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
  - ...

Harald Wiese (University of Leipzig) Sanskrit as an Indo-European language
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


- 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
Half vowels and diphthongs

ie. $i \rightarrow oï$. \[
\begin{cases}
  i, \text{ bef. consonant} \\
  y, \text{ bef. vowel}
\end{cases}
\]

Therefore: $gacchāmy aham$.

ie. $ai/ei/oi \rightarrow oï$. \[
\begin{cases}
  ê \text{ (normally written as e)}, \text{ bef. consonant} \\
  ay, \text{ bef. vowel}
\end{cases}
\]

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

ie. $āi/ēi/ōi \rightarrow oï$. \[
\begin{cases}
  âi \text{ (normally written as ai)}, \text{ bef. consonant} \\
  āy, \text{ bef. vowel}
\end{cases}
\]

Therefore: $tasmāi / tasmāy adadāt$
Vowel gradation

Pāṇini

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*)
- *bōdh-a-ti* is full grade
- *bāud-dha* (“concerning understanding, Buddhist”) is lengthened grade
Vowel gradation

Indo-European

- e
  - qualitative ablaut
    - quantitative ablaut: lengthening
    - quantitative ablaut: zero grade
  - loss of e

- o
  - qualitative ablaut
    - quantitative ablaut: lengthening

Harald Wiese (University of Leipzig)
Sanskrit as an Indo-European language
Vowel gradation

zero grade

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:

<table>
<thead>
<tr>
<th>Ie.</th>
<th>oi.</th>
<th>(\sqrt{\text{example}})</th>
</tr>
</thead>
<tbody>
<tr>
<td>CeC</td>
<td>CC</td>
<td>\textit{pat} (\textit{a-pa-pt-a-t})</td>
</tr>
<tr>
<td>CeiC</td>
<td>CiC</td>
<td>\textit{kśip} (\textit{kśip-ta})</td>
</tr>
<tr>
<td>CeuC</td>
<td>CuC</td>
<td>\textit{yuj} (\textit{yuk-ta})</td>
</tr>
<tr>
<td>CerC</td>
<td>CrC</td>
<td>\textit{srp} (\textit{srp-ta})</td>
</tr>
<tr>
<td>CenC</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>CemC</td>
<td>?</td>
<td></td>
</tr>
</tbody>
</table>
Vowel gradation

sound law: ie. syllabic n

Comparing words like
- in-credible
- un-believable
- a-śraddheya

Brugmann postulates syllabic n and m in IE, written ɬ and ɦ.

Compare e. *bottom* or nhg. *Besn*.

Sound law:

\[
\text{ie. } n \rightarrow \{ \begin{array}{l}
\text{oi. } \left\{ \begin{array}{l}
an \text{ bef. vowel} \\
a \text{ bef. consonant}
\end{array} \right. \\
\text{ogr. } \left\{ \begin{array}{l}
an \text{ bef. vowel} \\
a \text{ bef. consonant}
\end{array} \right. \\
\text{lat. } \left\{ \begin{array}{l}
in \text{ word-initial} \\
en \text{ otherwise}
\end{array} \right. \\
\text{e. } un \sim \text{ nhg. } un
\end{array} \right.
\]
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

ie. *k̻mtóm →

{oι. sátám
ogr. he-katon
lat. centum
e. hund-red}
Brugmann’s solution:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>examples (all zero grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ie.</td>
<td>oi.</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>CeC</td>
<td>CC</td>
<td>pat (full grade)</td>
<td>a-pa-pt-a-t</td>
</tr>
<tr>
<td>CeIC</td>
<td>CiC</td>
<td>kṣip</td>
<td>kṣip-ta</td>
</tr>
<tr>
<td>CeUC</td>
<td>CuC</td>
<td>yuj</td>
<td>yuk-ta</td>
</tr>
<tr>
<td>CerC</td>
<td>CrC</td>
<td>sṛp</td>
<td>sṛp-ta</td>
</tr>
<tr>
<td>CenC</td>
<td>CnC</td>
<td>han (full grade)</td>
<td>ha-ta</td>
</tr>
<tr>
<td>CemC</td>
<td>CmC</td>
<td>gam (full grade)</td>
<td>ga-ta</td>
</tr>
</tbody>
</table>
The formation of the PPP follows the general pattern

zero-grade root + ta

- also: vəp + ta $\rightarrow$ up-ta

But: zero grade of “just e” between consonants not possible! Therefore PPP in full grade

- with Bartholomae’s law: labh + ta $\rightarrow$ lab-dha
- with i: pat + ta $\rightarrow$ pat-i-ta
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

Indo-European  |  Sanskrit

\( k' \)  \( \rightarrow \frac{\text{primary palatalization}}{\text{primary palatalization before dark vowel}} \)  \( s' \)

\( k / k^w \)  \( \frac{\text{primary palatalization before dark vowel}}{\text{secondary palatalization before light vowel}} \)  \( k \)

\( g' \)  \( \frac{\text{primary palatalization}}{\text{secondary palatalization before light vowel}} \)  \( j \)

\( g / g^w \)  \( \frac{\text{primary palatalization before dark vowel}}{\text{secondary palatalization before light vowel}} \)  \( g \)
primary palatalization:

ie. *\textit{\textacute{kmtóm}} \rightarrow \begin{cases} 
\text{oï. } \textit{satám} \\
\text{oïr. } \textit{he-katon} \\
\text{lat. } \textit{centum} \\
\text{gth. } \textit{hund}
\end{cases}

secondary palatalization:

ie. *\textit{ke-kör-a} \\
\rightarrow \text{oï. } \textit{ca-kār-a}
secondary palatalization before ie. e

ie. *srǵ-e-ti
→ oi. srj-a-ti

no palatalization before ie. o

ie. *serǵ-o-s
→ oi. sarg-a-ḥ

Important for vowel controversy!
The PPP ū-ḍha from vah, vah-a-ti ("to flow, to drive") goes back to IE. *[ve̞gh]:

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

Similarly **lī-ḍha**
Like *lab-dha*, no zero grade possible:

- *seŷ-to* (full grade and *to*-marker of past participle)
- → *sajh-ta* (primary palatalization)
- → *saj-dha* (aspiration shift)
- → *saz-dha* (before voiced consonant)
- → *so-dha* (like *manobhiḥ*)

Thus, cerebral is irregular here (due to analogy).
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 - sign - final root - ending
in zero grade      (strong form)      consonant      (3. pers. sg.)
```

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

<table>
<thead>
<tr>
<th></th>
<th>3. pers. sg.</th>
<th>1. pers. pl.</th>
<th>translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>šak</td>
<td>šak-nô-ti</td>
<td>šak-nu-mas</td>
<td>to be able</td>
</tr>
<tr>
<td>tan</td>
<td>tan-ô-ti</td>
<td>tan-u-mas</td>
<td>to stretch</td>
</tr>
<tr>
<td>pū</td>
<td>pu-nā-ti</td>
<td>pu-nī-mas</td>
<td>to purify</td>
</tr>
</tbody>
</table>
The nasal infix classes

The 9. class as a special instance of the seventh class

<table>
<thead>
<tr>
<th>class</th>
<th>gaṇa sign</th>
<th>3. pers. sg.</th>
<th>future</th>
<th>infinitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>na</td>
<td>yuj</td>
<td>yōk-ṣyati</td>
<td>yōk-tum</td>
</tr>
<tr>
<td>9</td>
<td>nā</td>
<td>pū</td>
<td>pavi-ṣyati</td>
<td>pavi-tum</td>
</tr>
</tbody>
</table>

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 *sêt* root (*sêt* ← *sa-īṭ*).
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,

<table>
<thead>
<tr>
<th>class</th>
<th><em>gana</em> sign</th>
<th>3. pers. sg.</th>
<th>future</th>
<th>infinitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td><em>ne</em></td>
<td><em>yuṅ</em></td>
<td><em>yu-ne-k-ti</em></td>
<td><em>yēu-k-sy-a-ti</em></td>
</tr>
<tr>
<td>9</td>
<td><em>ne</em></td>
<td><em>puṅ</em></td>
<td><em>pu-ne-H-ti</em></td>
<td><em>pēu-H-sy-a-ti</em></td>
</tr>
</tbody>
</table>
The nasal infix classes

The 5. class as a special instance of the seventh class

Consider

\( \text{\textit{sr}, \textit{sr-\textsc{n}ô-\textsc{ti}}} \) ("he hears").

and compare

<table>
<thead>
<tr>
<th>class</th>
<th>*sign</th>
<th>3. pers. sg.</th>
<th>sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>*ne</td>
<td>*\textit{yu\textsc{g}} \rightarrow \textit{yuj}</td>
<td>*\textit{yu-ne-k-ti} \rightarrow \textit{yu-na-k-ti}</td>
</tr>
<tr>
<td>5</td>
<td>*ne</td>
<td>*\textit{kl}u \rightarrow *\textit{sr}u</td>
<td>*\textit{kl-ne-u-ti} \rightarrow \textit{sr-\textsc{n}ô-\textsc{ti}}</td>
</tr>
</tbody>
</table>
The nasal infix classes
The 8. class as a special instance of the 5. class

Traditionally,

<table>
<thead>
<tr>
<th>class</th>
<th>3. pers. sg.</th>
<th>gaṇa sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>tan</td>
<td>tan-ô-ti</td>
</tr>
</tbody>
</table>

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

*tn-nô-ti —> ta-nô-ti
Laryngeals between consonants:

\[ \text{LCH} \rightarrow \text{oi. CiC} \]

Laryngeals after vowels:

\[ \text{iH/uH/ eH/oH} \rightarrow \text{oi. } \bar{i}/\bar{u}/\bar{a}/\bar{\tilde{a}} \]

Laryngeals after syllabic \( n \):

\[ \text{CnH} \rightarrow \text{oi. } C\tilde{a} \]
bhūta

ie. root in full grade \textit{bheuH}

PPP in zero grade:

\begin{align*}
\textit{bhe}uH-to & \text{ (zero grade and \textit{to}-marker of past participle)} \\
\rightarrow \quad \textit{bhū-ta} & \text{ (H makes } u \text{ long)}
\end{align*}

Infinitive in full grade

\begin{align*}
\textit{bheuH-tum} & \\
\rightarrow \quad \textit{bhav-i-tum} & \text{ (H between consonants)}
\end{align*}
jāta

ie. root in full grade ĝenH
PPP in zero grade:

ĝenH-to (zero grade and to-marker of past participle)
→ jnH-to (primary palatalization)
→ jā-ta (ā, not a, due to H)

Agent noun in full grade

ĝenH-tor
→ jan-i-tar (H between consonants)

Similarly khā-ta versus khanitar
Aspiration shift (due to Bartholomae)

- \( dh t \rightarrow oi. \ d \ dh \)
- \( bh t \rightarrow oi. \ b \ dh \)
- \( gh t \rightarrow oi. \ g \ dh \)

- \( oi. \ budh \) with PPP \( bud-dha \)
- \( oi. \ labh \) with PPP \( lab-dha \)
Aspiration shift (due to Bartholomae)

But, in future forms with sy:

\[ dh \ s(y) \]
\[ \rightarrow \ d\ s(y) \; (\text{aspiration shift, but } s \text{ not aspiratable}) \]
\[ \rightarrow \ oi. \ t\ s(y) \; (\text{backward assimilation}) \]

Therefore, the sy-future for \textit{labh-\textit{a-ti} is lap-sy-\textit{ati}}.
Deaspiration shift (ascribed to Grassmann)

ie. \( bh\_dh \rightarrow oi. \ b\_dh \)

- oi. \( bh\bar{u} \) with perfect \( ba-bh\bar{u}va \)
- \( sth\bar{a}, ti-\acute{s}tha-ti \)
- Verbs of class 3:
  - \( dh\bar{a}, da-dh\bar{a}-ti \)
  - \( bh\bar{i}, bi-bh\acute{e}-ti \)
- Perfect forms
  - oi. \( dh\bar{a}v, dh\bar{a}vati \) with perfect \( da-dh\bar{a}v-a. \)
  - oi. \( bhaj, bhajati \) with perfect is \( ba-bh\bar{a}j-a. \)
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
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*. 

Harald Wiese (University of Leipzig) Sanskrit as an Indo-European language 36 / 42
Verner’s law

ie. t

- immediately following the ie. accent:
  *bʰr̥átēr* → e. *brother* ~ nhg. *Bruder*

- not following immediately after the ie. accent:
  *pH₂tēr* → e. *father* ~ nhg. *Vater*
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

- $yuj \rightarrow yuk-ta$

Voiceless before voiced

- $ap$ ("water") + $da$ from $dā$ ("to give") $\rightarrow ab-da$, m. ("water giver $\rightarrow$ cloud")
Forward assimilation in three cases, only

Cerebrals

- nadīṣu (ruki rule)
- maraṇam
- oi. ṣ/š + t → śṭ
  - vṛṣ-ta → vṛṣ-ṭa
  - drś-ta → drś-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:
  \( bhr\hat{a}t\acute{a}r \leftarrow \text{ie.} \ *b^h\hat{\acute{r}}\acute{\acute{a}}t\acute{\acute{e}}r \rightarrow \text{e.} \ brother \sim \text{nhg.} \ Bruder \)

- not following immediately after the ie. accent:
  \( pit\acute{\acute{a}}r \leftarrow \text{ie.} \ *pH\hat{2}\acute{t}\acute{e}\acute{r} \rightarrow \text{e.} \ father \sim \text{nhg.} \ Vater \)
Verner’s law

- ie. \( p/t/k \) word-initial or immediately following the ie. accent:
  
  \[ bhr\acute{a}t\grave{a}r \leftarrow \text{ie. } *b^h\acute{r}\grave{\acute{a}}\grave{t}\grave{\grave{\acute{e}}}r \]
  
  \[ \leftarrow \text{lat. FW } fraternity \]
  
  \[ \sim \text{ e. } brother \sim \text{ nhg. } Bruder \]
  
  \[ \sim \text{ European Gypsy } pral, \text{ English Gypsy } pal \text{ with FW } pal \]

- ie. \( p/t/k \) (not word-initial) not following immediately after the ie. accent:
  
  \[ pit\acute{\acute{a}}r \leftarrow \text{ie. } *pH_2t\grave{\acute{e}}r \]
  
  \[ \rightarrow \text{ gr. } pat\acute{\grave{e}}r \text{ with FW } patriot, \text{ patriarch} \]
  
  \[ \sim \text{ lat. FW } patron, \text{ patrician}, \text{ German } Patrone \text{ (“cartridge”) } \]
  
  \[ \rightarrow \text{ e. } father \sim \text{ nhg. } Vater \]