The Origins of Old English Morphology

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Symbols and abbreviations

Abbreviations

acc  accusative
AFB  Anglo-Frisian Brightening
dat  dative
fem  feminine
gen  genitive
loc  locative
masc  masculine
neutr  neutral/neutrum
nom  nominative
part  participle
perf  perfect
pl  plural
pres  present
pret  preterite
sg  singular
WGG  West Germanic Gemination

Language Abbreviations

Afr  Afrikaans
Angl-Fri  Anglo-Frisian
Du  Dutch
EGmc  East Germanic
Fri  Frisian
G  German
Go  Gothic
Gr  Greek
L  Latin
LG  Low German
MDu  Middle Dutch
ME  Middle English
MHG  Middle High German
MLG  Middle Low German
ModE  Modern English
NGmc North-Germanic
NWGmc Northwest Germanic
OE Old English
OFri Old Frisian
OHG Old High German
OIc Old Icelandic
OLF Old Low Franconian
ON Old Norse
OYi Old Yiddish
PGmc Proto-Germanic
PIE Proto-Indo-European
RN Runic Norse
Skt Sanskrit
WGmc West-Germanic
Yi Yiddish

Symbols
* In historical contexts, reconstructed item; in nonhistorical contexts, ungrammatical or nonoccurring item.
† extinct language
∅ zero-ending, empty morpheme
> becomes
< derives from
[ ] phonetic representation
// phonemic representation
{} morphemic representation
<> graphemic representation
C consonant
V vowel
N nasal
R nasal/liquid
¯V, V: long vowel
˘V, V short vowel
. syllabic consonant
. non-syllabic vowel
1 Introduction

As a computational linguist, I am interested in the structural qualities of languages. The automatic processing of natural language necessitates an accurate analysis of its rule systems. I was struck by a statement in Lass (1994), which in a unique manner could be assigned to a computational linguist as well as to a historical linguist.

A crucial source of detailed knowledge of the linguistic past is what I like to call ‘Verner’s Principle’: every exception to an otherwise regular process ought (ideally) to be explained in terms of some as yet undiscovered regularity.

(Lass 1994:109)

The proper understanding of language always implies the understanding of its past and the circumstances that lead to its present state. This makes historical linguistics a field that is worth studying, and the quotation above shows that in its methods it is on an equal level with contemporary automatic analysis of natural language.

2 Aim and scope

This paper deals with the origins of Old English morphology. It tries to situate Old English within the frame of the Germanic and Indo-European language family. I will show how issues of comparative Indo-European linguistics can affect the understanding of the linguistic past of Old English morphology.

I will ask what general principles are followed by linguistic reconstruction and what mechanisms were at work when Old English morphology developed from the Proto-Indo-European and Proto-Germanic system. The investigation will show how questions about the putative irregularities in Old English morphology can be answered.

This paper does not mean to be a concise overview of the system of Old English morphology but rather has its emphasis on the observation of the mechanisms that conditioned the evolution of this system. The discussion of individual phenomena in section 6 can therefore only have an explanatory character and is far from being exhaustive or even complete.

This paper is intended for readers who are familiar with the basic concepts and terms of phonetics, phonology and morphology. These will not be introduced separately but presupposed. I also presume that readers have attended an introductory course of Old English. They should know the basic historical and linguistic properties of this language and its speakers.
Readers are explicitly referred to the list of symbols and abbreviations at the beginning of this paper.

3 Literature

Although there is quite a wide range of introductions to Old English, the details of its Indo-European ancestry are not generally included in the usual ‘standard handbooks’. Students interested in treatments of the linguistic past of Old English must either work their way through one of the traditional linguistic grammars of Old English such as e.g. Campbell’s *Old English Grammar* (1959) or be contented with introductory chapters on the ‘backgrounds’ of English in the more extensive historical introductions to the English language. For the dedicated researcher, Prokosch’s *Comparative Germanic Grammar* (1938) seems still to be the unchallenged classic.

This paper is mainly based upon Lass’ *Old English: A Historical Linguistic Companion* (1994), which in a unique manner combines a keen interest in the impact of Indo-European issues on Old English with an introductory character and an easy readability. A very concise but nonetheless readable introduction to the subject is found in Bammesberger (1992). Among the other works on Old English historical linguistics consulted in preparation of this paper are Lehnert (1990), Millward (1989), Pyles and Algeo (1993) and – with respect to related Germanic languages and the reconstruction of Proto-Germanic – Bammesberger (1992), van Coetsem (1972), Hewson (1997) and Robinson (1992).

For the background in Comparative Indo-European Linguistics, Szemerényi’s *Einführung in die vergleichende Sprachwissenschaft* (1990) seems to have become a generally accepted standard. Recently, this German book has been translated into English (Szemerényi 1999). It is fairly exhaustive and despite its packed layout a useful handbook. Like most introductions to Indo-European studies, it may be somewhat technical if the reader does not have a basic knowledge of at least Latin and Greek. Occasionally, I also quote from Beekes’s *Comparative Indo-European Linguistics* (1995), although this book seems to be “not always reliable on technical matters” (Lass 1994:6) and the reader can easily get lost in it. Finally, I want to mention Tichy’s *Indoger- manistisches Grundwissen für Studierende sprachwissenschaftlicher Disziplinen* (2000), a fairly short and concise account of the most important technical issues of Indo-European linguistics, which can be understood without any knowledge of the individual Indo-European languages.
4 Background: Comparative Indo-European linguistics

4.1 Old English in the Indo-European language family

4.1.1 The Indo-European language family and the development of comparative Indo-European linguistics

Bammesberger (1992:26) states that the main point concerning language relationship can be phrased as follows:

[T]wo or more languages are genetically related if they stem from a common ancestor; the fact and the degree of the relationship are established on the basis of deepcutting structural agreements which cannot be due to chance.

(Bammesberger 1992:26)

Surprisingly, it was not until the 18th century, when English scholars began to study Sanskrit and its literature, that modern comparative linguistics was born. It was Sir William Jones’ address to the Royal Asiatic Society of Bengal in 1786 which is today regarded as the initial statement on comparative Indo-European linguistics:¹

The Sanskrit language, whatever be its antiquity, is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and in the forms of grammar, than could possibly have been produced by accident; so strong indeed, that no philologer could examine them all three, without believing them to have sprung from some common source, which perhaps, no longer exists: there is a similar reason, though not quite so forcible, for supposing that both the Gothic and the Celtic, though blended with a very different idiom, had the same origin with the Sanskrit; and the old Persian might be added to the same family....

In: Beekes (1995:13)

Today, we know that Sanskrit, Greek, Latin, Gothic, Celtic and Persian did indeed derive from a common ancestor language, namely the Proto-Indo-European language, and are therefore said to belong to the Indo-European language family. Until the end of the 19th century, Sanskrit

¹The reader interested in a more detailed report on the development of historical linguistics is referred to Szemerényi (1990:1–9).
(Indic), Persian (Iranian), Greek, Latin, Germanic, Celtic, Albanian and other languages were identified as members of the Indo-European language family. During the 20th century, some more languages were added: Hittite (Anatolian) and Tocharian. Recent publications list the following Indo-European languages and language families:

<table>
<thead>
<tr>
<th>Language Family</th>
<th>daughter languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indo-Iranian</td>
<td>†Sanskrit, Hindi, Gujarati; Iranian: †Avestan, Persian, Kurdish</td>
</tr>
<tr>
<td>Armenian</td>
<td>†Classical Armenian, Modern Armenian</td>
</tr>
<tr>
<td>Albanian</td>
<td>Albanian</td>
</tr>
<tr>
<td>Anatolian</td>
<td>†Hittite, Luwian</td>
</tr>
<tr>
<td>Hellenic</td>
<td>†Mycenaean (Linear B), †Ancient Greek, Modern Greek</td>
</tr>
<tr>
<td>Italic</td>
<td>Osco-Umbrian: †Oscan, †Umbrian; Latin-Faliscan: †Faliscan, †Latin, Romance languages</td>
</tr>
<tr>
<td>Celtic</td>
<td>Continental Celtic: †Hispano-Celtic, †Gaulic; Insular Celtic: Goidelic (†Old Irish, Irish, Scots Gaelic), Brythonic (†Cornic, Welsh, Breton)</td>
</tr>
<tr>
<td>Baltic</td>
<td>†Old Prussian, Lithuanian, Latvian</td>
</tr>
<tr>
<td>Slavic</td>
<td>East Slavic: Russian, Ukrainian; West Slavic: Polish, Czech; South Slavic: †Old Church Slavic, Bulgarian, Serbo-Croatian</td>
</tr>
<tr>
<td>Germanic</td>
<td>East Germanic: †Gothic, †Crimean Gothic; West Germanic: †Old English, †Old High German, Yiddish, English, Dutch, Afrikaans, Frisian, German; North Germanic: †Old Icelandic (Old Norse), Icelandic, Faeroese, Danish, Swedish, Norwegian</td>
</tr>
<tr>
<td>Tocharian</td>
<td>†Tocharian A, †Tocharian B</td>
</tr>
</tbody>
</table>

Since there are no written records of the Indo-European proto-language, PIE can only be reconstructed from the material that is accessible in the daughter languages. It is therefore evident that the more archaic the state of language preserved by any daughter language is, the more insights can be gained from that language about the structure of PIE. It is because of this fact that Greek, which has well preserved the original PIE vocalism, and Sanskrit, which has retained the PIE accent system and its grammatical categories, have become most eminent for the reconstruction.

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2The listing mainly follows Lass (1994:11) without claiming to be complete. An overview of the most ancient representatives of each group can be found in Szemerényi (1990:10ff.).
of PIE. Hittite is another language that has come to play an important role in comparative Indo-
European linguistics, since it was recognized as an Indo-European language at the beginning of
the twentieth century. The decipherment of Hittite was extraordinary as it was the first time that
scholars had found evidence in written records for a purely reconstructed feature of the proto-
language, namely the existence of the so-called ‘laryngeals’ in PIE. Relatively large corpora of
written evidence are preserved for Greek and Sanskrit – and to a minor extent also for Hittite.
This as well as the relative age of these languages make them most important for Indo-European
linguistics. Greek literature originates in Linear B inscriptions of about 1400 BC and the Home-
ric epics, which go back to the ninth or tenth century BC. The most ancient records of Vedic (the
predecessor of Sanskrit) and Hittite seem to be even older.

4.1.2 The Germanic language family

Language families are defined by a set of shared innovation clusters. The Germanic language
family differs from the other Indo-European languages e.g. in its tense system, its use of addi-
tional weak adjective forms, its stress on the first syllable and a set of sound changes which it
has undergone, such as e.g. the “first Germanic sound shift” (Grimm’s Law). The Germanic lan-
guage family is usually further divided in three groups, namely East Germanic, North Germanic
and West Germanic. The languages of each of these groups have again innovation clusters which
they do not share with the other Germanic languages. It is sometimes arbitrary to draw a clear
border line between two sub-families. Particular languages may share one innovation with one
sub-family and another which another sub-family. This is because languages do not only derive
from each other “vertically” but also influence each other “horizontally”, e.g. because of the
geographic neighborhood of its speakers or because of the political or economic superiority of
the speakers of one language. Furthermore, the splitting of one parent language into two or more
daughter languages happens over a longer period of time. Some daughter languages may part
earlier and behave in more innovative way whereas others may still keep together for a while
and behave more conservatively. It is therefore not surprising that Bammesberger (1992:29)
discusses the hybrid character of East, North and West Germanic.

It is, however, a highly disputed question whether the threefold distinction among the Ger-
manic languages is genetically justified, since both East Germanic and North Germanic and
North Germanic and West Germanic show some agreements which render it likely that origi-
nally Germanic fell into just two groups, and one of these groups underwent further splitting.

(Bammesberger 1992:29)
Lass (1994) supports the view that North Germanic and West Germanic are more closely related to each other than to East Germanic. He argues that “the bulk of the older runic inscriptions appear to be in a dialect distinct from East Germanic, and ancestral to North and West Germanic, which is now called Northwest Germanic.” (Lass 1994:13f.) Figure 1 shows the WGmc branch of the Germanic language family as it is given in Lass (1994:14f.).

![Diagram of the Germanic language family](image)

**Figure 1: The WGmc language family, including the modern languages**

### 4.1.3 The earliest attestation of Germanic

The earliest remains of any Germanic language are words reported by classical authors like Caesar and Tacitus (e.g. āurus ‘aurochs’), a few loan words in Finnish (e.g. kunningas ‘king’ and rengas ‘ring’) and above all runic inscriptions. The earliest runic inscription was found in the Nøvling clasp (North Jutland, Denmark) and probably dates from about AD 200. It is given – in transcription – in (1). Readers interested in a linguistic analysis of the inscription are referred to Lass (1994:12).

(1) *bida-warijaz tagidai*

‘Bida-Warijaz carved [this]’.

The earliest extensive Germanic record is provided in Gothic. Gothic was the East Germanic language spoken by the Visigoths and the Ostrogoths (‘Eastern Goths’). By far the largest part of Gothic records are translations of the New Testament and fragments of the Old Testament ascribed to Wulfila, bishop of the Visigoths, and dated from the fourth century. Unfortunately, the
text of the Greek Bible used for the translation is unknown and the Gothic spelling conventions are disputed. Furthermore, the translation is very literal, so that it provides little information on syntax. Nevertheless, Lehmann (1994:20) renders the common opinion when he states that “archaic characteristics in the language support the view that Gothic can be taken as the chief source for the reconstruction of Proto-Germanic.” Gothic has not undergone many phonological and morphological changes found in the other Germanic languages and has therefore preserved many features of the Germanic proto-language.

4.2 Linguistic reconstruction

4.2.1 Internal and external reconstruction

Linguists distinguish two major methods of linguistic reconstruction: “internal reconstruction” and “external or comparative reconstruction”. Internal reconstruction tries to explain irregularities in a language by deriving them from regular patterns in an earlier stage of that language. We can e.g. explain the fact that OE fōt ‘foot’ has a variant stem vowel in its dative singular and nominative and accusative plural forms (see paradigm 2) with internal reconstruction. If we know that the PGmc nom/acc pl ending was */-iz/ and that PGmc endings were reduced in OE, and if we apply to that the mechanism known as “i-umlaut”, in which back vowels were fronted before a following /i/, the seemingly irregular OE pattern in (2) can be traced back to a regular PGmc basis: OE fōt < *fōt-iz < PGmc *fōt-iz.

(2) Paradigm of OE fōt ‘foot’.

<table>
<thead>
<tr>
<th></th>
<th>sg</th>
<th>nom fōt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>gen</td>
<td>fōt-es</td>
</tr>
<tr>
<td></td>
<td>dat</td>
<td>fēt</td>
</tr>
<tr>
<td></td>
<td>acc</td>
<td>fōt</td>
</tr>
<tr>
<td>pl</td>
<td>nom</td>
<td>fēt</td>
</tr>
<tr>
<td></td>
<td>gen</td>
<td>fōt-a</td>
</tr>
<tr>
<td></td>
<td>dat</td>
<td>fōt-um</td>
</tr>
<tr>
<td></td>
<td>acc</td>
<td>fēt</td>
</tr>
</tbody>
</table>

The situation is slightly more complicated for the dative singular fēt. Lass (1994:136) argues that this form reflects an old locative form in */-/i/. As an evidence for this, he mentions that this form is still clearly visible in the OIc cognate form fœt-i. We realize that it is at this point
that comparative (or external) reconstruction comes in.\(^3\) External reconstruction is based on the comparison of words in the same language family that can be recognized as cognate - i.e. of common origin. In the above example, the comparison of the OE dat sg form \(\text{f}\text{êt}\) with the cognate OIr form \(\text{f}\text{æt}\) helps to find a regular PGmc origin of the seemingly irregular OE form: OE \(\text{f}\text{êt} < *\text{f}\text{êt}-i < \text{PGmc } *\text{f}\text{o}t-i\) and OIr \(\text{f}\text{æt}-i < \text{PGmc } *\text{f}\text{o}t-i\).\(^4\)

We can see from the explained example that internal and external reconstruction often work hand in hand and that it is sometimes a matter of perspective whether a particular reconstruction is to be seen as internal or external.

### 4.2.2 Sound laws

Historical linguists develop their hypotheses upon a maxim called the “Ausnahmslosigkeit der Lautgesetze” (“the regularity of sound laws”). Robinson (1992:9) accurately explains this principle and its consequences for practical linguistic work:

This [the regularity of sound change] is the assumption, borne out in actual analysis, that sound change is regular, that is, that the same sound in the same general environment will develop in the same way. [...] If we find apparently arbitrary changes, in which the assumption of regularity of sound change appears to be false, we must consider whether we have missed something, whether there is something different about the environment of the [sounds] in question that accounts for the different changes. In other words, there is some subregularity we have missed.

A famous example of this principle is the sound change known as “Verner’s Law”. Verner’s Law originates in the “first Germanic sound shift” (“Grimm’s Law”), which can be expressed as in (3).\(^5\)

\[(\text{3}) \quad \text{Grimm’s Law:} \]

\[
\begin{align*}
\text{PIE } /p, t, k/ & > \text{PGmc } /f, \theta, h/ \\
\text{PIE } /b, d, g/ & > \text{PGmc } /p, t, k/ \\
\text{PIE } /bh, dh, gh/ & > \text{PGmc } /\beta, \delta, \chi/ (\text{later } \theta, d, g/)
\end{align*}
\]

\(^3\)Comparative considerations have of course already come in above since one has to look at the Gothic paradigm to find evidence for the nom/acc pl in */-iz/. From the PGmc point of view, however, this is still an internal reconstruction.

\(^4\)Note that OIr \(<\text{æ} > = /\text{o}/ \) and OE \(/\text{æ}:\text{t}/ < /\text{o}:\text{t}/.

\(^5\)Note that in (3) I have not treated PIE \(/k^\text{w}, g^\text{w}, gh^\text{w}/ since their development in PGmc need some more explanation. Readers interested in what these sounds have become in PGmc are referred to Lass (1994:20f.).
In (3) we can recognize what is called “relative chronology”. It is evident that the sound changes must have happened in the given order. If the voiced stops had turned into voiceless stops before the original voiceless stops had turned into voiceless fricatives, no voiceless stops would have been left in PGmc since both voiceless and voiced stops would finally have become voiceless fricatives. By analogy, the change of the aspirated voiced stops must have happened after the transformation of the other stop sounds.

It is not possible to ignore that Grimm’s Law still leaves a high number of significant ‘exceptions’. The three words OE *fæder, mōðor, brōþor* show this. Whereas OE *brōþor* can easily be traced back to the PIE stem *bhrater*- (L frater, Gr φράτερ) according to Grimm’s Law, we would expect OE *fæþer* and *mōþor* from PIE *pater*- (L pater, Gr πατήρ) and *mētēr*- (L māter, Gr μήτηρ) instead of OE *fæder* and *mōðor*. Therefore, according to the principle stated above, there must be a subregularity which has been missed. It was the Danish linguist Karl Verner who found out in 1875 that the answer was related to the dynamic PIE accent. PGmc had replaced the free PIE accent system with a system in which the accent always fell on the first syllable of the lexical root. The expected voiceless fricative of Grimm’s Law only occurs where the original PIE accent immediately preceded it. Verner’s Law thus says that non-initial PIE voiceless stops have become PGmc voiceless fricatives if the original PIE accent immediately preceded them (as in OE *brōþor < PIE *bhrater-*), but have otherwise become voiced stops (as in OE *fæder < PIE *pater*- and OE *mōðor < PIE *mētēr*-).

4.2.3 Analogy

Apart from sound laws, “analogy” plays an important role in the way languages change. This is illustrated by the paradigms in (4). It is the paradigm of OE *fōt* ‘foot’, which we have already seen, and its Greek cognate ποώς.

(4) Paradigms of OE *fōt* and Greek ποώς ‘foot’.

<table>
<thead>
<tr>
<th></th>
<th>OE</th>
<th>Gr</th>
</tr>
</thead>
<tbody>
<tr>
<td>sg nom</td>
<td>fōt</td>
<td>ποώς (πῶς) &lt; πῶδ-ς</td>
</tr>
<tr>
<td>gen</td>
<td>fōt-es</td>
<td>ποδ-ός</td>
</tr>
<tr>
<td>dat/loc</td>
<td>fōt &lt; fōt-i</td>
<td>ποδ-ι</td>
</tr>
<tr>
<td>acc</td>
<td>fōt</td>
<td>πῶδ-ά</td>
</tr>
<tr>
<td>pl nom</td>
<td>fōt &lt; fōt-iz</td>
<td>πῶδ-ες</td>
</tr>
<tr>
<td>gen</td>
<td>fōt-a</td>
<td>ποδ-ων</td>
</tr>
<tr>
<td>dat</td>
<td>fōt-um</td>
<td>πο(σ)-σι’ &lt; ποδ-σι’</td>
</tr>
<tr>
<td>acc</td>
<td>fēt &lt; fōt-iz</td>
<td>πῶδ-ας</td>
</tr>
</tbody>
</table>
We can by now explain the differing stem vowel in the dat sg and nom/acc pl forms of the OE paradigm and assume the PIE stem *pod- for OE *fōt- with the help of Grimm’s Law. The Greek paradigm thus obviously reflects the original PIE sound pattern in its stem. We can learn from the Greek paradigm that the PIE stem vowel /o/ must have been short and was only lengthened in the nom sg form by loss of the dental sound before /s/ and compensatory lengthening of the preceding vowel: *pod-s > *pos-s > *pōs (Gr πός or ποῦς). The OE paradigm, on the other hand, shows a lengthened vowel in all its forms. As this long vowel cannot be explained by means of sound laws, it must be a generalisation of the vocalism of the nom sg form and thus illustrates the mechanism of analogy.

5 Conditions of the evolution of Old English morphology

5.1 Accent and stress

We have already seen in 4.2.2 above, that one major innovation of Germanic was the so-called “accent shift” and that this change also affected morphology. PIE accent was “free”. It was ruled by morphology and did not depend on word boundaries or syllable structure. This accent system was relatively well preserved in Greek and Vedic (Sanskrit). The position of the PIE accent could vary within one paradigm: we have already seen Gr nom sg πῶς ‘foot’, acc sg πῶς, where the accent is on the stem, but gen sg πῶς with the accent on the ending. This corresponds to Skr nom sg पति, acc sg पदम and gen sg पदम. Szemerényi (1990:79) mentions that the position of the PIE accent is often confirmed by Germanic, although not by the position of Germanic stress but by the differing realization of the sounds that immediately follow the PIE accent.

The PIE accent system was abandoned in PGmc and replaced by what is called the “Germanic stress rule”. In this system, (with certain exceptions) stress always fell on the first syllable of the lexical root, ignoring prefixes. As we have seen, the position of the PIE accent is nonetheless relevant for the understanding of certain putative irregularities, which can be explained by Verner’s Law. The different forms of OE wēorþan ‘become’ are another example for this. In (5), the OE forms are given along with their Skr cognates, which have retained the original PIE accent.

6 The PIE stem would in fact be *pe/od-, showing ablaut alternation in its root vowel. Both, Greek and Germanic have generalized the o-form, whereas e.g., Latin pēs < ped-s reflects the e-form.

7 Note that the Skr perfect forms show stem-reduplication as a tense marker.
5.2 Major sound changes from Proto-Indo-European to Old English

Phonological issues are not the major concern of this paper. Nevertheless, sound changes are an important source for the explanation of changes in morphology. I therefore briefly sketch the most relevant part of the phonological development from Proto-Indo-European to Proto-Germanic and from Proto-Germanic to Old English.\(^8\)

Germanic sound change in stressed syllables differs from sound change in weak syllables. I will first treat the development of the sounds in stressed syllables.

5.2.1 Sound changes in stressed syllables

Vowel Shift The most significant vowel shifts that happened from PIE to PGmc were short PIE /o/ becoming short /a/ and PIE long /a:/ becoming long /o:/ in PGmc. Due to the former change, the PIE diphthongs /ou/ and /oi/ resulted in /au/ and /ai/ in PGmc. PIE /ei/ turned into PGmc long /iː/. The PGmc diphthongs /ai/ and /au/ later became /ā/ and /ēa/ respectively in OE.

First Germanic Sound Shift We have already come across the first Germanic sound shift (Grimm’s Law) and Verner’s Law in section 4.2. The term “rhotacism” describes the development of PIE /s/ becoming PGmc /z/ by Verner’s Law and finally WGmc /r/.

Pre-nasal Raising PIE short /e/ was raised to PGmc short /i/ if it occurred before a nasal.

Anglo-Frisian Brightening The Anglo-Frisian branch of West Germanic languages retained the quality of PGmc /a/ if it was before a nasal but elsewhere brightened it to /æ/. Later, /æ/ was retracted to /a/ again if it was followed by a back vowel /u, o, a/ (“restoration of /a/”).

ē-Lowering Long /eː:/ was lowered to OE /æː:/

\(^8\)I will only occasionally mention intermediate steps, e.g. Northwest or West Germanic innovations, if they are relevant. Minor sound changes are not listed in this section but only mentioned where we come across them.
Nasal loss Nasals were lost before fricatives and the preceding vowel received compensatory lengthening.

i-Umlaut We have already come across the effects of i-umlaut in section 4.2.1: the fronting of back vowels and the raising of non-low front vowels before PGmc /i/ or /j/.

Breaking The term ‘breaking’ describes an early OE sound change, in which front vowels diphthongized before certain back consonants, namely before /r/ or /l/ + following consonant and before the velar fricative /x/ (=<h>). Lass (1994:50) argues that breaking actually conflates two developments: (i) the insertion of [u] after the concerned front vowel and (ii) a later “diphthong height harmony”, that is, a process in which the second element of the new diphthong came to agree in height with the first. He illustrates these two processes with OE eald as demonstrated in (6).

(6) */æild/ [æild] > [æild] (AFB) > [æuæld] (Breaking) > [æuæld] (DHH) (Lass 1994:51)

Back Umlaut Back umlaut is an early OE sound change in which front vowels /i, e, æ/ diphthongized before a back vowel in a following syllable.

Palatal Diphthongization Palatal diphthongization describes a sound change in which front vowels supposedly diphthongized after palatal consonants. Lass (1994:78ff.), however, argues that this might as well have been a mere orthographical change.

West Germanic Gemination West Germanic Gemination is the doubling of consonants before a PGmc /j/, which was lost afterwards. We will see that this is a notable feature in verb morphology.

Liquids The PIE syllabic consonants /r, l, m, n/ became /ur, ul, um, un/ in PGmc.

5.2.2 Sound changes in weak syllables

The historical development of phonology in Germanic weak syllables differs from that in strong ones described above. The Germanic stress rule has contributed to the fact that Germanic weak syllables are bound to be reduced or even completely lost, especially if they are the final segment of a word. This has – as we will see – a serious impact on the inflectional system, since PGmc has inherited a rich inflectional system from PIE based on a large set of different endings.

PIE final consonants except /r, s/ dropped in PGmc. PIE final /s/ appears as /z/ in PGmc, is turned into /t/ in OIC (rhotacism), devoiced in Go and lost in WGmc, as in PIE *ghost-i-s
becoming PGmc *gast-i-z, OIc gest-r, Go gast-s, OE giest-∅. The loss of final consonants and later vowel reduction led to substantial changes in the inflectional system of Germanic.

PGmc long vowels in weak syllables tended to shorten and to move towards the ‘corners’ of the vowel system: PGmc /o:/ > /u/, PGmc /æ:/ > e, PGmc /i:/ > /i/. The same holds true for the diphthongs: PGmc /ai/ > /a:/ > /æ:/ > /e/ and PGmc /au/ > /a/.

PGmc short /e/ was retained if it was followed by /r/ as in fæder ‘father’, but raised to /i/ elsewhere and eventually lowered or lost as in PIE *pod-es ‘feet’ > *fōt-es > PGmc fōt-iz > OE fēt-∅.

PGmc short /a/ deletes in final position. If it is protected by a following nasal, it either remains or becomes /e/.

“High vowel deletion” means that PGmc /i, u/ are deleted after a heavy syllable but remain after a light one, /i/ lowering to /e/. Heavy syllables are syllables which either have a long vowel or whose vowel is followed by two or more consonants. If this process happens to a word-initial vowel, it is called “syncope”.

5.3 Morphophonemics

5.3.1 Ablaut

We have already seen that sound laws such as i-umlaut or Anglo-Frisian brightening and the restoration of /a/ can cause a vowel alternation in OE roots. We can explain phenomena such as OE nom sg mūs ‘mouse’ but nom pl mūs (< PGmc *mūs-iz), and OE nom sg fēt ‘vessel’ but nom pl fāt-u (restoration of /a/).

There is, however, another kind of root vowel alternation in OE, which cannot be explained by proper sound changes, but only by a specific morphophonemic feature of PIE called “ablaut”. By comparing OE fōt ‘foot’ and Gr ποδίς (< *pod-s) with L pēs (< *ped-s), we must assume a PIE root */pVd-/, where the root vowel can either be /o/ or /e/. PIE ablaut was an alternation of the root vowel, which was in use for various morphological functions (derivational and inflectional). Example (7) illustrates the variety of stems that could be formed from the same root within a language.

(7) L tego ‘I cover’, toga ‘toga, garment’, tēc-tum ‘covered’

Ablaut can occur in five so-called “grades”: e-grade, o-grade, reduced or zero-grade, lengthened e-grade and lengthened o-grade. The /e/ ∼ /e/ -variation is traditionally called “qualitative” ablaut, the /∅/ ∼ /e, o/ ∼ /e, o/-variation “quantitative” ablaut. Example (7) shows samples of
e-grade, o-grade and lengthened e-grade. Example (8) shows Greek realizations of the PIE root *pet- ‘fly’.

(8) Gr πετ-αμαι ‘I fly’ (e-grade), ποτ-η ‘flight’ (o-grade), πτ-εφυξ ‘wing’ and ἤ-πτ-ὀμεν ‘flew’ (zero-grade), πωτ-αται ‘he flutters’ (lengthened o-grade)

It is evident from (8) that ablaut marked inflectional as well as derivational morphology. We will see later that ablaut plays an important part in OE verb morphology. Root alternations of Germanic strong verbs originate in PIE ablaut variations. Usually, e-grade is associated with PIE present, o-grade with PIE perfect and zero-grade with PIE aorist (see section 6.2.1).

5.3.2 PIE root structure and the laryngeals

The discussion on ablaut makes an implicit statement on the structure of PIE roots. Tichy (2000:34) assumes a general root structure for PIE as shown in (9), in which C represents any consonant and brackets stand for optionality.

(9) (C)(C)CeC(C)(C)

This means that PIE has mono-syllabic roots. PIE *streig- ‘skim’ is a maximal realization of root structure (9). Note that PIE /i, u/ are resonants like /r, l, m, n/, that is, both can occur non-syllabic (/i, u, r, l, m, n/) or syllabic e.g. in zero-grade roots (/i, u, r, l, m, n/).

Szemerényi (1990:138ff.) and Lass (1994:115f.) discuss an even more radical view of PIE root structure saying that PIE roots have the structure CeC and can be followed by one or more suffixes, called “extensions” or “determinatives” of the structure eC/C. The advantage of this interpretation of PIE root structure is that words that are obviously of the same origin but whose roots slightly differ can be uniquely reconstructed. Examples (10) and (11) illustrate how putatively different words originate in the same PIE root with varying suffixes.

(10) PIE root *wer-

| PIE root *wer-t- (e-grade root + zero-grade suffix) | > OE weor-b-an ‘become’ (with breaking of /e/ before /rC/) |
| PIE root *wr-t- (zero-grade root + zero-grade suffix) | > OE wur-d-on ‘became (past)’ (with PIE /ɪ/ > Gmc /ur/) |
| PIE root *wr-m- (zero-grade root + zero-grade suffix) | > OE wyr-m (< PGmc *wurm-iz) ‘worm’ (with i-umlaut) |

9Non-syllabic /i, u/ are either represented as /ɪ, ʊ/ or as /j, w/.
PIE root *wr-en-g- (zero-grade root + e-grade suffix + zero-grade suffix) 
> OE wr-in-g-an ‘twist’ (with pre-nasal rising)

PIE root *wr-on-g- (zero-grade root + o-grade suffix + zero-grade suffix) 
> OE wr-an-g ‘wrong’

(11) **PIE root *H₂ew-**

PIE root *H₂ew-g- (e-grade root + zero-grade suffix) 
> L au-g-eō, Go au-k-an, OE ēa-c-ian ‘increase’

PIE root *H₂ew-g-s- (e-grade root + two zero-grade suffixes) 
> L au-x-ilium ‘help’

PIE root *H₂w-og-s- (zero-grade root + o-grade suffix + zero-grade suffix) 
> Go w-ah-s-jan ‘grow’, OE w-eax-an (/w-˘æx-s-∞n/)

To be able to understand the reconstructions in (11), one has to have a basic idea of PIE laryngeals. Linguists have reconstructed three so-called “laryngeal” phonemes for early PIE, which are seen as a kind of resonants that are able to change the quality of a neighboring /e/ and to lengthen a preceding vowel. Usually, three laryngeals are proposed, represented as H₁, H₂ and H₃. It was an extraordinary breakthrough when evidence for the existence of these purely reconstructed PIE phonemes was found after the decipherment of Hittite. (12) shows the three laryngeals and their effects on the neighboring /e/.

(12) */H₁e/ > /e/: *H₁ed- ‘eat’ > L ed-ō, OE et-an
* /H₂e/ > /a/: *H₂eg- ‘drive’ > ag-ō
* /H₃e/ > /o/: *H₃ed- ‘smell’ > L od-or, Gr ḍd-ôṭô

*/eH₁/ > /e/: *reH₁g- ‘king’ > L rēx
*/eH₂/ > /a/: *meH₂- ‘mother’ > L mā-ter, OE mō-dor
*/eH₃/ > /o/: *deH₃- ‘give’ > L dō-num

The sound changes described in (12) took place at an early stage of PIE and were already completed when most of the IE daughter languages developed. The laryngeals were lost in early PIE and the only visible relics of them are the quality and quantity of neighboring vowels. In (11) above, H₂ has changed the following /e/ into /a/ where the PIE root was in its e-grade, but was lost without any trace in the zero-grade root.
6 Exemplification

In the remaining part of this paper, I intend to illustrate how the inventory of tools described in
the previous sections can be adapted to explain Old English morphology. This treatment does, of
course, not claim to give a detailed analysis of the whole set of OE morphology in general and its
inflectional system in particular. It is thus far from being exhaustive or complete. I rather intend
to explain the mechanisms that were at work when OE morphology developed.

Section 6.1 deals with the changes in noun inflection and is meant to illustrate how PIE
endings survived in OE. As its emphasis is on the development of endings, it is above all the
sound laws for Germanic weak syllables that are applied in this section.

The section on verb inflection deals with the development of strong verb ablaut series and is
mainly concerned with the continuation of PIE ablaut patterns in OE strong verbs. It is therefore
the explanations on morphophonemics and the sound laws for Germanic stressed syllables which
are relevant for this section. I also briefly introduce the Germanic innovation of weak verbs, and
how the evolution of their forms can be explained.

Finally, a short look at OE pronouns is intended to show how roots of different origin can
come to be combined in one paradigm.

6.1 Noun inflection

Proto-Indo-European was a highly inflectional language. Nominal inflection distinguished three
genders (masculine, feminine, neuter)\(^\text{10}\), three numbers (singular, dual, plural) and eight cases
(nominative, vocative, accusative, genitive, dative, ablative, locative, instrumental). PGmc pre-
served the gender system and to a certain extent the three PIE numbers, although dual forms sur-
vived only partly in Germanic. The case system was reduced to four cases (nominative, genitive,
dative, accusative) in Germanic languages. An exception may be the survival of old instrumental
forms in OS and in some noun classes of OHG and OE pronouns. PIE dative, ablative, locative
and instrumental collapsed in the Germanic “dative”, which took over the functions of all of
them. The Germanic dative forms may therefore originate in PIE dative forms, but also in PIE
locatives or instrumentals.

Case endings were added to the stem.\(^\text{11}\) A special group is formed by the thematic nouns,

\(^{10}\)These three genders originated in only two: animate and inanimate.

\(^{11}\)Szemerényi (1990:171) states that PIE noun stems could end in any consonant but only in the vowels -i-, -u-,
-o- and -ē-, -ā-, not in -a-. Beekes (1995) argues that there were only consonantic noun stems apart from the
so-called thematic stems with an -e/o-theme formative. He analyses stems in -i-, -u- as consonant stems in -j-, -w-
and those in long -ē-, -ā- as laryngeal stems in -iH-, -uH-. It is the same for stems in long -ā-, which Beekes interprets
which show an alternating -o/e- theme vowel between the root (and its suffixes) and the case ending. Thematic paradigms do not only occur in the nominal but also in the verbal inflection. One common feature of thematic inflection types is that they do not show ablaut-variation in the root. Tichy (2000:55) argues that it is due to this fact that thematic paradigms spread out in almost all IE languages.

(13) below lists the most important PIE case endings.

(13) **Regular PIE case endings.**

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
<th>dual</th>
</tr>
</thead>
<tbody>
<tr>
<td>nom</td>
<td>-s, -∅</td>
<td>-es</td>
<td>-e, -ė/-i</td>
</tr>
<tr>
<td>voc</td>
<td>-∅</td>
<td>(as nominative)</td>
<td>(as nominative)</td>
</tr>
<tr>
<td>acc</td>
<td>-m/-m</td>
<td>-ns/-ns</td>
<td>(as nominative)</td>
</tr>
<tr>
<td>gen</td>
<td>-es/-os/-s</td>
<td>-om/-öm</td>
<td>-ous?, -ōs?</td>
</tr>
<tr>
<td>dat</td>
<td>-ei</td>
<td>-bh(j)os, -mos</td>
<td>-bhjō, -mō</td>
</tr>
<tr>
<td>abl</td>
<td>-es/-os/-s, -ed/-od</td>
<td>-bh(j)os, -mos</td>
<td>(as dative)</td>
</tr>
<tr>
<td>loc</td>
<td>-i</td>
<td>-su</td>
<td>-ou</td>
</tr>
<tr>
<td>instr</td>
<td>-e/-o, -bhi/-mi</td>
<td>-bhis/-mis, -ōis</td>
<td>(as dative)</td>
</tr>
</tbody>
</table>

There are special rules for the nom, voc and acc forms of neuter nouns: in singular, athematic stems have -∅ and thematic stems have -m. In plural, the ending is -ā and in dual, it is -i.

### 6.1.1 **a-Stems**

The *a*-stems\(^{12}\) are the most predominant paradigm in OE noun inflection. They go back to the PIE thematic stems in -o/e-. Examples of this inflection type are PIE *wklw*-o-s ‘wulf’ > Gr *λύκ-ος*, L *lup-u-s*, PGmc *wulf-a-z* > Go *wulf*-s, OE *wulf*. (14) gives another example of this inflection type.

---

\(^{12}\)Designations of inflection types always denote the OE type, if nothing else is specified.
(14) Paradigm: a-Stems.

\[
\begin{array}{cccc}
\text{sg} & \text{nom} & \text{dæg}-\varnothing & < \text{PGmc } *\text{dag-a-}z < \text{PIE } *\ldots-o-\text{s} \\
\text{gen} & \text{dæg}-\text{es} & < \text{PGmc } *\text{dag-a-}sa < \text{PIE } *\ldots-o-\text{s(j)o} \\
\text{dat} & \text{dæg-}e & < \text{PGmc } *\text{dag-ai} < \text{PIE } *\ldots-o-\text{i} \\
\text{acc} & \text{dæg}-\varnothing & < \text{PGmc } *\text{dag-a}^{0} < *\text{dag-a-m} < \text{PIE } *\ldots-o-\text{m} \\
\text{pl} & \text{nom} & \text{dag-as} & < \text{PGmc } *\text{dag-a-s-iz} < \text{PIE } ?*\ldots-o-(s)-\text{es} \\
\text{gen} & \text{dag-}a & < \text{PGmc } *\text{dag-a}^{0} < \text{PIE } *\ldots-\text{om} < *\ldots-o-\text{om} \\
\text{dat} & \text{dag-um} & < \text{PGmc } *\text{dag-a-miz} < \text{PIE } *\ldots-o-\text{mis} \\
\text{acc} & \text{dag-as} & < \text{PGmc } *\text{dag-a-n-z} < \text{PIE } *\ldots-o-\text{n-s} < *\ldots-o-\text{m-s} \\
\end{array}
\]

The paradigm OE dæg is a good example of Anglo-Frisian brightening of /a/ and its later restoration before back vowels. This explains the differing stem vocalism in the plural forms.

Listing (14) above also shows that PIE o-stems had slightly different endings compared to the standard endings given in (13). Most of the OE a-stem endings can more or less systematically be traced back to their PIE origins with the help of the sound laws stated in section 5.2. The most obvious sound changes that apply are PIE theme vowel /o/ becoming PGmc /a/ and the loss of final syllables except if /a/ is protected by a nasal.

There are also some OE thematic stems on -ja and -wa. The former show i-umlaut in OE like here ‘army’ < PGmc *har-ja-z. The latter show /w/ in the cases that have retained an ending: OE nom sg cnēo ‘knee’ (< PGmc *kniu-wa-z), but gen sg cnēo-w-es (< PGmc *kniu-wa-sa).

Neuters lack -s in the nom sg and have -u after light syllables and -∅ after heavy syllables (high vowel deletion). The plural ending -u derives from PGmc -ī < PIE -ā as described in section 5.2.2. Examples are OE scip-u ‘ships’ and bān-∅ ‘words’.

6.1.2 ō-Stems

The OE ō-stems derive from the PIE ā-stems (or H2-stems, if we follow Beekes). This inflection type contains only feminine nouns like e.g. L dea or Gr θεός ‘Goddess’.\(^{13}\) PIE -ā develops to -ō in PGmc and becomes finally -u or – by high vowel deletion – -∅ in OE. This is visible in the nom sg form of the paradigms: OE laf-u ‘love’ vs. beorc-∅ ‘birch’ (high vowel deletion after heavy syllable). The origin of the oblique singular ending -ē is less clear and unfortunately not mentioned in any of the consulted handbooks. It can only be guessed, that it must originate in some PGmc /ai/ or /æ:/, which became /e/ according to the sound change described in 5.2.2 and then was generalized for all oblique cases in the paradigm. Similar considerations could be

\(^{13}\) Although they look alike, L deus and Gr θεός are not cognate words!

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applied to the plural forms. The gen pl in -a and the dat pl in -um may be formed analogically to the OE a-stems.

Some of the words with a stem on PGmc -jō do not lose -u even after a heavy syllable. This type forms an important class of derivations with an original *-n- infix like OE streng-u < PGmc *strang-īn-jō 'strength'. Another type of derivation in -jō are those in -ness < PGmc *-nas-jō.

wō-stems retain the -w- formative in oblique cases: OE nom sg bead-u 'battle' but dat sg bead-w-e.

6.1.3 i-Stems

The i-formative of OE i-stems is only visible in the i-umlaut, which it has caused in the root vowel. i-stems correspond to the Latin and Greek words in -is like L ign-is ‘fire’ and Gr πῶλ-ις ‘city’. We have already come across PIE *ghost-i-s > L host-i-s, PGmc *gast-i-z > OIc gest-r (i-umlaut) and OE giest-∅ (i-umlaut). Masculine and neuter OE i-stems have adopted the endings of the a-stems, feminine i-stems those of the ō-stems.

Apart from i-umlaut, the only other relic of the original i-formative is the nom sg ending -e after light syllables (according to high vowel deletion of the /i/ in the original ending *-i-s). An example of this is OE win-e ‘friend’.

6.1.4 u-Stems

Following the explanation on PIE u-stems in Szemerényi (1990:186f.), we can – by applying the sound laws given in 5.2.2 – derive the singular endings of the OE u-stems as shown in (15).

(15) Paradigm: u-Stems.

<table>
<thead>
<tr>
<th>Case</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>nom sg</td>
<td>sun-u</td>
</tr>
<tr>
<td>gen sg</td>
<td>sun-a</td>
</tr>
<tr>
<td>dat sg</td>
<td>sun-a</td>
</tr>
<tr>
<td>acc sg</td>
<td>sun-u</td>
</tr>
</tbody>
</table>

Unfortunately, the situation is less clear for the plural forms, which have -a in nom/acc, gen and -um in dat. Lass (1994:133) argues that “OE has extensively remodeled the plural, losing the original umlaut-causing *-/i, -j/ formatives (Go [nom pl] sun-jus = OIc syner, and cf. G Sohn/Söhne).”\(^{14}\)

\(^{14}\)Maybe one has to assume an ablauting PIE formative *-eu/ou- in order to achieve a more systematic analysis of OE u-stems as shown in (16).
6.1.5  

**n-Stems**

PIE nasal stems have an ablauting stem formative \(-en/on\)-. Their structure is best seen in the oblique cases, since the nom sg form often lacks the \(-n\)-formative: L *homo* ‘man’ gen sg *hom-in-is*, Gr *άχυμον* ‘anvil’ gen sg *άχυ-ον-ος*. The OE paradigm has lost its endings in the oblique cases. The OE formative \(-an\-) < PIE \(*-on\)- was retained since the /a/ was protected by the nasal. Hence OE *guma* ‘man’ gen sg *gum-an* < PGmc *gum-an-az* < PIE \(*-on-os\). The gen and dat pl forms *gum-ena* and *gum-um* were probably later analogies to the a-stems.

Whereas in English, the a-stem paradigm was generalized during the Middle English period, in other Germanic languages (German, Dutch) the n-stems were extended. The only relics of n-stems in ModE are *oxen* and *children*, although the latter was an original r-stem and only later converted to the n-stem paradigm.

6.1.6  

**Consonant stems and minor declensions**

We have already come across the paradigm of OE consonant stems when we discussed OE *fōt*. In consonant stems, the endings were directly added to the root. From a PIE perspective, however, this may not be accurate, since several PIE suffixes could have been attached to the actual PIE lexical root. I have discussed this in section 5.3.2.

Among the minor declensions not covered in this paper are kinship nouns in -r (PIE r-stems) like OE *fæder* ‘father’, *móðor* ‘brother’, *sweostor* ‘sister’, *dohtor* ‘daughter’ and the OE r-stems (PIE es/os-stems) like L *genus*, *gen-er-is* < *gen-es-os* ‘kind’, which show an /r/ in Gmc (Verner’s Law and rhotacism). The /r/ in ModE *child-r-en* is a relic of this stem type.

---

(16)  
*Reconstruction of OE u-stems endings.*

<table>
<thead>
<tr>
<th>Case</th>
<th>OE u-stem</th>
<th>PGmc</th>
<th>PIE <em>-u-s</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>nom sg</td>
<td>u-s</td>
<td>PGmc <em>sun-u-z</em></td>
<td>PIE <em>-u-s</em></td>
</tr>
<tr>
<td>gen sg</td>
<td>u-a</td>
<td>PGmc <em>sun-aiz</em></td>
<td>PIE <em>-ou-is</em></td>
</tr>
<tr>
<td>dat sg</td>
<td>u-a</td>
<td>PGmc <em>sun-au</em></td>
<td>PIE <em>-ou-ei</em></td>
</tr>
<tr>
<td>acc sg</td>
<td>u-m</td>
<td>PGmc <em>sun-u-m</em></td>
<td>PIE <em>-ou-es</em></td>
</tr>
<tr>
<td>nom pl</td>
<td>u-a</td>
<td>PGmc <em>sun-a</em></td>
<td>PIE <em>-ou-om</em></td>
</tr>
<tr>
<td>gen pl</td>
<td>u-m</td>
<td>PGmc <em>sun-a</em></td>
<td>PIE <em>-ou-om</em></td>
</tr>
<tr>
<td>dat pl</td>
<td>u-m</td>
<td>PGmc <em>sun-u-m</em></td>
<td>PIE <em>-ou-mis</em></td>
</tr>
<tr>
<td>acc pl</td>
<td>u-a</td>
<td>PGmc <em>sun-a</em></td>
<td>PIE <em>-ou-ns</em></td>
</tr>
</tbody>
</table>

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6.2 Verb inflection

It is debated what the original PIE verbal system was like. Without doubt, one can specify three tenses or aspects for PIE: present, aorist, perfect. The PIE temporal system is primarily aspectual rather than tensual: the present expresses habits or actions in progress, the aorist punctual past and the perfect can (roughly) be said to stand for completed actions. It is a major innovation of Germanic to reshape this system into a two-tense system. Germanic distinguishes specially marked preterite forms from unmarked present forms. The original PIE system, however, plays a role in Germanic verb morphology, since its forms are the ancestors of many Germanic verb forms.

Whereas PIE knows five moods (indicative, subjunctive, optative, imperative), PGmc only distinguishes three (indicative, subjunctive, imperative, injunctive). These are even more reduced in OE, which only retains an indicative (with person marking in singular only) and a subjunctive (without person marking).

In contrast to Gothic, which preserves the PIE voice system (active, middle), in OE, original middle voice is lost and a new syntactic passive is introduced. Dual inflection of verbs is again only retained in Gothic, but lost in all the other known Germanic languages.

The development of a “weak” verbal group in opposition to the inherited “strong” verbs is probably the most eminent innovation of the Germanic verbal system. The preterite forms of strong verbs show ablaut variation in the root and originate in the PIE aspect forms. The weak preterite forms are a Germanic innovation of unclear origin.

6.2.1 Strong verbs

Germanic strong verbs reflect the ablaut variations of the PIE aspect forms: e-grade present, o-grade perfect, and zero-grade (or lengthened grade) aorist. Example (17) illustrates the PIE system with the forms of Greek λείπω ‘leave’ < PIE *leik-

(17) Gr λείπω (e-present), λέ-λοιπ-α (o-perfect), ἐλλοιπ-ον (zero-aorist)

Note that PIE also made use of morphologic devices such as reduplication (λέλοιπα) and augment (ἐλλοιπον), which are only scarcely retained in Germanic.

The relevant forms of the OE strong verb classes I-III are given in (18). The first column illustrates the development of the original PIE e-grade present form to the OE infinitive and present singular form. The second column shows how PIE o-grade perfect became the OE preterite first and third person singular form. The third column documents the development of the OE
preterite plural forms from the PIE zero-grade aorist. These forms are “principal parts” of OE strong verbs, i.e. basic grades from which the rest of the paradigms can be constructed.\footnote{15}{I have omitted the past participle form, because it shows the same vocalism as the preterite plural.}

\begin{table}[h]
\centering
\begin{tabular}{llll}
\hline
\textbf{Class} & \textbf{Weak verb forms} & \textbf{OE forms} & \\
\hline
I & \textit{bītan} ‘bite’ & \textit{bāt} & \textit{bit-on} \\
& PIE \ -eiC- & -oiC- & -iC- \\
& PGmc \ -īC- & -aiC- & -iC- \\
& OE \ -īC- & -āC- & -iC- \\
II & \textit{bēodean} ‘offer’ & \textit{bēad} & \textit{bud-on} \\
& PIE \ -euC- & -ouC- & -uC- \\
& PGmc \ -euC- & -auC- & -uC- \\
& OE \ -eoC- & -ēaC- & -uC- \\
III & \textit{bindan} ‘bind’ & \textit{band} & \textit{bund-on} \\
& PIE \ -eNC- & -oNC- & -uNC- \\
& PGmc \ -iNC- & -aNC- & -uNC- \\
& OE \ -iNC- & -aNC- & -uNC- \\
\hline
\end{tabular}
\end{table}

Class I shows the familiar PGmc vowel and diphthong shifts: PIE /ei/ > PGmc /iː/ and PIE /o/ > PGmc /a/, as well as the later change of PGmc /ai/ to OE /ā/. In the PIE zero-grade aorist, the PIE resonant /i/ becomes syllabic. The pattern of the OE strong verb class I is that of \textit{λέεπω} shown in (17) above.

Class II has a similar root structure as class I, but with the PIE resonant /u/ instead of /i/. It shows the regular vowel and diphthong shifts from PIE to PGmc. PGmc /eu/ is turned into OE /eː/ by diphthong height harmony. The same holds true for PGmc /au/ becoming OE /ēa/.

In class III, the syllabic nasal in the PIE zero-grade aorist becomes /uR/ in Germanic. The PIE e-grade present /e/ is raised to /i/ in PGmc (pre-nasal raising). In fact, liquids could also take the place of N in class III. The combination /rC/ causes breaking, such as in \textit{weorpan} (breaking of /e/ before /rC/, no pre-nasal raising), \textit{wearp} (breaking of /a/), \textit{wurpon}.

The strong verb classes IV-V given in (19) below differ from classes I-III as they derive their preterite forms from a PIE lengthened grade aorist. Class IV-V show instances of Anglo-Frisian
brightening from PGmc /a/ to OE /æ/. In contrast, Anglo-Frisian brightening fails before nasal in class III.

(19) **strong verb classes IV-V**

<table>
<thead>
<tr>
<th></th>
<th>beran ‘bear’</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIE</td>
<td>-eR-</td>
</tr>
<tr>
<td>PGmc</td>
<td>-eR-</td>
</tr>
<tr>
<td>OE</td>
<td>-eR-</td>
</tr>
<tr>
<td></td>
<td>ber-an</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>etan ‘eat’</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIE</td>
<td>-eC-</td>
</tr>
<tr>
<td>PGmc</td>
<td>-eC-</td>
</tr>
<tr>
<td>OE</td>
<td>-eC-</td>
</tr>
<tr>
<td></td>
<td>et-an</td>
</tr>
</tbody>
</table>

Apart from classes I-V illustrated above, many minor classes and sub-classes of strong verbs exist, which cannot covered in this paper. The so-called “aorist presents”, for instance, are a group of class I verbs which build their present singular forms upon zero-grade aorist like OE ripan, rāp, ripon ‘ripe’. Class VII strong verbs even show relics of reduplication.

6.2.2 **Weak verbs**

Germanic weak verbs form their preterite by attaching a dental suffix to the unchanged present root or stem, like OE lufian ‘love’, pret luf-o-d-e, past part luf-o-d. Weak preterite forms are a uniquely Germanic innovation.

The origin of the weak preterite dental suffix is much debated. The most likely source seems to be the PIE verb *dhē- ‘put, place, do’ > L fēcī, OE dōn. The weak preterite form could therefore be traced back to an original compound with ‘do’ like OE luf-o-d-e ‘I did love’.

Although a weak Germanic preterite form already appears in the oldest runic inscription (RN talg-i-d-ai ‘[he] carved’), it is the conservative Gothic morphology that allows further insight into the origins of the dental suffix. The Gothic form nasidēdun ‘they saved’ can be analysed as in (20).

(20) nas - i - dē - d - un
SAVE - theme - reduplication - DO - 3 pl
‘they saved’

27
Gothic has retained the reduplicated lengthened e-grade perfect of PIE *dhē-. Other Gothic weak preterite forms show o-grade and zero-grade relics of *dhē-. In Gothic, all weak verbs are thematic. OE has thematic and athematic weak verbs. I have mentioned earlier that one characteristic of thematic verbs is that they do not have ablaut alternation and that this may be one reason why thematic paradigms have been generalized in almost all IE languages. Szemerényi (1990:246) sketches the different structures of thematic and athematic verbs as in (21).

(21) thematic: stem + mood marker + theme + ending  
athematic: stem + mood marker + ending  
The theme is an alternating -e/o-formative, which is semantically empty but may have had a derivative function in pre-PIE times. The marker for indicative mood is usually ∅. Therefore the formula can be shortened to (22).

(22) stem + (theme) + ending  
Original PIE thematic verbs may appear as OE athematic weak verbs, because the theme vowel dropped after heavy syllables (syncope) as demonstrated in (23) and (24).

(23) OE ner-e-de ‘he saved’ (Go nas-i-da):

ner - e - de  
stem - theme - ending  

(24) OE hēr-de ‘he heard’ (Go haus-i-da):

hēr - ∅ - de  
stem - syncope - ending  

OE weak verb classes contain causative verbs with an -i/j- stem-formative. This seems to have been one of the most productive PIE suffixes. It was used to form deverbatives, i.e. to derive verbs from verbs, like PGmc *sat-j-a-n ‘cause to sit, set’ from PGmc *sit-a-n ‘sit’. We can see that the deverbative was formed from the preterite stem (*sat-) of a strong verb.

PGmc *-jan had two effects in OE: The /j/ first caused i-umlaut in the root, and second doubled the preceding consonant (West Germanic gemination) and finally dropped. Hence OE sett-an < *set-jan (WGG) < PGmc *sat-jan (i-umlaut). This verb type could also be derived
from adjectives, like OE hāl-an ‘heal, cause to be whole’ < *hāljan (WGG did not appear if the preceding vowel was long or a diphthong) from OE hāl ‘whole’.

Further minor weak verb types and verb types which are neither strong nor weak (like ‘preterite presents’ and athematic root verbs) are not covered in this paper nor is the development of verbal endings.

6.3 Pronouns

The PGmc and OE pronominal system has various sources. First- and second-person pronouns are inherited form PIE. First person singular pronouns continues the PIE roots *H₂egh- (> L eg-o, OE ik) and *me- (> L me, OE mē). The PIE second-person root *t- became L tu, te, OE þū. The first-person plural forms continue PIE *nos-/n/* in its zero-grade form (PIE /n/ becoming PGmc /un/).

In contrast to the first- and second-person pronouns, Gmc third-person pronouns are marked for gender and do not continue a single PIE pronominal system. Masculine OE hē and neuter hit reflect a PIE deictic root *k- (L cis). Feminine OE hēo, hiere is built upon a PIE root *ei/i- (L ei-us), the initial /h/ being analogical.

The OE definite article continues a PIE deictic root *s- in nom sg masc (se) and fem (sēo) and a PIE deictic root *t- in nom sg neutr (þæt) and all oblique cases. Maybe one must assume a single PIE deictic root *s/t- with an alternating consonant. Greek shows a development similar to Gmc: *s-o > Gr ὦ and OE se; *s-ā > Gr ἐ̄ and OE sēo; *t-o-d > Gr το and OE þæt.

The NWGmc demonstrative OE þēs/þēos/þis is also built upon the PIE *s/t- root, but with a suffix *-s-.

Finally, the OE interrogative pronoun continues a PIE interrogative root *kʷ-. OE hw-æ-t is thus the exact equivalent to L qu-o-d.
7 Conclusion

In this paper, I have shown how linguistic reconstruction tries to explain putative irregularities in the system of a language by tracing them back to a regular system at an earlier state of that language. We have seen that the regularity of sound laws is one realization of this approach, but that analogical considerations have also to be taken into account.

I have explained what mechanisms conditioned the development of Old English morphology. Apart from sound laws, this process is influenced by a heavy change in the accent system and by the Proto-Indo-European morphophonemics such as ablaut and root structure.

The origins of Old English morphology have been exemplified by selected parts of nominal and verbal inflections. We have come to realism that the mechanisms stated before are helpful to reconstruct the evolution of morphological phenomena. In many cases, however, our knowledge seems to be insufficient to explain particular irregularities of OE morphology, either because we have missed an involved subregularity or because the accessible material is too narrow to draw any conclusions.

We have also seen how Germanic came up with unique innovations, which cannot be explained by means of sound changes and the structure of the PIE ancestor language. A brief look at the origins of Old English pronouns has demonstrated how broad the variety of Indo-European sources can be.

Old English historical morphology is a field that is worth studying since it leads, in its final consequence, to a better understanding of today’s language.
References


