ $\quad$ *d s(y)* (aspiration shift, but *s* not aspiratable)

$\rightarrow$ $\quad$ oi. *t s(y)* (backward assimilation)

Therefore, the *sy*-future for *labh-a-ti* is *lap-sy-ati*.

Deaspiration shift (ascribed to Grassmann)

$$\text{ie. } bh\_dh \rightarrow \text{oi. } b\_dh$$

- oi. *bhū* with perfect *ba-bhūva*
- *sthā*, *ti-ṣtha-ti*
- Verbs of class 3:
    - *dhā*, *da-dhā-ti*
    - *bhī*, *bi-bhê-ti*
- Perfect forms
    - oi. *dhāv*, *dhāvati* with perfect *da-dhāv-a*.
    - oi. *bhaj*, *bhajati* with perfect is *ba-bhāj-a*.

bhôtsyati

oi. *bôdhati* <— ie. **bheudh* with future *bhôt-sy-ati*:

- *dh* lost its aspiration in the consonant cluster and became voiceless before voiceless *s*.
- *sy* could not assume the aspiration.
- Aspiration dissimilation did not take place because the second syllable does not contain an aspirated consonant (any more).

Similarly

- *dhokṣi* versus *dogdhi*
- *dhekṣi* versus *degdhi*

dhekṣi

ie. *dheigh

- lat.FW *figure*, *fiction* (backward assimilation)
- nhg. *Teig* ∼ e. *dough* (also in *doughnut* = *donut*)
  la-dy ← Old English *hlæf-dīge* ("woman who kneads dough" and hence "woman whose bread one eats") where the first part *hlæf* is e. *loaf* or nhg. *Laib*.

Verner's law

ie. *t*

- immediately following the ie. accent:
  bhrátar <— ie. *b^h rátēr* —> e. *brother* ~ nhg. *Bruder*

- not following immediately after the ie. accent:
  pitár <— ie. *pH_2tēr* —> e. *father* ~ nhg. *Vater*

Conclusion

Sanskrit is still difficult, but
Pāṇini's vowel gradation and
the Indo-European perspective
bring out its beauty more clearly, and
make Sanskrit less difficult to learn for me.

Dhanyavādaḥ !!!

Backward assimilation of voice

Voiced before voiceless

- *yuj* —> *yuk-ta*

Voiceless before voiced

- *ap* ("water") + *da* from *dā* ("to give") —> *ab-da*, m. ("water giver → cloud")

Forward assimilation in three cases, only

Cerebrals

- *nadīṣu* (ruki rule)
- *maraṇam*
- oi. *ṣ/ś* + *t* —> *ṣṭ*
  - *vr̥ṣ-ta* —> *vr̥ṣ-ṭa*
  - *dr̥ś-ta* —> *dr̥ṣ-ṭa*

Palatals

- *rāj-an* and *rāj-ñ-ā*

Aspiration + voicing shift (Bartholomae's law)

- *budh-ta* —> *bud-dha*
- *labh-ta* —> *lab-dha*

Verner's law

ie. *t*

- immediately following the ie. accent:
  bhrátar <— ie. *b^h rátēr* —> e. *brother* ~ nhg. *Bruder*
- not following immediately after the ie. accent:
  pitár <— ie. *pH_2 tér* —> e. *father* ~ nhg. *Vater*

Verner's law

- ie. $p/t/k$ word-initial or immediately following the ie. accent:

bhrā́tar <—— ie. $^*b^h r\acute{a}t\bar{e}r$

    ← lat. FW *fraternity*

    ∼ e. *brother* ∼ nhg. *Bruder*

    ∼ European Gypsy *pral*, English Gypsy *pal* with FW *pal*

- ie. $p/t/k$ (not word-initial) not following immediately after the ie. accent:

pitár <—— ie. $^*pH_2 t\acute{e}r$

    → gr. *patḗr* with FW *patriot*, *patriarch*

    ∼ lat. FW *patron*, *patrician*, German *Patrone* ("cartridge")

    → e. *father* ∼ nhg. *Vater*