1.1. The Script

The Gothic script dates back to the 4\textsuperscript{th} century AD, and is widely thought to have been composed by Ulfilas (Go. \textit{wulfila}, 311-383 AD), an Arian bishop and supposed translator of the Holly Bible into Gothic. Besides the prevailing Greek influence, there are some characters whose origin must be sought in the Latin alphabet, with few of them taken from the Runic script. All in all, the Gothic alphabet comprises 27 letters, 25 of which have both phonetic and numeral function, as depicted in the table below:

<table>
<thead>
<tr>
<th>letter</th>
<th>probable pronunciation</th>
<th>transliteration</th>
<th>number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>[a]</td>
<td>a</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>[v], [b]</td>
<td>b</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>[g] (?!); [ŋ]</td>
<td>g</td>
<td>3</td>
</tr>
<tr>
<td>Δ</td>
<td>[ð], [d]</td>
<td>d</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>[e:]</td>
<td>e</td>
<td>5</td>
</tr>
<tr>
<td>U</td>
<td>[k\textsuperscript{w}]</td>
<td>q</td>
<td>6</td>
</tr>
<tr>
<td>Z</td>
<td>[z]</td>
<td>z</td>
<td>7</td>
</tr>
<tr>
<td>Π</td>
<td>[h]</td>
<td>h</td>
<td>8</td>
</tr>
<tr>
<td>Φ</td>
<td>[θ]</td>
<td>þ</td>
<td>9</td>
</tr>
<tr>
<td>I</td>
<td>[i]</td>
<td>i</td>
<td>10</td>
</tr>
<tr>
<td>K</td>
<td>[k]</td>
<td>k</td>
<td>20</td>
</tr>
<tr>
<td>Λ</td>
<td>[l]</td>
<td>l</td>
<td>30</td>
</tr>
<tr>
<td>Μ</td>
<td>[m]</td>
<td>m</td>
<td>40</td>
</tr>
<tr>
<td>N</td>
<td>[n]</td>
<td>n</td>
<td>50</td>
</tr>
<tr>
<td>Ω</td>
<td>[j]</td>
<td>j</td>
<td>60</td>
</tr>
<tr>
<td>Π</td>
<td>[u], [u:]</td>
<td>u</td>
<td>70</td>
</tr>
<tr>
<td>Π</td>
<td>[p]</td>
<td>p</td>
<td>80</td>
</tr>
<tr>
<td>U</td>
<td>/</td>
<td>/</td>
<td>90</td>
</tr>
<tr>
<td>R</td>
<td>[r]</td>
<td>r</td>
<td>100</td>
</tr>
<tr>
<td>S</td>
<td>[s]</td>
<td>s</td>
<td>200</td>
</tr>
</tbody>
</table>
1.2. Sources

(1) Runic inscriptions in Gothic, the most infamous of which is undoubtedly the Ring of Pietroassa. The text, written in the Elder Futhark, reads something like this: gutaniowihailag, and up to now, several conflicting interpretations of it have been put forth.

(2) The Gothic Bible comprises a large part of the New Testament: the Gospels (Codex Argenteus) and most of the epistles (Codex Ambrosianus A and B). It was published by Wilhelm Streitberg in 1908 (Heidelberg, Carl Winter). Meanwhile, a long-lost leaf of the Codex Argenteus, containing the ending of the Gospel of Marc, has been found in Speyer, Germany (the so-called Speyer Fragment).

(3) The Skeireins is the Gothic commentary of the Gospel of John. Only 8 leaves have been preserved, five of which (1–2, 5–7) are located in the Biblioteca Ambrosiana in Milan (Codex Ambrosianus E), with the remaining three (3–4, 8) being part of the Codex Vaticanus Latinus 5750. We cannot say with a good deal of confidence whether the Skeireins was originally composed in Gothic or translated from an (admittedly lost) Greek original. One of the editors of the text, Hans Ferdinand Maßmann, gave it its present-day name Skeireins aiwwageljons paireh iohannen = The Clarification of the Gospel of John. (Note that the Gothic lexeme skeirein- is a hapax: it is attested in 1 Cor 12:10 in the phrase skeireins razdo ‘the interpretation
of tongues’. Perhaps the most suitable translation of the word would be ‘elucidation’, as it goes back to PIE √*skeHi- ‘shine’). In this course, we adhere to Bennett’s 1960 edition.

(4) Gothic Signatures: Arezzo Deed and Naples Deed.

(5) The Gothic Fragment from Bologna

(6) Loanwords. Of singular importance for historical survey of the Gothic phonology and lexicon are the Gothic loanwords in Romance and Slavic. Having inhabited the Iberian Peninsula in the late 6th century, the Visigoths founded their kingdom, which lasted for well over a century, until the Arabian conquest in 711. The linguistic traces of their presence in Iberia are the loanwords in Spanish and Portuguese (e.g. Port. fona ‘spark’, from Go. fon, gen.sg funins ‘fire’). The earliest layer of Germanic loanwords in Proto-Slavic includes the words borrowed from Gothic, such as *xlēbū ‘bread’ < Go. hlaifs (hlaib-), *bljudo ‘plate, dish’ < Go. biups (biud-) ‘table’ (see Pronk-Tiethoff 2013 for more details).

1.3. An overview of Gothic phonology

When a linguist is to describe the phonological system of a given language, they must inevitably start from the string of speech sounds, with the final goal to determine which of the segments are independent and thus can be employed to distinguish larger units of the system—morphemes and words—from each other, and which only occur in a predictable set of contexts.

However, ahead of us is an entirely different task. Since, of course, no record of spoken Gothic is available, we are supposed to make guesses about what the most probable pronunciation of each of the above characters was by carefully examining how the units of the Gothic script are interrelated and testing those findings against comparative evidence.

How do we conduct such an analysis? For example, given the fact that fricatives are known to have been prone to word final devoicing in Gothic (cf. hvazuh ‘each’ vs. hvas ‘who’), Gothic ð <d> and ð <b> must have been pronounced as voiced fricatives /ð/ and /v/ respectively, as notable in gen.sg liuhas [liuhaðis] vs. nom.sg liuhap [liuhaθ] ‘light’ and
GEN.SG *hlæbis* [hlæ:vis] vs. *hlæif* [hlæ:if] ‘bread’, where <d> and <b> participate in alternations involving fricatives /θ/ and /f/. On the contrary, it can securely be argued that <d> and <b> were plosives /d/, /b/ after nasals, as no devoicing takes place in e.g. *band* (PST.1/3SG of *bindan* ‘bind’), NOM.SG *lamb* ‘lamb’. The Gothic state of affairs is neatly paralleled by the Old Norse correspondences:

Go. voc.SG *fadar* [faðar], with <d> = [ð], since no nasal precedes it; ON nom.sg *faðir*

Go. inf *bindan* [vindan]; ON *bindan* (not *bindan*).

The status of <x>, <h> and <g> is far more complicated. The first thing that comes to mind is the existence of two h-letters—<x> and <h>, but the prevalent view is that there was no phonetic difference between them, the former being restricted to Greek loanwords: *pasxa* [pasha] ‘Passover’, *xristus* [hristus] ‘Christ’. It is clear that the sounds noted by <g> and <h> were not subject to alternations depicted in the previous paragraph (cf. DAT.PL *baurgim* vs. DAT/ACC.SG *baurg* ‘castle, city’), which raises the question as to the exact phonetic value of these two characters. Since it is nowadays almost universally agreed upon that <h> was a voiceless glottal continuant [h] rather than the velar fricative [x], the question of <g> is the only one that remains open. There are two viable standpoints: <g> was either a voiced velar stop /g/ or a velar fricative /ɣ/. Adherents of the latter theory maintain that /ɣ/ was not exempt from the word-final devoicing, but the Gothic inventory did not possess a separate grapheme for /x/. In other words, <g> denotes both [ɣ], as in e.g. *magum* ‘can-PRS.1PL’ [mayum], and [x], as in *mag* ‘can-PRS.1/3SG’ [max], and even [g] after nasals: *gaggan* ‘go-INF’ [ɣaŋgan], *gagg* [ɣaŋg] PST.1/3SG. If so, the table below would have to be added a row for velar fricatives.

It is way more likely that borrowings such as *naubaimbair* were pronounced as *[novembair]* than *[nauvaimbair]*. Scholars maintain that the sequences <ai> and <au> are of two kinds: those traditionally noted as <ái>, <áu> originate from PGm. diphthongs, which have undergone monophthongization in Gothic, cf. *hláifs* (< PGm. *hlaibaz*), *báup* (< early PGm. *bauda/*baude), while <ái> and <áu> can only be encountered before [r], [h] and [hw] (<r>, <h>, <hw>), and are thought to be the result of the Gothic Vowel Breaking, cf. *waír* < *wiraz*, *waúþun* < *wurdun*. Bear in mind that the Gothic script did not originally make use of this distinctive diacritic, which is a product of the 19th-century scholarship. Nowadays it
is customary to regard the difference between <ái> and <ái> (and likewise <áu> and <aú>)
as merely quantitative: [ɛː] vs. [ɛ] (and [ɔː] vs. [ɔ]).

No other aspect of Gothic phonology is as problematic as the previous ones.

1.3.1. Vowels

<table>
<thead>
<tr>
<th>close</th>
<th>central</th>
<th>back</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>y</td>
<td>u</td>
</tr>
<tr>
<td>mid-close</td>
<td>e</td>
<td>o</td>
</tr>
<tr>
<td>mid-open</td>
<td>ɛ</td>
<td>ɔ</td>
</tr>
<tr>
<td>open</td>
<td>a</td>
<td></td>
</tr>
</tbody>
</table>

Note that the vowels /i/, /ɛ/, /a/, /ɔ/ and /u/ can be both long ([iː], [ɛː], [aː], [ɔː], [uː]), as in weis ‘we-NOM’ /wiːs/, galaieθ /galːeθ/ ‘get out-PST.1/3SG’, fahan /faːhan/ ‘hang-INF’, dauθs /ðɔːθs/ ‘dead-
NOM.SG’, hus /huːs/ ‘house-NOM.SG’, and short ([i], [ɛ], [a], [ɔ], [u]), as in wissa /wiːsa/ ‘know-
gabundun /gavundun/ ‘bind-PST.3PL’. On the contrary, mid-close vowels, i.e. /e/ and /o/, are in Gothic inherently long [ɛː], [ɔː].

The short vowels /ɛ/ and /ɔ/ can appear exclusively before r, h and hu.

The occurrence of /y/ and [aː] is trivial: /y/ is restricted to borrowings from Greek, cf. swnagogein /synagogiːn/ ‘synagogue-
ACC.SG’, hwssopon /hyssoːpoːn/ ‘hyssop-DAT.SG’, while /aː/ can only precede /h/, and can likewise be found in a limited number of examples.

1.3.2. Consonants

<table>
<thead>
<tr>
<th>plosives</th>
<th>fricatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>bilabial</td>
<td></td>
</tr>
<tr>
<td>p (b)</td>
<td>f v</td>
</tr>
<tr>
<td>dental</td>
<td></td>
</tr>
<tr>
<td>t (d)</td>
<td>θ ð / s z</td>
</tr>
<tr>
<td>velar</td>
<td>k g</td>
</tr>
<tr>
<td>glottal (?)</td>
<td>h</td>
</tr>
<tr>
<td>approximants</td>
<td>nasals</td>
</tr>
<tr>
<td>bilabial</td>
<td>m</td>
</tr>
<tr>
<td>alveolar (?)</td>
<td>r</td>
</tr>
<tr>
<td>palatal</td>
<td>n</td>
</tr>
<tr>
<td>velar (η)</td>
<td></td>
</tr>
</tbody>
</table>

1
Bracketed are allophones, contextually-bound variants of phonemes: [b] and [d] are variants of /v/, /ð/, while the sequence <gg>, in accordance with the Greek orthography, stands for [ŋg]. It follows that the phoneme /n/ is realized as [ŋ] in front of velars.

Consonant length can also be phonemically relevant in Gothic, cf. the difference between [l] and [lː] in skulan [skulan] ‘have to, shall-inf’ vs. fulls [fulːs] ‘full-nom.sg.m’. There are also minimal pairs: man [man] ‘think-prs*1/3sg’ vs. mann [manː] ‘man-dat.sg’. Note, however, that forms with long stops are exceptional, as there are only few of them, like atta ‘father’, skatts ‘money’, sakkus ‘sack’ etc.

Exercise

Read the following text aloud, word by word, applying the above rules, then transliterate the text from Gothic to Latin. Do you recognize which text you have read?

\[\text{atta nnsar wn in niminam} \\
\text{yehnai nmo wEin} \\
\text{uaime winaassu wEins} \\
\text{wairwei yiaa wEins} \\
\text{sye in nimina gahn ana airwai} \\
\text{naiw nnsarana wana sinteinan rie nns himma daa} \\
\text{gahn afeet nns watei sknams sigaima} \\
\text{syasye gahn yeis afeetam waim sknams nnsaraim} \\
\text{gahn ni britais nns in fraistnbga} \\
\text{ak aansei nns af wamma nbiaiin} \\
\text{nnte wina ist winaaraid gahn mats gahn wnauns in diwins} \\
\text{amen}\]
1.4. Historical phonology

Together with unrecorded (or at least sparsely recorded) Vandalic and Burgundian, Gothic
belongs to the East group of the Germanic branch of the Indo-European language family. It follows from this that a correct
account of its historical phonology must include the treatment of
both Proto-Indo-European and Proto-Germanic (both are products
of linguistic reconstruction!) before we arrive at the actually
attested Gothic system.

1.4.1. The PIE inventory

```
<table>
<thead>
<tr>
<th>voiceless</th>
<th>voiced</th>
<th>aspirated</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>*b</td>
<td>*bʰ</td>
</tr>
<tr>
<td>t</td>
<td>*d</td>
<td>*dʰ</td>
</tr>
<tr>
<td>k</td>
<td>*g</td>
<td>*gʰ</td>
</tr>
<tr>
<td>kʷ</td>
<td>*gʷ</td>
<td>*gʰ</td>
</tr>
</tbody>
</table>
```

The Indo-European language family consists of several branches: Anatolian (with extinct languages, such as
Hittite, the earliest attested IE language, Luwian, Palaic etc.),
Tocharian, Indo-Iranian, Armenian, Greek, Albanian
Balto-Slavic, Italo-Celtic,
Germanic. They are all
believed to originate from the
common source—the Proto-
Indo-European language.

"Ancient” Germanic languages are: Old English, Old Frisian, Old Dutch, Old
Saxon Old High German (West
Germanic), Old Norse (North Germanic)
and Gothic (East Germanic).
Given their comparatively early
attestation, they are given a crucial role
in the reconstruction of Proto-Germanic,
the common ancestor to all Germanic
languages.
Comments

It is important for purposes of this course to stay as theory-neutral as possible. Whenever a certain side is endorsed (note that IE linguistics has always been a field with many concurrent and often incompatible hypotheses!), all viable alternatives are going to be mentioned as well, with references. However, the list of references cannot pretend to be exhaustive, as this is just an introductory course.

1. Vowels

a) It is a disputed matter whether PIE should be reconstructed with the phonemes *a and *b. Following Lubotsky (1989), Schrijver (1991) and recently Pronk (2019), I do not reconstruct PIE *a. Even the scholars who do reconstruct PIE *a admit that it must have occupied a peripheral position in the system, as it would not take part in ablaut alternations and be limited to an inconsiderable number of lexical entries. As for PIE *b, although almost all daughter languages possess the voiced bilabial stop in their systems, the frequency of this phoneme was certainly not remotely as high in the protolanguage. (For both of these questions, cf. my other course at the Winter School.)

b) Laryngeal colouring and lengthening. Before disappearing, the laryngeals exercised a great deal of influence over the vocalic system, namely the laryngeal colouring and the laryngeal lengthening, as the processes at hand are usually referred to.

c) Ablaut. This is easily the most important property of PIE morphonology. The vowel of virtually any PIE root may vary in order to express a certain grammatical meaning. The vowels participating in this regular shift are traditionally called grades (Germ. Stufen):

```
The laryngeal colouring takes place when a vowel is preceded by a laryngeal
*_{h}1e > *e
*_{h}2e > *a
*_{h}3e > *o
Note that no such effect is exercised upon PIE *o.
```

```
Both the laryngeal colouring and lengthening take place when a laryngeal succeeds a vowel:
*_{e}h_{1} > *_{e}:
*_{e}h_{2} > *_{a}:
*_{e}h_{3} > *_{o}:
Followed by a laryngeal, PIE *o only lengthens.
```
The origin of the lengthened grade (the Dehnstufe) *eː/*oː is still a matter of discussion.

d) Vocalisation and syllabification. The sonorants and laryngeals can in the absence of a phonemic vowel take over the role of the syllable nucleus. Such rules apply in separate branches, not in the proto-languages, as the daughter languages sometimes display different outcomes of vocalisation, e.g. PIE *trih₂ ‘three-NOM/ACC.PL.N’ yields both Gr. τρία (<*trih₂) and OCS tri (<*trih₂).

1.4.2. From PIE to PGm.: Basic sound laws

1.4.2.1. Vowels

*e (< PIE *e, *h₁e) > PGm. *e

PIE *uert- > PGm. *wertana² (Go. wairban, Germ. werden),
PIE *kʷetuyōr ‘four’ >> Pre-PGm. *petyōr > PGm. *fedwōr (Go. fidwor)
PIE *h₁eg- > PGm. *ek (Go. ik)
PIE *yerγo- (Gr. ἕργος) > PGm. *werka- (ON verk, OE weorc)

> PGm. *i

(a) before tautosyllabic nasals

PIE *penkʷe ‘five’ >> Pre-PGm. *pempe > PGm. fimf (Go. fimf, OE fif)
PIE *bʰendʰ- > PGm. *bindana² (Go. bindan)
PIE *dʰre-n-g- > PGm. *drinkana² (Go. drigkan, OE drincan)

(b) before a syllable containing *i

PIE PRS.3SG *h₁esti ‘be’ > PGm. isti (Go. ist),
PIE PRS.3SG *bʰereti ‘bear’ > PGm. *biridi (OHG birit, Go. bairiþ)

---

¹ The thematic present of the root *leikʷ- is considered a Neubildung by the LIV² (407), since the verb seems to have initially formed a nasal-present!

² For a more comprehensive treatment of historical phonology, see Kroonen 2013 (= 2016), on which the section is primarily based.
*a (< PIE *h₂e)
   > PGm. *a
   PIE *h₂egʰ-r-o- (Skt. ajr-, Lat. ager) > PGm. *akra- (Go. akrs)
   PIE *h₂emgʷ- (Gr. ἀγγω) > PGm. *angwu- (Go. aggwus)
   PIE *h₂egʰ- (Lat. agō, Gr. ἀγγω, Skt. ajati) > PGm. *akanan (ON aka)
   PIE *h₂entio- (Hit. ḫanza) > PGm. *anþja- (ON enni)

*o (< PIE *o, *h₃e)
   > PGm. *a
   PIE *gʰost-i- (Lat. hostis, OCS gosti) > PGm. *gasti- (Go. gasts),
   PIE *mogʰti- > PGm. mahti- (Go. ana-mahts, Germ. macht)
   PIE *yod- (OCS voda) > PGm. *wat- (Go. wato)
   PIE PRF.3SG *(bʰe-)bʰor-e > PGm. bare (Go., ON bar, OE bær)

*e: (< PIE *e:, *eh₁)
   PGm. *e:
   PIE *yeh₁ro- (Lat. uērus, OIr. fīr) > PGm. *wēra- (OE wēr, Germ. wahr, Du.
   waar);
   PIE *yeh₁ro- (OCS jērů) > PGm. *jera- (Go. jer, Germ. Jahr);
   PIE *gʷe:(n) (OIr. bē) > Pre-PGm. *gʷe:ni- > PGm. kwēni- (Go. qens).

*a: (< PIE *eh₂)
   > PGm. *o:
   PIE *meh₂té:r (Skt. mātā) > PGm. mo:de:r (OE mōdor)
   PIE *steh₂-tlō- > PGm. *sto:la- (Go. stols)
   PIE *eh₂ (NOM/ACC.PL.N ending), as in *yrdheh₂ (Lith. NOM.SG vařdas) > PGm.
   *wurdo (Go. waurda)

*o: (< PIE *o:, *oH, *eh₃)
   > PGm. *o:
   PIE *po:d > PGm. *fot (OHG foz, OE fōt)
   PIE PRS.1SG ending *-oH, as in *bʰeroH (Lat. ferō) > PGm. *bero: (Go. baira)
   PIE *bʰlehtši- > PGm. *blo:di- (OHG bluot, OE blōd)
   PIE *meh₃- > PGm. *mojanaⁿ (OHG muojan)

*i
   > PGm. *i
   PIE *misdʰeh₂ > PGm. *mizdo: (Go. mizdo (n-stem!))
   PIE *yidɾ >> *uid٪t > PGm. *witun (Go. witun)

*u
   > PGm. *u
   PIE *dugh₂té:r > PGm. *duhte:r (Go. dauhtar)
   PIE PRF.3PL *(gj)jusʃ >> *ğus٪t > PGm. *kuzun (Go. kusun, ON kusu, OE curon)
*i: (< PIE *iH)
  > PGM. *i:
    PIE *ih₁tlo- > PGM. *iːdala- (OE ĩdel)
    PIE *kw₁ih₁le₂ > PGM. *hw₁lo: (Go. heila)
  In pre-tonic syllables PGM. *i: > *i before resonants, which is usually referred to as
  Dybo’s Law.
    PIE *uHr₁- (Skt. virá-, Lat. uir, Lith. výras) > PGM. wira- (Go. wair)
    PIE *gʷih₂yó- (Skt. jívá-) > PGM. *kwiwa- (Go. qius)

*u: (< PIE *uH)
  > PGM. *u:
    PIE *muHs (Lat. mūs) > PGM. *muːs (OE mūs)
  In pre-tonic syllables PGM. *i: > *i, in accordance with Dybo’s Law.
    PIE *suHnú- (Skt. sūnú-) > PGM. sunu- (Go. sunus, ON sonr)

*ei (< PIE *(h₁)eI)
  > PGM. *i:
    PIE *steigʰ- > PGM. *stiːgана (Go. steigan)

*ai (< PIE *h₂ei)
  PGM. *ai
    PIE *h₂eido- (Gr. αἱδός) > PGM. *aida- (OE ād)
    PIE *h₂eĩk- (Skt. īṣe < *h₂-ĩh₂k-) > PGM. *aigana (Go. aigan)

*oi (< PIE *oi, *h₃ei)
  > PGM. *ai
    PIE PRF.3SG *(le)loikwe (Gr. λελοιπέ) > PGM. *laihwe (Go. laihv)
    PIE PRF.1SG *yoidh₂e (Gr. οἴδα) > PGM. *waita (Go. wait)
    PIE *h₃eiHre₂ > PGM. *aiːo: (ON ár)

*eu (< PIE *eu, h₁eu)
  > PGM. *eu
    PIE *ğeus- (Skt. josate) > PGM. *keusana (Go. kiusan, OE ēōsan)
    PIE *bh₂eudʰ- > PGM. *beudana (Go. biudan, ON bjóða)

*au (< PIE *h₂eu)
  > PGM. *au
    PIE *lh₂euno- (?) > PGM. *launa- (Go. laun)
    PIE *h₂eug- (Lat. auget) > PGM. *aukana (Go. aukan)
    PIE *h₂eus- > PGM. *ausana (ON ausa)

*ou (< PIE *ou, *h₃eu)
  > PGM. *au
    PIE PRF.3SG *(ğe)ğouse > PGM. *kause (Go., ON kaus, OE ēōs)
    PIE PRF.3SG *(bh₂e)bhoudʰe > PGM. *baude (Go. baup)
1.4.2.2. Consonants

a) Grimm’s Law (the Proto-Germanic Lautverschiebung)

<table>
<thead>
<tr>
<th>Proto-Indo-European</th>
<th>Proto-Germanic</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>*p</td>
<td>*f</td>
<td>*ph₂tē:r &gt; *fade:r</td>
</tr>
<tr>
<td>*t</td>
<td>*b</td>
<td>*teso &gt; *pesa (GEN.SG.M/N)</td>
</tr>
<tr>
<td>*k/*k</td>
<td>*h</td>
<td>*kunslo- &gt; *hunsla-</td>
</tr>
<tr>
<td>*kw</td>
<td>*hw</td>
<td>*kw₁h₁le₂ &gt; *hw₁lo:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proto-Indo-European</th>
<th>Proto-Germanic</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>(*b)</td>
<td>*p</td>
<td>*h₂ebol- &gt; *apla-</td>
</tr>
<tr>
<td>*d</td>
<td>*t</td>
<td>*dekmt &gt; *tehun</td>
</tr>
<tr>
<td>*g/*g</td>
<td>*k</td>
<td>*uerjom &gt; *werkaⁿ</td>
</tr>
<tr>
<td>*gw</td>
<td>*kw</td>
<td>*gw₁olHeie- &gt; *kwaljanaⁿ</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proto-Indo-European</th>
<th>Proto-Germanic</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bʰ</td>
<td>*b</td>
<td>*bʰendʰ &gt; *bindanaⁿ</td>
</tr>
<tr>
<td>*dʰ</td>
<td>*d</td>
<td>*dʰeh₁tís &gt; *de:diz</td>
</tr>
<tr>
<td>*gʰ/*gʰ</td>
<td>*g</td>
<td>*uěgʰos &gt; *wegaz</td>
</tr>
<tr>
<td>*gʷh</td>
<td>*gw</td>
<td>*h₂emgʷwhus &gt; *angwuz</td>
</tr>
</tbody>
</table>
b) Verner’s Law
Non-initial voiceless fricatives are voiced in Proto-Germanic, except when immediately preceded by a stress-bearing vowel:

\[
\begin{align*}
\text{PIE} & \quad \text{PGm.} & \quad \text{OE} & \quad \text{Go.} \\
\text{PRF.3SG} & \quad *(\acute{\text{g}}\text{e})\acute{\text{g}}\text{ó}\text{use} & \quad \text{ká\text{use}} & \quad \text{če\text{as}} & \quad \text{kaus} \\
\text{PRF.3PL} & \quad *(\acute{\text{g}}\text{e})\acute{\text{g}}\text{usf} & \quad \text{kus\text{ún}} & \quad \text{kusun} \\
\end{align*}
\]

But:

\[
\begin{align*}
\text{PIE} & \quad \text{PGm.} & \quad \text{OE} & \quad \text{Go.} \\
\text{PRF.3SG} & \quad *(\acute{\text{g}}\text{e})\acute{\text{g}}\text{ó}\text{use} & \quad \text{ká\text{use}} & \quad \text{če\text{as}} & \quad \text{kaus} \\
\text{PRF.3PL} & \quad *(\acute{\text{g}}\text{e})\acute{\text{g}}\text{usf} & \quad \text{kus\text{ún}} & \quad \text{kusun} \\
\end{align*}
\]

Note that the alternation caused by Verner’s Law is preserved in Old English but eliminated in Gothic:

\[
\begin{array}{|c|c|c|c|}
\hline
\text{NOM.SG} & \text{Go.} & \text{PGm.} & \text{OE} \\
\text{st\text{ag}z} & \text{kaus} & \text{kas} & \text{kas} \\
\text{staggaz} & \text{kaus} & \text{kas} & \text{kas} \\
\hline
\text{GEN.SG} & \text{Go.} & \text{PGm1} & \text{PGm2} \\
\text{st\text{ag}z} & \text{kas} & \text{kas} & \text{kas} \\
\hline
\end{array}
\]

PGm. *stako:* > OE staca. That PIE *stogh-* contains an aspirated, and not voiced stop, is witnessed by Lith. stāgas, which did not undergo Winter’s Law.

d) Occasional confusion of labiovelars and labials in Pre-Proto-Germanic. As seen in several cases above, labials have replaced PIE labiovelars in the predecessor of Proto-Germanic:

\[
\begin{align*}
\text{PIE} & \quad \text{Pre-PGm.} & \quad \text{PGm.} & \quad \text{PGm.} \\
\text{y\text{f}k\text{w}os} & \quad \text{y\text{f}pos} & \quad \text{wulfa} & \quad \text{OGH wolf} \\
\text{penk\text{w}e} & \quad \text{pempe} & \quad \text{fimf} & \quad \text{OE fif} \\
\text{kwet\text{y}or} & \quad \text{pet\text{y}or} & \quad \text{fedwór} & \quad \text{OGH fidworf} \\
\end{align*}
\]
From Proto-Germanic to Gothic

1. PGm. short mid vowel *e became high in Pre-Gothic:
   - PGm. *fedwôr > Go. fidwor ‘four’;
   - PGm. *gebana > Go. giban ‘give’;
   - PGm. *wegaz > Go. wigs ‘way’.

2. When short high vowels i and u are followed by r, h or hv in Gothic, they lower to [ɛ], [ɔ], respectively. This is referred to as the Gothic Vowel Breaking.
   - PGm. *wurda > Go. waurd ‘word’;
   - PGm. PST.3PL *wurdun > Go. waurpun ‘become’;
   - PGm. *duhter > Go. dauhtar ‘daughter’;
   - PGm. *wiraz > Go. wair ‘man’;
   - PGm. PST.3PL *lihun > Go. laihun
   - PGm. *tehun > Pre-Go. *tihun > Go. taihun ‘ten’.

Since the Breaking affects the *i going back to PGm. *e, it must have been posterior to the development described in (1).

3. The Gothic Auslautgesetze. Final syllable shortening reached every single Germanic language and is usually thought as being a consequence of initial dynamic accent in Proto-Germanic. Still, it seems that it has been carried out quite lately in the history of Germanic, as its results are somewhat different across the branches. The infamous inscription on one of the Golden Horns of Gallehus (early 5th century) still kept the final syllables: ek hlewagastiz holtijaz horna tawido ‘I, Hlewagastiz Holtijaz made the horn’. Note that the endings -iz, -ijaz, -a, -do correspond with Gothic -s, -eis, -ø, -da, respectively.

   In Gothic, three rules have determined the course of this process:
   (1) short final vowels are deleted: Gallehus horna vs Go. haurn ‘horn’, Gallehus -gastiz vs. Go. gasts ‘guest’;
   (2) Long vowels shorten: Gallehus tawido vs. Go. tawida ‘make-PST.1SG’;
   (3) Overlong vowels, which came into being due to vowel retractions, yield ‘normal’ long vowels: PIE GEN.SG *Hy₂hl₁neh₂es > Pre-PGm. *Hy₂hl₁naHes > PGm. *wullos:z > Go. wullos ‘wool’.

The distinction between long (*o:) and overlong (*o::) vowels explains the fate of many important endings in Gothic in a convenient way, as will be entirely clear in chapter 4.

4. Verschärfung (Holtzmann’s Law)
   (1) PGm. *jj > Go. ddj (*dajjana > daddjan ‘suckle’; *ejjo: > iddja ‘went’);
   (2) PGm. *ww > Go. ggw (*blewwanan > bliggwan ‘blow’).