Archaisms and innovations
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Bjarne Simmelkjær Sandgaard Hansen

Archaisms and innovations
four interconnected studies on Germanic historical phonology and morphology
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1. Introduction

Ever since the birth of comparative linguistics, officially though unjustly marked by Sir William Jones’ proclamation of 1786 that Sanskrit, Greek, Latin and possibly Celtic, Gothic and Old Persian, as well, had “sprung from some common source perhaps no longer in existence”, the primary goal of this scholarly discipline has been to uncover the prehistory and genetic relationship of the languages studied. Doing so requires the application of, above all, the Comparative Method, for a detailed description of which cf. section 2.1. What is generally looked for are linguistic archaisms that can be projected back into the common and oftenmost no longer existing ancestor of the related languages in question, i.e. their proto-language.

Following this fundamental philosophy of the scholarly field of comparative linguistics, the present Ph.D. dissertation has sprung from a partly predefined subproject on archaisms in the Germanic languages, i.e. those languages that can be scientifically proved by application of the Comparative Method to derive from Proto-Germanic, at the University of Copenhagen based research centre Roots of Europe – Language, Culture and Migrations which has as its proclaimed goal to “create an open, lively and scientifically fruitful environment for the general study of prehistoric Europe in a broad, interdisciplinary collaboration between scholars of comparative linguistics, comparative religion, mythology and folklore, archaeology, genetics and anthropology.”

Such archaisms are expected to reveal the undisturbed development of linguistic segments from a given proto-language to a subsequent linguistic stage of interest. In the case of Proto-Germanic, linguistic archaisms are therefore expected to provide information on Proto-Indo-European, i.e. the generally acknowledged parental language of Proto-Germanic, thereby also providing indispensable information on Proto-Indo-European itself and its phonological and grammatical system, but the benefits from knowledge obtained from linguistic archaisms are not limited to these areas. By

---

1 In 1767, around two decades prior to William Jones’ proclamation, the Jesuit missionary Père Coeurdoux sent a letter from his posting in Pondicherry to the French academy of science in which he outlined the similarity between Sanskrit, Greek and Latin and claimed them to have sprung from “une commune origine” since the five alternative explanations of the resemblances between these three languages, viz. commerce, scholarly intercourse, proximity of nations, religion and invasions, were to be disregarded, cf. e.g. Godfrey (1967: 58-59).

creating stronger links between, say, Proto-Germanic and its Proto-Indo-European precursor, the scholarly community will also automatically obtain greater and more detailed knowledge on the relations between Proto-Germanic, including the individual Germanic languages descended from it, and the other Indo-European branches and languages of Europe and Western and Central Asia with improved knowledge on prehistoric Europe in general as a secondary benefit.

1.1. Archaisms and innovations

In their fully understandable zeal to uncover archaisms in their respective languages of study, comparative linguists often tend either to forget or at least to forget expressing overtly the necessity of separating archaisms from innovations. In other words, in order to search for archaisms that can be projected back into the proto-language, we must first define what constitutes an archaism. Only so will we be able to identify and subsequently disregard innovations and their impact on the overall language system in argumentations concerning the prehistory of the language or languages studied.

It should be noted that innovations are by no means useless to the field of comparative linguistics. True enough, they may not provide the same kind of information on linguistic stages past, but they constitute the primary means of determining linguistic subfamilies. Once it has been established that two or more languages within a language family share an innovation, they can be grouped together into a subfamily. In reality, however, subfamilies are not posited unless either considerably many or very untrivial shared innovations can be identified between the languages sharing them. If a language family is posited on the basis of only few, rather trivial shared innovations, the risk must be considered that these innovations are tokens of mere chance similarities rather than of a genuine linguistic subgrouping.

1.2. Aim and purpose of the present thesis

With the differences in focus and utility of linguistic archaisms and innovations borne in mind, keeping these apart becomes all the more crucial to the field of comparative linguistics. Hardly surprisingly, therefore, I have centred my Ph.D. project and the present thesis resulting from it on the identification of archaisms and the subsequent separation of innovations from archaisms in Germanic nominal morphology.

That I have chosen nominal morphology or more specifically derivational morphology of nouns in Proto-Germanic and its descendants as my primary object of study in that regard is far from desultory. Only few other fields of Indo-European linguistics are in equally great need for a study on archaisms and innovations to be carried out. As I touch upon in greater detail in Ph.D. articles
no. 1 and 2, the inherited inflectional system of Germanic nouns collapsed and was shaped anew in a manner better compatible with the Germanic phonological system that had also undergone massive changes on its way from Proto-Indo-European to Proto-Germanic and further to the individual Germanic languages. Going into details on the exact nature of and reasons for these changes would take us too far; suffice it therefore here to state that the derivational stem of a given noun, once easily recognisable by means of its mere inflection, had now become sufficiently masked for the language users no longer to recognise this stem and consequently for the possibility to arise that nouns could be assigned to a new inflectional class, a new pattern, thereby laying down a seeming smokescreen on the derivational prehistory of these nouns, cf. e.g. Thöny (2013: 1, 23-27, 41-43).

Two areas of the derivational morphology of Proto-Germanic nouns call for special mentioning in this regard, viz. root nouns and vocalic stems. It is commonly known that a great amount of fluctuation of nouns happened between the inflectional class of root nouns on the one hand and the inflectional classes of the vocalic stems, i.e. the Germanic a-, ō-, i- and u-stems, on the other as well as internally between the vocalic stems, cf. e.g. Bammesberger (1990: 54-55), Casaretto (2004: 36, 170-173), Thöny (2013: 1-2, 13-27, 58-70, 77-82). Consequently, the mere assignment of a Germanic noun to, say, the synchronic i-stem inflection does not vouch for its diachronic identification as an i-stem, and we are forced to employ other means in order to uncover its derivational history.

1.3. Structure and limitations of the present thesis

In two separate articles of my thesis, I have examined two inflectional and originally derivational classes of Proto-Germanic nouns, viz. root nouns and primary i-stem nouns, in order to establish new ways of defining which nouns of these two inflectional classes are archaic, i.e. which root nouns and i-stem nouns have been inherited as such from Proto-Indo-European, and, correspondingly, which nouns are to be regarded as innovations by way of having been secondarily transferred into new inflectional classes differing from their original ones.

My preference for and choice of these two classes for examination relies on the circumstance that, as will become evident to the readers from reading the articles, the phonotactics and ablaut of the lexical roots from which their nouns are derived play a decisive role in the identification of archaisms and innovations among their members. The same can rightfully be said of the primary Germanic a-, ō- and u-stems, but the comprehensive study on u-stems presented in the monograph by Neri (2003: esp. 45-178, 341-346) has already, despite its primary focus on Gothic rather than on
Proto-Germanic as such, provided the scholarly community with invaluable information on archaisms and innovations, and I see no reason to engage in a task already so well and thoroughly conducted. As regards the two remaining classes of primary vocalic stems, viz. the a-stems and the ō-stems, their very number far exceeds the spatial limitations of this thesis. Furthermore, the complexity of the a-stems in particular as regards possible derivational sources even at the Proto-Indo-European stage severely blurs our chances for finding any neat way to separate archaisms from innovations in these two classes. A wide array of the derivational processes concerning especially the Germanic a-stems has been dealt with in Ph.d.-article no. 2, though, and some of those regarding ō-stems in Ph.d.-article no. 1.

Diachronic derivational morphology as a field of study cannot be properly conducted without accurate inputs from diachronic phonology. In other words, if we do not know the basic recurrent phonological correspondences between the languages compared, we have no means of determining whether two forms from two different languages are cognate or not. Consequently, in order for us to better understand all derivational and inflectional aspects of the Proto-Germanic root nouns and primary i-stem nouns, I have deemed necessary the addition of two auxiliary articles on phonological questions to my thesis: one on the Germanic outcome of initial PIE *#Hi- and *#Hu-, the other on the Germanic outcome of PIE *-êĩ(C)# and -êũ(C)# in initial syllables. Besides suggesting a new soundlaw regarding the development of Proto-Indo-European laryngeals into Proto-Germanic, the former article is meant to qualify the Indo-European etymology of one of the lexemes included in Ph.D. article no. 4 on root nouns, viz. PG *aik- f. ‘oak’.

As for the latter article, the sound laws suggested in it have a direct relevance to our understanding of the prehistory of some of the oblique desinences of the Proto-Indo-European i- and u-stems, thereby contributing to our overall understanding of these two inflectional classes and the potential impact of their inflectional features on common points of reference to other inflectional classes.

1.4. General features of the individual articles

As these four articles are aimed at publication in various media, they cannot be expected by their readers to appear entirely uniform. Nevertheless, it is worth mentioning several recurrent traits of especially those three articles where etymological analyses play a significant role.

The etymological analyses of individual words are always initiated with the specification of the reconstructed or, in some cases, transposed Proto-Germanic lemma in question. The lemmata are quoted in their stem form, i.e. in a form clear of further inflectional specifications, meaning that,
e.g., the noun known as PG *dagaz (nom.sg.), *daga\(^n\) (acc.sg.) etc. ‘day’ will be quoted in the form of *daga-. Following the notational system introduced by the more recent etymological dictionaries of Proto-Germanic, e.g. Orel (2003) and (Kroonen (2013), I mention verbs by their infinitive stem.\(^3\) Consequently, the verb whose infinitive is PG *kwemana\(^n\) ‘(to) come’ will be quoted as *kwemana-; not as *kwema- in accordance with the notational practice followed by e.g. Seebold (1970) and Casaretto (2004). Immediately following the Proto-Germanic lemma itself, basic grammatical information is provided, i.e. information on word class. Nouns are marked and defined by gender; verbs according to their type, i.e. whether they belong to the class of strong, weak or preterite-present verbs. In cases where, for some reason or another, the grammatical gender of a noun cannot be identified, the noun is marked as “sb.” for substantive, “n.” being reserved for marking the neuter. The final piece of information provided on every lemma is its meaning. If, as is the case for some glosses, the meaning is only provided in, say, Latin or Greek, I have generally attempted at providing also an English translation.

Attested cognates of the Proto-Germanic lemmata in the individual Germanic languages,\(^4\) further Germanic derivatives related to the Proto-Germanic lemmata, and considerations on the Proto-Indo-European predecessors of the lemmata constitute, in the sequential order mentioned here, the next pieces of information provided in the etymological analyses. All intra- and extra-Germanic cognates are generally listed in the same way as the Proto-Germanic lemmata, i.e. with their form followed by basic grammatical and semantic information. Their forms are quoted in accordance with the standard annotational practices of the languages in question, e.g. Sanskrit nouns and adjectives in their stem form, Sanskrit verbs in their 3.sg., Greek nouns in their nom.sg., Latin adjectives in their m.nom.sg., Gothic verbs in their infinitives etc. Generally, the cognates mentioned in my thesis belong to the oldest attested stages of the languages which they represent unless later stages provide indispensable pieces of etymological information not provided by the ancient languages.

The etymological analyses are concluded by a list of references to secondary literature regarding the Proto-Germanic lemma in question. Reference is given to a range of standard handbooks on

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3 Orel (2003) quotes the full infinitive form, i.e. stem and desinence. In the case presented here, Orel (2003: 227) quotes the form as PG *kwemanan.

4 I generally list cognates from only the major ancient Germanic languages, i.e. Gothic, Old Norse, Old English, Old Frisian, Old Saxon and Old High German, unless features of cognates from later stages of these languages or from other of the ancient Germanic languages provides unique information of particular relevance to the etymological analysis of the lexeme in question.

As for the wide array of additional handbooks also consulted, e.g. synchronic dictionaries on the individual Germanic languages and synchronic or etymological dictionaries on languages of the remaining Indo-European branches, I have generally mentioned them in the list of references only when parts of the etymological analyses of the Proto-Germanic lemmata in question rely on etymological proposals mentioned in them.

Finally, it should be noted that I have merged the bibliographical sections of the four articles and of the general chapters 1-3 into one list situated at the end of the thesis.
2. Methodological considerations

Before we turn to the four individual articles, we need first identify the methods applied to and the factors operating in their data. The most salient such factors are regular sound change as identified by the concurrent application of the Comparative Method and the method of Internal Reconstruction, analogy, and lexical borrowings.

2.1. The Comparative Method

The by far most important method in historical and comparative linguistics and consequently also for the present thesis is the Comparative Method. When applied on linguistic data from two or more languages of common descent, i.e. two or more languages sharing the same ancestor, the Comparative Method makes us capable of revealing the development of these languages by performing a segment-by-segment comparison of the data. For a thorough description of the Comparative Method cf. e.g. Campbell (2013: 107-144).

The linguistic area of phonology constitutes the primary source of data for comparison. Consequently, our task as comparative linguists is to compare lists of cognate terms from which we can then establish regular sound correspondences between the languages in question. Only when a sequence of regular and recurring sound changes can be suggested can we reconstruct the proto-language, i.e. the common ancestor of the languages studied. In other words, linguistic kinship is deemed certain only if the common ancestor appears reconstructible and if regular and recurring sound correspondences can be established. After establishing these and reconstructing protophonemes, we can turn our focus one level up in the linguistic hierarchy and start comparing meaning-bearing sequences of these phonemes or, in other words, start comparing morphemes. In so doing we must be constantly aware, though, that the results of morphological comparison are often seriously hampered by analogy, for an outline of which cf. section 2.3.

2.1.1. How to apply the Comparative Method on linguistic data

Campbell (2013: 109-128) suggests some basic steps for applying the comparative method to linguistic data, the first of which being the creation of a list of potential cognates, i.e. a list of linguistic forms with identical or similar meaning from the languages in question.

Secondly, we must establish sets of regular and recurrent phonological correspondences. If we can retrieve many regular correspondence sets of this kind, a common origin of the languages
involved in the comparison becomes a virtual certainty, especially if some of the correspondences are non-trivial or unusual.

The reconstruction of proto-phonemes constitutes the third task. One type of consideration that might assist us in deciding what reconstruction fits the data is of a typological nature. For example, the voicing of voiceless stops between vowels is common, but not the devoicing of voiced stops in the same position. If, say, a correspondence \(-p\sim -b\) is found intervocically in two languages, the proto-phoneme is more likely to be \(*-p\), with the second language having undergone the development \(*-p > -b\). The opposite reconstruction would create a rare type.\(^5\)

Fourthly, we might need applying contextual conditionings to the sound correspondences just discovered, i.e. we must state if two or more sounds appear to be complementarily distributed according to the surroundings in which they occur. In other words, if, say, a \(k\) of one language can be compared to both a \(k\) and a \(\dot{c}\) of another language, we must either assume that original \(*k\) and \(*\dot{c}\) have merged in the former or that original \(*k\) (or \(*\dot{c}\) for that matter) has split into what ultimately developed into two phonemes in the latter. In this latter case, we need to set up a range of criteria for when to expect \(k\) and when to expect \(\dot{c}\), i.e. we need to identify the conditioning factor.

Steps five and six partly overlap and strongly relate to parts of the process in step three. Here we must check the reconstructed proto-phonemes for typological adequacy from the perspectives of both the reconstructed phonological system of the proto-language on the one hand and linguistic universals and typological expectation on the other.

When we have accomplished all the previous steps, we can safely turn to the comparison of larger units such as morphemes, cf. above.

### 2.1.2. Potential shortcomings of the Comparative Method

Criticism of the Comparative Method has mainly centred on the, admittedly valid, observation that languages do not develop as divergently as inherently presupposed by the Comparative Method or rather as illustrated by the family-tree model of rendering linguistic kinship as a branching off in different directions of the related languages from one common source, cf. e.g. Campbell (2013: 142-144, 174-184, 187-188) and the scepticism expressed by Bloomfield (1933: 318): “The comparative method, then – our only method for the reconstruction of prehistorical language, –

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\(^5\) Unusual sound changes do occur, though. The Indo-European word for, e.g., ‘two’ is reconstructed as PIE \(*dyo(y)\) which, in turn, is reflected as Arm. \(erku\) num. ‘two’. Several other cognates demonstrate a regular change of PIE \(*du- > Arm. \(erk\)-\(,\) cf. e.g. Fortson (2004: 341-342).
would work accurately for absolutely uniform speech-communities and sudden, sharp cleavages. Since these presuppositions are never fully realized, the comparative method cannot claim to picture the historical process.”

In reality, however, linguists are well aware of this caveat and therefore, when possible, seek to include data from variants of the languages studied, cf. e.g. Campbell (2013: 188-197). Such data is not easily rendered in the family-tree model which, in itself, allows for the rendering of neither contact between languages after their first split-up nor the circumstance that no languages are clear of dialectal or other types of linguistic variation. In order to render such data properly in a graphic model, we must apply the Wave Theory according to which every linguistic change spreads out like a wave from its starting point. Consequently, we must insert every change and its geographical area of impact into a map, thereby obtaining a detailed picture of linguistic variation and contact.

It should be noted, however, that the Wave Theory reveals nothing about linguistic stages past. The most comprehensive and accurate rendering of the history of a given language, consisting as it does of variants and influenced as it probably is by neighbouring speech communities, is therefore obtained by application of both models whenever possible.

2.2. Internal Reconstruction

Whereas the Comparative Method performs a segment-by-segment comparison of linguistic data from two or more genetically related languages, the method of Internal Reconstruction analyses the internal development of only one language over time. In practice, these two methods should by no means be seen as mutually exclusive. On the contrary, historical and comparative linguists apply both methods together in order to reconstruct prehistoric phases of languages, to discover the linguistic developments of the languages studied and to confirm or refute hypothesised kinship between languages, cf. e.g. Campbell (2013: 211).

Internal Reconstruction is a method of retrieving information about a past and often most unattested stage of a language from the characteristics of an attested and more recent stage of that language. Internal reconstruction thus compares variants within a single language under the assumption that meaning-bearing elements alternating between two or more similar forms in different environments, i.e. different allomorphs of a morpheme, descend from a single regular form from which they have arisen as the result of conditioned sound changes, cf. e.g. Campbell (2013: 198-212) and Givón (2000: 107-114, 155).
2.3. Analogy

Analogy is best described as a cognitive process of transferring or generalising information or meaning from one particular set of conditions to another particular set of conditions, cf. e.g. Campbell (2013: 91-105) who lists a range of different types of analogy including, above all, proportional analogy and analogical or paradigmatic levelling.

Such a definition of analogy implies that analogy results from a cognitive and in principle irregular and unpredictable process rather than from an automatic or regular one as is the case with the regular and recurring sound changes identified by means of the Comparative Method and Internal Reconstruction. The relationship between analogy and sound change is described quite accurately by what is known as Sturtevant’s (1947: 109) Paradox: “Phonetic laws are regular but produce irregularity. Analogic creation is irregular but produces regularity.” Hence follows that analogy actually modifies the outcome of regular sound change, thereby disturbing or blurring the clarity and regularity of the lists of cognates used by the Comparative Method to identify regular sound changes and to establish linguistic kinship.

2.3.1. Proportional analogy

One type of analogy is the proportional one which is the linguistic process that removes word forms perceived by the language users as irregular by remaking them in the shape of more common forms governed by synchronic rules, cf. e.g. Campbell (2013: 92-93).

The idea is that an old synchronically irregular form can be replaced by a new synchronically regular and transparent one by application of the formula \(a : b \sim c : x\) where \(x\) is to be understood as a new form whose phonological shape resembles that of \(b\). Suffice it here to mention one example, viz. that of turning a Germanic strong verb perceived as irregular by the language users into a synchronically more regular weak verb, e.g. Da. male ‘paint’ : gale ‘crow’ ~ malede ‘painted’ : x where \(x = galede\) ‘crew, crowed’, the obsolete form being gol ‘id.’. Sometimes irregular forms can be created by analogy as well, this process being referred to by Campbell (2013: 95) as analogical extension. One case is the past tense form of Eng.(Am.) dive, i.e. drive : dive ~ drove : x where \(x = dove\), the obsolete form being dived still existing in British English.

2.3.2. Analogical or paradigmatic levelling

Another form of analogy is analogical or paradigmatic levelling by which process the language users make a synchronically irregular paradigm with variants regular by choosing and generalising one of the variants, cf. e.g. Campbell (2013: 93-95). Consequently, we may justly state that both
cases of proportional analogy described above (section 2.3.1) are also cases of analogical or paradigmatic levelling.

One of the cases of analogical or paradigmatic levelling most often adduced in handbooks on linguistic change is that of Gr. ἔπομαι ‘follow’ whose present singular and plural forms, if resulting from regular sound change only, should have been 1.sg. ἐπομαι ‘I follow’, 2.sg. *ἐτη ‘you follow’, 3.sg. *ἐτεται ‘he follows’, 1.pl. ἐπόμεθα ‘we follow’, 2.pl. *ἐτεσθε ‘you follow’, 3.pl. ἐποντα ‘they follow’. In order to create a uniform paradigm, the stem variant *ἐτ-, resulting from the development of PIE *kʷ > Gr. τ when followed by a front vowel, was replaced with ἐπ- whose π reflects PIE *kʷ in front of back vowels, cf. e.g. Campbell (2013: 94) quoting Beekes (1995: 73).

2.3.3. Analogical processes of particular relevance to the present thesis

As I stated above (section 1.2.), my thesis centres on the identification of archaisms and the subsequent separation of innovations from archaisms in Germanic. Analogical processes are, therefore, of the utmost importance to its argumentation and results.

Analogy is responsible for the creation of innovations. In other words, when an archaic- and irregular-looking Proto-Germanic paradigm is analogically altered into a more regular one in synchronic terms, we are facing a linguistic innovation. Archaisms, on the other hand, must be regarded as resulting from processes of regular sound change that have been allowed to remain undisturbed by analogy.

Derivational morphology of Germanic nouns is a field of study for which analogy and the linguistic innovations resulting from it play a significant role. Due to the collapse of the inherited inflectional system of Germanic nouns, i.e. a system in which lexical root, derivational suffix and inflectional ending were originally more easily (though not entirely) recognisable units, the Germanic nouns have lost their primary marker of derivational stem and inflectional class, these two entities being originally identical. In other words, when, say, the easily recognisable a-stem PG *dagaz m. ‘day’ is reflected in the individual Germanic languages as Goth. dags m. ‘id.’, ON dagr m. ‘id.’, OE dag m. ‘id.’ etc. with regular syncope of the stem defining vowel PG *a, we are suddenly deprived of our most straightforward means of categorising these nouns diachronically, i.e. of identifying them as a-stem derivatives, cf. e.g. Thöny (2013: 41-43, 53-58) and Nübling (2008: 283-288, 295-297) for a more comprehensive discussion of the impact of the loss.6 If, then,

6 Though including a section of approx. two pages on Proto-Germanic inflectional classes, Nübling (2008) treats the matter of inflectional classes primarily from the view of contemporary German.
we add to the equation the i-stem PG *gastiz m. ‘guest’ > Goth. gasts m. ‘id.’, ON gestr m. ‘id.’, OE giest m. ‘id.’ etc. with regular syncope of the stem defining vowel PG *i, a classical case of inflectional similarities between two inflectional classes emerges. Especially in Gothic where the i-mutation does not operate, the so-called pivotal forms of nom.sg. Goth. dags : gasts and acc.sg. dag : gast now form the basis for a merger of the remaining desinences, in this case in favour of the a-stem forms. This and similar examples constitute what Ramat (1981: 62) designates a “Krise des Flexionssystem im Germanischen.”

However, crises are meant to be solved. The Germanic languages found new ways of deciding to what inflectional class a given noun should most probably be assigned. Though often deprived of their overt derivational markers, the members of each inflectional class still inherited a wide array of features from older linguistic stages, and these features assisted in the creation of more or less fixed prototypes or profiles of inflectional classes, cf. e.g. Thöny (2013: 23-27, 35-46, 314-325, esp. 317) who lists features such as sets of inflectional rules (e.g. desinences and mutations of the stem), phonotaxis (number and quantity of syllables; to this I add quality of syllables, i.e. ablaut), stress and grammatical gender among the formal ones. Among the functional features, he lists general function (agent noun, abstract noun etc.), semantic field (+/- animate, +/- animal etc.), natural gender and semantic relations to the derivational basis. 8

In cases where doubt prevails as to the proper assignment of a given noun to an inflectional class, the loss or weakening of the once primary marker of derivational stem as well as inflectional

7 Following Darski (2004), Kotin (2012: 93-101, 451-452) discards the entire standard notational system of a-stems, i-stems, u-stems etc. and replaces that system with one of referential nominal stems (RNS) consisting of referential nominal roots (RNW) and primary, constant exponents (KE) to which secondary, variable exponents (VE) are added. In this system, the RNW broadly corresponds to the lexical root, the KE more or less to the derivational suffix and the VE to the inflectional ending. Thus, Kotin (2012: 101) designates a classical a-stem as “RNS 1: RNW + KE idg. O, germ. A” with the result of focus shifting from (diachronic) derivation to (synchronic) inflection in a way quite similar to the inflectional classes of Thöny (2013: 15-20) and others, cf. Hansen (forthc. 2015: 123). Kotin’s practice can therefore hardly be seen as anything but an attempt to adapt the notational system to the synchronic reality of the ancient Germanic languages.

8 Albeit only to a limited extent when compared to the Proto-Germanic situation, the individual Germanic languages still include the primary marker of a given inflectional class among the formal features for assignment of nouns into inflectional classes. The relatively stable Old English r-stems constitute a brilliant example of this. With their rather consistent suffixal r, they defy the transitional tendencies seen in many other inflectional classes for a considerable period, cf. e.g. Thöny (2013: 43, 84-85).
class, i.e. the loss or weakening of the derivational stem marker, makes the remaining features gain attractive power as regards this assignment.

2.4. Lexical borrowings

At least one additional factor potentially disturbing the picture obtained by the application of the Comparative Method deserves to be mentioned here, viz. language contact including lexical borrowings which, naturally, cannot be reconstructed any longer back in time than to the period when they were borrowed from the source language into the borrowing language, cf. e.g. Campbell (2013: 56-75).

2.4.1. Lexical borrowings from known sources

In many cases, the identification of lexical borrowings involves no particular challenges to comparative linguistics. When, for instance, OE cyrice, cirice f. ‘church’ and OS kirika f. ‘id.’ has been borrowed from Gr. κυριακόν, κυρικόν n. ‘pertaining to the Lord’, we can easily identify the Germanic terms as borrowed rather than inherited term. The reasons for this are manifold. Firstly, we find no suitable extra-Germanic comparanda displaying a regular phonological development; in other words, we find no reflexes of a PIE *gurige₂ in any Indo-European languages but Germanic (i.e. PG *kuriko(n)-). Secondly, a nearly identical term is found in Greek where, unlike in Germanic, a perfect Indo-European etymology can be adduced.9 Thirdly, early Germanic attestations are found in only a limited area of Germania. The word for ‘church’ has thus been borrowed from the West Germanic into the North Germanic languages as is evident from the fact that a form such as PG *kuriko(n)- would probably result in ON †kurka rather than kyrkja, kirkja just as PG *talidɔ w.v. I ‘told; counted’ (pret.) > ON talda and not †eldon, cf. e.g. Noreen (1923: 61-63). This explanation conforms well to what we know about the culture of the early Germanic area, viz. that the speakers of North Germanic were Christianised considerably later than the speakers of, say, Old English, cf. e.g. Stenton (1971: 104-105) and McGuire (2008).

2.4.2. Lexical borrowings from unknown sources

However, not every case of lexical borrowing is as easily identifiable as the above-mentioned (section 2.4.1.). If we suspect a given lexeme to be a lexical borrowing in cases where the source

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9 Gr. κυρι(α)κόν is to be analysed as a substantivised ko-adjective derived from Gr. κύριος m. ‘possessor, master, lord’ < PIE *kāH-rj- to the root PIE *kēH- ‘swell’ also found in e.g. Gr. κυώ v. ‘swell’ and Skt. śávīra- adj. ‘strong, mighty’, cf. e.g. Nielsen (2000: 220-221), Frisk (1963-1966: 53-54) and IEW (2005: 592-594).
language is no longer attested, we are left with no other choices than resorting to indications such as limited geographical distribution of the lexeme in question, phonological and morphological irregularities, aberrant processes of word formation and the connection of the lexeme to a semantic field especially prone to accept lexical borrowings, cf. e.g. Schrijver (1997: 294-296) and Campbell (2013: 61-66). As pointed out by Schrijver, the identification of a given lexeme as a borrowing may justly call for criticism if lexical borrowing from an unknown source is invoked only by means of one of the criteria listed here. Rather, as Schrijver (1997: 296) states, “[i]t is the cumulative evidence that […] clearly tips the balance in favour of a substratum origin.” This is especially true if we add that cases of lexical borrowing from unknown sources can be identified as such “by the fact that they show phonological and morphological alternations which are regular in the sense that they recur in more than one etymon according to a certain pattern but irregular in the sense that they cannot be explained, for some reason or other, on the basis of Indo-European phonology and morphophonology”, cf. again Schrijver (1997: 296).

Lexical borrowings from unknown sources are generally referred to as sub-, ad- or superstrate words. The term *substrate or substratum* refers to the language of speakers who had less prestige and power in comparison with speakers of another language in contact with the former. Conversely, the term *superstrate or superstratum* is used of a language whose speakers enjoy high prestige in comparison with speakers of another language upon which the former language has often been imposed by means of force, i.e. invasion. *Adstrate or adstratum* finally labels the linguistic interaction of equally prestigious speakers of two or more different languages, cf. e.g. Tristram (2007: 195-196).

When we are in want of historical sources to inform us about the balance of power and prestige between the languages in contact, our only tool for categorising a lexical borrowing as either a sub-, ad- or superstrate word is an analysis of the semantic field to which it belongs. Superstratum is invoked when the lexeme in question belongs to a semantic field pertaining to upper class functions of a society such as religion, administration and warfare; substratum, on the other hand, when the lexeme belongs to a semantic field pertaining to lower class life such as farming and nature in general. To these semantic fields of substrate vocabulary, Vennemann (1995 [2003]: 207-208) adds that of toponyms assigned to various locations in the area where the speakers of a superstrate language impose themselves on the speakers of a substrate language. Furthermore, he notes that substrate languages tend to influence not only on the lexicon but also on the morphosyntax and phonology of intruding superstrate languages.
2.4.3. Borrowing processes of particular relevance to the present thesis

Since lexical borrowing constitutes a natural part of any language that finds itself in contact with other languages, cf. e.g. Campbell (2013: 56), I see no reason not to assume that Proto-Germanic and the ancient Germanic languages could have borrowed lexical items from other known or unknown languages.

Schrijver’s (1997: 296) statement that lexical borrowings can safely be identified in cases where recurring phonological and morphological patterns unanalysable within the phonological and grammatical system of the target language are displayed has provided us with a new and viable tool for suggesting substrate or loan word origin of Germanic lexemes. Possible candidates for lexical borrowing according to these methodologically strict criteria have been suggested by Schrijver (1997: 297-312) himself and repeated later by e.g. Kroonen (2012: 240). He has observed a systematic, though non-Indo-European interchange of initial *a- versus initial *Ø- in a number of lexically similar doublets from the European languages, cf. e.g. OHG amsala f. ‘blackbird’ ~ Lat. merula f. ‘id.’ (< *mesal-) and OHG aruz n. ‘ore’ (< PG *arut-) ~ Lat. raudus m. ‘lump of ore’. We can further observe that the lexical roots display radical zero grade when a-prefigated.

Another case identified already by Kuiper (1956: 217-219) is that of the suffix PG *-iũ- (< Pre-PG *-ind-) in e.g. PG *arwũt- f. ‘pea’ corresponding almost regularly to the “Pelasgian” suffix Gr. -iũθ- ~ -ĩθ- ~ -ĩθ- ~ -iv- etc. found in e.g. Gr. ἐρέβινθος m. ‘chickpea’, λαβύρινθος m. ‘labyrinth’ etc. This suffix seems to occur also with a rounded vowel, i.e. as Gr. -ũθ- found in e.g. Gr. κολοκύνθη f. ‘round gourd’, όδόλινθοι m. ‘chickpeas’ (pl.) etc., cf. also Kroonen (2012: 243-244, 247-248).
Article no. 1: Layers of root nouns in Germanic: Chronology, structure and origin

In this article, I propose that root nouns and unsegmentable consonant stems in Germanic be categorised into three layers, viz. (I) inherited root nouns, (IIa) original substrate or loan words, (IIb) nouns from other declensions reanalysed as root nouns in parts of the Germanic dialect continuum and (III) nouns from other declensions reanalysed as root nouns in North Germanic. I further propose that the inherited root nouns of the first layer, non-ablauting as they have become in Germanic, display radical ablaut grades that are predictable from the phonotactic structure of the root.

1. Communis opinio on root nouns

Proto-Indo-European root nouns are constructed only by means of a root and an inflectional morpheme. Thus, no derivational suffixes are involved in the construction of a root noun. Like the majority of the remaining athematic noun declensions, root nouns are ablauting, i.e. their radical vocalism interchanges between ē-grade, ō-grade and zero grade according to a number of morphophonemic criteria from Pre-Proto-Indo-European times, cf. e.g. Brugmann & Delbrück (1906: 130-146), Hirt (1929: 224-230), Kuryłowicz (1968: 26-38), Schindler (1972a: 8-9); Rasmussen (2003: 354-355); Fortson (2004: 73-74, 103-109) etc.

According to Schindler (1972: 32-38), root nouns display two basic types of ablaut at the Proto-Indo-European stage.

1  e/Ø-ablaut (e.g. PIE nom.sg. *h₂nēr, acc.sg. h₂nēr-η, gen.sg. *h₂ŋr-ós ‘man’). This type is associated with action nouns and with agent nouns derived from verbal roots with inherent static semantics.

2  o/e-ablaut (e.g. PIE nom.sg. *nōkʷt-s, acc.sg. *nōkʷt-η, gen.sg. *nēkʷt-s ‘night’); however o/Ø-ablaut if the root contains a vocalisable resonant (e.g. PIE nom.sg. *pōrk-s, gen.sg. *pφk-ós ‘fallow deer’). This type is associated with feminine nouns with resultative or

10 An abbreviated version of this article has been submitted for publication in the conference proceedings from Etymology and the European Lexicon: XIII Fachtagung der Indogermanischen Gesellschaft, Copenhagen, 17-22 September 2012.
passive semantics and with agent nouns with which a touch of iterative semantics can often be associated.

Root nouns and consonantal stems in general were inherited from Proto-Indo-European into Proto-Germanic, where, however, this declension had become not only closed in that it was no longer productive and would not accept new members, but also moribund in that its members, the inherited root nouns, gradually transcended to other declensions.

This communis opinio is expressed by, i.a., Krahe (1967: 34): “Von dem im Germ. vorhandenen kons. Stämmen, die sämtlich auf idg. Typen beruhen, stellen die unter ”a” bis ”d” [Reste von idg. Wurzelnomina u. dgl., Verwandtschaftsnamen auf -r, Substantivierte Partizipia auf idg. -nt and Reste neutraler s-Stämme] behandelten Restgruppen dar, die im Laufe der Entwicklung in den Einzeldialekten als selbständige Gruppen ausgestorben und in andere Klassen übergegangen sind.”

Two general circumstances call for a modification of this view. First, a fact long known but too often left unmentioned by the scholarly community is that the root noun declension seems to have become (re)opened in North Germanic, cf. e.g. Brøndum-Nielsen (1935: 146): “De maskuline Rodstammer udgør i Nordisk en faatallig Klasse, af hvilke næppe andre end føtr Fod er oprindelig Rodstamme.” and (1935: 154-155): “De feminine Rodstammer omfatter i Gammeldansk – som i de andre nordiske Sprog, dels en Række gamle Rodstammer, dels nogle fra andre Stammer overførte Substantiver.”

Second, Kroonen (2012: 255) claims that: “[…] in Germanic, the Indo-European class of the root nouns was open to loan words or substrate words. This can hardly be anything else but a reflection of the form of these words in the donor language.”

If so far taking for granted the validity of these two assumptions, we seem able to conclude that the root nouns had become if not thriving in Germanic then at least in the process of recovering from their former moribundity. Consequently, a rejection or at least a modification of the communis opinio regarding the fate and the vitality of the root noun declension seems to be in order.

In this article, I claim the alternative view that root nouns and synchronically unsegmentable consonant stems be stratified into a number of layers according to various criteria. Basing my analysis on the Germanic material listed in section 2, I propose the following three layers:

I Root nouns inherited from Proto-Indo-European.
IIa Unsegmentable substrate or loan words reanalysed as root nouns in Proto-Germanic.
IIb Nouns from other declensions reanalysed as root nouns in Proto-Germanic or in parts of the Germanic dialect continuum.

III Nouns from other declensions reanalysed as root nouns in North Germanic.

2. Material

The hopefully close to complete list of material below consists of 69 lexemes that are inflected entirely or partially as root nouns or as unanalysable, monosyllabic consonant stems in Proto-Indo-European (only those that are continued in Proto-Germanic), Proto-Germanic or the individual Germanic languages.

1 PG *aik- f. ‘oak’. Attested as a root noun in ON eik f. ‘id.’, OE āc f. ‘id.’; as an ō- or i-stem in OFris. ēk f. ‘id.’, OS ēk f. ‘id.’ (may also be a root noun), as an i-stem in OHG ei(c)h f. ‘id.’ (may also be a root noun) and as a younger ō- or iō-stem in OHG eihhe, eihha f. ‘id.’. Often affiliated with the root PIE *h₂eǵ- ‘shine’, cf. Gr. aίγ- (e.g. in aίγιλους m. ‘kind of oak’), Gr. aἴγειρος m. ‘poplar’, Lat. aesculus f. ‘durmast oak, winter oak’ vel sim. (< *aigscolos), Lith. ažuolas, ažuolos, ažuolas m. ‘oak’ etc.; further maybe ORu. jazvъ m. ‘badger’, Ru. jazъ m. ‘carp’, OIr. áesc sb. ‘concha, clasendix’. Rather than reconstructing PIE *h₂eǵ-, we might consider reconstructing *aiǵ- with an original (post-) PIE *a, this alternative being more likely when judging from the semantics (botany) which at least partially implies a possible loan word status and thus affiliation with layer IIa rather than layer I, cf. also e.g. Kroonen (2013: 9-10) for the Germanic forms and Frisk (1960: 30-31) for the Greek cognates. Literature: Bammesberger (1990: 195), Bjorvand & Lindeman (2000: 180), Griepentrog (1995: 24-32), Holthausen (1974: 2), IEW (2005: 13), Kluge/Seebold (2002: 229-230), Kroonen (2013: 9-10), Lloyd et al. (1998: 974, 984-986), Orel (2003: 7), Philippa et al. (2003: 669), de Vries (1974: 96).

2 PG *alh- m. ‘temple, sanctuary’. Attested as a root noun in Goth. alhs; as an a-stem in OE ealh, alh m. ‘temple, place of sacrifice, protected area’, OS alah m. ‘Christian temple’; further cf. the compounded forms ON -áll and OHG alah-. Possibly to be reconstructed as PIE *h₂ék- ~ *h₂lkh- in light of Gr. ἀλκί m. ‘strength’ (dat.sg.); semantic connection to PG *alh- rather weak, though. An o-stem PIE *h₂olk-o- also underlying the Germanic a-stem is attested in Celt. alko-, Lith. aškas, eškas m. ‘sacred grove’ and Latv. ēlks m. ‘idol’, and an i-stem is found in compounded forms such as Gr. ἀλκί- and Celt. alki-. Further
connections to the root PIE *h₂leks-* ‘ward off, guard, protect’ have also been invoked, cf. e.g. Skt. rākṣati v. ‘protects’ and Gr. ἀλέξω v. ‘ward off’. A possible semantic point of reference between the Germanic and Balto-Slavic forms (‘sacred grove, temple’ etc.) on the one hand and Gr. ἀλκί m. ‘strength’ as well as PIE *h₂leks-* ‘ward off, guard, protect’ on the other hand may be seen in OE edalh, alh ‘temple, place of sacrifice, protected area’. Kroonen (2013: 22) prefers to regard the Germanic and Balto-Slavic forms as borrowed from a local non-Indo-European language with the consequence that PG *alh- would belong to layer IIa rather than I or IIb.

Literature: Bamme-


4 PG *anad-, *anid-, *anud- f. ‘duck’. Attested as a root noun only in ON ǫnd, ǫnd f. ‘id.’; as an i-stem in OE ænid, æned, eded m./f. ‘id.’, OS anad, anud f. ‘id.’ and OHG anut, anat etc. f. ‘id.’. To be reconstructed as PIE *h₂enHt(-i)- *h₂gt(-i)- ‘duck, web-footed bird’, cf. also e.g. Skt. āṭi- f. ‘duck, web-footed bird, aquatic bird’, Gr.(Ion.) vĭṣṇa f. ‘duck’, Gr.(Att.) vĭṣa f. ‘id.’, Lat. anus f. ‘id.’ (gen.sg. anatis), Lith. ántis f. ‘id.’, OPr. anis f. ‘id.’. The comparative data suggest this lexeme to be either an i-stem or a root noun. In the former case, ON ǫnd, ǫnd must be analysed as secondarily transferred to the root noun declension and thus belonging to layer III. The attestation of a root noun in Latin, however, severely weakens any argument in favour of PG *anad-, *anid-, *anud- being an original i-stem. In the latter case, i.e. if it is to be analysed as an original root noun belonging to layer I, at least a partial transition from root noun to i-stem inflection seems to have taken place in Proto-Indo-European already, for which process cf. also Ph.D. article no. 2. The presence of the enigmatic second vowel PG *a- *i- *u may be regarded as a further support for a root noun origin of the lexeme in question. Hamp (1978: 30) thus believes to see this second vowel of the lexical stem as a “continuation of non-initial non-medial
schwa”. In contrast to e.g. Griepentrog (1995: 299-300) and Hollifield (1984: 34-36), Fulk (1988: 153-154) and tentatively Hansen (2007: 157-158) support Hamp’s analysis, but the former adds that the development cannot be restricted to final syllables in light of PG *anad-, *anid-, *anud- being, in his view, an i-stem. Alternatively, it can be analysed as an originally ablauting t-stem PIE *h₂énh₂-et- ~ *h₂th₂-t-, cf. Kroonen (2013: 26) and Beekes (1985: 63-64) for the assumption of two generalised full grades. Belonging to layer I or, in the light of its appearance as a root noun only in Old Norse, layer III.


5 PG *bök- f. ‘beech; book’. Attested as a root noun in ON bók f. ‘id.’, OE bōc f./n. ‘book’ and OS bōk f./n. ‘id.’, OHG buoh m./f./n. ‘id.;’ as an ō-stem in Goth. boka f. ‘letter, character’, OFris. bōk f./n. ‘book’; as a (j)ōn-stem in OE bēce, bēce f. ‘beech’, OS bōke f. ‘id.’ and OHG buocha f. ‘beech’. To be reconstructed as PIE *bʰeh₂g(-eh₂)- or *bʰoh₂g(-eh₂)- to the root PIE *bʰeh₂- ‘beech’, cf. Gr. φηγός f. ‘oak’, Gr.(Dor.) φαγὸς f. ‘id.’ and Lat. fāgus f. ‘beech’. Root noun forms are known only in Germanic, the remaining branches displaying something as remarkable as a feminine o-stem. Griepentrog (1995: 73-74) believes that both forms are archaic and that they have originally both meant ‘beech’, the feminine o-stem originally being an adjective of appurtenance secondarily altered into a synchronically more transparent feminine ō-stem in Germanic, cf. also Thöny (2013: 105-106). If Griepentrog is right in his analysis, PG *bök- belongs to layer I. If, however, as is equally feasible, the Germanic root noun has arisen as a consequence of the speakers of Proto-Germanic not knowing how to analyse a feminine a-stem and thus turning it into partly a feminine root noun, partly a feminine ō-stem, PG *bök- would belong to layer IIb. Literature: Bammesberger (1990: 197-198), Bjørvand & Lindeman (2000: 92-94, 126-127), Boutkan & Siebinga (2005: 55), Casaretto (2004: 43-44), Griepentrog (1995: 59-77), Holthausen (1974: 28), IEW (2005: 107-108), Kluge/Seebold

11 Hamp (1978: 29-31) thus reconstructs nom.sg. PIE *H₂énH₂-t-s (= PIE: *h₂énh₂-t-s) > *ánat-s > *ánah-s > PG *anah-s; nom.pl. PIE *H₂énH₂-t-es (= PIE *h₂énh₂-t-es) > *ánat-es > *ánah-es > PG *anah-iz ~ *and-iz_; and gen.sg. PIE *H₂ñH₂-t-ös (= PIE *h₂hn₂-t-ös) > *nät-ös > *pāp-*ñah-’ > *und-ñad- > *an(ā)d- > PG *an(u)d-.


12 Alternatively PG *brōk- is formed with a lengthened o-grade to the PIE root *bʰreg- ‘break’, cf. PG *brekana- s.v. ‘break’ and Lat. frangō v. ‘break’, suffragō f. ‘a joint in the hind leg of a quadruped’ (n-stem), cf. the secondary meaning ‘behind, bum’ of PG *brōk- which is sparsely attested in West Germanic. In that case early borrowing could have taken place in the opposite direction, i.e. from Germanic to Celtic.


13 Originally maybe OE brūa (nom.pl.) < PG *brū(w)ō-, i.e. the dual form of the root noun PG *brū-, cf. e.g. Griepentrog (1995: 330).

PG *fingr-* m. ‘finger’. Attested as a root noun only in ON fingr m. ‘id.’; as an a-stem (PG *fing-ra-*) in the remaining Germanic languages. Belonging to layer III. Literature: Kroonen (2013: 141), De Vries (1962: 120), Wessén (1958: 69).


19 PG *gans-* f. ‘goose’. Attested as a root noun in ON *gás* f. ‘id.’, OE *gōs* f. ‘id.’; as an i-stem in OHG *gans* f. ‘id.’. To be reconstructed as PIE *gʰans-* ‘goose’ (original PIE *a*), cf. also e.g. Skt. haṃśa- m. ‘id.’, Gr.(Att./Ion.) χῆν m./f. ‘id.’, Gr.(Dor./Boeot.) χῶν m./f. ‘id.’, Lat. ānser m./f. ‘id.’, OIr. *ḡéis* f. ‘swan’, Lith. žąsis f. ‘goose’ etc. Belonging to layer I. Literature: Bammesberger (1990: 196), Bjorvand & Lindeman (2000: 333-334),


PG *hnit-* ~ *gnit-* f. ‘nit’. Attested as a root noun in OSw. gnit14 f. ‘id.’ and OE hnutu f. ‘id.’ (acc.pl. hnyte); also OHG niz, hniž f. ‘id.’. To be reconstructed as PIE *knid- which alternates with PIE *kon-id- in e.g. Gr. ković (koviđ-) f. ‘nit’, Alb. thēni f. ‘id.’. Kroonen (2012: 247) presumes substrate origin of this etymon on the basis of the suffix *(h)indh- ~ *(h)indh- etc. also found in e.g. PG *arwīt- f. ‘pea’ corresponding to Gr. ἐρέβινθος m. ‘chickpea’. Belonging to layer IIA. Literature: Griepentrog (1995: 474-476), Holthausen (1974: 166), IEW (2005: 608-609), Kluge/Seebold (2002: 653), Kroonen (2013: 236), Orel (2003: 180), Philippa et al. (2007: 412).

PG *hnut-* f. ‘nut’. Attested as a root noun in ON hnot f. ‘id.’, OE hnutu f. ‘id.’ (acc.pl. hnyte); i-stem in OHG (h)nuζ f. ‘id.’. From PIE *(h)nuδ-; for cognates without the d-extension cf. e.g. Lat. nux (nuc-) f. ‘nut tree’, OIr. cnú f. ‘nut’. Kroonen (2012: 248)

14 The g in this and related North Germanic forms may originate from PG *ga-hnūt- with collectivising prefix PG *ga-.


30 PG *kwō- f. ‘cow’. Attested as a root noun in ON kyr f. ‘id.’, OE cū f. ‘id.’, OFris. kū f. ‘id.’, OHG chuo f. ‘id.’ (also as an i-stem); as an i-stem possibly in OS kō f. ‘id.’.


PG *mark- f. ‘border, region; mark (unity)’. Attested as a root noun only in ON mørk f. ‘mark (unity)’ (partially inflected as an i-stem) and maybe in OFris. merk f. ‘certain currency’; ð-stem in Goth. marka f. ‘border’, ON mørk f. ‘border area, forest’, OE mearc f. ‘boundary, district’, OS marka f. ‘border, region’, OHG marcha f. ‘border, region, end’.
To be reconstructed as PIE *mroǵ- ~ *mรก-, cf. the root noun of PCelt. *brog- ~ *brig-


35 PG *meluk- f. ‘milk’. Attested as a root noun in Goth. miluks f. ‘id.’ (only gen.sg. miluks 1x), ON mjólk, mjólk f. ‘id.’, OE meolc f. ‘id.’, OFris. melok f. ‘id.’, OHG miluch f. ‘id.’; as an a-stem in OS miluk (only gen.sg. milukas 1x). From PIE *h₂melǵ- (hardly PIE *h₂melHǵ- > PG *meluk-, cf. Gr. ἀμέλγω f. ‘milk’ without traces of PIE schwa; however, cf. also Lith. mėžu (with traces of laryngeal) instead of *mėžu unless the nature of the Lith. accent be explained from an original long vowel (Narten verb); for an overview cf. Hansen (2007: 165)); further cf. Skt. mārṣī v. ‘wipes off’, Av. marzəzaiti, mərəzəzaiti v. ‘brushes, touches lightly’, Gr. ἀμέλγω v. ‘milk’, Lat. mulgeō v. ‘id.’, Mfr. bligim v. ‘id.’, Lith. mėžu v. ‘id.’ etc. PG *meluk- may be explained as a contamination of full grade *melm- and secondary zero grade *mluk- (according to Griepentrog (1995: 300-301 with further lit.) formed analogically from a secondary full grade PG *mleks < *m đènks in the nom.sg.). Bammesberger (1990: 197), however, remains sceptical to that analysis and prefers to explain the *u of PG *meluk- as arisen due to analogical influence from PG *alup- n. ‘ale, beer, intoxicant’. Belonging to layer I. Literature: Bammesberger (1990: 196-197), Bjorvand & Lindeman (2000: 595-597), Boutkan & Siebinga (2005: 254-255),


37 **PG *nagl-** m. ‘nail’. Attested as a root noun only in ON nagl m. ‘id.’; as an a-stem (PG *nag-la-) in the remaining Germanic languages. Belonging to layer III. Literature: Kroonen (2013: 381), Orel (279), De Vries (1962: 403-404), Wessén (1958: 69).


40 **PG *(ga-)naut-** m. ‘fellow, companion’. Attestation as a root noun possibly (and if so only partially) in OHG gīnōz, kinōz, kanōz m. ‘id.’; otherwise as an a- or an n-stem in OHG, and as an a-stem in the remaining Germanic languages. The root noun forms are rejected as scribal errors by Griepentrog (1995: 490-491). Literature: Griepentrog (1995: 490-491).


44 **PG *sē-ing-(?)** f. ‘bed with linen’. Attested as a root noun only in ON sæing, sæng f. ‘id.’, though cf. also Da.(Jutl.) sæŋ’ә f. ‘bed’ (pl.) with “stød” indicating former monosyllabicity; as an ō-stem in the remaining EN dialects. Belonging to layer III. Literature: Brøndum-Nielsen (1935: 165), De Vries (1962: 575).

45 **PG *sī-dl-** (?) f. ‘herring’. Attested as a root noun only in ON sīld f. ‘id.’; as an ō-stem otherwise. Owing to its rather opaque etymology, PG *sī-dlō- (?) may be a lexical borrowing from some unknown source, i.e. a substrate word. So far, such an assumption remains speculative seeing that there is nothing in the phonotactics of the form that would suggest so. Kroonen (2013: 436) tentatively reconstructs an old t-stem PIE nom.sg. *sēl-ōt, gen.sg. *sil-t-ōs, thereby suggesting Du. zeelt c. ‘tench’ to be related to ON sīld. Either belonging to layer I or to layer IIa – or to layer III seeing that root noun inflection is, after all, found only in Old Norse. Literature: Kroonen (2013: 436), Philippa et al. (2009: 652), De Vries (1962: 475).


PG *sulh- f./m. ‘plough’. Attested as a root noun only in OE sulh f./m. ‘id.’; a related a-stem is found in PG *selha- m. ‘seal, i.e. (animal) that drags itself along the ground’ > e.g. ON selr m. ‘id.’, OE seolh m. ‘id.’ and OHG selah m. ‘id.’. To be reconstructed as PIE *selk- ~ *sljk-, cf. Gr. ἔλκω v. ‘pull’, Gr. ὀλκός m. ‘furrow’, Alb. helq, heq v. ‘pull, lead’, Lat. sulcus m. ‘furrow’ etc. Belonging to layer I. Literature: Bammesberger (1990: 197), Bjørvand & Lindeman (2000: 771), Griepentrog (1995: 393-402), Holthausen (1974: 290, 329), IEW (2005: 901), Kluge/Seebold (2002: 837), Kroonen (2013: 432, 491), De Vries (1962: 469-470).


PG *-t(a)ug- f. ‘þurtug (unity)’. Only attested in East Norse and Gutnish (ODa. þurtugh, ðørte, OSw. þurtugh, orteugh, Gutn. ertaug etc.) with optional root noun inflection in the plural. Probably belonging to layer III. Literature: Brøndum-Nielsen (1935: 155).

PG *tīk- f. ‘bitch’. Attested as a root noun only in ON tīk f. ‘id.’; as an ō- or an n-stem in the remaining Germanic languages. Belonging to layer III. Literature: De Vries (1962: 588), Wessén (1958: 70).

PG *traf- f. ‘fringe’. Attested as a root noun only in ON f. trefr ‘fringes’ (pl.) which coexists with tref n. ‘id.’ (pl.) to traf n. ‘scarf’; as an ō-stem in the remaining Germanic languages. Griepentrog (1995: 462) tentatively suggests that the root noun inflection might be inherited but dares not conclude anything with certainty due to an expressed lack of comparative evidence. To be reconstructed as PIE *drop-(eh2-) to the root PIE *drep- ‘pluck, cut off’ and compared to Skt. drāpi- m. ‘mantle, garment’, Gr. ἀρέσω v. ‘pluck, cut off’. Granted the existence of a root noun PIE *drop- > PG *traf- f. ‘fringe’, we would need to understand its meaning as ‘what has been cut off’, i.e. an o/e-grade root noun with resultative semantics. Belonging either to layer I or to layer III. Literature: Griepentrog (1995: 462), IEW (2005: 211), Kroonen (2013: 520), LIV (2001: 128-129), Orel (2003: 408), De Vries (1962: 596-597).


Three layers of Germanic root nouns

3.1. Layer I: Root nouns inherited from Proto-Indo-European

Besides the two main types of root nouns, viz. the one ablauting with ólé and the one ablauting with élØ, we find a third type which actually constitutes a subtype of the ólé-ablauting root nouns. If, as Schindler actually pointed out himself (1972: 34-36), an originally ólé-ablauting root noun has the root structure -ERT, the weak form would appear with radical zero grade. In other words, we would obtain a new type with ólØ ablaut.

Building on this claim by Schindler, Nielsen Whitehead (2010; 2013) has recently contributed with a considerable amount of data to the analysis of the ablaut conditionings in the root noun category. Consequently, she has discovered that, out of 32 examined roots of the structures -RC and -HC, the vast majority displays general zero grade in both the strong and the weak cases. Further, she has suggested a rationale for this phenomenon, viz. that root nouns in Proto-Indo-European eventually come to appear in a form where three criteria are fulfilled, viz. (1) that the root has to contain at least one consonant in the syllable onset, (2) that a vocalic element must be displayed in the root, and (3) that no more than one consonant is allowed in the radical syllable coda. The third constraint, however, does not apply to roots that have two non-vocalisable consonants, i.e. two obstruents, in their syllable coda.
When scrutinising and focusing on the Germanic root nouns, I cannot help reaching the conclusion that Nielsen Whitehead’s claim is at least partially valid. The root structure indeed seems to form the decisive factor regarding the expected ablaut grade of a Proto-Germanic root noun, cf. also Griepentrog (1995: 419) for a similar statement. In particular, I believe inherited Germanic root nouns to display:

1. **Radical full-, o-, or lengthened grade with the root structure (C)CVT(C), (C)CVH(C), CVC:**
   - (5) PG *bōk-* f. ‘beech; book’ (layer IIb also possible),
   - (15) PG *fōt-* m. ‘foot’,
   - (30) PG *kwō-* f. ‘cow’,
   - (38) PG *naht-* f. ‘night’,
   - (41) PG *nōt-* f. ‘large (fishing) net’ (layer III also possible),
   - (59) PG *traf-* ‘fringe’ (layer III also possible),
   - (67) PG *wlōh-* f. ‘fringe’ < ‘the curly’ and
   - (69) PG *wrōt-* f. ‘root’ (layer III also possible).

2. **Radical zero grade with the root structure (C)CVRC:**
   - (8) PG *brust-* f. ‘breast, chest’,
   - (9) PG *brū-* f. ‘brow’,
   - (10) PG *burg-* f. ‘city, town, citadel’,
   - (12) PG *dur-* f. ‘door’,
   - (17) PG *furh-* f. ‘furrow’,
   - (31) PG *lūs-* f. ‘louse’,
   - (36) PG *mūs-* ‘mouse; muscle’,
   - (48) PG *spurd-* m.f. ‘track, course’,
   - (52) PG *sū-* f. ‘sow’,
   - (53) PG *sulh- f./m. ‘plough’,
   - (60) PG *turb-* f. ‘turf, peat’ and
   - (61) PG *brūh-* ‘wooden chock, hollow trunk’.

3. **Preservation of original a-vowel regardless of the root structure:**
   - (1) PG *aik-* f. ‘oak’,
   - (2) PG *alh-* m. ‘temple, sanctuary’ (layer IIa or IIb also possible),
   - (18) PG *gait-* f. ‘goat’ (layer IIa also possible),
   - (19) PG *gans-* f. ‘goose’ and
   - (39) PG *nas- f. ‘nose’. Without doubt, many of these may belong to layer IIa rather than to layer I.15

### 3.1.1. Apparent counterexamples

As neat as this distribution may seem, we cannot avoid considering a range of apparent counterarguments or exceptions, the first of which is (1) PG *aik-* f. ‘oak’ where we would *a priori* expect PIE †h₂i̞j̄ > PG †ik. However, this lexeme only constitutes an exception if we choose to reconstruct PIE *h₂e̞j̄- or *h₂o̞j̄- rather than *a̞i̞- with an original (post-)PIE *a* in which case PG *aik- could be analysed as a lexical borrowing. We might at least consider one more alternative, though, viz. that Germanic could have followed Greek in displaying vocalised reflexes of an initial laryngeal (at least of PIE *h₂) followed by one of the approximants *i* or *u*, cf. Ph.D. article no. 3, in which case it would seem possible that PIE *h₂i̞j̄- > PG *aik- by regular soundlaw.

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15 Needless to say, the argument of attributing (some of) these root nouns to layer II rather than layer I gains further strength if one believes in the theory that Proto-Indo-European had no true *a*. 

40
(2) PG *alh- m. ‘temple, sanctuary’ seems to constitute another exception. It is important to note, however, that we only find root noun inflection of this lexeme in Gothic; in the remaining Germanic languages, we find an a-stem. Outside Germanic, we find root noun inflection in Greek (only attested in dat.sg.), too; however cf. the somewhat aberrant semantics. If we are, indeed, dealing with an inherited root noun rather than e.g. a PG a-stem, in which case PG *alh- would belong to layer IIb instead, we may be facing an original a-vowel, a possibility that cannot be contradicted by any other Indo-European language unless relation to the root PIE *h₂leks- ‘ward off, guard, protect’ is invoked, cf. Skt. rákṣati, Arm. aracel, Gr. ἀλέξω etc. (IEW 2005: 32). The possibility that PG *alh- is a lexical borrowing and thus is to be affiliated with layer IIa may also be considered, cf. in this regard Kroonen (2013: 22).

Adverbial or prepositional material such as (3) PG *and-, *unb-, *und-, *unb-, *umbi prep. ‘about’, (16) PG *fur- adv. ‘for, in front of’ and (34) PG *med- adv. ‘with, within’ cannot be said to be real counterexamples since they all appear only as archaisms in fossilised case forms and functioning as adverbs or prefixes even in the earliest attestations of Germanic, i.e. prior to the introduction of the distributional rules governing what ablaut grade to expect in the root of a given root noun. Consequently, these forms may be straightforwardly disregarded.

At a first glance, the most serious counterexample is provided by (33) PG *mark- f. ‘border, region; mark (unity)’ where we would definitely expect †murk-. However, it is far from unlikely that we are faced with an original ō-stem PG *markō- (or a-stem *marka-) whose secondary full grade has been formed from the zero grade of the original root noun PIE *mro̞g̡- ~ *mgr̡- as attested in Celtic. In Germanic terms, such a Schwebe-ablaut analysis seems quite plausible seeing that the zero grade PIE *mgr̡- would be vocalised as PG **murk- with the epenthetic vowel inserted before the resonant. Given that only the zero grade of the original root noun would have survived in Germanic, the plausibility of a new full grade along the lines of PG *mark- would be greater than that of PG **mrak-. However, this analysis, too, is far from being unproblematic. First, the secondary zero grade may have been formed already at the PIE stage, cf. Av. marəzəm m. ‘border, mark’ < PIE *mro̞g̡-o-. Second, PCelt. *brog- may just as easily be viewed as secondarily formed in analogy with the zero grade PCelt *brig- < PIE *mgr̡-, cf. also Schindler (1972: 34-35), in which

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16 Neither PG *fur and *med nor PG *unb-, und- (incl. *umbi), i.e. the by-forms of *anb-/und-, may reasonably be regarded as counterexamples at all in that they display the outcome expected from the distributional rules regarding the root nouns of layer I. Consequently, they are mentioned together with the true counterexample of PG *anb-, *and- only for methodological reasons.
case the root noun would have been PIE *morǵ- ~ *ŋorǵ- and PG *mark- would reflect the PIE root noun directly. When accepting that interpretation, we would have to accept PG *mark- as a true and inexplicable exception to the distributional rules outlined in this article.

If Griepentrog (1995: 300-301 with literature) is right in his analysis of (35) PG *meluk- f. ‘milk’ as a contamination of full grade *melk- and secondary zero grade *mluk- formed from a secondary full grade PG *mlek-s < *mēlk-s in the nom.sg., cf. also the discussion in section 2, and if this contamination took place prior to the generalisation of the radical ablaut grade in root nouns according to their phonotactics, the possibility arises that the language users have not been able to analyse and interpret PG *meluk- as a real root noun at the time when the generalisation rules were applied. Granted this analysis and provided that (4) PG *anad-, *anid-, *anud- f. ‘duck’ actually is an archaic root noun, the same may account for its failure to display radical zero grade. Its second vowel, whether arisen from PIE *H or not, may simply have caused it to be analysed as a lexeme consisting of a root and a suffix rather than a root noun.

An original t-stem and thus not a root noun may be what underlies (49) PG *stad- ~ *stulb- ~ *stud- f. ‘prop, support, post, pillar’, i.e. PIE *sta₂-t- > PG *stad- that was reinterpreted as an o-grade form to which a new secondary zero grade *stud- was formed in analogy with the ablaut pattern known from e.g. (56) PG *tanþ- ~ *tund- m./f. ‘tooth’. An even less clear case of a counterexample emerges if we choose to follow Schaffner’s (2001: 639) analysis of PG *stup-/stud- as a true, and in Germanic terms expected, zero grade formation PIE *sth₂u-t-. Consequently, regardless of the chosen analysis, PG *stud- should not be counted among the valid counterexamples to the distributional rules outlined in this article. A somewhat similar explanation, viz. an ablauting t-stem that was still analysable to the language users, might be provided for (45) PG *sī-dl- (?) f. ‘herring’ if Kroonen (2013: 436) is right in his hypothesis and we are not dealing with a substrate term.

(56) PG *tanþ- m./f. ‘tooth’ (next to the expected form PG *tund-) might actually count as a counterexample per se. Being in fact a substantivised present participle (< PIE *h₁d-ōnt- ~ *h₁d-h₂nt- ‘eating’) rather than a root noun, PG *tanþ- cannot be expected to follow the distributional rules pertaining to root nouns, at least not if it was still interpreted as a participle by the speakers of (Pre-) Proto-Germanic, cf. also the retention of ablaut.

The last item on our list of apparent counterexamples is (62) PG *(fer-)ud- sb. ‘last year’ which should ideally have had full, lengthened or o-grade according to our distributional rules that predict PG †(fer)wed- vel sim. to be the expected outcome in that all root nouns should have at least one
consonant in the syllable onset. The deviation can be explained quite straightforwardly, though, seeing that PG *ud- never occurs as a simplex but only as a second member of a compound where radical zero grade of a root noun is expected whenever phonetically possible, cf. e.g. Skt. pratičaḥ ‘face’ (gen.sg.) < PIE *proti-h₂kʷ-ös.

A considerable number of the lexemes analysed in section 2 cannot reasonably be treated as counterexamples even if their radical ablaut grade deviates from what is expected according to our distributional rules, e.g. (55) “PG” *tang- f. ‘tongs’. The reason for that is that the lexemes in question had not yet entered the root noun declension at the stage when our distributional rules were still active. Rather, they were adopted into the root declension at one of the later stages represented by my suggested layers IIa, IIb or III.

3.2. Layer IIa: Unsegmentable substrate or loan words reanalysed as root nouns in Proto-Germanic

In a recent article, Kroonen (2012: 242-255) gives a convincing account of some problematic lexemes by listing a number of already known substrate markers, including the substrate suffix PG *-īt- alternating with *-ūt- whose origin seems to be identical to that of Gr. -iνο[- -iνθ]~ -iνθ~, the substrate prefix *a-/e- alternating with *Ø-, and consonant clusters that violate the general Proto-Indo-European and Proto-Germanic phonotactic constraints. These and further criteria Kroonen believes to see present in the four root nouns (18) PG *gait- f. ‘goat’, (24) PG *hnit- ~ *gnit- f. ‘nit’, (25) PG *hnut- f. ‘nut’ and (26) PG *idis-/edis- f. ‘lady’. A common denominator of these items is, according to Kroonen, that they appeared unsegmentable to the speakers of (Pre-)Proto-Germanic at the time of the borrowing and were consequently assigned to the root noun declension. Kroonen also includes the two cases of PG *arwīt- f. ‘pea’ and *wīsund- ~ *wizund- m. ‘European bison, Bison bonasus’ to his article, but seeing that these are not monosyllabic root nouns or consonant stems, I have left them out of consideration for the present purpose.

It lies far outside the scope of this article to confirm or reject the details of Kroonen’s etymologies and general idea. However, it can hardly be questioned that a model such as that of Kroonen, which identifies borrowed root nouns, is of great utility to my claim regarding the predictability of the ablaut grade of the inherited root nouns (layer I). In other words, if we may assume that the items on Kroonen’s list were borrowed into (Pre-)Proto-Germanic at a time

17 It should be noted, though, that Kroonen’s idea has the great, general advantage to a range of other substrate theories that etymologies are proposed on the basis of structural considerations and, in many cases, known possible substrate sources (rather than with virtually all-embracing “Schallwurzeln” and/or in want of a good intra-lingual etymology).
subsequent to the active application of the distributional rules outlined in section 3.1, a root noun such a PG *gait- and unsegmentable consonant stems such as PG *arwīt-, *edis- and *wīzund/-wīzund-, whose ablaut grade and, in the latter cases, general root structure would violate these rules, may easily be disregarded.18 They may be described as later borrowings that took place after the rules had ceased to be effective.

It should be noted, though, that besides the items listed by Kroonen (2012), yet another handful of obvious candidates for membership in layer IIa must be considered, viz. (1) PG *aik- f. ‘oak’ (layer I also possible), (2) PG *alh- m. ‘temple, sanctuary’ (layer I or IIb also possible), (7) PG *brōk- f. ‘trousers, breeches’, (43) PG *rīk- m. ‘ruler, king’ and (45) PG *sī-dl- (?) f. ‘herring’ (layer I and III also possible) which are all, with divergent degrees of certainty, possible lexical borrowings, cf. the discussion in section 2.

3.3. Layer IIb: Nouns from other declensions reanalysed as root nouns in Proto-Germanic or in parts of the Germanic dialect continuum

Of the three layers outlined in this article, layer IIb is, without doubt, the one most difficult to define, but we are aided by the descriptions of transitional tendencies and inflectional class profiles provided by Thöny (2013: 79-82, 314-325). Principally, we may here ascribe nouns that have been transferred from other declensions (a- and ō-stems) into the root noun declension in the North-West Germanic language(s) after the split-up of Proto-Germanic, since they are attested with root noun inflection only (in parts of) Germanic and nowhere else. Furthermore, it is highly likely that the transitions took place already in (Pre-)Proto-Germanic times with the result that layer IIa and IIb are, in principle, identical, the only difference being that they are fed with material from two different sources. At least, PG *mann- (see below) would suggest this latter scenario since it displays partial root noun inflection not only in North-West Germanic but also in Gothic.

Judging from my etymological considerations in section 2, the following root nouns may fall under this category: (2) PG *alh- m. ‘temple, sanctuary’ (layer I or IIa also possible), (5) PG *bōk- f. ‘beech; book’ (layer I also possible), (32) PG *mann- m. ‘man’ and (33) PG *mark- f. ‘border, region; mark (unity)’ (layer I also possible, cf. the lengthy discussion in section 3.1.1). To these may be added that, in reality, we cannot know if at least some of the root nouns that do fit the

18 That zero grade is what I would structurally expect in PG *hnīt- and *hnut-, even had they been inherited root nouns (layer I), obviously does not impede my analysis of them as rather being loan words that entered the language at a later stage.
distributional rules outlined in section 3.1 could not just as well have entered the Proto-Germanic language at this later stage. Evidently it is often difficult to decide with certainty if an item belongs to layer I or to layer IIb. We can only substantiate our decision by analysing the prevalence of a given root noun candidate in not only the Germanic but in all Indo-European languages. If a noun is found with (partial) root noun inflection only within (parts of) Germanic, the likelihood of its proper attribution to layer IIb rather than to layer I increases considerably.

A further complicating factor regarding this layer is the seeming lack of transparency as to what phonological, morphological, semantic and other factors catalysed the transition of a noun from one of the vocalic declensions to the root noun declension. Partial case syncretism in the (North-West) Germanic languages between the providing a- and ð-stem declensions and the receiving root noun declension constitutes the, in my view, intuitively most appealing explanation for the declensional transitions of this layer. The question still remains, however, why so few such nouns have (or could have) changed their declensional affiliation with the result that they partially or entirely became root nouns and, consequently, why exactly these approximately four nouns and not, say, PG *gebō- f. ‘gift’ (→ †geb-) or *fugla- m. ‘bird’ (→ †fugl-) were (or could have been) affected.

3.4. Layer III: Nouns from other declensions reanalysed as root nouns in North Germanic

As already mentioned, it is a long-known fact that in North Germanic, the root noun declension was, at some point, revitalised with the result of it accepting new members from other declensions, cf. e.g. Brøndum-Nielsen (1935: 146, 154-155). Hence follows that, contrarily to the situation in layer IIb, North Germanic has had a particularly extensive influx of nouns to the root noun declension from other declensions. When also taking into account that the catalysts behind this purely North Germanic development are far more transparent than those behind the similar developments of layer IIb, we can easily defend the assumption of a fourth layer distinct from and considerably younger than the former one.19

Two possible catalysts for the transition of masculine nouns are (1) interactions between root nouns and u-stems owing to partial case syncretism, cf. the opposite analogy in Goth. fotus ‘foot’ (original root noun), and (2) “body part analogy” with ON fótr m. ‘foot’ (< PG *fōt-) as the model

19 It can hardly be excluded, though, that this third layer is a mere continuation of the second layer, i.e. that the developments and mechanisms initiated in layer IIb soon ceased to be productive in West Germanic but continued to be so in North Germanic where they were even intensified, thus creating what I have here labelled layer III.
example. The PG transponates (63) *wand-* m. ‘wall’ and (66) *wintr-* m. ‘winter’ belong to the former group; (13) *fingr-* m. ‘finger’ and (37) *nagl-* m. ‘nail’ (both original a-stems) to the latter.

For the feminines, Brøndum-Nielsen (1935: 138-140, 154-155) lists not only two but three possible catalysts, the first of which being that u-mutation in the acc.sg. (PIE *-ŋ vowel > PG *-u > ON -Ø) and secondarily in the nom.sg. creates a parallel to the feminine ō-stems (PG *-ō > NWG -u#). Not surprisingly, therefore, ō-stem nouns with visible u-mutation, i.e. nouns with ON a or áló in the root, are particularly prone to making the declensional transition.20 As such, (4) ON ǫnd, ǫnd f. ‘duck’, (6) bót f. ‘penalty, compensation’, (20) glóð f. ‘red-hot ember’, (41) nót f. ‘large (fishing) net’ (layer I also possible), (42) rǫnd f. ‘edge’, (68) rǫng f. ‘frame rib (mar.)’ (< PG transponent *wrang-), (69) rót f. ‘root’ (layer I also possible), (47) spong f. ‘spangle’, (50) stǫng f. ‘pole’, (51) strǫnd f. ‘beach’, (55) tǫng f. ‘tongs’ and (59) trǫf f. ‘fringe’ (layer I also possible) have transcended to partial root noun inflection. Analogy between the i-mutation in root nouns (gen.sg. and nom./acc.pl.) and the R-mutation in nouns ending synchronically in a vowel constitutes yet another catalyst; thus e.g. (14) ON fló, flá f. ‘layer stratum’, (28) kló f. ‘claw’ and (54) tá f. ‘toe’. A factor that might have encouraged this development, too, is the circumstance that a couple of inherited root nouns, viz. (30) PG *kwō- ‘cow’ (ON kýr) and (52) *sū- ‘sow’ (ON sýr), actually already had a vocalic auslaut in Proto-Germanic. The third and last easily observable catalyst is the apparent need for total elimination of the feminine u-stem declension originally represented by (21) ON hǫnd21 ‘hand’ and (27) kinn ‘cheek’, cf. also the remark above regarding partial case syncretism between root nouns and u-stems.

A few productively created root nouns of layer III are not that easily explained, however. As such, it remains enigmatic what catalysts are responsible for the transition of (22) ON hind f. ‘fallow buck, hind’, (29) kverk f. ‘throat’ (pl. ‘neck’), (45) sīld f. ‘herring’, (44) sæ(i)ng f. ‘bed’,

20 Most Old Norse vowels only display a separate u-mutated variant with the w-umlaut; not with the u-umlaut proper. Only with a, whose u-mutated variant is ǫ (cf. e.g. NWG *hab(a)nu > ON höfn ‘harbour’) and with á, whose u-mutated variant was ǫ (> ā, cf. e.g. NWG *skālu > Early ON *skól > ON skál ‘bowl’) when not nasalised and ǫ (> ólá, cf. e.g. NWG *ansuk > Early ON *ōs > ON ðoss, ðoss ‘a Norse god’) when nasalised, was a difference between the mutated and non-mutated variants made explicit, cf. e.g. Andersen (1962: 5, 17). Not all instances of ON ó have developed from u-mutated, nasalised á. In the case of bót, for example, one would have to assume that the transition from the ó-stem declension to the root noun declension happened relatively late, i.e. at a time when the language users could no longer distinguish between ON ó < PG *ō and ON ó < PG *ã (by u-umlaut and nasalisation).

21 Dat.sg. hendi < PG *handiu < PIE *-êy, cf. Ph.d. article no. 3.
(58) tík f. ‘bitch’, (65) vík f. ‘creek, inlet’, (57) OEN/Gutn. *-t(a)ug f. ‘qrtug (unity)’ and possibly (23) OEN nek f. ‘sheaf’ to the root noun declension.

4. Conclusion

In this article, I have argued that root nouns in Proto-Germanic and the individual Germanic languages may be attributed to three chronologically defined layers:

2. Layer IIa: Unsegmentable substrate or loan words reanalysed as root nouns in Proto-Germanic.
3. Layer IIb: Nouns from other declensions reanalysed as root nouns in Proto-Germanic or in parts of the Germanic dialect continuum.
4. Layer III: Nouns from other declensions reanalysed as root nouns in North Germanic.

I have further argued that the ablaut grade of the inherited root nouns (layer I) is predictable from the phonotactics of the root in partial accordance with the rules suggested by Nielsen Whitehead (2010; 2013):

1. Radical full-, o- or lengthened grade with the root structure (C)CVT(C), (C)CVH(C), CVC.
2. Radical zero grade with the root structure (C)CVRC.
3. Preservation of original a-vowel regardless of the root structure.

However, these rules should not be applied on the Germanic material until the subsequently created root nouns of layers IIa, IIb and III have been identified and filtered out. For the sake of clarity, the considerations made throughout the discussion of the material as to what layer(s) a given root noun could or should be attributed to, will be summarised in table 1.

Table 1: Attribution of the investigated root nouns to the three layers

<table>
<thead>
<tr>
<th></th>
<th>Layer I</th>
<th>Layer IIa</th>
<th>Layer IIb</th>
<th>Layer III</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) PG *aik- f. ‘oak’</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) PG *alh- m. ‘temple, sanctuary’</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

47
<p>| (3) PG *and-, *anb-, *und-, *unb-, *ambi prep. ‘about’ | (X) |  |
| (4) PG *anad-, *anid-, *anud- f. ‘duck’ | X | X |
| (5) PG *bök- f. ‘beech; book’ | X | X |
| (6) PG *bör- f. ‘penalty, compensation’ | X | |
| (7) PG *brök- f. ‘trousers, breeches’ | X | |
| (8) PG *brast- f. ‘breast, chest’ | X | |
| (9) PG *brä- f. ‘brow’ | X | |
| (10) PG *burg- f. ‘city, town, citadel’ | X | |
| (11) PG *dulp- f. ‘festival, celebration’ | | |
| (12) PG *dur- f. ‘door’ | X | |
| (13) PG *fingr- m. ‘finger’ | X | |
| (14) PG *flöh- f. ‘layer, stratum’ | X | |
| (15) PG *föt- m. ‘foot’ | X | |
| (16) PG *fur- adv. ‘for, in front of’ | (X) | |
| (17) PG *furh- f. ‘furrow’ | X | |
| (18) PG *gait- f. ‘goat’ | X | X |
| (19) PG *guns- f. ‘goose’ | X | |
| (20) PG *glöd- f. ‘red-hot ember’ | X | |
| (21) PG *hand- f. ‘hand’ | X | |
| (22) PG *hind- f. ‘fallow buck, hind’ | X | |
| (23) PG *hnik- f. ‘sheaf’ | X | |
| (24) PG *hnut- ~ *gnit- f. ‘nit’ | X | |
| (25) PG *hnut- f. ‘nut’ | X | |
| (26) PG *idis-/~edis- f. ‘lady’ | X | |
| (27) PG *kinn- f. ‘cheek’ | X | |
| (28) PG *klōw- f. ‘claw’ | X | |
| (29) PG *kwerk- f. ‘throat’ | X | |
| (30) PG *kwö- f. ‘cow’ | X | |</p>
<table>
<thead>
<tr>
<th>Index</th>
<th>Word Root</th>
<th>Meaning</th>
<th>SG</th>
<th>MG</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>*tiœs</td>
<td>‘louse’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>*mann</td>
<td>‘man’</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>33</td>
<td>*mark</td>
<td>‘border, region; mark (unity)’</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>34</td>
<td>*med</td>
<td>adv. ‘with, within’</td>
<td>(X)</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>*meluk</td>
<td>‘milk’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>*mœs</td>
<td>‘mouse; muscle’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>*nagl</td>
<td>m. ‘nail’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>*naht</td>
<td>f. ‘night’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>*nas</td>
<td>f. ‘nose’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>*ga(naut)</td>
<td>m. ‘fellow, companion’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>*nœt</td>
<td>f. ‘large (fishing) net’</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>42</td>
<td>*rand</td>
<td>f. ‘border, rim’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>*rœk</td>
<td>m. ‘ruler, king’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>*sœ-ing(?)</td>
<td>f. ‘bed with linen’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>*sœ- dl- (?)</td>
<td>f. ‘herring’</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>46</td>
<td>*skœd</td>
<td>n.? ‘robes’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>*spang</td>
<td>f. ‘spangle’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>*spurd</td>
<td>m./f. ‘track, course’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>*stœd-</td>
<td>~ *stœlp-</td>
<td>~ *stœd-</td>
<td>f. ‘prop, support, post, pillar’</td>
</tr>
<tr>
<td>50</td>
<td>*stœng</td>
<td>f. ‘pole’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>*strœnd</td>
<td>f. ‘border, edge; coast, shore’</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>52</td>
<td>*sœu</td>
<td>f. ‘sow’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>*sœlh</td>
<td>f./m. ‘plough’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>*taïhw</td>
<td>f. ‘toe’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>*tang</td>
<td>f. ‘tongs’</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>*tanl-</td>
<td>~ *tœnd-</td>
<td>m./f. ‘tooth’</td>
<td>(X)</td>
</tr>
</tbody>
</table>
Not all challenges regarding root nouns in Germanic have been solved. At least three problems remain, viz. (1) that a distinction between an original, Proto-Indo-European a-vowel (layer I) and an a-vowel that has entered the language through borrowing (layer IIa) is often virtually impossible to make, (2) that no obvious candidate for a catalyst regarding the transition of layer IIb can be defined, and (3) that even in layer III, there is a residual quantity of root nouns where no candidate for a catalyst is obvious. Future studies will hopefully bring elucidation to some of these matters.
In order to separate archaisms from innovations, we must first define in every concrete case what characterises an archaic form. In this article, I define the structure, form and function of archaic, primary i-stems in Germanic. It turns out that, as has already been established by previous scholarship, primary i-stem verbal abstracts are synchronically and productively formed with the same ablaut grade as is found in the stem of the preterite participle of the corresponding strong verb, this system (together with, i.a., the reanalysis of old s-stems as i-stems) giving rise to a wide array of new possible Germanic ablaut grades in the root syllable. The only archaic i-stems are those displaying radical o- and zero grade. Radical o- and zero grade of i-stems are also found in other Indo-European branches, as are the two main functional categories of i-stems, viz. adjectival agent nouns on the one hand and action nouns or verbal abstracts on the other. I further propose that the two formal types, i.e. the zero grade type and the o-grade type, were originally identical, the radical phonotactics constituting the determining factor for when to expect zero grade and when to expect o-grade. Such a complementary distribution of o- and zero-grade is reminiscent of what Rasmussen (1989: 158-175) suggests for the Proto-Indo-European eh₂-stems of the type Lat. togā, fugā of which these i-stems should probably be seen as a variant, i.e. adjectival agent nouns of the structure PIE *CóC-i- or *C'C-i- and action nouns or verbal abstracts of the structure PIE *CoC-i- or *CC-i-. When transferred to Germanic, the original distribution of o- and zero grade was abandoned in favour of a new ablaut distribution dependent on the ablaut system of the strong verbs, and the old system is only recognisable through an, albeit large, handful of i-stems displaying aberrant ablaut grades in comparison with the strong verbs corresponding to them.

1. General characteristics of i-stems and their inflection

A considerable number of nouns in Proto-Germanic are inflected as i-stems. In other words, these nouns are characterised by the addition of a nominal suffix PG *-i- to the lexical root. At least as an overall type, the i-stems are of Proto-Indo-European pedigree, for which reason a wide array of inflectional features have also been thus inherited. For inflectional details on the i-stems as well as on the, in most regards, completely parallel u-stems cf. the detailed treatment in Ph.D. article no. 4. Suffice it therefore here to list the i-stem case endings of the individual Germanic languages.
supplemented by their assumed Proto-Germanic and Proto-Indo-European precursors as reconstructed by, e.g., Krahe (1967: 25-31), Bammesberger (1990: 124-127), Boutkan (1995: 236-250) and most recently Ph.D. article no. 4.

Table 1: Inflectional endings of the masculine and feminine i-stems

<table>
<thead>
<tr>
<th></th>
<th>PIE</th>
<th>PG</th>
<th>Goth.</th>
<th>RN</th>
<th>ON</th>
<th>OE</th>
<th>OS</th>
<th>OHG</th>
</tr>
</thead>
<tbody>
<tr>
<td>nom.sg.</td>
<td>*-i-s</td>
<td>*-iz</td>
<td>*-s</td>
<td>-r</td>
<td>-e</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
</tr>
<tr>
<td>acc.sg.</td>
<td>*-i-m</td>
<td>*-i</td>
<td>-Ø</td>
<td>-i</td>
<td>-Ø</td>
<td>-Ø</td>
<td>-Ø</td>
<td>-Ø</td>
</tr>
<tr>
<td>gen.sg.</td>
<td>*-i-jei</td>
<td>*-ai</td>
<td>-ai</td>
<td>-ei</td>
<td>-i</td>
<td>-æ/e</td>
<td>-e</td>
<td>-e</td>
</tr>
<tr>
<td>dat.sg.</td>
<td>*-i-h</td>
<td>*-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
</tr>
<tr>
<td>loc.sg.</td>
<td>*-i-eh</td>
<td>*-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
</tr>
<tr>
<td>instr.sg.</td>
<td>*-i-b</td>
<td>*-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
</tr>
<tr>
<td>voc.sg.</td>
<td>*-i-eh</td>
<td>*-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
<td>-i</td>
</tr>
</tbody>
</table>

A considerable number of forms are lacking in table 1. Except for Runic Norse which is so poorly attested that examples of several case forms are simply not known at all, the lacunae are mainly caused by a given case form being replaced by another case form either by means of case syncretism internally within the i-stem paradigm, e.g. between dat.sg. and loc.sg., or by means of transition of a desinence from another inflectional class into the i-stems, e.g. the i-stem instr.pl. ON -um, OE -um originating in the a-stem inflection. Such transitions happened not only when a case form was completely replaced; in several cases the inherited i-stem desinences coexist with new ones transferred from other inflectional classes, cf. e.g. the entire masculine singular paradigm of

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22 The capital D designates the synchronic use of the form as a dative.
the Gothic i-stems where pivotal forms such as the nom.sg., acc.sg. and also the more marginal voc.sg. have served as common points of reference for a total merger of the masculine singular of the a-stem and i-stem paradigms or, in other words, for the introduction of the a-stem gen.sg. and dat.sg. desinences in the i-stem paradigm. Whereas the intruding a-stem gen.sg. and dat.sg. desinences have entirely replaced the original i-stem desinences in the masculine singular paradigm of Gothic, they serve only as options in the masculine singular of the i-stem paradigms of the remaining Germanic languages. Another example is the desinence of the nom.sg. of feminine i-stems in Old Norse, i.e. originally ON -r < PG *-īz as in the corresponding masculine form, which has been replaced by the feminine ō-stem nom.sg. desinence ON -Ø (u-umlauting) < PG *-ū in most forms with the original desinence ON -r being retained in only a marginal group, cf. e.g. Krahe (1967: 29) and Boutkan (1995: 241).

Bearing in mind the many points of reference between the Germanic i-stems and other inflectional classes, above all the root nouns and the remaining vocalic stems, we can hardly be surprised that numerous transitions of lexemes from the i-stems to these other inflectional classes and vice versa have taken place in most if not all ancient Germanic languages, cf. e.g. Thöny (2013: 66-70) for a brief overview of the transitional tendencies operating in the i-stems. For the attempt of historical and comparative linguists to separate archaisms from innovations, such working conditions strongly complicate the task. Without any further clues than inflectional information, historical and comparative linguists are faced with the insoluble task of determining whether a given noun should be categorised and reconstructed as, say, a masculine a- or i-stem, a masculine a- or ja-stem, or a feminine i- or ō-stem. Consequently, they must transcend the field of inflectional morphology in their search for further clues that might help them determine the exact derivational prehistory of a given noun.

As I intend to show in the present article, one area of linguistics that might provide the historical and comparative linguist with additional information of this kind is the crossfield of derivational morphology and phonotaxis. Hence follows that the purpose of the present article is to facilitate the determination of the derivational character of Proto-Germanic nouns by setting a range of criteria for the shape, structure and function of Proto-Germanic primary i-stems inherited from Proto-Indo-European.
2. Form and function of the Germanic primary i-stems

2.1. Masculine i-stem verbal abstracts derivationally matching the ablaut grade found in the stem of the preterite participle of a corresponding strong verb

Most grammars of Proto-Germanic and accordingly most scholars occupied with Germanic derivational morphology have noticed that the bulk of Germanic i-stems appear in the masculine gender, with radical zero grade, with voiced Verner’s variants root-finally as an indication that the Proto-Indo-European accent was located on the i-stem suffix, and with the function of verbal abstracts, i.e. action nouns which have often been secondarily concretised as resultative nouns, to strong verbs, cf. e.g. Krahe & Meid (1967: 65-66), Hinderling (1967), Bammesberger (1990: 128), Schaffner (2001: 421-435) and Casaretto (2004: 166-169). Furthermore, such i-stem verbal abstracts are often parred with ga-prefigated neuter a-stems functioning as collective abstracts, cf. e.g. Hinderling (1967: 42-102).

However, not all of these i-stems appear with radical zero grade. In a considerable number of cases, we find radical o-grade (PIE *o > PG *a), and even full grade and lengthened grade are attested. Synchronically speaking, part of the reason for this mixture of different radical ablaut grades is to be found in the circumstance that different ablaut grades are also found in the preterite participles of strong verbs. Only in class I-IV strong verbs is the preterite participle formed with radical zero grade, cf. e.g. the class I strong verb PG *gripena- ~ *gripana- s.v. ‘caught’ (pret.ptc.), the class II strong verb PG *budena- ~ *budana- s.v. ‘bidden’ (pret.ptc.), the class III strong verb PG *bundena- ~ *bundana- s.v. ‘bound’ (pret.ptc.) and the class IV strong verb PG *numena- ~ *numana- s.v. ‘taken’ (pret.ptc.). In the class V strong verbs, on the contrary, the preterite participle is formed with radical full grade, cf. e.g. PG *setena- ~ *setana- s.v. ‘sat’ (pret.ptc.), and in the preterite participle of class VI strong verbs, we encounter a synchronic a-vowel representing either PIE *o or *H, cf. e.g. PG *takena- ~ *takana- s.v. ‘taken’ (pret.ptc.). The reduplicated strong verbs complicate the ablaut picture even further, especially considering the fact that their preterite participles may be shaped with synchronic radical PG *a, *ē or *ō in the class I-VI non-ablauting reduplicated strong verbs and with PG *ē in the class VII ablauting reduplicated strong verbs. For details on the ablaut system of Germanic strong verbs, which lies outside the scope of this article, cf. e.g. Krahe (1967: 100-107, 114-115).

The following pages contain a hopefully close to complete list of primary Germanic i-stem verbal abstracts derivationally matching the ablaut grade found in the stem of the preterite participle of a corresponding strong verb according to the class of the strong verb.
2.1.1. I-stem verbal abstracts corresponding to class I strong verbs


6 PG *lidi- m. ‘going’ vel sim. Represented in OHG (ab-)lit m. ‘death’, (uz-)lit m. ‘error’. Radical zero grade also in e.g. PG *lida- n. ‘company, escort; vessel’ > ON lið n. ‘company, escort, army’, OE lid n. ‘ship’, OFris. lid n. ‘crowd, troop, company’ and PG lidan- m. ‘follower, companion’ > ON liði m. ‘id.’, OE līda m. ‘skipper, master of ship’. Derivationally matching the class I strong verb PG *līðana- s.v. ‘go’ > Goth. (ga-)leīhan s.v. ‘go, come, travel’, ON līða s.v. ‘go; pass by, pass away, die’, OE līhan s.v. ‘go, sail; disappear’, OFris. lītha s.v. ‘go’, OS līthan s.v. ‘go, leave; perish’, OHG līdan s.v. ‘go, pass; suffer, tolerate, endure’. To be reconstructed as PIE *lit-i- to the root PIE *leīt- ‘go away’, cf. also e.g. Toch. B līta v. ‘went away’, Av. -irīdhīettī v. ‘dies’, Gr. λοίθη f. ‘burial,


PG *skridi- ~ *skriþi- m. ‘slide, step’. Represented in ON skríðr m. ‘sliding movement (of a ship)’, OE skríþe m. ‘run, course’, OHG skrit m. ‘step’. Derivationally matching the class I strong verb PG *skrīþana- ~ *skrīdana- s.v. ‘stride’ > ON skríða s.v. ‘stride, creep, crawl’, OE scríþhan s.v. ‘go, wander; move, creep’, OFris. skrīða s.v. ‘walk’, OS skríþan, skrīðan s.v. ‘glide, stride, pace, go’, OHG (bi-)skrītan s.v. ‘id.’. To be reconstructed as PIE *skrīþi- to the root PIE *skrejt- ‘stride, move’ and possibly related to Lith. skristi v. ‘rush, run’, skraidius adj. ‘fast’, but these forms continue PIE *-d̠t- rather than the *-t- found in the precursor of the Germanic forms. Consequently, LIV (2001: 563) suggests that a more proper cognate be Lith. skrīesti v. ‘move around in circles’ (pres. skrīęčiu) < PIE *skrēt-e-. As the only deverbal i-stem abstract in Germanic, PG *skridi- ~ *skriþi- m. ‘slide, step’ is represented with both the unvoiced and the voiced Verner’s variant of PIE *t. All other i-stems only display the voiced variant indicating that the PIE stress was originally situated on the suffix. In the strong verb PG *skrīþana- ~ *skrīdana- s.v. ‘stride’, the opposite situation prevails: Where only the unvoiced variant is expected, i.e. PIE *skrēt-e- > PG *skrīþana-, also the voiced variant is found. Literature: Bammesberger (1990: 129), Boutkan & Siebinga (2005: 355), Holthausen (1974: 283), IEW (2005: 935-938, esp. 937), Kluge/Seebold (2002: 826), Kroonen (2013: 448-449), LIV (2001: 563), Lloyd et al. (1998: 114), Philippa et al. (2009: 118), Seebold (1970: 421-422), Sehrt (1966: 474-475), De Vries (1962: 503).

PG *slidi- m. ‘misstep, slip; error’. Represented in OE slide m. ‘id.’. Radical zero grade also in e.g. PG *slidan- m. ‘sled’ > ON sleði m. ‘id.’, OS slido m. ‘id.’, OHG slito m. ‘id.’. Derivationally matching the class I strong verb PG *slīdana- s.v. ‘misstep, slide, slip; err’ > OE slīdan s.v. ‘slide, slip; err’, MHG slīten s.v. ‘id.’. To be reconstructed as PIE


12 PG *snidi- m. ‘cut’. Represented in OE snide m. ‘cut’, OFris. snid m. ‘id.’, OHG snit m. ‘cut, grain crop’. Radical zero grade also in e.g. PG *snída- n. ‘cut’ > ON sníd n. ‘slice, piece’, OE (ge-)snid n. ‘killing, slaughter’. Derivationally matching the class I strong verb PG *snīpana- s.v. ‘cut’ > Goth. sneipan s.v. ‘kill, slaughter, sacrifice’, ON snída s.v. ‘cut off’, OE snīhan s.v. ‘cut; kill’, OFris. snīha s.v. ‘cut’, OS snīhan s.v. ‘id.’, OHG snīdan s.v. ‘cut; reap, harvest’. Uncertain etymology, though possibly to be reconstructed as PIE *snit- -i- to the root PIE *snejit- ‘cut’, cf. also e.g. Cz. snět m. ‘branch’. Literature: Bammeberger (1990: 129), Boutkan & Siebinga (2005: 360), Holthausen (1974: 304),


14 PG *stiki- m. ‘prick, stab’. Represented in Goth. sticks m. (only in in stika melis ‘in a moment’), OE stice m. ‘prick, stab’, OFris. steke m. ‘id.’, OS stiki m. ‘id.’, OHG stih m. ‘id.’. Derivationally matching a lost verb PG *stikana- s.v. ‘bite’, i.e. a verb of the type Skt. tudāti v. ‘thrusts, pushes’ with radical zero grade. This verb has given rise to a reinterpretation of the a-umlauted form PG *stekana- s.v. ‘stick, thrust’ > OFris. steka s.v. ‘id.’, OS stekan s.v. ‘id.’, OHG stehhan s.v. ‘id.’ as a regular class V strong verb to which a competing i-stem noun with radical o-grade has also been formed, viz. PG *staki- m. ‘mark, scar’. To be reconstructed as PIE *(s)tíg- to the root PIE *(s)teig- ‘prick, sharp’, cf. also e.g. Skt. téjate v. ‘is sharp’, tigmá- adj. ‘pointed’, Av. tégra- adj. ‘id.’, Gr. στίγμα f. ‘dot, point’, Lat. (in-)stigō v. ‘stimulate, instigate’. Literature: Boutkan & Siebinga (2005: 371-372), Casaretto (2004: 176-177), Holthausen (1974: 321), IEW (2005: 1016-1017), Kluge/Seebold (2002: 878, 883), Kroonen (2013: 476), Lehmman (1986: 325-326), LIV (2001: 592-593), Orel (2003: 370), Seebold (1970: 467-468), Sehrt (1966: 505).

15 PG *stridi- m. ‘pace, step’. Represented in OE stride m. ‘id.’, MHG strit m. ‘id.’. Derivationally matching the class I strong verb PG *strīdana- s.v. ‘resist, fight, quarrel’ > OSw. strīda s.v. ‘fight, quarrel’, OE strīdan s.v. ‘stride; get by force’ (semantically


PG *swik(w)i- m. ‘delay, postponement’ > OE swiça m. ‘id’. Radical zero grade also in e.g. PG *swik(w)a- n. ‘treason, fraud’ > ON svík n. ‘id.’, OE sciwic n. ‘deception, illusion’ and PG *swik(w)an- m. ‘traitor’ > OE swīca m. ‘id.’. Derivationally matching the class I strong verb PG *swīkana- s.v. ‘betray, deceive’ > ON svíkva, svíkja, s.v. ‘id.’, OE swīcan s.v. ‘move about, wander, leave, desert; betray, deceive’, OFris. svīka s.v. ‘remove’, OS svīkan s.v. ‘desert, leave in the lurch’, OHG swīhan s.v. ‘turn away, decline’. The quality of the root final velar is uncertain: ON svíkva, svíkja points to a labiovelar PG *kw while the remaining forms point to a plain velar PG *k. Bjørvand & Lindeman (2000: 888) reasonably holds that the plain velar is original and that ON svíkva, svíkja is secondarily transformed from *svīka by analogy starting in the pres. 3.sg. svíkr,
cf. the pattern of syngva ‘sing’ : syngr, blíkja ‘shine’ : blíkr and X : svíkr where X = blíkva.


PG *writi- m. ‘sign, letter’. Represented in Goth. writs m. ‘id.’, OHG riz m. ‘stroke, letter’ (hapax, only attested in acc.sg. ainana writ ‘one sign’). Radical zero grade also in e.g. PG *writā- n. ‘writing, book’ > ON rit n. ‘writing’, OE writ n. ‘writing, book’. Derivationally matching the class I strong verb PG *writana- s.v. ‘carve, inscribe, draw, write’ > ON rīta s.v. ‘id.’, OE wrītan s.v. ‘id.’, OFris. wrīta s.v. ‘id.’, OS wrītan s.v. ‘id.’, OHG rīzan s.v. ‘tear, write’. As for the further etymology, Frisk (1944: 28-30) has suggested that PG *writana- should be compared to Arm. ergicanem v. ‘bite, tear’. Alternatively, Kroonen (2013: 597) regards the strong verb PG *writana- as secondarily formed from the iterative verb PG *writtō(ja)na- w.v. II ‘carve, write’ (< Pre-PG *writ-n-) which is in turn derived from PG *wripana- s.v. ‘twist, turn’, i.e. < PIE *yrejt- ‘twist, turn’ also found in e.g. Lith. riësti v. ‘bend, curve’ (pres. rieciū). Literature: Bammesberger (1990: 130), Casaretto
2.1.2. I-stem verbal abstracts corresponding to class II strong verbs

PG *druzī- m. ‘fall’. Represented in Goth. drus m. ‘id.’, OE dryre m. ‘fall, decline’. As remarked by Schaffner (2001: 428-429), the existence of Goth. drus with voiceless s by no means guarantees an original paradigm PG *drusi- ~ *druzī- continuing a PIE paradigm with mobile accent. The unvoiced Verner’s variant in Gothic may simply result from Auslautsverhärtung or have spread from the strong verb to the i-stem abstract; a development paralleled by primary deverbal derivations such as abstract nouns, causatives and verbal adjectives, cf. e.g. the causative Goth. gadrausjan w.v. I ‘plunge down’ vs. MHG trōren w.v. I ‘drip, ooze, shed’ < PG *druzjana- w.v. I ‘make fall’. Radical zero grade also in e.g. PG *druza- n. ‘glaucoma, cataract’ > ON drōr n. ‘id.’ which might be compared to PG *druzī-. Derivationally matching the class II strong verb PG *dreusana- s.v. ‘fall’ > Goth. driousan s.v. ‘fall, fall down’, OE drēosan s.v. ‘rush, fall, perish’, OS driosan s.v. ‘fall’. If related to the stative PG *drūsē(j)ana- w.v. III ‘fall asleep’ > OE drūsian w.v. III ‘become slow’ and thus further to Ru. drýxnut’ v. ‘sleep’ as posited by Kroonen (2013: 105), the root should be reconstructed as PIE *dʰreujHs- ~ *dʰruHs- ‘fall asleep, sleep(?)’, and PG *druzī- would have to be regarded as secondarily formed from the weak stem, i.e. the stem of the preterite participle, of the strong verb PG *dreusana-. Literature: Bammesberger (1990: 130), Casaretto (2004: 174), Holthausen (1974: 77-79), IEW (2005: 274-275), Kroonen (2013: 105), Lehmann (1986: 95), LIV (2001: 157-158), Orel (2003: 76-77), Philippa et al. (2005: 195), Seebold (1970: 170-171), Sehrt (1966: 84), De Vries (1962: 86).

PG *flugi- m. ‘escape’. Represented in Goth. plauhs m. ‘id.’, ON flugr m. ‘id.’, OE flyge m. ‘id.’, OS flugi m. ‘id.’. Radical zero grade also in e.g. PG *flugan- m. ‘escapee’ > ON (fluð-)flogi m. ‘runaway bridegroom’ and parallely (flann-)fluga f. ‘runaway bride, runaway wife’ (< PG *flugōn-). Derivationally matching the class II strong verb PG *fleuhana- s.v. ‘flee, escape’ > Goth. pluahan s.v. ‘id.’, OE flēon, s.v. ‘id.’, OFris. flūā s.v. ‘flee, disappear’, OS flioian s.v. ‘flee’, OHG flioian s.v. ‘flee, avoid’. The question whether the cluster PG *fl- or *pl- is original has caused much debate. In my view, Matzel (1962: 222-224, 237) has presented the most convincing solution to the problem, viz. that

PG *gruzi- m. ‘fear, dread’. Represented in OE gryre m. ‘id.’, OS gruri m. ‘fear, dread; violence’. According to Bammesberger (1990: 130) derivationally matching the class II strong verb PG *greusana- s.v. ‘frighten, storm; overwhelm(?)’ > OE (be-)groren s.v. ‘overwhelmed’ (pret.ptc.). Further etymological connection uncertain. Holthausen (1974: 138) compares OE (be-)groren and gryre with Gr. ēkōpov v. ‘attacked, charged’, Lat. in-grūō v. ‘rush on, storm’ and Lith. grūàuti v. ‘tear down, destroy’ derived from the root reconstructed by LIV (2001: 202) as PIE *gʰrehu- ‘rush on’. IEW (2005: 435-454) prefers a comparison of at least the Germanic i-stem forms with Skt. ghorā- adj. ‘awful, terrible, dreadful’, n. ‘horror, terror; magic, spell’ and Goth. gaurs adj. ‘sad’; both from PIE *gʰourō- ‘dreadful, filled with fear’ which, though a semantic near to perfect match, is no formally well-fitting candidate for a precursor to OE gryre and its closest Germanic relatives. In the light of the obvious semantic affinities between ‘dreadful, filled with fear’ and ‘rush on’ > ‘frighten, storm; overwhelm’, I would not be surprised if the root underlying the Germanic lexemes in question had arisen as a contamination of the two forms PIE *gʰrehu- > *gʰruhu- (zero grade of PIE *gʰrehu-) and PIE *gʰourō- and were to be reconstructed as PG *greur- rather than the PG *greus- suggested by Bammesberger (1990: 130).23 Literature: Bammesberger (1990: 130), Holthausen (1974: 138-139), IEW (2005: 453-454), Sehrt (1966: 212).

23 There are no Germanic lexemes or inflected forms in unequivocal support of Bammesberger’s notion that the root-auslauting consonant of NWG *greur- is a voiced Verner’s variant (NWG r < PG *z) of PG *s rather than a continuant of plain PG *r. The closest candidate with comparable semantics is PG *greusana- s.v. ‘tremble’ > ON gjósa s.v. ‘id.’, cf. e.g. De Vries (1962: 170-171) and Bjorvand & Lindeman (2000: 329), but its lack of a radical r renders any attempt to compare these two forms futile.

PG *hluti- m. ‘share, lot’. Represented in ON hlutr m. ‘id.’, OE hlyte m. ‘id.’, OHG hluz, luz m. ‘id.’. Radical zero grade also in e.g. PG *hluta- n. ‘share, lot’ > OE hlot n. ‘id.’, OFris. hlot n. ‘id.’, OHG hloz, loz n. ‘id.’. Derivationally matching the class II strong verb PG *hleutana- s.v. ‘obtain by lot’ > ON hjóta s.v. ‘get, obtain’, OE hlētan s.v. ‘cast lots; get, obtain by lot’, OS hliotan s.v. ‘acquire, receive’, OHG hlōzan, liōzan s.v. ‘draw lots’. A competing i-stem noun with radical o-grade also exists, viz. PG *hlauti- m. ‘share, lot’. Further etymology uncertain, but maybe to be analysed as PIE *kʰleuH-d(h₃)-i- to a compound PIE *kʰleuH-d(H₃)- ‘give by lot’ consisting of the roots PIE *kʰleuH-, cf. e.g. Lith. klūti v. ‘stick’ (< PIE *kluH-) and PIE *deh₃- ‘give’, cf. e.g. Skt. dádāti v. ‘gives’, Gr. διδομε v. ‘give’, Lat. dō v. ‘id.’, Lith. dūoti v. ‘id.’. Given this etymology, PG *hluti- must have received its short *u in analogy with the general ablaut pattern of class II strong verbs, i.e. PG *hleutana- : X ~ *geutana- : *guti- with X equalling *hluti-. Literature: Bammesberger (1990: 133), Bjorvand & Lindeman (2000: 543-544), Casaretto (2004: 180), Holthausen (1974: 162, 164-165), IEW (2005: 604-605, esp. 605), Kluge/Seebold (2002: 582), Kroonen (2013: 230, 233), LIV (2001: 105-106, 365), Orel (2003: 176, 178), Philippa et al. (2007: 263-264), Seebold (1970: 264-265), Sehrt (1966: 262), De Vries (1962: 238, 240).


PG *luzi-* m. ‘loss’. Represented in OE lyre m. ‘id.’. Radical zero grade also in e.g. PG *lusa-* n. ‘loss’ > ON los n. ‘dissolution’, OE los n. ‘loss’, OHG (far-)los n. ‘id.’ and PG *luza-* m. ‘ruin, destruction’ > OE (far-)lor m. ‘id.’, OS (far-)lor m. ‘id.’, OHG (far-)lor m. ‘id.’. Derivationally matching the class II strong verb PG *leusana- s.v. ‘lose; loosen’ > Goth. (fra-)liusan s.v. ‘id.’, OE (for-)lēosan s.v. ‘id.’, OFris. (for-)liāsa s.v. ‘id.’, OS (far-) liosan s.v. ‘id.’, OHG (for-)līosan s.v. ‘id.’. To be reconstructed as PIE *lu-s-ī- to the extended root PIE *leyH-s- ‘set free, let loose, loosen’ found without the extension in e.g. Hitt. lūri- c./n. ‘loss of honour, disgrace, humiliation’, Skt. lunāti v. ‘cuts, cuts off’, Gr. λύω v. ‘loosen, liberate, set free, let loose’, Lat. luō v. ‘suffer, make amends for’. The laryngeal is obviously missing in the Germanic zero grade form PG *luzi- < PIE *lu-s-ī-; a PIE *luH-s-ī- would have yielded PG †lūzi-. The short radical *u has probably been introduced from the stem of the preterite participle of PG *leusana-, i.e. PG *luzana-, whose *u is in itself secondarily shortened from PG *ū in order for PG *luzana- to adapt to the standard ablaut pattern eu : au : u : u of the class II strong verbs. Literature: Bammesberger (1990: 130), Boutkan & Siebinga (2005: 227), Holthausen (1974: 199-200, 209), IEW (2005: 681-682), Kluge/Seebold (2002: 954), Kroonen (2013: 334), Lehmann (1986: 123-124), LIV (2001: 417), Orel (2003: 243, 251), Philippa et al. (2007: 262-263), Philippa et al. (2009: 503), Seebold (1970: 339-340), Sehrt (1966: 344-345), De Vries (1962: 366-367).

PG *ruki- m. ‘smell; smoke’. Not attested in any of the ancient Germanic languages but only later in e.g. MLG roke m. ‘smell’, MHG ruch m. ‘id.’. Seebold (1970: 380), however, mentions one older form, viz. OHG rug m. ‘smoke’, which does not seem to find support in the scholarly literature. Derivationally matching the class II strong verb PG *reukana- s.v. ‘smoke’ (originally ‘smell’) > ON rjúka s.v. ‘smoke, smell; be driven, be flung, fly’), OE rēocan s.v. ‘reek; smoke, steam’, OFris. riāka s.v. ‘smoke’, OHG riochan, rihhan s.v. ‘smoke, steam’, but its ablaut grade is aberrant. A competing i-stem noun with radical o-grade also exists, viz. PG *rauki- m. ‘smoke’. Further etymology uncertain, but the Baltic languages offer some possible comparanda, e.g. Lith. rāugti v. ‘sour, make sour’ and Latv. řūgt v. ‘sour, make sour; smoke’ where, however, the meaning ‘smoke’ is probably caused by influence from another nearly homophonous verb represented by Lith. rūkti v. ‘smoke’. Literature: Bammesberger (1990: 133), Bjorvand & Lindeman (2000: 742-743), Holthausen (1974: 257), IEW (2005: 871-872), Kluge/Seebold (2002: 350, 764-765),


PG *slupi- m. ‘slip; piece of garment to slip over one’s head’ > OE (ofers-)slype m. ‘chasuble’. Radical zero grade also in e.g. PG *slupa- m./n. ‘slip; piece of garment to slip over one’s head’ > ON sloppr m. ‘loose gown’, OE (ofers-)slop n. ‘id.’. Derivationally matching the class II strong verb PG *sleupana- ~ *slūpana- s.v. ‘sneak, slip’ > Goth. sliupan s.v. ‘slip, slip into, slide’, OE slūpan s.v. ‘id.’, OHG slofan s.v. ‘slip, sneak’. Often compared to Lat. lūbricu s.v. ‘slippery’, but Kroonen (2013: 454) presents the alternative view that it should rather be compared to Lith. j-slupti v. ‘slips into’ by means of a reconstruction PIE *slup- to the root PIE *sleyp- ‘slip’ and with the comparison of Lith p to PG *p explained by Kluge’s Law, i.e. by the unattested form PG *sluppō(J)ana- (< PG *slup-n-) indirectly attested in the jan-verb PG *slup(J)ana- > OHG (int-)slupfen w.v. I ‘get away’. Literature: Bammesberger (1990: 130), Holthausen (1974: 300), IEW (2005: 963-964), Kluge/Seebold (2002: 810, 812), Kroonen (2013: 454), Lehmann (1986: 315), LIV (2001: 567), Orel (2003: 350), Seebold (1970: 435-436), De Vries (1962: 517).

PG *supi- m. ‘drink’. Represented in OE sype m. ‘id.’. Radical zero grade also in e.g. PG *supan- m. ‘swallow, gulp’ > ON sopi m. ‘swallow, gulp, mouthful’, OE sopa m. ‘sup, draught’. Derivationally matching the class II strong verb PG *sūpana- s.v. ‘swallow, quaff, guzzle’ > ON súpa s.v. ‘sip, drink’, OE sūpan s.v. ‘swallow, quaff, guzzle, slurp’, OHG sūfan s.v. ‘swallow, quaff, guzzle, slurp, drink’. Comparable to Skt. sūpa- m. ‘broth, soup’ < PIE *suHp- to the root PIE *sēuHp- which might be analysed as PIE *sēuH- ‘pour’ as seen in Hitt. šuhhai v. ‘pours’ compounded with PIE *p(h₃)- ‘drink’ as seen in e.g. Skt. pibati v. ‘drinks’, Lat. bibō v. ‘drink’ (both < PIE *pi-ph₃-é-), cf. Kroonen (2013: 493); given that analysis, however, the p of Skt. sūpa- must have been reintroduced from the general verbal root Skt. pā- since PIE *-ph₃- > PIE *-b-, cf. again PIE *pi-ph₃-é- > *pi-be- in Skt. pibati, Lat. bibō. The comparison of Skt. p to PG *p can thus be regular, but it can also be explained through influence from the geminate arisen by Kluge’s Law in the iterative PG *suppō(j)a(na)- ~ *sūbō(j)a(na)- w.v. II ‘soak’ (< PG *suP-n-). Kroonen further explains the short *u of PG *suppō(j)a(na)- as a result of dissimilatory loss of the first laryngeal of the form PIE *suH-ph₃-. Another solution is, in my view, that the long *ū of PG *sūpana- is actually to be regarded not as secondary but as regularly continuing PIE *suH-ph₃-é-, i.e. a present of the Skt. tudati-type, which was reanalysed in Proto-Germanic as belonging to the class II strong verbs on the basis of examples such as PG *lūkana- s.v. ‘close’. Given the validity of this analysis, the i-stem PG *supi- must be regarded as


2.1.3. I-stem verbal abstracts corresponding to class III strong verbs

PG *brungi- m. ‘bringing’. Represented in OS (hēm-)brung m. ‘return’, OHG (heim-) prunc m. ‘income’. Derivationally matching the class III strong verb PG *bringana- s.v. ‘bring’ > Goth. briggan s.v. ‘id.’, OE bringan s.v. ‘id.’, OFris. bringa s.v. ‘id.’, OS bringan s.v. ‘id.’, OHG bringan s.v. ‘id.’. Suggested by Brugmann (1901: 154-158) with later modification by García Ramón (1999: 65-67) to be a combination of the root PIE *bʰer- ‘carry’ and PIE *enek-, *en-, *nek- (i.e. *h₂neŋk-) ‘reach’, cf. the parallel mixture of W (he-)brung v. ‘bring, lead’ and the suppletion of Gr. φέρω v. ‘carry’ (present stem, < PIE *bʰer- ‘carry’) and Gr. ἤνεγκα, ἤνεγκον v. ‘carried’ (aorist stem, < Pre-Gr. *enek- < *anek- < PIE *h₂neŋk- ‘reach’). A peculiarity of PG *bringana- is that its preterite and preterite participle stems are created with the dental suffix of the weak verbs, i.e. PG *branh-t- > *brāh-t-. Strong preterite and preterite participle forms also occur, but they are
limited to OHG *brang, brungum, brungan* and OE *brungen*. García Ramón (1999: 67) sets up a plausible scenario of the development that might have led to the making of the attested forms. He assumes that PG *berana*- s.v. ‘carry’ once co-existed with a causative PG *angjana*- w.v. I ‘let reach; bring’ (< PIE *h₂onk̂-ēje-*) whose preterite stem would have been PG *anh-t- > *āh-t- vel sim. These two verbs coalesced in PG *brangiana*- w.v. I ‘bring’ with a pret. PG *branh-t- > *brāh-t-. In analogy with the ablaut in PG *berana-*(pret. *bar*), a new e-grade present stem PG *brengana- > *bringana- was created that replaced the old PG *brangiana- still found in West Germanic (OE *brengen* w.v. I ‘bring’, OFris. *brendza* w.v. I ‘id.’, OS *bregian* w.v. I ‘id.’, OHG *brengen* w.v. I ‘id.’). Only later was a full paradigm of strong forms created in analogy with other verbs with a present stem of the structure *CeRC-*, i.e. other class III strong verbs. Given the validity of this assumption, the i-stem PG *brungi- must be regarded as secondary. Literature: Bammesberger (1990: 131), Bjorvand & Lindeman (2000: 102-103), Boutkan & Siebinga (2005: 58-59), Holthausen (1974: 34-35), IEW (2005: 168), Kluge/Seebold (2002: 151), Kroonen (2013: 77), Lehmann (1986: 79-80), LIV (2001: 282-284), Lloyd et al. (1998: 338-341), Orel (2003: 55-56), Philippa et al. (2003: 377), Seebold (1970: 136-137), Sehrt (1966: 62-63).

36 PG *bruni- ‘fire, flame’. Represented in OE *bryne* m. ‘id.’. Derivationally matching the class III strong verb PG *brinnana- s.v. ‘burn’ > Goth. *brinnan* s.v. ‘id.’, ON *brinna, brenna* s.v. ‘id.’ (the latter form < PG *branjiana-), OE *beornan, biornan, biernan* s.v. ‘id.’, OFris. *berna, burna, barna* w.v. I/s.v. ‘id.’, OS *brinnan* s.v. ‘id.’, OHG *brinnan* s.v. ‘id.’. Further etymology uncertain, but several scholars assume that a nasal present PIE *bʰe-n-y(H)- of the root PIE *bʰerH- ‘burn, be wild’ also found in e.g. Lat. *ferveō* v. ‘boil, seethe’ and PG *brewwana- s.v. ‘brew’ is no inept candidate for a precursor of PG *brinnana-*. Seebold (1980: 478-479) has presented an alternative view, though, viz. that PG *brinnana- has been created analogically from the zero grade form PG *brunn- < *burnn- < PIE *gʷhr-ny- to the root PIE *gʷh- er- ‘become warm’, cf. the cognate -neu-/nu-present of Skt. *ghrṇoti* v. lights, burns’ and further e.g. Gr. *θέρω* v. ‘become warm, warm oneself’, Lat. *formus* adj. ‘warm’, *formus* m. ‘oven’, OIr. *(fo-)geir* v. ‘warms up, heats’, Lith. *garėtį* v. ‘burn’, OCS *gorėti* v. ‘id.’. Regardless of which etymological proposal, if any, is correct, no doubt can remain that PG *bruni- has been created to a secondary stem rather than directly to the root, thus being of no value as a primary i-stem.


38 PG *drunki- m. ‘drink’. Represented in ON drykkr m. ‘id.’, OE drync m. ‘drink, swallow, gulp’, OHG trunk m. ‘drink; swallow, gulp’. Derivationally matching the class III strong verb PG *drinkana- s.v. ‘drink’ > Goth. drigkan s.v. ‘id.’, ON drekka s.v. ‘id.’, OE drincan s.v. ‘drink, swallow, gulp’, OFris. drinka s.v. ‘drink’, OS drinkan s.v. ‘id.’, OHG trinkan s.v. ‘id.’. A competing i-stem noun with radical o-grade also exists, viz. PG *dranki- m. ‘drink’. Further etymology uncertain. Many scholars tentatively assume PG *drinkana- to descend from the root PIE *dʰreǵ- ‘glide, move’, cf. e.g. Skt. dhrájati v. ‘glides, slips; migrates (of birds etc.)’ and Lith. drežōti v. ‘smooth, straighten’ by means of an infigated nasal and with the semantic development known from G Zug m. ‘pull, draw’ > ‘swallow, gulp’. Appurtenance of PG *drinkana- to Lith. dręgti v. ‘become moist, become damp’, dręgnas adj. ‘humid, wet’ also by means of an infigated nasal is an option, as well. Regardless of which etymological proposal is correct, there is no doubt that PG *drunki- has been created secondarily from a nasal present rather than directly from the root, thus being of no value as a primary i-stem. Literature: Bammesberger (1990: 131), Bjorvand & Lindeman (2000: 151), Holthausen (1974: 77, 79), IEW (2005: 273), Kluge/Seebold (2002: 930), Kroonen (2013: 103), Lehmann (1986: 94-95), Orel (2003: 75, 77), Philippa


40 PG *hwurbi- m. ‘way, passage’. Represented in OE hwyrf m. ‘id.’. Derivationally matching the class III strong verb PG *hwerbana- s.v. ‘walk, turn’ > Goth. huirban s.v. ‘go around, walk; walk through life, live’, ON hverfa s.v. ‘turn; disappear’, OE hverfan s.v. ‘turn, change, go’, OFris. hwerva s.v. ‘turn, walk, swap’, OS hverban s.v. ‘walk hither and thither, turn, return’, OHG werban, hwerban s.v. ‘return, drive’. To be reconstructed as PIE *kʷrp-í-to the root PIE *kʷerp- ‘turn’ also found in e.g. Gr. καρπός ‘wrist, i.e. where the hand turns’ (< PIE *kʷrp-ó-). It should be noted that the strong verb PG *hwerbana- and all other Germanic derivatives of that root almost consistently and deviatingly select the voiced Verner’s variant of the final radical consonant PIE *p, i.e. PG *hwerbana- < PIE *kʷerp-é-. In other words, no forms but some Old High German variants demand the unvoiced Verner’s variant. Literature: Bammesberger (1990: 131), Bjorvand & Lindeman (2000: 1043-1044), Holthausen (1974: 181), IEW (2005: 631), Kluge/Seebold (2002: 983-984), Kroonen (2013: 265-266), Lehmann (1986: 197), LIV (2001: 392-393), Orel (2003: 200), Philippa et al. (2009: 615), Seebold (1970: 282-284), Sehrt (1966: 286-287), De Vries (1962: 271).

41 PG *kurbi- m. ‘fragment, bit, piece’. Represented in ON kurfr m. ‘wooden piece’, OE cyrf m. ‘fragment, bit; cutting off’, OFris. kerf m. ‘cut’. Derivationally matching the class III strong verb PG *kerbana- s.v. ‘cut into’ > OE ceorfan s.v. ‘cut off, carve’, OFris. kerva s.v. ‘notch’. From both a formal and a semantic point of view, the closest possible extra-Germanic comparanda are constituted by Gr. γράφω v. ‘carve, write’ (< PIE *grbʰ-) and further OCS žrēbʰ m. ‘lot’ (< PIE *gerbʰ-o-) with cognates. Given these comparanda, PG *kurbi- is to be reconstructed as PIE *grbʰ-í- to the root PIE *gerbʰ- ‘carve, cut into’. Literature: Bammesberger (1990: 131), Boutkan & Siebinga (2005: 214), Holthausen (1974: 46, 68), IEW (2005: 392), Kluge/Seebold (2002: 484), Kroonen (2013: 285), LIV

43 PG *sprungi- m. ‘jump’. Represented in OE (ē-)spryng m. ‘id.’, OHG sprung m. ‘jump’. Radical zero grade also in e.g. PG *sprungōn- f. ‘crack, scratch’ > ON sprunga f. ‘crack in the skin, scratch’. Derivationally matching the class III strong verb PG *springana- s.v. ‘break out, leap’ > ON springa s.v. ‘spring; burst, crack’, OE springan s.v. ‘spring, burst out’, OFris. springa s.v. ‘spring, jump, leap, run’, OS springan s.v. ‘id.’, OHG springan s.v. ‘jump, gush, flow’. Further etymology uncertain. The closest possible cognates are Av. (ā-)spərəzətā v. ‘strove after’ (< PIE *(s)pṛgʰ-), Gr. σπέρχομαι v. ‘set in rapid movement’ (< PIE *(s)pṛgʰ-) and maybe Lith. dial. preñgti v. ‘press, push, squeeze’ (< PIE *(s)pre-n-.)
in which case the Germanic strong verb must be analysed as continuing a nasal present
PIE *spr-\text{-}n-g^h\text{-} with probably analogical full grade PIE *spre-\text{-}n-g^h\text{-} > PG *springana\text{-}. The
i-stem PG *sprungi\text{-} must consequently be seen as secondary since it has been created to
the nasal present stem rather than to the bare root. Literature: Bammesberger (1990: 131),
538-539).

PG *stungi\text{-} m. ‘prick, stab’. Represented in OE styng m. ‘id.’, OHG stung* m. ‘id.’ (only
attested in the passage in slegio des stunges ‘in icto puncti’). Radical zero grade also in e.g.
PG *stungö\text{-}f. ‘stab wound’ > ON stunga f. ‘id.’. Derivationally matching the class III
strong verb PG *stingana\text{-} s.v. ‘sting, stick’ > Goth. (us-)stagg s.v. ‘pluck out’ (ipv., if to
be amended to us-stigg), ON stinga s.v. ‘id.’, OE stigan s.v. ‘stick, penetrate’. A
competing i-stem noun with radical o-grade also exists, viz. PG *stangi\text{-} m. ‘bar, pole,
stick’. Further etymology uncertain, but the Germanic strong verb could be analysed as a
nasal present PIE *st-\text{-}n-g^h\text{-} with analogical full grade PIE *ste-\text{-}n-g^h\text{-} > PG *stingana\text{-} to the
root PIE *steg^h\text{-} ‘stick’, cf. also e.g. OCS (o-)stegnət v. ‘bind, put in chains’. The i-stem
PG *stungi\text{-} should consequently be seen as secondary since it has been created to the
nasal present stem rather than to the bare root. Literature: Bammesberger (1990: 131),
548, 556).

PG *stunkwi\text{-} m. ‘smell’. Represented in OS stunc m. ‘smell’. Radical zero grade also in
e.g. PG *stunkwa\text{-} n. ‘thrust’ > Goth. (bi-)stugg n. ‘id.’. Derivationally matching the class
III strong verb PG *stinkwana\text{-} s.v. ‘thrust, clash; stink’ > Goth. stigkan s.v. ‘hit, battle,
stumble’, ON stôkkva s.v. ‘leap, jump, flee’, OE stîcan s.v. ‘smell, stink; leap, spring’, OS
stîkan s.v. ‘id.’, OHG stîkan s.v. ‘id.’. A competing i-stem noun with radical o-grade
also exists, viz. PG *stankwi\text{-} m. ‘smell’. Partly due to their very broad semantics, the
further etymology of PG *stunkwi\text{-} and *stinkwana\text{-} is highly disputed. Literature:
1033), Kluge/Seebold (2002: 885), Kroonen (2013: 480-481, 487), Lehmann (1986: 73,
PG *sturki- m. ‘strength’. Represented in ON styrkr m. ‘id.’. Radical zero grade also in e.g. PG *sturka- m. ‘stork (< ‘stiff bird’) > ON storkr m. ‘id.’, OE storc m. ‘id.’, OS stork m. ‘id.’, OHG storh, storah m. ‘id.’. Derivationally matching the class III strong verb PG *sterkana- s.v. ‘stiffen, harden’ preserved in ON (blóð-)storkinn adj./ptc. ‘coagulated’ and also confirmed by the existence of the related inchoative PG *sturknana- w.v. IV ‘become stiff, stiffen (intr.’). To be reconstructed as PIE *strg-ı to the root PIE *sterg- ‘stiff’, cf. also e.g. Lith. stręgti v. ‘stiffen, turn into ice’. Literature: Bjorvand & Lindeman (2000: 864-865), Holthausen (1974: 324), IEW (2005: 1022-1027, esp. 1023), Kluge/Seebold (2002: 887), Kroonen (2013: 488), Orel (2003: 375, 384), Seebold (1970: 473-474), De Vries (1962: 551, 558).

PG *swulgi- m. ‘drink, swallow, gulp’. Represented in ON sylgr m. ‘drink, swallow, gulp; drinker, swallow’, i.e. both as abstract noun and agent noun. Radical zero grade also in e.g. PG *swulga- m. ‘whirl, whirlpool, vortex’ > OS svelg m. ‘id.’. Derivationally matching the class III strong verb PG *svelgana- s.v. ‘swallow’ > ON svelga s.v. ‘swallow, choke on’, OE svelgan s.v. ‘swallow’, OHG svelgan, swel(a)han s.v. ‘id.’. A competing i-stem noun with radical o-grade also exists, viz. PG *swalgi- m. ‘abyss; swirl, whirlpool’. Further etymology uncertain. In my view, the best proposal is the one by Specht (1939: 25-26), viz. that PG *svelgana- (< PIE *svelk-) is to be analysed as a contamination into PIE *svelk- of PIE *h₂velk- ‘pull, drag’ on the one hand, cf. e.g. Gr. αὐλαξ f. ‘furrow’ (< PIE *h₂ulk- < *h₂ulk- with syllabification based analogically on the o-grade represented in Gr. (Hom.) acc.sg. ἀυλακα < *ἀυλάκα < PIE *h₂ulók-ŋ, cf. Schindler (1972: 34)), Lith. vilkti v. ‘id.’, and PIE *sélk- ‘pull’ on the other, cf. Arm. helg adj. ‘slow, inert’, Gr. ἔλκω v. ‘pull’, Gr. ὀλκή f. ‘drawing, dragging, tugging’, ὀλκός m. ‘hauling-machine; furrow’, Alb. helq v. ‘pull, tear off’, Lat. sulcus m. ‘furrow’, sulcō v. ‘plough’ and further PG *sulh- f. ‘plough; furrow’ and *sélha- m. ‘seal, (animal) that drags itself along the ground’. As with PG *drunki- m. ‘drink’, the semantic development would be the one known from G Zug m. ‘pull, draw’ > ‘swallow, gulp’. Literature: Bammesberger (1990: 132), Bjorvand & Lindeman (2000: 882), Holthausen (1974: 334), IEW (2005: 901, 1145), Kluge/Seebold (2002: 833), LIV (2001: 289-290, 530-531, though no mentioning of

PG *swuli- m. ‘swelling’. Represented in OE swile, swyle m. ‘tumor; callosity, callous skin’. Radical zero grade also in e.g. PG *swulla- m. ‘swelling’ > ON sullr m. ‘tumor’, OFris. swoll m. ‘id.’. Derivationally matching the class III strong verb PG *swellana- s.v. ‘swell’ > ON sveál s.v. ‘id.’, OFris. swella, swilla s.v. ‘swell; rise, stand up’, OS swellan s.v. ‘swell’, OHG sweljan s.v. ‘id.’. A competing i-stem noun with radical full grade also exists, viz. PG *sweli- m. ‘callosity, callous skin’. To be reconstructed as PIE *suHí- to the root PIE *suelH- ‘swell’ whose final laryngeal is suggested by Lühr (1976: 92) on the basis of the geminated *l. Only one possible extra-Germanic comparandum exists, viz. Lat. (in-)solēscō v. ‘become conceited, become rude; swell’ (< PIE *suH-eHr-). Finally it should be noted that since the attestation of PG *swuli- m. ‘tumor; callosity, callous skin’ is limited to OE swyle m. ‘id.’ which, if a free variant of swile, may alternatively be reconstructed as PG *sweli-, there is no real basis for the reconstruction of PG *swuli-. Literature: Bammesberger (1990: 133), Boutkan & Siebinga (2005: 386-387), Holthausen (1974: 334-335, 337), Kluge/Seebold (2002: 833), Kroonen (2013: 499, 503), LIV (2001: 609-610), Orel (2003: 394, 398), Philippa et al. (2009: 683), Seebold (1970: 489-490), De Vries (1962: 560, 567).


PG *wunni- m. ‘suffering, pain’. Represented in Goth. wunns m.(?) ‘id.’. Derivationally matching the class III strong verb PG *winnana- s.v. ‘exert oneself, take pains’ > Goth. winnan s.v. ‘suffer’, ON vinna s.v. ‘work, do, complete; fight, win’, OE winnian s.v. ‘fight,
suffer, reach’, OFris. winna s.v. ‘gain, win, get’, OS winnan ‘win, gain; rage’, OHG winnan s.v. ‘exert oneself, take pains; work; fight, rage’. Competing i-stem nouns with radical full and lengthened grade also exist, viz. PG *wenni- m. ‘friend’ and PG *wēnī- m. ‘hope, expectation’. There is little doubt that the precursor of PG *winnana- and *wunni-is the root PIE *yenH- ‘strive, want, desire’, cf. also e.g. Skt. vanōtī v. ‘loves; wants, demands; wins’, vānāti v. ‘id.’, vātā- adj./ptc. ‘loved; wanted, demanded; won’ (< PIE *ugH-tō-), vanīta- adj./ptc. ‘id.’, Lat. venus f. ‘(goddess of) love, pleasure, grace’ (gen.sg. veneris), OIr. finē f. ‘family, kin’ (< PIE *yen-īeh₂- < *yenH-īeh₂; for the development of PIE *-CHj- > *-Čj- cf. Pinault (1982: 266)), OCS unitī v. ‘will, want’ and maybe Hitt. wenzi v. ‘sleeps with’. The geminated *n of the Germanic forms is to be explained as arisen from either of the sequences nasal followed by laryngeal, cf. tentatively Lühr (1976: 80-81), or PIE *-nu-, cf. the -neu/-nu-present of Skt. vanōtī (< PIE *ugH-nēu- ~ *ugH-nu-) which, if thematisised (i.e. < PIE *ugH-nu-é-), would yield PG *wunnana- to which a new present stem *winnana- could easily be shaped in analogy with other class III strong verbs.


51 PG *wurdi- f. ‘fate, destiny, chance’. Represented in ON urðr f. ‘(goddess of) fate, destiny’, m. ‘bad luck, death’, OE wyrd f. ‘fate, destiny’, OS wurd f. ‘id.’, OHG wurt f. ‘id.’. Derivationally matching the class III strong verb PG *werpana- s.v. ‘become, appear, come into being, come about, happen’ > Goth. wairpan s.v. ‘id.’, ON verða s.v. ‘id.’, OE weorthan s.v. ‘id.’, OFris. wertha s.v. ‘become, be assigned’, OS werthan, werdan s.v. ‘become, appear, come into being, happen’, OHG werdan s.v. ‘id.’. To be reconstructed as PIE *gyt-i- to the root PIE *yert- ‘turn’, cf. also e.g. Skt. vārtate v. ‘turns’, Lat. vertō v. ‘turn, change’, Lith. veštį v. ‘turn, overturn (pres. verčiū), OCS vrstėti sę v. ‘turn’; for the semantic development cf. Eng. turn ‘turn’ > ‘turn, become’ or Fr. devenir v. ‘become’ < Lat. dēveniō v. ‘come down; go to, arrive at, reach’. The motivation for the general feminine gender of PG *wurdi- as opposed to the masculine gender of virtually any other primary i-stem in Germanic is unknown. We could, however, consider the possibility of reanalysis of PG *wurdi- as *wur-di-, i.e. as a feminine ti-stem. Literature: Bammesberger

2.1.4. I-stem verbal abstracts corresponding to class IV strong verbs

52 PG *bruki- m. ‘breach, crack, fragment’. Represented in OE bryce m. ‘id.’, OFris. breke, breze m./f. ‘id.’, OS bruki- m. ‘id.’, OHG bruc m. ‘id.’. Radical zero grade also in e.g. PG *bruka- m. ‘breaker’ > OHG (pi-)proh m. ‘seducer’ and PG *bruka- n. ‘fragment’ > OE (ge-)broc n. ‘id.’. Derivationally matching the class IV strong verb PG *brekana- s.v. ‘break, crack’ > Goth. brikan s.v. ‘fight; break, destroy’, OE brecan s.v. ‘break, storm’, OFris. breka s.v. ‘break, tear’, OS brekan s.v. ‘id.’, OHG brechan, brehhan s.v. ‘break; split, open’. Extra-Germanic comparanda are few and uncertain, but Lat. frangō v. ‘break’ is the one most often mentioned and also the most plausible candidate if we can assume with Schrijver (1991: 478) that Lat. frangō < PIE *bʰr-ⁿ-gʷ-, i.e. a reduced grade as replacement of the proper zero grade PIE *bʰr-ⁿ-gʷ- > Lat. †forg- vel sim. in a way quite similar to the one in which the original zero grade PG *burk- (< PIE *bʰr-ⁿ-gʷ-) was altered into PG *bruk- in order to maintain the phonotactics of the root PIE *bʰr-ⁿ-gʷ-. If OIr. braigid v. ‘farts’ is to be compared here, as well, a similar reduced grade must be reconstructed for its precursor. Literature: Bammesberger (1990: 133), Bjorvand & Lindeman (2000: 99-100), Boutkan & Siebinga (2003: 61-62), Holthausen (1974: 33, 35-36), IEW (2005: 165), Kluge/Seebold (2002: 148, 153), Kroonen (2013: 75, 79), Lehmann (1986: 80), LIV (2001: 91-92), Lloyd et al. (1998: 307-309, 374), Orel (2003: 55), Philippa et al. (2003: 376-377), Seebold (1970: 132-135), Sehrt (1966: 61-62).

53 PG *buri- m. ‘son, progeny’. Represented in Goth. baur m. ‘son’, ON burr m. ‘id.’, OE byre ‘son, progeny; time, occasion’. Radical zero grade also in e.g. PG *bura- adj. ‘high’ > OHG bor adj. ‘id.’ (only in in bor(e) ‘upwards, in the air’), PG *bura- m. ‘party’ > Goth. (ga-)baur m. ‘id.’; and PG *bura- n. ‘collect, collection; progeny’ > Goth. (ga-)baur n. ‘collect, collection’, OHG (gi-)por n. ‘progeny’. Derivationally matching the class IV strong verb PG *berana- s.v. ‘carry; bear, give birth’ > Goth. bairan s.v. ‘id.’, ON bera s.v. ‘id.’, OE beran s.v. ‘carry; tolerate’, OS beran s.v. ‘carry, possess’, OHG beran s.v. ‘produce, bear’. To be reconstructed somewhat anachronistically as *bʰr-ⁱ⁻ to the widely


PG *kuli- m. ‘cold’. Represented in ON kylr m. ‘id.’ (reshaped as a ja-stem), OE cyle m. ‘id.’. Derivationally matching the archaic preterite participle stem of the class VI strong verb PG *kalana- s.v. ‘be cold’ (originally probably class IV *kelana-) found only in OSw. kolin adj./ptc. ‘feeling shivery’ (< PG *kulena- ~ *kulana- pret.ptc.). Only later was a competing i-stem PG *kali- m. ‘cold’ created to the new preterite participle PG *kalena- ~ *kalana-. To be reconstructed as PIE *glH-i- to the root PIE *gelH- ‘cold’, cf. also e.g. Lat. gelus m., gelu n. ‘cold, frost, ice’, gelidus adj. ‘cold’, Lith. gel(-menis) f. ‘severe cold’.

24 With metathesis of PG *ur > *ru in order to restore the inflectional paradigm by bringing the phonotactics in line with the full and o-grade forms PG *drep- and *drap- of the phonotactic structure CRVC.


58 PG *numi- m. ‘taking’. Represented in OE (fore-)nyme m. ‘praesumptio, i.e. anticipation’. Radical zero grade also in e.g. PG *numan- m. ‘taker, taken (?)’ > ON (her-)numi m.
‘prisoner of war’, OE (ierfe-)numa m. ‘heir’, OFris. (erf-)noma m. ‘id.’, OS (sigi-)nomo m. ‘victor’. Derivationally matching the class IV strong verb PG *nemana- s.v. ‘take’ > Goth. niman s.v. ‘take, catch’, ON nema s.v. ‘take, catch; learn’, OE niman s.v. ‘take’, OFris. nema, nima s.v. ‘take, rob’, OS neman s.v. ‘take, choose’, OHG neman s.v. ‘take, grab’.

An i-stem adjective with a radical lengthened grade also exists, viz. PG *nēmi- adj. ‘easy to take, acceptable’. To be reconstructed as *nēmi- to the root PIE *nem- ‘assign to, allot to; take; give’ also found in e.g. Av. nēmah- n. ‘loan’, Gr. νέμω v. ‘distribute; seize, possess’, Lat. numerus m. ‘number’ (< PIE *nomeso-), Lith. nūoma f. ‘rent, tenancy’.


2.1.5. i-stem verbal abstracts corresponding to class V strong verbs

PG *kwedi- m. ‘talk’. Represented in OE cwede m. ‘word, saying; order, command; curse’, OS cwid m. ‘word’, OHG squit f. ‘pronunciation’. Radical full grade also in e.g. PG *kwedu- m. ‘talk’ > ON kviðr m. ‘saying, word; verdict, inquest’. Derivationally matching the class V strong verb PG *kweþana- s.v. ‘talk’ > OE cwethan s.v. ‘say, speak’. To be reconstructed as PIE *gʷet- to the root PIE *gʷet- ‘say, speak’, the prevalence of which in other branches is disputed. Skt. gādati v. ‘speaks’ (with *t replaced by d in analogy with Skt. vādati v. ‘speaks’), Arm. kočem v. ‘call, invite’ and Lat. vetō v. ‘forbid’ (< ‘say no’) are


2.1.6. I-stem verbal abstracts corresponding to class VI strong verbs

PG *agi- m. ‘fear’. Represented in OE ege m. ‘id.’. Identical radical ablaut grade in e.g. PG *agan- m. ‘fear, horror; unrest’ > ON agi m. ‘id.’; PG *agīn- f. ‘fear’ > Goth. (un-)agein adv. ‘fearless’, OHG egī f. ‘id.’; and PG *agiz- n. ‘fear’ > Goth. agis n. ‘id.’ (a-stem) and, with a secondary n-stem enlargement in West Germanic, OE egesa m. ‘horror’, OS egiso m. ‘id.’, OHG agiso, egiso m. ‘id.’. Derivationally matching the class VI preterite-present verb PG *ōg ~ *ōgum pp.v. ‘fear’ > Goth. og ~ ogum pp.v. ‘id.’. The original preterite participle of this verb is not attested, the verb being a preterite-present; the secondary weak preterite participle is accidentally unattested as well. The original a-vocalism normally prevailing in the present stem and the preterite participle stem of class VI strong verbs is secured, though, by the fossilised present participle Goth. (un-)agands adj. ‘fearless’, i.e. ‘not fearing’, with the varia lectio of un-agans which is, in the light of
the semantics (‘fearless’ = ‘not fearing’ rather than ‘not feared’), probably to be seen as a mere scribal error for un-agands rather than as a true preterite participle. Outside Germanic, an exact cognate to the s-stem prevails in Gr. ἄχος n. ‘sadness, pain’. Further comparanda include Skt. aghá- n. ‘pain, danger’, Gr. ἀγνώμαι, ἀγώμαι v. ‘grieve, mourn, am sad’ and OIr. (ad-)agathar v. ‘fears’, and the root is thus to be reconstructed as PIE *h₂egʰ- ‘fear’. Besides being analysable as an i-stem verbal abstract formed automatically from the ablaut grade found in the weak stem of the original preterite participle of the corresponding verb, PG *agi- may also be regarded as continuing the s-stem PIE *h₂egʰ-os ~ * h₂egʰ-es- > PG *ag-az ~ * ag-iz-, the weak stem of which is, by means of reinterpretation of the stem-final PG *z as the case marker of the nom.sg., easily resegmentable as PG *ag-i-. Literature: Bammesberger (1990: 134), Casaretto (2004: 559), Holthausen (1974: 89), IEW (2005: 7-8), Kroonen (2013: 3-4), Lehmann (1986: 9-10, 270), LIV (2001: 257), Lloyd et al. (1998: 957, 962-964), Orel (2003: 3, 290), Seebold (1970: 362), De Vries (1962: 3).


64 PG *kali- m. ‘cold’. Represented in OE ciel m. ‘id.’. Derivationally matching the newly shaped preterite participle stem of the class VI strong verb PG *kalana- s.v. ‘be cold’ (originally probably class IV *kelana- in the light of the archaic-looking preterite participle OSw. kolin adj./ptc. ‘feeling shivery’) > ON kala s.v. ‘become cold, be cold, be stiff’, OE calan s.v. ‘be cold’. With PG *kali- being derived from PG *kalena- ~ *kalana- ptc.

PG *skapi- m. ‘nature, character, kind’. Represented as simplex only in OHG scaf m. ‘id.’; as a second member of compounds it is widely attested in the Germanic languages, cf. e.g. ON -skapr m. ‘of that kind’, OE -schiepe m. ‘id.’, OFris. -skipi m. ‘id.’, OS -skepi m. ‘id.’, OHG -scaf m. ‘id.’. Radical zero grade also in e.g. PG *skapa- n. ‘vessel; nature, character, kind; form, creation’ > ON skap n. ‘nature, character, kind’, OE (ge-)sceap n. ‘creation, form; destiny’, OS skap n. ‘vessel, container’, OHG skaf n. ‘nature, character, kind; vessel container’. Derivationally matching the class VI strong verb PG *skapjana- s.v. ‘form, create’ (with the present stem formed as a class I weak verb in some of the Germanic languages) > Goth. (ga-)skapjan s.v. ‘id.’, ON scepja s.v./w.v. ‘shape, form, mould’, OE scieppan, scippan s.v. ‘form, create’, OFris. skeppa s.v. ‘create; destine’, OS skeppian s.v. ‘id.’, OHG scapfen, scepfen s.v./w.v. ‘id.’. To be reconstructed as PIE *skHb- to a root PIE *skleHb- ‘form, create’ vel sim. with no extra-Germanic cognates at first sight. However, there might not be any need for the reconstruction of a root-final PIE *b for the precursor of PG *skapi- and *skapjana-. Following Kroonen (2013: 440), we might suggest that PG *p is unoriginal, having rather spread from the possibly related iterative verb PG *skap/bôj(a)na- w.v. II ‘hollow out’ > ‘shave, scraibe’ where Kluge’s Law (PIE *-P-n- > PG *-pp-) was in operation. Consequently, any labial plosive will do, and our minds may instantly turn towards the root PIE *skabh- or *skh2ebh- ‘scratch, scraibe’ also found in e.g. Gr. σκάφη f. ‘basin, trough; hollow’, σκάπτω v. ‘dig, dig up’ (with analogical π for φ), Lat. scabō v. ‘scratch, rub’, Lith. skàbti v. ‘pick, pluck’ and also PG *skaban-s.v. ‘shave, scraibe’. Literature: Bammesberger (1990: 135), Boutkan & Siebinga (2005: 347-348, 353), Holthausen (1974: 273, 277), IEW (2005: 930-933), Kluge/Seebold (2002: 791), Kroonen (2013: 440), Lehmann (1986: 148-149), LIV (2001: 549), Orel (2003: 334), Philippa et al. (2009: 84), Seebold (1970: 406-408), Sehrt (1966: 469), De Vries (1962: 483, 489).

PG *slagi- m. ‘hit, blow, stroke’. Represented in Goth. slahs m. ‘slap, box on the ear’, ON slagr m. ‘hit, blow, stroke’, OE slege m. ‘id.’, OFris. slei m. ‘id.’, OS slegi m. ‘id.’, OHG slag m. ‘id.’. Identical radical ablaut grade in e.g. PG *slaga- n. ‘hit, blow, stroke’ > ON


PG *stapi- m. ‘step’. Represented in OE stepe, stepe m. ‘id.’, OFris. -stepi m. ‘step, going’, OS stap m. ‘step’, OHG stapf m. ‘id.’. Derivationally matching the class VI strong verb PG *stapjana- s.v. ‘walk, step’ (with the present stem formed as a class I weak verb in some of the Germanic languages) > OE steppan s.v. ‘trudge, plod’, OFris. stapa s.v. ‘walk, step’, OS stapen s.v. ‘walked, stepped’ (pret.ptc.). According to Kroonen (2013: 452).
the strong verb is likely to be a backformation from the iterative PG *stapp/bō(ja)na-
w.v. II ‘walk’ and thus to be reconstructed as PIE *stop-n- (> PG *stapp- by means of
Kluge’s Law) to a root PIE *step- ‘track, step’ also found in e.g. OCS stopa f. ‘footprint,

2.1.7. I-stem verbal abstracts corresponding to class I-VII reduplicated strong verbs

69 PG *fal(l)i- m. ‘fall, crash’. Represented in OE fiell, fyll m. ‘id.’, OFris. fal, fel m. ‘id.’,
(erth-)fell m. ‘fall to the ground’. Identical radical ablaut grade in e.g. PG *falla- m. ‘crash,
fall; end, ruin’ > OS fal, fall m. ‘id.’, OHG fal, fall m. ‘id.’ and PG *falla- n. ‘fall’ > ON
fall n. ‘id.’, OE feall n. ‘id.’, OHG (ur-)fal n. ‘breakdown’. Derivationally matching the
class III reduplicated strong verb PG *fallana- s.v. ‘fall’ > ON falla s.v. ‘fall, fall in battle’,
OE feallan s.v. ‘fall, crash’, OFris. falla s.v. ‘fall, lower, go down, collapse’ (conjugated as
a class VI unreduplicated strong verb), OS fallan s.v. ‘fall, crash, perish’, OHG fallan s.v.
‘fall, crash, die’. Further etymology uncertain. The traditional view as presented in e.g.
IEW (2005: 851) claims that PG *fal(l)i- and *fallana- should be compared to Arm.
p’lanim v. ‘fall’ (for a discussion of the p’ in the Armenian forms cf. Klingenschmitt
(1982: 164-172)), p’owl sb. ‘fall’ and Lith. pūlti v. ‘fall’ (pres. pūolu); the two latter forms
developed from PIE *p(h)öl-. Unless such a form is to be understood as PIE *peh2-l-
with zero grade PIE *p(h)₂-l-, this reconstruction cannot be maintained in the light of the
present knowledge on the Proto-Indo-European root structure and inventory of phonemes.
A more promising etymology prevails, viz. the one suggested by Praust (2005) that PG
*fallana- is actually a prefigated verb consisting of PIE *h₂po prefix ‘off’ and a thematic
present of the root PIE *h₁elh₁- ‘fall’ as found also in Hitt. hallanai v. ‘trample down,
flatten’, Gr. ὀλλυτιμ v. ‘destroy’, cf. also Scheungraber (2012: 1 with lit.). The combination
of PIE *h₂po and the root PIE *h₁elh₁- is not restricted to Germanic; similar formations
prevail in Gr. ὀπ-ὀλλυτιμ v. ‘wreck, destroy, lose’ (mid. ‘go to waste, be ruined, be lost’ and
Lat. ab-oleō v. ‘destroy, banish, abolish’ as well as in the Armenian and Lithuanian forms
mentioned above. Literature: Bammesberger (1990: 134), Bjorvand & Lindeman (2000:

PG *hrōpi*- m. ‘shout’. Reconstructed as an i-stem by Bammesberger (1990: 136), but as pointed out by Hinderling (1967: 159), all nominal forms related to the class VI reduplicated strong verb PG *hrōpana- s.v. ‘shout’ are reconstructable as a-stems. Consequently, PG *hrōpi- m. ‘shout’ is non-existing. Literature: Bammesberger (1990: 136), Hinderling (1967: 159).

PG *stauti*- m. ‘thrust, push, blow’. Represented in ON steytr m. ‘id.’, OFris. stēt m. ‘thrust’, OHG stōz m. ‘id.’. Derivationally matching the class II reduplicated strong verb PG *stautana- s.v. ‘hit, thrust, knock’ > Goth. stautan s.v. ‘hit, strike’, OFris. stēta s.v. ‘punch, kick’, OS stōtan s.v. ‘hit, strike’, OHG stōzan s.v. ‘push, knock; fall; touch’. To be reconstructed as PIE *s;pouy-d-i- to the root PIE *s;teydh- ‘push, prick, knock’, cf. also e.g. Skt. tudāti v. ‘thrusts, pushes’, Arm. īndam v. ‘am shaken’, Alb. shtynj v. ‘shove, push’ (<

PG *walli- m. ‘source, spring, well’. Represented in OE wiell, wyll m. ‘id.’. Radical o-grade also in e.g. PG *walla- n. ‘bubbling, boiling’ > ON vall n. ‘id.’, OE weall n. ‘id.’. Derivationally matching the class III reduplicated strong verb PG *wallana- s.v. ‘wave, roar, bubble, boil’ > OE weallan s.v. ‘id.’, OFris. walla s.v. ‘id.’, OS wallan s.v. ‘id.’, OHG wallan s.v. ‘id.’. Generally seen as related to the root PIE *yelh₁- ‘turn’, cf. also e.g. Skt. ārmi- m. ‘wave’ (< PIE *yllH-mi-), Lith. vilnis f. ‘id.’ (< PIE *yllH₁-ni-), of which it constitutes an o-grade nasal present, i.e. PIE *yoolh₁-n-. Given the validity of that analysis, PG *walli- does not belong to the group of primary i-stems and is thus of no relevance to the present study. The alternative identification of PG *walli- as a true primary i-stem derived from PIE *yoolh₁- also cannot be ruled out if Lühr (1976: 76-77) is right in her analysis of this root and in her general claim that PIE *-RH- > PG *-RR- at least under certain conditions. Literature: Bammesberger (1990: 134), Bjorvand & Lindeman (2000: 1033-1034), Holthausen (1974: 386, 393), IEW (2005: 1140-1144, esp. 1142), Kluge/Seebold (2002: 970), Kroonen (2013: 571), Lehmann (1986: 411), LIV (2001: 677), Orel (2003: 444), Seebold (1970: 538, 552-553), Sehrt (1966: 636-637), De Vries (1962: 641).

2.2. Masculine i-stem verbal abstracts corresponding to a strong verb but displaying unexpected radical ablaut grade

As against the numerous examples treated above (section 2.1) of masculine i-stem verbal abstracts derivationally matching the ablaut grade of the stem of the preterite participle of a corresponding strong verb, we encounter a far smaller quantity of, again mainly masculine, i-stem verbal abstracts that have the appurtenance to a strong verb in common with the former group. This second group, however, differs from the regularly formed i-stem verbal abstracts in that the ablaut grades of its members do not match the stem of the preterite participle.

Examples of such i-stems are listed on the following pages and are, as was also the case with the former group, categorised in accordance with the class of the strong verb in question.
2.2.1. I-stem verbal abstracts corresponding to class I strong verbs

No examples.

2.2.2. I-stem verbal abstracts corresponding to class II strong verbs

PG *hlauti- m. ‘share, lot’. Represented in Goth. hlauts m. ‘lot, inheritance’, OE hlīt, hlīet m. ‘share, lot; sacrifice’. Radical o-grade also in e.g. PG *hlautō- f. ‘sacrificial blood; lot’ > ON hlaut f. ‘id.’ and *hlauta- m. ‘share, lot’ > ON hlautr m. ‘share, lot’ (hapax), OS hlōt m. ‘id.’, OHG lōz, hlōz m./n. ‘id.’. Etymologically belonging to the class II strong verb PG *hleutana- s.v. ‘obtain by lot’, but its ablaut grade is aberrant. If created to the weak stem of the verb, i.e. the stem found in the preterite participle, the i-stem should have been PG *hluti- m. ‘lot’ which actually exists as a competing form. Literature: Bammesberger (1990: 133), Casaretto (2004: 180), IEW (2005: 604-605, esp. 605), Kluge/Seebold (2002: 582), Kroonen (2013: 230, 233), LIV (2001: 105-106, 365), Orel (2003: 175), Seebold (1970: 264-265), Sehrt (1966: 262), De Vries (1962: 235).

PG *laudi- m. ‘form, appearance’. Represented in Goth. (jugga-)laufs m. ‘young man, youth’. Etymologically belonging to the class II strong verb PG *leudana- s.v. ‘grow’ > Goth. liudan s.v. ‘id.’, ON lodinn adj./ptc. ‘shaggy, dishevelled’, OE lēdan s.v. ‘grow’, OS liodan s.v. ‘id.’, OHG liotan s.v. ‘id.’, but its ablaut grade is aberrant. Descendants of the expected form PG *ludi- are not attested. Attested are, on the other hand, descendants of another i-stem to this root, viz. PG *leudi- with radical full grade. The i-stem shape of Goth. jugga-laufs (-laudi-) stands a good chance of being secondary seeing that Goth. -laudi- as well as the more productive Goth. -lauða- in e.g. swa-laufs adj. ‘so big’, for that matter, only appear as second members of compounds. In that position, when the second member of the compound is adjectival, i.e. when the compound is exocentric, transition of thematic stems (a-stems) into i-stems is, from a Proto-Indo-European point of view, an expected and regular process, examples of which include Skt. gandhā- m. ‘smell, fragrance’ → dī́mā-gandha- adj. ‘smelling of smoke, having the smell of smoke’, Gr. μισθός m. ‘wages, pay, hire’ → α-μισθι- adj. ‘without pay’ and, as is the case here, Goth. *lauða- m. ‘shape, appearance’ → jugga-lauði- m. ‘having a young appearance’, cf. further e.g. Brugmann & Delbrück (1906: 112-113) and Rasmussen (1988 [1999]: 320). The i-stem, or rather the underlying thematic a-stem, is to be reconstructed as PIE *hölūd- to the root PIE *h₁leuḍ- ‘rise, grow’ also known from e.g. Skt. vī-rūḍh- f. ‘plant’ (< PIE *vih₁-lūḍh), rōḍhati, rōhati v. ‘grows’, Gr. ἱλωθον v. ‘came’ (aor., < PIE
*é-h₁ludʰ-e-), ἐλεύσομαι ‘will come’ (fut., < PIE *h₁léydʰ-(h₁)s-e-), OIr. luid v. ‘went’.


PG *leudi- m. ‘man’ (pl. ‘people’) as represented in ON ljóðr, lýðr m. ‘id.’, OE lēod m. ‘man, king’, f. ‘people’, OFris. liude m. ‘id.’, OS līodi m. ‘id.’, OHG līut m. ‘id.’ constitutes a second aberrant i-stem form to PG *leudana- s.v. ‘grow’. Further cognates with full grade of the root include Lith. liāudis f. ‘people’, OCS ljuds m. ‘id.’, pl. ljudje), and for the special semantic development of ‘grow’ > ‘growth-group’ > ‘(free) stock, people’ cf. Gr. ἐλεύθερος adj. ‘free’ and Lat. *lūber > līber adj. ‘free’, m. ‘god of vegetation and growth’; both < PIE *h₁léydʰ-ero-. The creation of a PG *leudi- next to the likewise secondary form PG *laudi- ‘form, appearance, is difficult to motivate. Neither is PG *leudana- a class V strong verb in which case radical full grade would be expected; nor does any a- or s-stem with radical full grade, i.e. PG *leuda- < PIE *h₁léydʰ-o- or PG *leudaz ~ *leudiz- < PIE *h₁léydʰ-os ~ *h₁léydʰ-es- which could otherwise have served as a source of analogy for the creation of PG *leudi-, prevail in any of the Indo-European branches. In my view, either of the explanations presented by Casarett (2004: 167), viz. that it has been analogically influenced by i-stem verbal abstracts corresponding to class V strong verbs, and Hinderling (1967: 40), viz. that the phonological identity of the present stem and the preterite participle stem in the class V and VI strong verbs have caused the derivatory basis to be reanalysed as the present stem, are by far the most convincing ones, at least for want of better and more plausible alternatives. Literature: Bammesberger (1990: 136), Bjorvand & Lindeman (2000: 555-556), Boutkan & Siebinga (2005: 242), Holthausen (1974: 199), IEW (2005: 306-307, 684-685), Kluge/Seebold (2002: 572), Kroonen (2013: 332-333), LIV (2001: 248-249), Orel (2003: 242), Philippa et al. (2007: 224), Seebold (1970: 335), Sehrt (1966: 345-346), De Vries (1962: 359-360, 369).

PG *rauki- m. ‘smoke’. Represented in ON reykr m. ‘id.’, OE riec, rēc m. ‘id.’, OFris. rēk m. ‘id.’, OS rōk m. ‘id.’, OHG rouh m. ‘id.’. Etymologically belonging to the class II strong verb PG *reukana- s.v. ‘smoke’ (originally ‘smell’), but its ablaut grade is aberrant. This i-stem with radical o-grade coexists with the expected zero grade form PG *ruki- m.
‘smell; smoke’. The solution to the problem which of these two i-stems is more original may profitably be sought in the verb PG *raukiana- w.v. I ‘smoke’ which is often seen analysed as a denominal verb with PG *rauki- as its derivatory base. If, however, rather analysed as a causative, i.e. ‘make smell’ > ‘smoke’, PG *raukiana- can easily serve if not as a derivatory base for an i-stem PG *rauki- m. ‘smoke’ then at least as a heavy source of inspiration for a separation of the original PG *ruki- m. ‘smell; smoke’ into *ruki- ‘smell’ on the basis of the strong verb PG *reukana- s.v. ‘smoke’ (originally ‘smell’) and newly shaped *rauki- m. ‘smoke’ on the basis of or analogically influenced by the causative PG *raukiana- w.v. I ‘smoke’. Literature: Bammesberger (1990: 133), Bjorvand & Lindeman (2000: 742-743, 747-748), Holthausen (1974: 257, 259), IEW (2005: 871-872), Kluge/Seebold (2002: 746, 764-765), Kroonen (2013: 406), Orel (2003: 299), Philippa et al. (2003: 681-682, 689-690), Seebold (1970: 379-380), Sehrt (1966: 440), De Vries (1962: 443, 449).

PG *saudi- m. ‘meat broth’. Represented in Goth. sauþs m. ‘sacrifice’, ON saudr m. ‘sheep’ (with unumlauted vowel; the umlauted variant is found in OGotn. soypr m. ‘sheep’), the semantical development being one of ‘meat broth’ > ‘boiled meat’ > ‘sacrifice’ and ‘sheep’ (< ‘raw meat for cooking’), respectively, cf. Bjorvand & Lindeman (2000: 762) and Seebold (1970: 401). Radical o-grade also in e.g. PG *sauþa- m. ‘broth’ > OGotn. sauþr m. ‘well’, OE sēath m. ‘well, hollow, pit, lake’, OFris. sāth m. ‘well’ and PG *sauda- m. ‘cooking, boiling’ > Norw. saud m. ‘cooking’, MHG sōt m. ‘boiling, cooking; well’. Etymologically belonging to the class II strong verb PG *seufana- s.v. ‘boil, seethe’, but the attested o-grade is unexpected in the light of the numerous other Germanic i-stem verbal abstracts treated in section 2.1. PG *saudi- with radical o-grade (< PIE *h₂souigʷ- if inherited from Proto-Indo-European) coexists with the expected zero grade form PG *sudi- m. ‘decoction, extract’. Two explanations for this coexistence come to mind. Either PG *saudi-, having received its o-grade due to influence from either of the a-stems PG *sauþa- m. or *sauda- m. mentioned above, is a recent formation in comparison with PG *sudi-, or PG *saudi- is simply to be regarded as the original i-stem form inherited from Proto-Indo-European in a period when the Proto-Germanic process of creating an i-stem verbal abstract to the weak stem of the verb, i.e. the stem of the preterite participle, had yet to become automatized. Literature: Bammesberger (1990: 133), Bjorvand & Lindeman (2000: 762-763), Casaretto (2004: 182), Holthausen (1974: 287).

80 PG *smauki- m. ‘smoke’. Represented in OE smīc, smīc m. ‘id.’. Etymologically belonging to the class II strong verb PG *smeukana- s.v. ‘smoke’ > OE smōcan s.v. ‘id.’, but as with the previous i-stem formations of the present paragraph, radical o-grade is unexpected, the only other formation with radical o-grade being the weak verb PG *smaukiana- w.v. I ‘smoke’ > OE smīcan, smīecan s.v. I ‘id.’. At first sight, PG *smauki- and *smeukana- descend from a form with a root-final PIE *g. When including forms with relevant semantics from outside Germanic, however, we are faced with a multitude of root-final velars: PIE *k in Arm. mowx sb. ‘smoke’ (< PIE *smokHko- or maybe rather PIE *smouHk-ko-; for the development PIE *-h1-initial- > *-l- -cf. Olsen (1994: 274-275)) and OIr. múch f. ‘fire’ (< PIE *smuhk-), PIE *k or *g in Gr. σμύχω v. ‘burn up, smolder away’ (< PIE *smuhk/gh-)- and Lith. smągęti v. ‘choke’ (< PIE *smouHg-je-), and finally PIE *g in the Germanic forms, at least on the surface. The effects of Kluge’s Law (PIE *K- > PG *kk-), which may have been in operation in the iterative PG *smeukiana- w.v. II ‘smoke’ as continued in OE smocian s.v. II ‘id.’ and G(Lux.) schmocken s.v. II ‘id.’, reveal that the PG root *smeuk- need not mirror a PIE *smeu(H)g- but can actually mirror also *smeu(H)g- and *smeu(H)g-. Literature: Bammesberger (1990: 133), Holthausen (1974: 301-303), IEW (2005: 971), Kroonen (2013: 458-460), Orel (2003: 354), Seebold (1970: 440-441).

2.2.3. I-stem verbal abstracts corresponding to class III strong verbs

81 PG *balgi- m- ‘sack, bag’. Represented in Goth. balgs m. ‘skin-bag’, ON belgr m. ‘flayed animal skin, bag; bellows; belly’, OE belg, bylig, bielg m. ‘sack, bag; bellows’, OFris. (blēs-)balch m. ‘bellows’, OHG balg m. ‘skin, tube, pod’. Etymologically belonging to the class III strong verb PG *belgana- s.v. ‘swell’ > ON bolginn adj./ptc. ‘swollen’, OE belgan s.v. ‘become angry, be angered’, OFris. (over-)bulgen adj./ptc. ‘resentful, angry, incensed’, OS belgan s.v. ‘become angry, be angered’, OHG belgan s.v. ‘id.’, the expected i-stem verbal abstract of which would be PG *bulgi- rather than *balgi-. To be reconstructed as PIE *bhölgh-i- to the root PIE *bhélgh- ‘swell’ also found in e.g. Skt. barhiṣ- n. ‘sacrificial straw’, Av. baržiṣ- n. ‘pillow’, OIr. bolg m. ‘sack’, f. ‘bladder’ (< PIE *bhölgh-o-), bolgaim v. ‘swell’. Literature: Bammesberger (1990: 133), Bjorvand & Lindeman (2000: 67-69), Boutkan & Siebinga (2005: 36, 301), Casaretto (2004: 178-179), Holthausen

PG *dranki- m. ‘drink’. Represented in OE drenc m. ‘id.’. Radical o-grade also in e.g. PG *dranka- m. ‘drink’ > OFris. drānk m. ‘id.’, OS drank m. ‘id.’, OHG tranq m. ‘id.’ and PG *dranka- n. ‘drink’ > Goth. dragk n. ‘id.’, OHG tranq n. ‘id.’. Etymologically belonging to the class III strong verb PG *drinkana- s.v. ‘drink’ whose expected i-stem verbal abstract is also attested as reflects of PG *drunki- m. ‘drink’. Seeing that both PG *drunki-, *dranki- and *drinkana- mirror a nasal present to a root PIE *dʰreg- ‘glide, move’ and not a root itself, both i-stems stand virtually no chance of being an archaism, and with PG *drunki- representing the synchronically expected form, an alternative explanation must be

PG *stangi- m. ‘bar, pole, staff, stake’. Represented in OE steng m. ‘id.’. Radical o-grade also in e.g. PG *stangō- f. ‘bar, pole, staff, stake’ > ON stǫng f. ‘id.’ (partially inflected as a root noun, cf. Ph.d. article no. 1), OS stanga f. ‘id.’, OHG stanga f. ‘id.’. Etymologically belonging to the class III strong verb PG *stingana- s.v. ‘stick, thrust’ whose expected i-stem verbal abstract should appear as PG *stungi-; a reconstructed form to which cognates are actually attested. Two questions now arise, viz. what could have motivated the coexistence of these two i-stem verbal abstracts, and which form is archaic. The most straightforward solution to the problem would be to assume that PG *stangi- < PIE *stongʰ-i- is the more archaic form since the formation of it cannot be motivated directly.

PG *stungi-, on the other hand, is easily explicable as productively derived from the ablaut grade found in the stem of the preterite participle of the corresponding strong verb. It is also possible, however, that *stangi- is the unoriginal form. In that case, we might consider invoking influence from PG *stangō- f. ‘bar, pole, staff, stake’ on PG *stangi- m. ‘id.’. Finally, though disinclined to believe in that explanation himself, Seebold (1970: 462) mentions the theoretical possibility of the hapax Goth. (us-)stagg s.v. ‘pluck out’ (ipv.) vouching for the existence of a class III reduplicated strong verb PG *stangana- ‘sting, stick’ s.v. competing with *stingana- s.v. ‘id.’. Needless to say, the synchronically expected form of an i-stem verbal abstract to PG *stangana- would be PG *stangi-.


PG *stankwi- m. ‘smell’. Represented in OE stenc m. ‘odour; smell’. Radical o-grade also in e.g. PG *stankwa- m. ‘clash; smell’ > ON stǫkkkr m. ‘sudden movement’, OE stanc m. ‘spraying, sprinkling’, OS stank m. ‘odour, pleasant smell’, OHG stanc m. ‘odour; smell’. Etymologically belonging to the class III strong verb PG *stinkwana- s.v. ‘thrust, clash; stink’. As was also the case with the previous lemma, i.e. PG *stangi- m. ‘bar, pole, staff, stake’, this aberrant form coexists with the structurally expected i-stem verbal abstract PG
*stunkwi-* m. ‘smell’. Here, too, an estimate is wanted as to what form is original, and again two major options present themselves, viz. of the o-grade form to be original due to the zero grade form being easily constructible from PG *stinkwana-* or of the o-grade form to have been remodelled from PG *stunkwi-* in analogy with the a-stem PG *stankwa-*.


PG *swalgi-* m. ‘abyss; swirl, whirlpool’. Represented in ON svelgr m. ‘swirl, whirlpool’, OE svelg m. ‘abyss’. Etymologically belonging to the class III strong verb PG *swelgana-* s.v. ‘swallow’ to which also another i-stem verbal abstract PG *swulgi-* m. ‘drink, swallow, gulp’ is related. For the question of which form is the more archaic one cf. the discussion under the previous two lemmata. It is important to note, however, that in the case of PG *swalgi-, no corresponding a- or ō-stem exists that could have otherwise facilitated any transition from either of the thematic paradigms to the i-stem paradigm.


PG *swangwi-* m. ‘swing; stroke’. Represented in OE sweng ‘id.’, OFris. sweng m. ‘perfusio, i.e. the act of pouring water over a patient, affusion, moistening’. Etymologically belonging to the class III strong verb PG *swingwana-* s.v. ‘swing’ > OE swingan s.v. ‘swing, flee; strike, discipline, castigate’, OFris. swinga s.v. ‘pour over, douse’, OS swungan s.v. ‘swung, fallen’ (pret.ptc.), OHG swingan s.v. ‘swing’, the i-stem verbal abstract of which one would have rather expected to find as PG †swungwi-. Further etymology highly uncertain. At least, the classic comparandum mentioned by e.g. IEW (2005: 1047-1048) of PG *swengwana-* and Skt. svájate v. ‘hugs, embraces’ must be abandoned on formal grounds (Skt. j < PIE *g(w) or *k(w))


PG *swanki-* m. ‘misery, sorrow; toil; temptation’. Represented in OE swenc m. ‘id.’. Radical o-grade also in e.g. PG *swankō-* f. ‘swing’ > Norw. (dial.) svokk f. ‘arch of the foot’. Etymologically belonging to the class III strong verb PG *swinkana-* s.v. ‘toil,


91 PG *wēni-* m./f. ‘hope, expectation’. Represented in Goth. *wens* f. ‘id.’, ON *ván, vón, ōn* f. ‘id.’ (early transition into the ō-stem declension), OE *wēn* f. ‘supposition, opinion’, OFris. *wēn* f. ‘idea, opinion’, OS *wān* m. ‘hope, expectation’, OHG *wān* m. ‘hope, expectation, opinion, elusion’. Along with the previous lemma, PG *wēni-* belongs etymologically to the class III strong verb PG *winnana-* s.v. ‘exert oneself, take pains’ with the synchronically regular PG *wunni-* m. ‘suffering, pain’. The obvious explanation for the

2.2.4. I-stem verbal abstracts corresponding to class IV strong verbs


93 PG *kwemi- m. ‘eventus, i.e. outcome, result’. Represented in OHG (ga-)quimi m. ‘id.’. Etymologically belonging to the class IV strong verb PG *kwemana- s.v. ‘come’ and coexisting with PG *kwumi- m. ‘coming’, which must be regarded as the structurally expected form. Since no other full grade nominal derivatives of PG *kwemana- exist except for PG *kweman- m. ‘newcomer’ > OHG (niuwi-)qhuemo m. ‘novice’, no other forms could have triggered or facilitated the creation of PG *kwemi-. In my view, either of the explanations suggested for PG *leudi-, must therefore be regarded as the only option. Literature: Bammesberger (1990: 136), IEW (2005: 464-465), Kroonen (2013: 316), LIV (2001: 209-210), Orel (2003: 227-228), Seebold (1970: 315-317).

2.2.5. I-stem verbal abstracts corresponding to class V strong verbs

94 PG *mati- m. ‘food’. Represented in Goth. mats m. ‘id.’, ON matr m. ‘id.’, OE mete m. ‘id.’, OFris. mete m. ‘id.’, OS meti m. ‘id.’. Radical o-grade also in e.g. PG *mata- n. ‘food’ > OS mat n. ‘id.’ OHG maz m. ‘id.’. Etymologically belonging to the class V strong verb PG *metana- s.v. ‘measure’ > Goth. mitan s.v. ‘id.’, ON meta s.v. ‘id.’, OE metan s.v. ‘id.’, OFris. meta s.v. ‘id.’, OS metan s.v. ‘regard’, OHG mezzan s.v. ‘measure’, the semantic development of PG *mati- being one of ‘measuring’ > ‘part, portion’ > ‘food’. To be reconstructed as PIE *mod-i- to the root PIE *med- ‘measure, regard; worry, give advice, give healing’ with reflects in e.g. Gr. μηδεμαι v. ‘consider, decide’ and Lat. meditor v. ‘consider carefully’, medeor v. ‘heal, come to assistance’. This etymology,
however, is only one of the two etymologies most often adduced for PG *mati-. The second etymological proposal separates PG *mati- m. ‘food’ from PG *metana- s.v. ‘measure’ only to compare it with the root PIE *mad- (IEW 2005: 694-695) or *med- (LIV 2001: 423-424) ‘wet; glossy, fat, well-fed’ with numerous descendants in the individual branches, cf. e.g. Skt. mándati v. ‘rejoices at; enjoys, gets drunk’, mádati v. ‘rejoices at; enjoys, gets drunk, gets enough to eat’, máda- m. ‘intoxicant’, Lat. madeō v. ‘am drunk’.


PG *staki- m. ‘mark, scar’. Represented in Goth. staks m. ‘id.’. Identical radical ablaut grade in e.g. PG *stakan- m. ‘pole, post, stake’ > OE staca m. ‘id.’, OFris. staca m. ‘id.’. Etymologically belonging to the class V strong verb PG *stekana- s.v. ‘stick, thrust’ which may, in turn, be a backformation through reinterpretation of the a-umlauted form PG *stekana- of an original zero grade verb PG *stikana-, cf. Seebold (1970: 468). The expected i-stem verbal abstract of this verb is PG *stiki- m. ‘prick, stab’. The aberrant form PG *staki- cannot be explained as archaic seeing that the verb to to which it corresponds is, in itself, secondary. In my view, the most obvious candidate for the analogy of creating an i-stem verbal abstract with radical o-grade is the i-stem PG *stangi- m. ‘bar, pole, staff, stake’ to which semantic parallels can be drawn from PG *stekana-. Literature: Bammesberger (1990: 135), Casaretto (2004: 182), Holthausen (1974: 314), IEW (2005: 1014, 1016-1017), Kroonen (2013: 472, 476), Lehmann (1986: 322), LIV (2001: 592-593), Orel (2003: 370), Philippa et al. (2009: 254), Seebold (1970: 467-468).

2.2.6. I-stem verbal abstracts corresponding to class VI strong verbs

No examples.

2.2.7. I-stem verbal abstracts corresponding to class I-VII reduplicated strong verbs

No examples.
2.3. I-stem nouns with no correspondence to a strong verb

Some primary i-stems, of masculine as well as of feminine gender, resist further analysis within Germanic. They are, in other words, not to be synchronically regarded as verbal abstracts derived from strong verbs.

On a diachronic basis, however, a decent portion of them should actually be categorised as such seeing that, in those cases, the “strong” verbs lacking in Germanic are attested as thematic presents in other Indo-European branches. This is the case for, e.g., PG *duni- m. ‘noise’ with a perfect match in Skt. dhvánati v. ‘roars, sounds’, and maybe PG *hwali- m. ‘whale’ if it is to be understood as an agent noun to the root PIE *kʰelh₁-i- ‘turn’, i.e. PIE *kʰólh₁-i- ‘turner’, with a thematic present attested in e.g. Skt. cárati v. ‘moves, walks’ and Gr. πέλομαι, πέλω v. ‘move, am located, am, become’ and Alb. shell v. ‘bring, carry; turn’.

Alphabetically listed examples of such i-stem nouns that, for one reason or another, cannot be matched with any strong verbs in Germanic are found on the following pages.


PG *bak⁷(w)- m. ‘creek, brook, rivolet’. Represented in ON bekkr m. ‘id.’ (inflected as a ja-stem), OE bece m./n. ‘id.’, OFris. -bitze m. ‘id.’, OS beki m. ‘id.’, OHG bah m. ‘id.’. Either to be compared to ORu. bagъno n. ‘mud, marsh’ or to be reconstructed as PIE *bʰog⁷(w)-i- to the root PIE *bʰe₂g⁷- ‘run’; for the latter cf. e.g. Gr. φέβομαι v. ‘flee’, φόβος m. ‘flight, escape; fear’, Lith. bėgti v. ‘run, flee’, bėgis m. ‘flight, escape; run’ and maybe
Mr. búal f. ‘running water’ (< PIE *bʰogʷ-leh₂-), búar m. ‘diarrhoea’ (< PIE *bʰogʷ-ro-).


PG *duni- m. ‘noise’. Represented in ON dyrn m. ‘id.’ (with y probably from dynja w.v. I ‘roar, gush’), OE dyne m. ‘id.’, OHG tuni m. ‘id.’. Serves as the basis for the denominal verb PG *dunjana- w.v. I ‘make noise, boom, roar’ > ON dynja w.v. I ‘roar, gush’, OE dynnan w.v. I ‘make a noise, resound’, OS dunnian w.v. I ‘roar, rumble’ which may, however, also be analysed as a zero grade causative formation. To be reconstructed as PIE *dʰun-i- to the root PIE *dʰen- ‘sound’ with extra-Germanic cognates in Indic only, cf. e.g. Skt. dhvánati v. ‘roars, sounds’, dhvani- m. ‘sound, thunder, word’, dhúni- adj. ‘roaring, sounding’, dhúnatîyati v. ‘roars’. The i-stem PG *duni- and Skt. dhúni- are exact cognates with the sole exception that Skt. dhúni- (< PIE *dʰún-i-) is the radically stressed adjective/agent noun and PG *duni- (< PIE *dʰun-i-) is likely to be the suffixally stressed abstract noun formed from the former by means of internal derivation. In Indic, the abstract noun appears in the shape of a full or o-grade formation Skt. dhvani-, of which the latter is only possible on a regular basis if the root contained a final laryngeal. As already mentioned, the weak verb PG *dunjana- is to be seen either as a denominal verb shaped from PG *duni-, i.e. PIE *dʰun-i-, or as a zero grade causative formation, i.e. PIE dʰen-ëje-, which is probably the better alternative in the light of the exact parallel of Skt. dhúnatîyati.


PG *hugi- m. ‘intellect, mind’. Represented in Goth. hugs m. ‘understanding, mind’, ON hugr m. ‘mind, mood’, OE hyge m. ‘mind, heart, soul’, OFris hei m. ‘mind’, OS hugi m.
‘thought, mind’ and, albeit transferred to the u-stem inflection, OHG *hugi* m. ‘mind, thought, spirit’. Serves as the basis for the denominal verb PG *hugjana*-w.v. I ‘think’ > Goth. *hugjan* w.v. I ‘id.’, ON *hyggja* w.v. I ‘think, mean, believe’, OE *hycgan* w.v. I ‘think, be mindful, consider’, OFris. *hugia* w.v. I ‘think’, OS *huggian* w.v. I ‘id.’, OHG *huggen* w.v. I ‘remember, hope’. Further etymology uncertain. One of the most promising attempts of a comparison of PG *hugi-* and *hugjana-* with extra-Germanic material is that of Hirt (1900: 110), viz. that they are almost exact cognates to Skt. *śuc*-adj. ‘shining, bright, pure’ and *śucāt*-v. ‘radiates, shines’, the only irregularity in the cognateness being that Skt. *śuc*- (< PIE *k̂úk-i*) is the radically stressed adjective/agent noun and PG *hugi-*(< PIE *k̂uk-i*) is the suffixally stressed abstract noun formed from the former by means of internal derivation. The semantic differences between the Indic and Germanic forms can easily be overcome: The semantic field of intelligence, knowledge and mind often combines well with notions of brightness and light, cf. e.g. the English use of *brilliant* and *bright*. Literature: Bammesberger (1990: 130), Casaretto (2004: 188-189), Holthausen (1974: 183), Kroonen (2013: 252), Lehmann (1986: 192-193), Orel (2003: 190-191), Philippa et al. (2005: 428), Sehrt (1966: 275-276), De Vries (1962: 265, 274).


PG *hwali-*(or *hwala-*) m. ‘whale’. Represented in ON *hvalr* m. ‘id.’, OE *hwæl* m. ‘id.’, OHG *wal, hwal* m. ‘id.’. To be reconstructed as PIE *kʷöl-i-* to the root PIE *kʷel-* ‘turn’ with the original meaning probably being ‘turner, roller; turning, rolling’ due to the rolling movement made by the back of the whale on the surface of the water when the whale surfaces to breathe. Consequently, this noun should probably rather be equated with the i-stem adjectives, originally being adjectival agent nouns, treated below (section 2.4). Alternatively to be compared to OPr. *kalis* m. ‘wels catfish’ and further possibly Av. *karan* ‘kind of fish’, Lat. *squalus* m. ‘kind of big sea fish’ < PIE *(s)kʷal-o-* ‘large fish’.

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PG *rugi- m. ‘rye’. Represented in ON rugr m. ‘id.’, OE ryge m. ‘id.’. Safe comparanda can be found only in Balto-Slavic, cf. e.g. Lith. rugiai m. ‘rye’ (pl.), Latv. rudzi m. ‘id.’ (pl.), OCS ružb f. ‘id.’. Kroonen (2013: 416) speculates if this post-PIE *rugʰ-i- could be of substrate origin, cf. also the semantically closely related Thrac. βπίζα f.(?) ‘emmer-wheat, rye’ which cannot be compared to this post-PIE *rugʰ-i- unless substrate influence is invoked or unless it can be safely assumed that PIE *(u)rugʰ⁻jeḥ₂-? > Thrac. βπίζα. Literature: Bjorvand & Lindeman (2000: 738), Holthausen (1974: 265), IEW (2005: 1183), Kluge/Seebold (2002: 769), Kroonen (2013: 416), Orel (2003: 308), De Vries (1962: 453).

PG *segi- m. ‘victory’. Represented in ON sigr ‘id.’, OE sige m. ‘id.’, OFris. si m. ‘id.’, OS sigi m. ‘id.’, OHG sigi m. ‘id.’. Radical full grade also in e.g. PG *segu- m. ‘victory’ > OHG sigu m. ‘id.’ (with radical vocalism taken over from sigi) and PG *sigiz- n. ‘victory’

108 PG *spurdi-* m./f. ‘track, course’. Represented in Goth. spaurds f. ‘id.’, OE *spyrd* m. ‘id.’, OHG *spurt* m. ‘id.’. In the light of its closest cognates Skt. spīḍh- f. ‘contest, fight’, Av. spārṇḍ- f. ‘zeal, alacrity’ which are both root nouns (< PIE *spṛḍʰ-*), it seems reasonable to claim that PG *spurdi-*, too, was originally a root noun, i.e. PG *spurd-*. Such an assumption is supported by the fact that Goth. spaurds is feminine, a feature seldom observed in Germanic primary i-stems but richly present in root nouns, cf. also the feminine gender of the Indo-Iranian cognates. The West Germanic forms would then have changed their gender in order to conform to the general pattern of the i-stems. For further analysis of this lexeme, cf. Ph.D. article no. 1. Literature: Casaretto (2004: 41-42), Griepentrog (1995: 367-379), Holthausen (1974: 314), IEW (2005: 995-996), Kroonen (2013: 470-471), Lehmann (1986: 319), LIV (2001: 580-581), Orel (2003: 367).

109 PG *puli-* m. ‘reciter’. Represented in ON *pulr* m. ‘speaker, orator; sage’, OE *pyle* m. ‘orator, spokesman’. Radical zero grade also in e.g. PG *pulôn-* f. ‘recitation’ > ON *pula* f. ‘series of words’. Serves as the basis for the denominal verb PG *puljana-* w.v. I ‘speak, recite, murmur’ > ON *pylja* w.v. I ‘id.’. Further etymology uncertain, but probably either to be compared to Hitt. *tlliya* v. ‘prays to, evokes’ and thus to be reconstructed as PIE *tHl*- in which case, however, the competing form ON *pauli* m. ‘reciter’ (< PG *paulan-*) would need to be analysed as displaying secondary ablaut, or to be equated with Hitt. *tuliya-* c. ‘gathering, assembly’, for which Kloekhorst (2008: 897-898 with. lit.) suggests a precursor PIE *tuh₂-lₐjо-* from the root PIE *tēqʰ₂*- ‘swell, become strong’, cf. also Lith. *tūlas* adj. ‘many’ < PIE *tuh₂-lo-*. The short vowel of PG *puli-* and its derivatives (< PIE
*tuh₂-li-*) would thus have to be explained by means of Dybo’s Law of pretonic shortening. In any case, given the validity of either analysis presented here, PG *puli- cannot be included in the list of primary Germanic i-stems. Only if the frequently mentioned, yet semantically weak comparison of PG *puli- ‘reciter’ and PG *pulē(j)na- w.v. III ‘tolerate, endure’ (< PIE *t|h₂-éh₁-) is invoked, will any analysis of PG *puli- be possible.


112 PG *wurmi- f. ‘worm’. Represented in OE wyrm m. ‘snake, worm, dragon’, OFris. wirm m. ‘worm’, OS wurm m. ‘id.’, OHG wurm m. ‘worm, snake’. Radical zero grade also in e.g. PG *wurma- m. ‘worm’ > Goth. waurms m. ‘snake’, ON ormr m. ‘id.’. Extra-Germanic cognates abound, cf. e.g. Gr. πόμος m. ‘wood borer, woodworm’, Lat. vermis m. ‘snake’, Lith. vaũmas m. ‘insect, mosquito’, ORu. virmije n. ‘insects’ (pl.); all from PIE *wurmi-, *urmo- or secondarily *yormo- with a rhyming parallel in PIE *kʷr̥mi- ‘worm, grub’ (> Skt. k̥m̥i- m. ‘worm, insect’, Lith. kirmis m./f. ‘grub’ etc.) which is, in turn, probably affiliated with the root PIE *kʷremH- ‘take a step’ reflected in e.g. Skt. kr̥mati v.

Not mentioned in the previous paragraphs are the Germanic i-stem ethnonyms of the type Goth. saureis m. ‘Syrians’ (pl.), ON danir m. ‘Danes’ (pl.), firðir m. ‘people of Fjǫrð’ (pl.), OE dene m. ‘Danes’ (pl.), engle m. ‘Angles’ (pl.), cf. e.g. Krahe & Meid (1967: 67). Although isolated in the overall derivational and inflectional system of Germanic, this type finds a parallel outside Germanic, viz. above all in the Indo-Iranian i-stem patronyms, and must thus be expected to be of Proto-Indo-European age, cf. e.g. the vrddhi’ed examples of Skt. āgniveśi- (to agniveśa-) and śaucivṛkṣi- (to śucivṛkṣa-) mentioned by Wackernagel & Debrunner (1954: 301-302).

2.4. I-stem adjectives

Of mere marginal relevance to the present study, which focuses on the formation of nouns only, are the Germanic primary i-stem adjectives, cf. e.g. Krahe & Meid (1967: 66-67) and Bammesberger (1990: 259-261). I-stem adjectives fall into two functional groups in Germanic, viz. gerundives, i.e. adjectives of possibility, on the one hand as exemplified by PG *flugi- adj. ‘able to fly’ (derived from PG *fleugana- s.v. ‘fly’) and PG *ēti- adj. ‘eatable’ (derived from PG *etana- s.v. ‘eat’), and adjectival agent nouns on the other as illustrated by PG *swiki- adj. ‘deceiving’ (derived from PG *swīkana- s.v. ‘deceive’) and PG *tēmi- adj. ‘suitable, proper’ (derived from PG *temana- s.v. ‘be proper’). Formally speaking, both functional types tend to appear with radical zero grade when derived from class I-III strong verbs and with radical lengthened grade as found in the stem of the preterite plural when derived from class IV-VI strong verbs.25

Counterexamples appear to occur, though, but closer scrutiny reveals that all but one are, in fact, regular. PG *muni- adj. ‘remembering’, derived as it is from a class IV strong verb, should regularly appear as PG †mēni- if it were to follow the pattern of other i-stem adjectives derived from class IV

25 In my view, it is quite feasible that the lengthened grade type has originally arisen as a result of vrddhi. After all, with their general function of designating ‘pertaining to X, relating to X’, adjectives constitute the ideal environment for vrddhi to occur. Just as the i-stem nouns, these i-stem adjectives could easily be adapted to the ablaut system of the Germanic strong verbs, but whereas the nouns are closely connected to the stem of the preterite participle, the adjectives must be analysed as corresponding to the ablaut grade of the stem of the preterite plural.
strong verbs. It is important to bear in mind, though, that the verb in question is no ordinary strong verb but a preterite-present one, viz. PG *man ~ *munum pp.v. ‘think’ whose ablaut pattern deviates slightly from that of the regular strong verbs.

The motivation for PG *baugi- adj. ‘flexible, pliant’ (derived from PG *beugana- s.v. ‘bend’) not to appear as PG †bugi- might be identical to the explanation provided for PG *laudi- m. ‘form, appearance’, viz. that it is only attested as a second member of an exocentric compound in which case transition of thematic stems (a-stems) into i-stems is, from a Proto-Indo-European point of view, an expected and regular process.

Only PG *kauzi- adj. ‘choosy’ (derived from PG *keusana- s.v. ‘test, trial, select, prefer’) completely resists analysis within the framework of the posited structure of the adjectival i-stems by displaying both synchronically aberrant radical o-grade and unexpected unvoiced Verner’s variant of the root-final consonant. First speculations inevitably focus on the possibility of PG *kauzi- being of the same nature as PG *baugi- adj. ‘flexible, pliant’ and PG *laudi- m. ‘form, appearance’, viz. a second member of an exocentric compound, but contrarily to these, PG *kauzi- adj. ‘choosy’ represented by OE cīes, cīese adj. ‘id.’ only appears as simplex whereas the related a-stem adjective PG *kauza- represented by OE (or-)cēas adj. ‘invaluable’ and (un-be-)cēas adj. ‘indisputable, incontrovertible’ only exists as a second member of compounds. Consequently, the only analysis that presents itself so far is to regard PG *kauzi- as an archaism.

3. Form and function of Indo-European primary i-stems

The highly heterogenous and partly inexplicable appearance of Germanic i-stems uncovered in the previous chapter emphasises the need for inclusion of data from the other Indo-European branches. Only then will we find ourselves capable of determining which forms and functions are archaic, which are productive, and which are neither.

Consequently, we shall now turn our attention towards those of the Indo-European branches where primary i-stems have entirely or partially remained a separate category, cf. also Hinderling (1967: 104-112).

3.1. Indo-Iranian (represented here by Sanskrit)

As ingeniously analysed by Wackernagel & Debrunner (1954: 291-307) who is followed by e.g. Hinderling (1967: 104-106), we may categorise the primary i-stems of Sanskrit into two main groups containing two subgroups each, viz. agent nouns and action nouns.
The group of agent nouns consists of verbal adjectives with the root in the zero grade preceded by a stressed reduplicative syllable, cf. e.g. Skt. cákri- adj. ‘working’, and true agent nouns with a stressed radical vowel mainly in the zero grade. Examples of this latter type include Skt. dhúni- adj. ‘roaring, sounding’ (derived from dhvan-) and fśi- m. ‘singer’ (derived from rś- ‘go’). What appear to be radical full or o-grade i-stems are attested, too, cf. e.g. Skt. go-dari- adj. ‘opening the stables of the sky’ and vasu-váni- adj. ‘asking wealth, bestowing wealth’, but in such cases, the final Skt. -i reflects PIE *-H of set-roots with the consequence of the nouns in question resisting analysis as i-stems and being, in fact, mere root nouns, cf. also Skt. vasu-ván- adj. ‘asking wealth, bestowing wealth’ competing with vasu-váni- adj. ‘id.’.

Whereas the former i-stem agent noun subtype is unknown to any other branch of Indo-European, strong parallels can be drawn from the latter type to the Germanic i-stem adjectival agent nouns mentioned in section 2.4, the only caveat being that Verner’s Law points at all Germanic i-stem adjectival agent nouns safe for PG *kausi- adj. ‘choosy’ continuing Proto-Indo-European suffixal accent.

Constituting the second major group of Sanskrit primary i-stems, action nouns, too, are divisible into two subgroups, viz. fossilised dat.sg. forms created from the unstressed zero grade of the root and functioning synchronically as infinitives on the one hand, cf. e.g. Skt. drśaye v. ‘see’ and citāye v. ‘understand’, and true agent nouns with more or less unpredictable gender, accent and radical ablaut grade on the other, cf. e.g. Skt. kṛśi- f. ‘agriculture, farming; ploughing’, bhujī- f. ‘granting of enjoyment, favour’, śoci- f. ‘flame, glow’, aṇjī- m. ‘ointment’ (also as adj. ‘applying an ointment or pigment’) and rúci- f. ‘light, lustre, splendour, beauty’. A strong tendency is seen, though, for this latter subtype to display radical zero grade and, when the action noun keeps some of its verbal semantics, feminine gender. Common reason dictates that this type has a strong connection with the Germanic i-stem verbal abstracts, differing from those mainly by the general application of feminine gender in Sanskrit versus masculine gender in Germanic.

Sanskrit and Germanic thus seem to have two common points of reference as regards the primary i-stems, viz. agent nouns in Sanskrit (stressed on the root syllable appearing in the zero grade) compared to adjectival agent nouns in Germanic (mainly stressed on the i-stem suffix and mainly with radical zero grade) and infinitives and action nouns in Sanskrit (mainly stressed on the i-stem suffix and with unpredictable radical ablaut grade) compared to action nouns, i.e. verbal abstracts, in Germanic (stressed on the i-stem suffix and with unpredictable radical ablaut grade).
As a final point of relevance, it should be noted that Sanskrit and Germanic match each other in one more area regarding the i-stems. Sanskrit gerundives can be formed by the addition of the suffix Skt. -yá- to a verbal root most often in the zero grade, cf. Wacernagel & Debrunner (1954: 789-795), thereby bearing a strong resemblance to the i-stem gerundives in Germanic of the types PG *flugi- adj. ‘able to fly’ and PG *ēti- adj. ‘eatable’, cf. section 2.4. Furthermore, the fact that the Germanic i-stem adjectives of both functional types are also frequently formed with radical lengthened grade finds a perfect parallel in Sanskrit, cf. e.g. the comparison of Skt. sādi- m. ‘rider, horseman’ (originally in compounds only) and Skt. sādyā- adj. ‘fit for riding’, m. ‘riding horse’ with PG *sēti- adj. ‘sitting; able to sit’, i.e. both adjectival agent noun/adjective and gerundive, cf. e.g. Wacernagel & Debrunner (1954: 295) and Heidermanns (1993: 479-480).

3.2. Greek

Only few parallels can be drawn to the i-stems of Germanic and Sanskrit if we choose to accept Solmsen’s (1909: 155-179) categorisation of Greek primary i-stems into abstracts with radical stressed zero grade on the one hand, cf. e.g. Gr. σπάνις f. ‘scarcity, lack’ (maybe belonging to Gr. πένομαι v. ‘toil, work; am poor, am needy’, cf. e.g. Frisk (1963-1966: 756-757)) as well as a minor group of i-stems with even less certain etymologies, and concrete nouns with radical stressed o-grade on the other, cf. e.g. Gr. στρόφις f. ‘slippery fellow, twister’, τρόπις f. ‘keel’ and τρόχις m. ‘courier, messenger’ on the other.

According to Chantraine (1933: 111), all types of Greek i-stems have remodelled the original accent into a new system. Hence follows that the location of the accent in a given Greek i-stem reveals virtually nothing about the conditioning of Proto-Indo-European i-stem accentuation. The question now remains to be answered if the categorisation suggested by Solmsen (1909: 155-179) can be upheld or if amendments are needed. Solmsen himself (1909: 162) actually doubts that his proposed categorisation mirrors completely any older stages. Firstly, he points out, other o-grade derivatives may have influenced on the i-stem concrete nouns with radical o-grade. Secondly, the very assignment of zero grade i-stems in the group of abstract nouns and of o-grade i-stems in the group of concrete nouns is far from consistent, cf. e.g. the i-stem abstract noun Gr. φρόνις f. ‘prudence, wisdom’ with radical o-grade which would be unexpected according to Solmsen’s categorisation. To this latter objection might be added that, given the appurtenance of Gr. πόρις f.

26 It cannot be rouled out that at least Skt. sādi- and PG *sēti- are not as similar as we are first led to think. Besides being reconstructable as PIE *sēdi-, Skt. sādi- may, unlike PG *sēti-, alternatively continue PIE *sōdi-.
'calf, young heifer’ to the root PIE *perh₃- ‘bear, produce’, cf. e.g. IEW (2005: 818) and LIV (2001: 474), it is actually to be understood as an abstract or action noun, i.e. ‘the born one, the begotten one’, rather as a concrete or agent noun, i.e. ‘bearer, begetter’. Also, it cannot be ruled out that Gr. ἄγωρις f. ‘gathering, crowd’ may be a mere Aeolic i-stem variant of the more wide-spread form ἀγόρα f. ‘assembly’, cf. the development in Aeolic of Gr. -op- > -yp- mentioned by Schwyzer (1959: 351-352), in which case yet another abstract noun with underlyingly radical o-grade may be attested.

Even if Solmsen (1909: 155-179) is right as to the general tendencies in the synchronic i-stem system of Greek, it lies beyond dispute that a different system must be reconstructed for the precursors of Greek, viz. a system with seemingly random assignment of radical o- and zero grade in both functional i-stem types and, consequently, with stronger affinities to the systems of Germanic and Sanskrit. From a diachronic point of view, an even clearer pattern emerges if the nouns in Gr. -ίς, -ί- of the type Gr. ἰατῆς f. ‘drop, spot’ are drawn into the equation, as well, cf. e.g. Chantraine (1933: 338) and Schwyzer (1959: 464). As suggested by the frequent coexistence of id- and i-stem forms, we may expect at least some of these nouns to be old, primary i-stems that were reanalysed as id-stems only at a late stage in the history of the Greek language. These original i-stem nouns with radical zero grade and suffixal accent are probably to be compared primarily to the i-stem infinitives and action nouns of Sanskrit as well as to the i-stem verbal abstracts of Germanic. Probably secondarily, however, they are also to be compared to the (adjectival) agent nouns of Sanskrit and Germanic seeing that agentive function is also attested, cf. e.g. Gr. σκάφις f. ‘spade, showel; belly bunt’, i.e. ‘digger, digging tool’, to σκάπτω v. ‘dig’ and Gr. παγίς f. ‘trap, snare’ to the root PIE *peh₂k̂- ‘fix, fasten’.

The i-stems of both functional types with radical o-grade deserve an additional comment. If Gr. ἄγωρις is not to be analysed as an o-grade formation but, as often most done, as a zero grade formation, we cannot help noticing that, in all the o-grade forms attested, the radical vowel is preceded by an r. Consequently, the theoretical possibility exists that these i-stems all display Aeolic zero grade, i.e. -po- for standard Gr. -pα- < PIE *-r-. The reason why I do not consider that an option, after all, is that we would expect at least one of these forms at least once to occur with the standard vocalism Gr. -pα-. Seeing that this is not the case, I, albeit aware that radical zero grade is an option, prefer the analysis of these Greek i-stems as o-grade formations.
3.3. The remaining branches

In my view, Indo-Iranian and Greek provide us with the best comparative evidence for the Germanic primary i-stems. However, we should not neglect that the remaining branches have i-stems as well.

Hittite, as a representative of the Anatolian branch, offers two formal types of i-stems, viz. one type with suffixal -i- and one type with suffixal -ai- in the strong stem of the nom.sg. and acc.sg., and, as is the case in Germanic, both nouns and adjectives are attested, cf. e.g. Kronasser (1962-1966: 202-208).

In Tocharian, i-stems are recognisable by their nom.pl. -i which has a palatalising effect on the preceding consonant; the i-stem suffix itself is apocopated. According to Van Windekens (1979: 11-12) and indirectly Adams (1988: 125-126), Tocharian has preserved only a small residue of the primary i-stems. Furthermore, we may easily risk mistaking an i-stem for an i-stem seeing that their nom.sg. would both disappear by means of apocopy. In the acc.sg., however, we might still have a chance of keeping them apart, cf. again van Windekens (1979: 12).

Armenian contains only a couple of archaic i-stems, i.e. Armenian i-stems that correspond to i-stems in other Indo-European languages, cf. Olsen (1999: 78).

In Latin, the i-stem inflection and the consonant stem inflection have merged into one paradigm, for which reason any attempt of deducing evidence from the Latin i-stems that might be of value to the comparative study of Proto-Indo-European i-stems is severely hampered, cf. e.g. Leumann et al. (1963: 231-233). In contrast to Latin, the Sabellic languages manage to keep consonant stems and i-stems inflectionally apart, cf. Buck (1904: 124-127), but due to their relatively small number, they do not contribute with much in comparative terms.

By consulting some of the standard handbooks on Balto-Slavic nominal word formation, e.g. Otrębski (1965: 49-53) and Vaillant (1974: 22-23), we learn that, in Baltic as well as in Slavic, the i-stems have considerably increased in number due to the transition of, above all, root nouns to the inflectional class of the i-stems, cf. also Larsson (2010: 34-35, 49-100, 102). In both branches, however, zero grade i-stems still seem to play a certain role, cf. Hinderling (1967: 110-112) and e.g. the comparison of OCS ʰǔ̞ź̞b adj. ‘lying, false, mendacious’ and PG *lugi- m. ‘lie, deception’ (even if the former is an adjective and the latter is a noun).

3.4. Proto-Indo-European

As can be deduced from sections 3.1-3.3, Anatolian, Tocharian, Armenian, Italic and Balto-Slavic appear to offer i-stem forms of less informative value to the purpose of this study than do Indo-
Iranian and Greek. Consequently, the following brief outline of the Proto-Indo-European state of affairs is based mainly on Indo-Iranian, Greek, and Germanic.

3.4.1. General types of i-stems in Proto-Indo-European

When comparing the i-stem types found in the branches mentioned above, we find two prevalent types, viz. adjectival agent nouns and action nouns often functioning as verbal abstracts.

Adjectival agent nouns have a clear tendency in Sanskrit to be stressed on the root; so, too, in Greek where, however, radical accent also prevails in the abstract noun type. Where a difference can be seen, Germanic points at suffixal accent in all i-stem forms but one, viz. PG *kausi- adj. ‘choosy’. As for the radical ablaut grade, Indo-Iranian is less informative due to its coalescence of the primary vowels PIE *e, *a and *o > PIIr. *a.27 It is beyond dispute, however, that radical zero grade is widely spread in both main i-stem types. Germanic and Greek reveal what Indo-Iranian cannot do or can do only to a limited extent, viz. that the other main ablaut grade found in this type of i-stems is the o-grade.

As for the action nouns or verbal abstracts, there is a strong tendency for them to be stressed on the i-stem suffix, albeit with the sole exception of a few forms in Greek and Sanskrit. Again, all three branches reveal that both radical o- and zero grade is attested even if zero grade seems to be the by far most frequent type, cf. especially the widely productive infinitives in Skt. CC-áye. When it comes to the gender of these i-stems, however, any agreement between the branches in question ceases completely: Greek and Sanskrit show a clear preference for feminine gender, more conspicuously so in Greek than in Sanskrit, whereas the bulk of Germanic i-stem verbal abstracts comes with masculine gender.

3.4.2. Derivational history of primary i-stems with radical zero grade

Besides being acknowledged as a Proto-Indo-European derivational type due to the cognateness of the Indo-Iranian, Greek and Germanic primary i-stems with radical zero grade, this type remains isolated within Proto-Indo-European in that it, at least at first glance, resists adaption into the general derivational system.

27 In two positions the timbre of the PIE vowel actually does reveal itself in Indo-Iranian, viz. where Brugmann’s Law causes lengthening of PIE *o > PIIr. *ã in open syllables, cf. e.g. Wackernagel & Debrunner (1896: 13-14), and where a PIE *e (not *a or *o) palatalises a preceding velar plosive, cf. e.g. Wackernagel & Debrunner (1896: 139-144).
The possibility exists, however, for these zero grade i-stems as well as for i-stems with other radical ablaut grades to be derived or reshaped from old root nouns, cf. e.g. Hinderling (1967: 113-115). To what extent that process can be regarded as having taken place in the Indo-European proto-language remains uncertain, but if we assume that this process of transferring old root nouns into i-stems has its origin in compounds with a root noun as their second member, a thematisation or adjectivisation of the root noun would, if early enough, be expected to appear as PIE *-i-, cf. e.g. Brugmann & Delbrück (1906: 112-113) and Rasmussen (1988 [1999]: 320). On the other hand, phonological motivations for a transition from root nouns to i-stems can be identified in (some of) the individual branches, cf. e.g. the Sanskrit root nouns from set-roots ending in -i (Wackernagel & Debrunner 1954: 294-295) or the Latin and Balto-Slavic coalescence of the acc.sg. of root nouns (PIE *-η > Lat. -em, -im, PBS *-im) with the corresponding desinence of the i-stems (PIE *-im > Lat. -im, PBS *-im) (Sihler 1995: 316-318; Larsson 2010: 34-35; Vaillant 1958: 146, 182-183), thus suggesting the transitions to be of a more recent date. Of course, these two alternatives by no means exclude each other. To put it differently, the seeds of the transitions may have been sown in Proto-Indo-European already, but the phonological motivations in some of the daughter languages have promoted the process of changing root nouns into i-stems even further.

3.4.3. Derivational history of primary i-stems with radical o-grade

In the light of Rasmussen’s (1988 [1999]: 313) claim that the thematic vowel PIE *e ~ *o was originally weakened into PIE *i ~ *u when unstressed, speculations as to whether the primary i-stems with radical o-grade could not simply be variants of the widespread o-grade thematic nouns and adjectives of the type τόμος/τομός seem not too far-fetched. Consequently, Rasmussen (1988 [1999]: 320) himself was not slow to suggest that option. Also Casaretto (2004: 173) suggests a connection, albeit independent of any regular sound change of PIE *e ~ *o > *i ~ *u, between Germanic i-stems of the PG *balgi- type and the PIE τόμος type.

However, if the primary i-stems are to be included into the derivational conglomerate of τόμος/τομός and also τομή, they need to fit into the derivational chain of these possibly related formations, for which cf. e.g. Risch (1974: 196-207) and Rasmussen (1989: 156-158). If taking feminine abstract nouns of the type Gr. τομή f. ‘cutting, incision, insection’, i.e. PIE *CoC-éh₂-, as our point of departure, we can, by using that form as a second member of exocentric compounds, obtain the type Gr. X-τομός, -ή, -όν adj. ‘relating to cutting of X’ which, after becoming separated from its original compound, gives rise to agentival adjectives with suffixal stress of the type Gr. τομός, -ή, -όν adj. ‘cutting, sharp’, i.e. PIE *CoC-ό-. With internal derivation by means of
contrastive accent, the creation of an action noun of the type Gr. τόμος m. ‘slice, cut’, i.e. PIE *CóC-o-, from Gr. τομός, -ή, -όν is a completely straightforward process.  

Further, we may tentatively hypothesise, following Rasmussen (1988 [1999]: 320; 1989: 156), that the process of internal derivation yielding Gr. τόμος above was preceded by a much earlier process of internal derivation at a time when Rasmussen’s rule stating that the thematic vowel PIE *e ~ *o was weakened into PIE *i ~ *u in unstressed position was still active. By that process, we may obtain a shift of word class from the agentival adjectives with suffixal stress of the type Gr. τομός, -ή, -όν to true agent nouns of the type PIE *CóC-o- > *CóC-i- with presumably masculine gender. Finally, yet another process of internal derivation of PIE *CóC-i- → *CoC-i- would then turn these agent nouns into action nouns or general verbal abstracts.

4. Primary i-stems as a parallel type of the PIE toga/fuga formations

Rasmussen’s (1989: 158-175) further idea that nouns of the type Gr. τομή or Lat. toga f. ‘toga’ are actually identical to nouns of the type Lat. fuga f. ‘flight, escape’, i.e. feminine abstract nouns of the structure PIE *CC-éh₂-, might be what is needed in order for the two formal i-stem types to be united and thus for the type with radical zero grade to lose its status as a derivationally isolated type and be adapted into the general derivational pattern of Proto-Indo-European.

More precisely Rasmussen suggests that nouns formed from roots of the structures PIE ToT, RoT, HRoT, TRoT, sToUT, HRoUT, sRoUT, UoT, ToRH, ToR, sToR, HToR, TRoR, ToU, TRoU, sRoU, TOU₁, HToU₁, sToU₁, ToS, HUoRs, ToRT, sToRT, RoRT, TRoRT, sTRoRT, sIoRT, HRoRT, URoRT, sCoRT and UoRT keep the PIE *o of their root, whereas nouns formed from roots of the structures PIE T-UT, R-UT, H-UT, TR-UT, sR-T, H-RH, U-RH, T-Uh₂/₃, sT-Uh₂/₃, U-UH, TR-TH?, T-ST, H-U, TT-H, TU-H, HR-H, C-HU, C-RHU and sU-RT lose it.

Seeing that the i-stem nouns with radical o-grade may actually concord well with the general τόμος/τομός/τομή system, we would a priori expect them to concord equally well with the complementary distribution of o- and zero grade prevailing in at least the toga/fuga type, the

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28 Widmer (2004: 32-33), however, believes the derivational process of the τόμος/τομός type to have run in the reverse order, i.e. Gr. τόμος m. ‘slice, cut’ → τομός, -ή, -όν adj. ‘cutting, sharp’. He basically analyses the latter as a possessive derivative of the former by means of not true internal derivation but rather suffixal substitution of the type ROOT-o₁- → ROOT-ó₂[1posi]- with a special possessive suffix PIE *-ó₂[1posi]- also used for internal derivation from athematic stems.
τόμος τομός type being already in Proto-Indo-European times a highly productive type subject to levelling in favour of keeping the PIE *o regardless of radical phonotactics, cf. Rasmussen (1989: 157-158). In tables 2-6 below, I list all the Germanic i-stem nouns analysed in this article in accordance with their level of adaption to the toga/fuga type.

4.1. I-stems of the toga/fuga type

Table 2: Radical zero grade expected in the toga/fuga system

<table>
<thead>
<tr>
<th>Derivational match with the ablaut grade of the stem of the preterite participle of a corresponding strong verb</th>
<th>No derivational match with the ablaut grade of the stem of the preterite participle of a corresponding strong verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) PG *bibi- m. ‘bite, prick’</td>
<td>(102) PG *hugi- m. ‘intellect, mind’</td>
</tr>
<tr>
<td>(2) PG *biki- m. ‘appearance, emergence’</td>
<td>(103) PG *hupi- m. ‘hip’</td>
</tr>
<tr>
<td>(3) PG *gridi- f. ‘step, standing’</td>
<td>(106) PG *rugi- m. ‘rye’</td>
</tr>
<tr>
<td>(6) PG *lidi- m. ‘going’</td>
<td></td>
</tr>
<tr>
<td>(21) PG *flugi- m. ‘escape’</td>
<td></td>
</tr>
<tr>
<td>(23) PG *guti- m. ‘filling, pouring’</td>
<td></td>
</tr>
<tr>
<td>(24) PG *hluti- m. ‘share, lot’</td>
<td></td>
</tr>
<tr>
<td>(27) PG *lugi- m. ‘lie, deception’</td>
<td></td>
</tr>
<tr>
<td>(29) PG *ruki- m. ‘smell; smoke’</td>
<td></td>
</tr>
<tr>
<td>(34) PG *tugi- m. ‘pull, draw’</td>
<td></td>
</tr>
<tr>
<td>(47) PG *swulgi- m. ‘drink, swallow, gulp’</td>
<td></td>
</tr>
<tr>
<td>(49) PG *swulti- m. ‘starvation’</td>
<td></td>
</tr>
<tr>
<td>(50) PG *wunni- m. ‘suffering, pain’</td>
<td></td>
</tr>
<tr>
<td>(69) PG *fal(l)i- m. ‘fall, crash’</td>
<td></td>
</tr>
</tbody>
</table>

If our working hypothesis that the Germanic i-stem verbal abstracts mainly displaying radical zero and ο-grade ablaut and synchronically matching the ablaut grade of the stem of the preterite participle of a corresponding strong verb actually have developed from only one archaic type of suffixally stressed i-stem action nouns with complementary distribution of ο- and zero grade according to radical phonotactics is valid, the numerous forms listed in the left column of table 2 are clearly the ones serving as pivots for the reinterpretation.
Needless to say, since not all of the Germanic “roots” represented in these i-stems continue pure Indo-European roots, cf. e.g. the proposed etymologies of (24) PG *hluti- m. ‘share, lot’, (47) PG *swulgi- m. ‘drink, swallow, gulp’ and (69) PG *fal(l)i- m. ‘fall, crash’, the productively created forms must have arisen in analogy with potentially inherited ones such as (1) PG *bitti- m. ‘bite, prick’, (2) PG *bliki- m. ‘appearance, emergence’ etc.

Isolated and unaffected as they are by the ablaut system of any strong verbs, the three forms of the right column of table 2, except for (106) PG *rugi- m. ‘rye’ for which substrate influence may have played a role, must be regarded as continuing truly archaic i-stems of the type PIE *CC-i-.

**Table 3: Radical zero grade unexpected in the toga/fuga system**

<table>
<thead>
<tr>
<th>Derivational match with the ablaut grade of the stem of the preterite participle of a corresponding strong verb</th>
<th>No derivational match with the ablaut grade of the stem of the preterite participle of a corresponding strong verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4) PG *hrini- m. ‘touch’</td>
<td>(108) PG *spurdi- m./f. ‘track, course’</td>
</tr>
<tr>
<td>(7) PG *siki- m. ‘sigh’</td>
<td>(109) PG *puli- m. ‘reciter’</td>
</tr>
<tr>
<td>(9) PG *slidi- m. ‘misstep, slip; error’</td>
<td></td>
</tr>
<tr>
<td>(10) PG *sliki- m. ‘furrow’</td>
<td></td>
</tr>
<tr>
<td>(11) PG *sliti- m. ‘break, split’</td>
<td></td>
</tr>
<tr>
<td>(12) PG *snidi- m. ‘cut’</td>
<td></td>
</tr>
<tr>
<td>(13) PG *stigi- m. ‘ascent, rising’</td>
<td></td>
</tr>
<tr>
<td>(14) PG *stiki- m. ‘prick, stab’</td>
<td></td>
</tr>
<tr>
<td>(30) PG *skuti- m. ‘shot, shooting’</td>
<td></td>
</tr>
<tr>
<td>(31) PG *slupi- m. ‘slip; piece of garment to slip over one’s head’</td>
<td></td>
</tr>
<tr>
<td>(35) PG *brungi- m. ‘bringing’</td>
<td></td>
</tr>
<tr>
<td>(38) PG *drunki- m. ‘drink’</td>
<td></td>
</tr>
<tr>
<td>(39) PG *dunti- m. ‘shot’</td>
<td></td>
</tr>
<tr>
<td>(40) PG *hwurbi- m. ‘way, passage’</td>
<td></td>
</tr>
<tr>
<td>(41) PG *kurbi- m. ‘fragment, bit, piece’</td>
<td></td>
</tr>
<tr>
<td>(43) PG *sprungi- m. ‘jump’</td>
<td></td>
</tr>
<tr>
<td>(44) PG *stungi- m. ‘prick, stab’</td>
<td></td>
</tr>
</tbody>
</table>

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As can be deduced from table 3, a wide array of i-stem verbal abstracts appear with a non-expected radical zero grade, i.e. a radical zero grade in roots of a structure where PIE *o would have been expected instead.

The many forms of the left column of table 3 are in no need of further explanations, for they may easily be analysed as productively derived with the ablaut grade found in the stem of the preterite participle of a corresponding strong verb. Their very etymologies reveal that many of them are, indeed, secondary. Suffice it here to mention e.g. the etymologies of (4) PG *hrini- m. ‘touch’, (38) PG *drunki- m. ‘drink’, (43) PG *sprungi- m. ‘jump’ and (44) PG *stungi- m. ‘prick, stab’, in the roots of which nasal infixes have been inserted with the consequence that the i-stems do not continue true Proto-Indo-European primary i-stems.

The two forms of the right column constitute potentially much greater problems to our working hypothesis, seeing that there are no strong verbs in analogy with whose preterite participles such zero grade forms, unexpcted in the light of the rules governing the complementary distribution of o- and zero grade in the toga/fuga system, could have been secondarily created or reshaped. As for (108) PG *spurdi- m./f. ‘track, course’, however, we have already established that it was originally a root noun rather than an i-stem in which case the rules governing the toga/fuga system cannot be expected to apply, and the etymology of (109) PG *þuli- m. ‘reciter’ is simply too obscure in order for it to constitute any strong counterexample.
Table 4: Radical o-grade expected in the toga/fuga system

<table>
<thead>
<tr>
<th>Derivational match with the ablaut grade of the stem of the preterite participle of a corresponding strong verb</th>
<th>No derivational match with the ablaut grade of the stem of the preterite participle of a corresponding strong verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>(64) PG *kali- m. ‘cold’</td>
<td>(80) PG *smauki- m. ‘smoke’</td>
</tr>
<tr>
<td>(72) PG *stauti- m. ‘thrust, push, blow’</td>
<td>(81) PG *balgi- m. ‘sack, bag’</td>
</tr>
<tr>
<td></td>
<td>(82) PG *bandi- m. ‘captivity’</td>
</tr>
<tr>
<td></td>
<td>(83) PG *dranki- m. ‘drink’</td>
</tr>
<tr>
<td></td>
<td>(84) PG *stangi- m. ‘bar, pole, staff, stake’</td>
</tr>
<tr>
<td></td>
<td>(85) PG *stankwi- m. ‘smell’</td>
</tr>
<tr>
<td></td>
<td>(92) PG *drapi- m. ‘blow, stroke’</td>
</tr>
<tr>
<td></td>
<td>(94) PG *mati- m. ‘food’</td>
</tr>
<tr>
<td></td>
<td>(99) PG *bak(\textsuperscript{w})i- m. ‘creek, brook, rivolet’</td>
</tr>
<tr>
<td></td>
<td>(101) PG *fadi- m. ‘lord’</td>
</tr>
<tr>
<td></td>
<td>(104) PG *hwali- m. ‘whale’</td>
</tr>
</tbody>
</table>

Parallel to the forms listed in the left column of table 2, the two forms of the left column of table 4 may theoretically have served as pivots for the reinterpretation of the archaic complementary distribution of o- and zero grade according to radical phonotactics in the i-stem action nouns into a new system where the radical ablaut grade of an i-stem action noun synchronically matches that of the stem of the preterite participle of a corresponding strong verb. Only (72) PG *stauti- m. ‘thrust, push, blow’ may prove original, though, seeing that (64) PG *kali- m. ‘cold’ has clearly been formed secondarily to the, in itself, newly shaped preterite participle PG *kalena- ~ *kalana-pret.ptc. ‘cold’, the archaic participial form being that of PG *kulena- ~ *kulana- pret.ptc. ‘feeling shivery’ (< PIE *glH-enó- ~ *glH-onó-) represented in OSw. kolin adj./ptc. ‘id.’.

Truly archaic and relatively isolated examples of i-stems of the type PIE *CoC-\textsuperscript{i}- are listed in the right column of table 4. Note, however, that (104) PG *hwali- m. ‘whale’ is not to be compared to the i-stem abstract noun type of PIE *CoC-\textsuperscript{i}- but rather to the adjectival agent noun type of PIE *CoC-\textsuperscript{i}-, if the whale is indeed to be regarded as ‘turner, roller’, thereby matching the root PIE *k\textsuperscript{w}elh\textsuperscript{\textsuperscript{1}}- ‘turn, roll’ from the o-grade of which (104) PG *hwali- is derived. Also, as is the case for their synchronically regular zero grade counterparts (38) PG *drunki- m. ‘drink’ and (44) PG *stungi- m. ‘prick, stab’ listed in table 3, the roots of (83) PG *dranki- m. ‘drink’ and (84) PG
*stangi- m. ‘bar, pole, staff, stake’ have been enlarged with a nasal infix which implies that these two i-stems can in no way be regarded as archaisms, their conformity to the complementary distribution of o- and zero grade in the togal/fuga system thus being merely coincidental.

Table 5: Radical o-grade unexpected in the toga/fuga system

<table>
<thead>
<tr>
<th>Derivational match with the ablaut grade of the stem of the preterite participle of a corresponding strong verb</th>
<th>No derivational match with the ablaut grade of the stem of the preterite participle of a corresponding strong verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>(75) PG *hlauti- m. ‘share, lot’</td>
<td></td>
</tr>
<tr>
<td>(76) PG *laudi- m. ‘form, appearance’</td>
<td></td>
</tr>
<tr>
<td>(78) PG *rauki- m. ‘smoke’</td>
<td></td>
</tr>
<tr>
<td>(86) PG *swalgi- m. ‘abyss; swirl, whirlpool’</td>
<td></td>
</tr>
<tr>
<td>(87) PG *swangwi- m. ‘swing; stroke’</td>
<td></td>
</tr>
<tr>
<td>(88) PG *swanki- m. ‘misery, sorrow; toil; temptation’</td>
<td></td>
</tr>
</tbody>
</table>

The six forms listed in the right column of table 5 are, together with those two of the right column of table 3, the ones that may justly contradict the working hypothesis presented in this article.

Three of the forms, however, viz. (86) PG *swalgi- m. ‘abyss; swirl, whirlpool’, (87) PG *swangwi-m. ‘swing; stroke’ and (88) PG *swanki- m. ‘misery, sorrow; toil; temptation’, all turn out to display the root structure SUoRT. Even if Rasmussen (1989: 164) claims the expected togal/fuga outcome of that phonotactic constellation to be SU-RT rather than SUoRT, his claim seems to be supported by only one example, viz. Goth. saurga f. ‘sorrow’ < PG *swurgō- < PIE *swrgʰ-éh₂-. Admittedly, no arguments exist that may unfailingly contradict the claim of Rasmussen. Nevertheless, when adding the statistics of one form in favour of SU-RT as against three in favour of SUoRT as also the circumstance that SU-RT is the only of the many constellations ending in -RT where zero grade rather than o-grade is expected, cf. Rasmussen (1989: 162), we should at least consider alternative options for PIE *swrgʰ-éh₂-. In fact, Rasmussen (1989: 159) has done so already in that he admits that some nouns of the type PG *CC-eh₂- may reflect thematisations of old root nouns, especially when stressed on the root or when coexisting with an attested root noun.

As for the remaining three forms, the first, viz. (75) PG *hlauti- m. ‘share, lot’ might have been created in analogy with other nominal o-grade derivatives of the same root, e.g. PG *hlautō- f. ‘sacrificial blood; lot’ or *hlauta- m. ‘share, lot’. The second, viz. PG (76) *laudi- m. ‘form, appearance’, has been demonstrated to be an old thematic stem only transferred into an i-stem, albeit probably already in Proto-Indo-European times, due to its appearance as a second member of an
exocentric compound. The last one, viz. (78) PG *rauki- m. ‘smoke’, may be derived not from PG *reukana- s.v. ‘smoke’ (originally ‘smell’) directly but from *raukiana- w.v. I ‘smoke’ if the latter is to be analysed as a causative, i.e. ‘make smell’ > ‘smoke’, rather than as a denominal verb.

Table 6: Expected radical ablaut grade in the toga/fuga system unknown

<table>
<thead>
<tr>
<th>Derivational match with the ablaut grade of the stem of the preterite participle of a corresponding strong verb</th>
<th>No derivational match with the ablaut grade of the stem of the preterite participle of a corresponding strong verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5) PG *hwini- m. ‘whistling, whiz’</td>
<td>(79) PG *saudi- m. ‘meat broth’</td>
</tr>
<tr>
<td>(8) PG *skridi- ~ *skriji- m. ‘slide, step’</td>
<td>(95) PG *staki- m. ‘mark, scar’</td>
</tr>
<tr>
<td>(15) PG *stridi- m. ‘pace, step’</td>
<td>(98) PG *awi- f. ‘ewe, female sheep’</td>
</tr>
<tr>
<td>(16) PG *striki- m. ‘dot, line’</td>
<td>(100) PG *duni- m. ‘noise’</td>
</tr>
<tr>
<td>(17) PG *swik(w)i- m. ‘delay, postponement’</td>
<td>(112) PG *wurmi- f. ‘worm’</td>
</tr>
<tr>
<td>(18) PG *witi- m. ‘face, appearance, form’</td>
<td></td>
</tr>
<tr>
<td>(19) PG *witi- m. ‘sign, letter’</td>
<td></td>
</tr>
<tr>
<td>(20) PG *druzi- m. ‘fall’</td>
<td></td>
</tr>
<tr>
<td>(22) PG *gruzi- m. ‘fear, dread’</td>
<td></td>
</tr>
<tr>
<td>(25) PG *hruzi- m. ‘fall, death’</td>
<td></td>
</tr>
<tr>
<td>(26) PG *kuzi- m. ‘choice’</td>
<td></td>
</tr>
<tr>
<td>(28) PG *luzi- m. ‘loss’</td>
<td></td>
</tr>
<tr>
<td>(32) PG *sudi- m. ‘decoction, extract’</td>
<td></td>
</tr>
<tr>
<td>(33) PG *supi- m. ‘drink’</td>
<td></td>
</tr>
<tr>
<td>(36) PG *bruni- ‘fire, flame’</td>
<td></td>
</tr>
<tr>
<td>(37) PG *brusti- m. ‘break, fracture’</td>
<td></td>
</tr>
<tr>
<td>(42) PG *ru(n)ti- m. ‘run, course’</td>
<td></td>
</tr>
<tr>
<td>(48) PG *swuli- m. ‘swelling’</td>
<td></td>
</tr>
<tr>
<td>(57) PG *numi- m. ‘thought, feeling’</td>
<td></td>
</tr>
<tr>
<td>(58) PG *numi- m. ‘taking’</td>
<td></td>
</tr>
<tr>
<td>(62) PG *agi- m. ‘fear’</td>
<td></td>
</tr>
<tr>
<td>(63) PG *aki- m. ‘ache, pain’</td>
<td></td>
</tr>
<tr>
<td>(65) PG *skapi- m. ‘nature, character, kind’</td>
<td></td>
</tr>
</tbody>
</table>
Regarding roots of the structure reflected in the Proto-Germanic lexemes of table 6, we are able to find evidence in Rasmussen (1989: 158-175) in favour of neither zero grade nor o-grade of the toga/fuga type. For that reason, we shall not go into further details with these i-stem nouns, many of them being clearly secondary, anyway; suffice it here to mention two, viz. the onomatopoetic (5) PG *hwini- m. ‘whistling, whiz’ and (67) PG *stadi- m./f. ‘place, town’ being, in reality, a ti-stem rather than a primary i-stem.

(98) PG *awi- f. ‘ewe, female sheep’ stands out from the rest of the forms listed in table 6 in that it continues an ole-ablauting, unanalysable i-stem PIE *h₂óy-i- ~ *h₂ég-y-i- ‘sheep’. Consequently, any systematic comparison between that and the remaining non-ablauting and deverbal i-stems would seem futile.

**4.2. I-stems resisting analysis within the toga/fuga system**

Finally it should be noted that a set of i-stem nouns fall outside the scope of a toga/fuga analysis seeing that they display radical full grade or lengthened grade, i.e. any other ablaut grade than o- and zero grade. Two of these i-stems, viz. (60) PG *kwedi- m. ‘talk’ and (61) PG *wreki- m. ‘pursuit’, are synchronically analysable as verbal abstracts whose radical ablaut grades match the stem of the preterite participle of a corresponding class V strong verb. We could theoretically say the same of (71) PG *hrōpi- m. ‘shout’, but as pointed out by Hinderling (1967: 159), this i-stem does not exist.

The remaining nouns cannot be matched with the ablaut grade of the stem of the preterite participle of a corresponding strong verb, for which reason alternative explanations of their form and structure must be sought. The i-stem nouns in question are (77) PG *leudi- m. ‘man’ (pl. ‘people’), (89) PG *sweli- m. ‘callosity, callous skin’, (93) PG *kwemi- m. ‘eventus, i.e. outcome, result’, (110) PG *wēdi- f. ‘clothes, clothing’, (105) PG *kwēni- f. ‘wife’, (107) PG *segī- m. ‘victory’, (90) PG *weni- m. ‘friend’, (91) PG *wēni- m. ‘hope, expectation’ and PG (111) *wrōgi- m. ‘complaint, accusation’. For these examples, of which some may be to be regarded as reanalyses
of old s-stems, some as i-stem verbal abstract with misinterpreted ablaut grade due to the homophony of the infinitive and preterite participle stem of the Germanic strong verbs in classes V and VI, some as vrddhi-derivations and yet some as derivations of old root nouns, cf. the etymological notes to each of them in sections 2.2 and 2.3.

5. Conclusion

In order to separate archaisms from innovations, we must first define in every concrete case what characterises an archaic form. In this article, I have defined the structure, form and function of archaic, primary i-stems in Germanic.

Primary i-stem verbal abstracts are synchronically and productively formed from the same ablaut grade as is found in the stem of the preterite participle of the corresponding strong verb. This new system together with, i.a., the reanalysis of old s-stems as i-stems has given rise to a wide array of possible Germanic ablaut grades in the root syllable, e.g. zero grades, o-grades, full grades and lengthened grades. Close scrutiny has revealed, however, that the only archaic i-stems are those displaying radical o- and zero grade.

Radical o- and zero grade of i-stems are also found in other Indo-European branches, as are the two main functional categories of i-stems, viz. adjectival agent nouns on the one hand and action nouns or verbal abstracts on the other. These two formal types, i.e. the zero grade type and the o-grade type, were originally identical, the radical phonotactics constituting the determining factor for when to expect zero grade and when to expect o-grade. Such a complementary distribution of o- and zero-grade is reminiscent of what Rasmussen (1989: 158-175) suggests for the Proto-Indo-European eh2-stems of the type Lat. togalfuga of which these i-stems should probably be seen as a variant, i.e. adjectival agent nouns of the structure PIE *CóC-i- or *C ´C-i- and action nouns or verbal abstracts of the structure PIE *CóC-i- or *CC-i-. Seeing that I have so far carried out a systematic study of only the Germanic i-stems, it is too early to tell if we can extend our hypothesis so as to also include i-stems in the remaining branches of Indo-European; further studies will therefore have to elaborate on that matter.

When transferred to Germanic, the original distribution of o- and zero grade was abandoned in favour of a new ablaut distribution dependent on the ablaut system of the strong verbs, and the old system is only recognisable through an, albeit large, handful of i-stems displaying aberrant ablaut grades in comparison with the strong verbs corresponding to them.
Article no. 3: The outcome of PIE *#Hi- and *#Hu- in Germanic

It has been established with a great amount of certainty that PIE *#Hu- > Gr. #Vò- and that PIE *#Hi- > Gr. #i-. It still remains to be demonstrated what happens in other Western Indo-European branches, including Germanic. In this article29, I reject the statement by Ringe (1988: 433) that PIE *#Hu- > PG *#u- and propose the possibility of differentiated outcomes dependent on the timbre of the PIE laryngeal, viz. that PIE *#h₁i- > PG *#i- and PIE *#h₁u- > PG *#u- as assumed by most scholars, but that PIE *#h₂i- and PIE *#h₂u- might yield PG *#ai- and PG *#au-, respectively. Furthermore, I tentatively propose that PG *#au- > PG *#u- when followed by a labial consonant; a development partially paralleled in Greek and in English.

1. PIE *#Hi- and *#Hu-: the classical view

In many grammars of Proto-Indo-European one may come across the statement that the outcome of PIE *#Hi- and *#Hu- in the individual Indo-European languages with the sole exception of the languages of the Anatolian branch is Post-PIE *#i- and *#u-, respectively, cf. e.g. Lehmann (1955: 32, 86-87), Lindeman (1987: 42-43), Beekes (1969: 128-129; 1988: 59 ff.) and – albeit somewhat hesitantly – Cowgill (1965: 146-147). Quite recently, Clackson (2007: 57) uncritically adopts the very same notion.

Given this vast, yet by no means exhaustive list of scholars arguing for the development of PIE *#Hi- > Non-Anatolian-Post-PIE *#i- and of PIE *#Hu > Non-Anatolian-Post-PIE *#u-, any mentioning of the idea that these two soundlaws would apply also for Germanic, i.e. that PIE *#Hi- > PG *#i- and that PIE *#Hu > PG *#u-, would seem almost superfluous. A much-cited example of the development of at least PIE *#h₂u > PG *#u- is that of PG *ubila- adj. ‘evil, bad’ with a related form in Hitt. huwappa- adj. ‘evil, ill, bad’ derived from huwapp- ~ hupp- v. ‘be hostile towards, do evil against; throw (down), hurl’, cf. e.g. Watkins (1969: 30). By following the etymological proposal of Watkins, Ringe (1988: 433) even tentatively judges the universal Germanic outcome of PIE *#Hu- to be PG *#u-, cf. table 1.

29 This article has been submitted for publication in the journal Indogermanische Forschungen.
Table 1: Ringe’s survey of laryngeal developments in initial position in the Western Indo-European languages (after Ringe 1988: 433)

<table>
<thead>
<tr>
<th>PIE</th>
<th>Greek</th>
<th>Latin</th>
<th>O[asc]-U[min.]</th>
<th>P[roto]-C[eltic]</th>
<th>P[roto]-G[erm.]</th>
</tr>
</thead>
<tbody>
<tr>
<td>*N̥-</td>
<td>a-</td>
<td>*eN- (&gt; iN-)</td>
<td>aN-</td>
<td>*aN-</td>
<td>*uN-</td>
</tr>
<tr>
<td>*xN̥-</td>
<td>aN-</td>
<td>aN-</td>
<td>aN-</td>
<td>*aN-</td>
<td>*uN-</td>
</tr>
<tr>
<td><em>x</em>N̥-</td>
<td>oN-</td>
<td>*oN- (&gt; uN-)</td>
<td>?</td>
<td>*aN-</td>
<td>?</td>
</tr>
<tr>
<td>*xF-</td>
<td>ar-</td>
<td>*or- (&gt; ur-)</td>
<td>?</td>
<td>*ar-</td>
<td>?</td>
</tr>
<tr>
<td>*xu-</td>
<td>au-</td>
<td>au-?</td>
<td>?</td>
<td>?</td>
<td>*u-?</td>
</tr>
</tbody>
</table>

Indeed, Watkins’ etymological proposal does seem to suggest a development of PIE *#Hu- > PG *#u- as indicated in the table, but one seemingly safe example constitutes a comparatively meagre body of evidence; hence, probably, Ringe’s application of a question mark in the table.

As such, it still remains to be seen if the communis opinio can be upheld or if the inclusion of additional data will call for a new interpretation. By focusing particularly on the Germanic outcomes of PIE *#Hi- and *#Hu-, this article aims at removing the insecurity exemplified by the question mark in Ringe’s table.

2. The development of PIE *#Hi- and *#Hu- revisited

Though generally accepted, the notion of PIE *#Hi- and *#Hu- > Non-Anatolian-Post-PIE *#i- and *#u does not gain support from everybody. Some scholars argue that, in some branches, notably Greek and Italic, PIE *#Hi- and *#Hu- alternates with what some scholars choose to notate *#i- and *#u, cf. e.g. table 1 for Ringe’s assumption of the development in Greek. The first to consider this development was Pedersen (1909: 179): “Präidg. g-im Wortanlaut vor einem w oder j + einem unsilbischen Laut kann silbisch werden oder unsilbisch bleiben. Lat. augeō ’vermehre’ ir. uagim ’nähe’ S. 54 : skr. ugrá- ’gewaltig’ (idg. u- aus präidg. gu). Lat. ae-quus ’gleich’ : i-tem ’ebenfalls’ (zum Pronominalstamm *ei-, *ai-, *i- vgl. § 107).”

Hammerich (1948: 32) expresses similar ideas concerning the alternation between PIE *#Hu- and *#u-: “[…] whereas H in Hu was preserved as consonantal in ’Anatolian’, primitively in Aryan and Armenian, too, Hu generally became H in Greek, Italo-Celtic, Balto-Slavonic and – perhaps – Albanese. Naturally, the au of several IE languages may sometimes be IE au and sometimes IE Au. But where the western languages have au- in forms corresponding to forms with
in the eastern languages, it is probable that we have western ḫu- derived from IE Hu- preserved as ḫu- in Hittite, as u- in the other eastern languages.\textsuperscript{30}

Heavily inspired by Lex Rix\textsuperscript{31} and slightly modified by Hyllested & Cohen (2007: 13), Peters (1980: 5-125) was the one to finally uncover the situation in Greek, i.e. if PIE *#Hi- > Gr. #i- or #Vître- and similarly if PIE *#Hu > Gr. #ó- or #Vô-. Peters (1980: 72) concludes that the seven forms ăγή f. ‘sunlight’, ăβdictions f. ‘human voice, speech’, ăβξo v. ‘make large, increase; strengthen’, ăβχεo v. ‘boast’, ἦπιθέριος etc. adv. ‘early’, ιαίω etc. v. ‘sleep, pass the night’ and εὖνις adj. ‘reft of, bereaved of’ may all have developed from PIE *#Hu- even though non-phonological explanations, however unlikely, cannot be excluded. Against these seven examples, one single example, viz. Gr. ὑφαίνω v. ‘weave’, seems to indicate a development of PIE *#Hu- > Gr. #ó-, but by formulating the rule that Pre-Gr. *#Vw- > #u- / _C[+lab], as a consequence of which Gr. ὑφαίνω should no longer be regarded as a counterexample of the general development of PIE *#Hu > Gr. #Vô-, Hyllested & Cohen (2007: 13) renders unnecessary any of Peters’ (1980: 114-125) attempts to explain why PIE *h2ubʰ-η-ιόδ would appear as Gr. ὑφαίνω rather than as ἡαφαίνω.

As for the development of PIE *#Hi-, Peters (1980: 113) claims that the comparison of the six forms where Gr. #Vître- might be a result of PIE *#Hi- but where non-phonological explanations might be equally attractive to the seven forms where Gr. #i- is seen as the result of PIE *#Hi- even though non-phonological explanations, however unlikely, cannot be excluded clearly points in the direction of PIE *#Hi- > Gr. #i- being the regular development. Contrarily, Joseph (1975: 322-323, 326-327) holds the rule of PIE *#HU- > Gr. #VŬ- to be valid for both glides. It is important to note, however, that actual data from Greek plays a significantly minor role in Joseph’s article and that his conclusions are based on theoretical and systemic considerations implying that the change PIE

\textsuperscript{30} With his citation of Friðþjófr Þórsteinsson’s Lausavísa no. 30, where Eyþjöfr (ON ey- < PG *au- with i-mutation) and útsker should be seen as alliterating, Hammerich (1948: 33) even claims that Germanic, too, may have vocalised PIE *H in initial position immediately preceding *u, cf. also his reconstruction of Goth. *austr-(Ostro-) < PIE *Hstr-o- < *Hstro- or of Goth. aukun s.v. ‘increases, grows’ < PIE *Hgg- (Hammerich 1948: 31).

\textsuperscript{31} PIE *#HR- > Gr. #VR-, cf. e.g. PIE *h₂gh₂-ró- > Gr. ἀργός ‘shining, bright’ (dissimilated from *ἀργρός) and PIE *h₂θbʰ-ļ-ļo- > Gr. ὑφαίνω ‘weave’, cf. Rix (1970: 84-102 and 84-85, 94-95 in particular).
*#HU- > #Vǜ- is triggered by influence between various formal classes in the morphology rather than by internal phonological pressures, cf. Joseph (1975: 327). 32

According to Peters (1980: 113-114), the dissimilar developments of PIE *#Hi- and *#Hu- in Greek are reminiscent of the situation found with the appearance of prothetic vowels, triggered by laryngeals, in front of glides: The sequence of PIE *#Hu- does develop a prothetic vowel in Greek just as we would expect, cf. e.g. PIE *h₂yes-s- > Gr. āesα v. ‘spent (the night)’; PIE *#Hi-, on the other hand, does not.

With the sole exception of Latin, for which language Forssman (1982-1983: 291) in his review of Peters (1980) tentatively suggests that PIE *#ə₂u- > Lat. au- based on the example of Lat. aurōra f. ‘dawn’ (against which Schrijver (1991: 74-75)), there would seem to be no other Indo-European languages in which PIE *#Hu- > *#Vų-. Neither are there any examples of PIE *#Hi- > *#Vų-, not even in Greek if we choose to follow Peters (1980: 113) rather than Joseph (1975: 322-323, 326-327). That Greek seems to take up a special position among the Indo-European languages as regards the development of at least PIE *#Hu- is far from surprising in that Greek is one of only three branches to display prothetic vowels developed from laryngeals in initial position followed by a non-syllabic sound. 33 As indicated above, yet contrary to what Hammerich (1948: 31) supposes, the initial vowel of Gr. #Vǜ- should probably rather be seen as a prothetic vowel than as the manifestation of a vocalised laryngeal, i.e. of PIE *ə.

3. Possible outcomes in Germanic

Turning now our attention towards Germanic, i.e. the branch for which Ringe (1988: 433) found it necessary to apply a question mark in his table illustrating the development of PIE *#Hu- in a range of Western Indo-European languages, we first need to set up a range of criteria in order for us to determine what Germanic phonemes or combinations of phonemes in initial position could theoretically reflect PIE *#Hi- and *#Hu-.

32 Equally or maybe even more important is the fact, mentioned by Joseph (1975: 323) himself, that the small amount of data included in the article stems from an early draft of Peters (1980), possibly from a time prior to Peters’ completion of his data analysis.

Based on the knowledge from other branches, it feels safe to assume that PG *#i- and *#u- are possible outcomes, cf. e.g. Skt. uksa`iti v. ‘grows’ (< PIE *h2uk-s-é-). The special development of PIE *#H- > Gr. #Vó- suggested by, e.g., Pedersen, Hammerich and Peters, cf. above, should also be considered for Germanic. In Greek, according to Peters (1980: 7), the timbre of the vowel is determined by the quality of the laryngeal, hence PIE *#h1u- > Gr. #é6- , PIE *#h2u- > Gr. #aô- and PIE *#h3u- > Gr. #oû-. If Germanic behaves in a way exactly parallel to Greek, the expected outcomes could be PIE *#h1u- > PG *#eu-, PIE *#h2u- > PG *#au- and PIE *#h3u- > PG *#au- with the vowels representing prothetic vowels even if Germanic, unlike Greek, is not normally regarded as a language that develops prothetic vowels.

If, however, we start reflecting about the nature of prothetic vowels, we might be given a rationale for any appearance of prothetic vowels in Germanic. In my view, prothetic vowels must have arisen as a consequence of sandhi developments. For the sequence of PIE *#Hi- and *#Hu-, four possible sandhi environments may occur, viz. PIE *-V#Hi/uV- (> *-V̄/yV-), *-V#Hi/uC- (> *-Vi/uC-), *-C#Hi/uV- (> *-CHj/yV) and *-C#Hi/uC- (> *-CHj/uC-). In the former two environments, we would expect the laryngeal to colour and, in the first example also lengthen, the preceding vowel after which it would disappear in non-Anatolian-Post-PIE. The latter two environments are of greater interest to us. In the first of these, the laryngeal would develop into a true schwa which, however, has been preserved in this position as a so-called prothetic vowel only in Greek, Armenian and Phrygian, cf. above. If we consider for the last sandhi environment that the sequence PIE *CHi/u would develop a supporting vowel in order to ease the pronunciation in a way parallel to Sievers’ Law for the cluster PIE *Cj/yV > *Cj/uV, i.e. in this case PIE *CHi/u > *CHjHi/u, we have an explanation for any development of PIE *#Hi- > PG *#Vi- and PIE *#Hu- > PG *#Vu- as also for the identical development in Greek.

For the sake of systematic completion, we should also examine, though, whether either PIE *#h1i- > PG *#ei- (> *#î-), PIE *#h2i- > PG *#ai- and PIE *#h3i- > PG *#ai- or generally PIE *#Hi- > PG *#ai- are possible developments, cf. the triple representation of PIE *h1/2/3 in Greek. Consequently, in order to include all theoretically possible outcomes of PIE *#Hi- and *#Hu- in Germanic, this study will examine all Germanic lexemes with the initial phonological combinations of PG *#i-, *#ai-, *#î-, *#u-, *#au- and *#eu-.

It should be noted that not all lexemes with these initial combinations may be regarded as reflecting PIE *#Hi- or *#Hu-. Alternative sources for PG *#ai-, *#î-, *#au- and *#eu are full and o-grade forms of roots with the structure *HEU/Ć-. PG *#i- and *#u- may also reflect the zero grade.
of PIE *#hV- and *#yV-; PG *#i- and *#u- even have a third possible source, viz. as a raised variant of PG *#e- (< PIE *#e-) preceding a nasal plus another consonant and as the supporting vowel in the sequence PG *#uR- developed from PIE *#(H)R, respectively. In addition to these sources, analogical reshapings, onomatopoeias and lexical borrowings should also be taken into account. The material will therefore be divided into five sections:

1. Material with an initial laryngeal followed by PIE *(V)i or *(V)u
2. Material with PG *#i- and *#u- reflecting the zero grade of PIE *#iVC- and *#yVC-
3. Material with PG *#i- reflecting PIE *e /NC
4. Material with PG *#u- reflecting the supporting vowel of PG *#uR- < PIE *#R-
5. Material from other sources (analogical reshapings, onomatopoeias, lexical borrowings)

The material of the first section will be further divided into subsections in accordance with the quality of the laryngeal and the (syllabic or non-syllabic) glide.

3.1. Material with an initial laryngeal followed by PIE *(V)i or *(V)u

In the following Proto-Germanic lexemes, it is theoretically possible that PG *#i-, *#ai-, *#i-, *#u-, *#au- and *#eu- reflect a PIE initial laryngeal followed either by a full or o-grade vowel and a glide or by a syllabic glide, i.e. the structures PIE *HeiC-, *HoJC-, *HiC-, *HeyC-, *HoyC- and *HiC-.

3.1.1. Possibility of PIE *#h1i-

1. PG *aima- m. ‘smoke, steam; smell’; see (14).
2. PG *aina- num. ‘one, alone, any’ > Goth. ains num. ‘id.’, ON einn num. ‘id.’, OSw. ūn, ēn num. ‘id.’, ODa. een num. ‘id.’, OE ān, ēn num. ‘id.’, OFris. ān, ēn num. ‘id.’, OS ūn num. ‘id.’, OHG ein num. ‘id.’ etc. Initial PG *#ai- also in e.g. PG *ainahan- adj. ‘single’ > Goth. ainaha adj. ‘id.’, ON eina adj. ‘id.’ (indecl.), OE ānga, ēnga, ēnga adj. ‘id.’; PG *ainaka- adj. ‘only, special’ > ON einkum adj. ‘id.’ (dat.pl.); PG *ainakjōn- f. ‘widow’ > ON ekkja f. ‘id.’, OSw. enkia f. ‘id.’, ODa. ænkia f. ‘id.’; and PG *ainak(a)la- adj. ‘standing alone’ > Goth. ainakls adj. ‘id.’. Extra-Germanic comparanda abound, e.g. Gr. οἶνη f. ‘one (on dice)’, Lat. ūnus num. ‘one’, OIr. ūn, ūn num. ‘id.’, Lith. vienas num. ‘id.’, OPr. ains num. ‘id.’ etc.; all from PIE *oino- num./adj. ‘one, alone’; with different suffixation cf. e.g. Skt. ēka- num. ‘one’, Mitanni-Indic aika- num. ‘id.’, Av. aēva- num. ‘id.’, OPers. aiva- num. ‘one, alone’ and Gr. oloj adj. ‘alone, lonely’. Often regarded as a

PG *aina- m. ‘juniper’. Represented in ON einir m. ‘id.’, LG ēn(e)ke m. ‘id.’. If an extra-Germanic comparandum is represented in Hitt. eyan- n. ‘a certain evergreen tree, yew (?)’, a reconstruction along the lines of PIE *h₁oi-n- ~ *h₁eʃ-, i.e. an acrostic neuter n-stem, might not be far-fetched, cf. Kroonen (2013: 12). Lat. iùni(-perus) m. ‘juniper’, which is traditionally compared to PG *aina- (< PIE *h₁oi-n-jo-), would thus need to continue PIE *h₁oi-n-i- with an enigmatic, initial Lat. i-, and the comparandum of Lat. iùniperus m. ‘juniper’ and Lat. iuncus m. ‘rush’, Mfr. āín sb. ‘bulrush, juncus effusus’ must thus be abandoned. Lat. iuncus < PIE *jojn-ko- may, however, be the folk etymological source for the initial i- of Lat. iùniperus. Alternatively, LG ēn(e)ke and other West Germanic forms may have been folk etymologically influenced by PG *aina- num. ‘one’, in which case the traditional etymology of ON einir, LG ēn(e)ke etc. < PG *jainia- may be seen as valid in spite of its exclusion of Hitt. eyan- as a comparandum. Literature: IEW (2005: 513), Kroonen (2013: 12), Orel (2003: 205), De Vries (1962: 97).

PG *aisō(ja)na- w.v. II ‘rush’. Represented in ON eisa w.w. II ‘rush, dash’. Initial PG *#ai- also in e.g. PG *aiskrō(ja)na- w.v. II ‘roar, rage’ > ON eiskra w.v. II ‘id.’ if this should not rather be reconstructed as PG *ai(d)skrō(ja)na- and compared to PG *aida- m. ‘pyre’, for which see (14), but the existence of Icel. ískra w.w. II ‘be furious from excitement or pain’ (< PG *iškrō(ja)na-), which cannot continue a form with initial PIE *h₂, clearly points in the direction of PG *aiskrō(ja)na- w.v. II ‘roar, rage’ belonging here, since the root of PG *aisō(ja)na- w.v. II ‘rush’ is normally reconstructed as PIE *h₁eish₂- ‘move rapidly’, cf. the extra-Germanic comparanda of, e.g., Skt. īṣyatī v. ‘sets in motion, sends’, Skt. āṣāyati v. ‘refreshes, becomes strengthened’, īṣirā- adj. ‘strong, lively’ (< PIE *h₁iṣa₂-rö-), ēṣā- adj. ‘quick’, Av. aēšma- m. ‘rage, fury’, Gr. ὠλπος m. ‘rage’, ἱἀρός adj. ‘strong, lively’ (< PIE *h₁iṣa₂-rö-), Lat. īra f. ‘anger, rage’ (< PIE *h₁eish₂-eh₂-). The
actual Germanic form must be regarded as a denominal verb derived from PIE *h₁ójšh₂-eh₂- ‘rage, movement’ vel sim. or maybe rather PIE *h₁išh₂-evh₂- if we choose to accept Rasmussen’s (1989: 172) claim that the PIE *-o- appearing in the verbal nouns of the toga-type is always dropped when adjacent to, i.a., a laryngeal, cf. also the semantically closely related fuga-type as well as the causative-iterative Skt. isāyati v. ‘refreshes, becomes strengthened’ (< PIE *h₁išh₂-ęje-) where identical conditions prevail regarding the distribution of o- and zero grade. Literature: IEW (2005: 299-301), Kroonen (2013: 13-14), LIV (2001: 234), De Vries (1974: 98).

PG *aipha- m. ‘oath’. Represented in Goth. aipš m. ‘id.’, ON eiðr m. ‘id.’, OSw. ėper m. ‘id.’, ODa. ėth m. ‘id.’, OE āðh m. ‘id.’, OFris. ėth, ēd m. ‘id.’, OS ėth m. ‘id.’ and OHG eid m. ‘id.’ etc. Initial PG *#ai- also in e.g. PG *aid(i)a- n. ‘isthmus’ > ON eið, eiði n. ‘id.’, OSw. ėp n. ‘id.’. Outside Germanic, we find the same derivative only in Celtic, e.g. OIr. oeth m. ‘oath’, whence the Germanic lexeme may have been borrowed or vice versa, cf. also Marstrander (1911: 205), Kluge/Seebold (2002: 230) and also Casaretto (2004: 452) who, however, remains sceptical towards the idea of a lexical borrowing in either direction. Together with PG *aipha-, the Celtic lexeme points at PIE *H₃i-to-. As for the timbre of the laryngeal, all three options are available: If suggesting PIE *h₁-, we would invoke affiliation of this derivative to the root PIE *h₁eij- ‘go’ based on the term ON eiðgangr m. ‘oath-walk’. A reconstruction with PIE *h₁ also finds support in the existence of a form – also related to the meaning ‘oath’ – from Post-PIE *ei-to- that can only reflect PIE *h₁eij-to-, viz. Umbr. eiipes (< eitom epens ‘they took an oath’); further cf. also Gr. oĩtōς m. ‘fate’ and OPhryg. oito- ‘id.’. In support of PIE *h₂ and a root PIE *h₂eij- ‘important speech’, older literature lists Gr. aínũu, aîvěo v. ‘praise’, cf. e.g. IEW (2005: 11), but this equation is rejected by the majority of more recent etymological dictionaries, cf. e.g. Bjorvand & Lindeman (2000: 174-175). The last of the options at hand, viz. PIE *h₃ in a root PIE *h₃eij- ‘trust’ with cognates in Hitt. hai- v. ‘believe, trust, be convinced’, has been suggested by Puhvel (1991: 9-10), but as stated by Kloekhorst (2008: 267), most attestations of this verb point to a stem Hitt. hā- (< PIE *h₂jeH₁) rather than †hai-. As such, PIE *h₁oj-to- would seem the most attractive candidate for PG *aipha-. Regardless of the timbre of the laryngeal, however, radical zero grade does not seem to be a possible option, cf. OIr. oeth. Furthermore, contrary to the verbal adjectives of the type PIE *myr-tó- ‘dead’, substantival to-formations, which formally resemble vrddhi-formations of the

6 PG *aipma- m. ‘son-in-law’. Represented in OE āthum m. ‘son-in-law, brother-in-law’, OFris. āthum, āthom, āthem m. ‘son-in-law, father-in-law’, OHG eidum, eidam m. ‘son-in-law’. Uncertain etymology, but three proposals are worthy of consideration. Firstly, if PG *aipma- is to be understood as ‘son/father-in-oath’, comparison to PG *aipa- m. ‘oath’, for which see (5), is straightforward. Secondly, it can be compared to Av. aēta- m. ‘proper share; punishment’, Gr. αἷσιν, ἱσιν f. ‘part, share, destiny’, Osc. aiteis f. ‘part’ (gen.sg.) which are all derivatives of the root PIE *h2eį- ‘give, contribute’, cf. further Gr. αἴνωμαι v. ‘take’, i.e. ‘give to your self’. This makes sense from the semantic point of view that PG *aipma- is ‘he who has a share in the inheritance of the daughter’. Thirdly, it may be analysed as a derivative of the Lallwort root found in PG *aipīn-, *aipōn- f. ‘mother’, for which see (96); however, it is questionable, in my view, if a term for a mother whose acquaintance is not made until adult life could have developed from a nursery word for mother. In all, the pedigree of this lexeme must be regarded as too uncertain in order for it to serve as a basis for any assumptions regarding the radical ablaut grade and the timbre of a possible initial laryngeal. Literature: Boutkan & Siebinga (2005: 29), Holthausen (1974: 8), Kluge/Seebold (2002: 230), Kroonen (2013: 15), Lloyd et al. (1998: 979-981).

7 PG *aiwa- m., aiwō- f., *aiwi- f. ‘law’; see (27).

8 PG *i- pron. ‘he, she, it’. Represented in Goth. is; ita pron. ‘he; that’, ON es, er pron. ‘who’, OFris. -er pron. ‘he’, OS it pron. ‘that’, OHG ir, er; iz, ez pron. ‘he; it’ etc. With initial PG *#i- in e.g. PG *i- > Goth. ei conj. ‘that’, ON í (first member of temporal denotations such as í gær ‘yesterday’, í dag ‘today’ etc.), OE í(-lca) adj. ‘same’ (< PG *i-likan-). To be reconstructed as PIE *(h1)i- ~ *(h1)e- ~ *(h1)eį-,- cf. also Skt. ayám, idám, a-etc. pron. ‘he etc.’, Av. ayām pron. ‘id.’, Gr. ī- pron. ‘him’, Lat. is, ea, id pron. ‘he etc.’; as for the varying representations of the root in the same paradigm also within Germanic, cf. e.g. Goth. eis pron. (m.pl.) ‘they’ (< PIE *(h1)eį-). The assumption of an initial laryngeal in this pronominal root is only structurally motivated, cf. e.g. Benveniste (1935: 148-149).
It can be stated with certainty, though, that if a laryngeal is present initially, it must be PIE *h₁, cf. again e.g. Goth. eis (< PIE *h₁e₁₁-es) and Lat. ea pron. ‘she’ (< PIE *h₁e₁₁-eh₂); any other laryngeal would have resulted in colouring of the radical vowel. Literature: Boutkan & Siebinga (2005: 90), IEW (2005: 281-283), Kroonen (2013: 268), Lehmann (1986: 207-208), Lloyd et al. (1998: 1092-1107), Orel (2003: 203), Sehrt (1966: 223-233), De Vries (1962: 105).

PG *idi- f. ‘work’ > Burg. *ips (in personal names such as Idbertus, Idwinus), ON ið f. ‘profession, job’. Initial PG *#i- also in e.g. PG *ida- n. ‘constant moving, quivering’ > ON ið n. ‘id.’ and PG *idō(j)a-na- w.v. Ii ‘move around restlessly’ > Icel. iða w.v. Ii ‘id.’. Outside Germanic, the denominal verb is found also in Gr. ἵταον v. ‘go here and there’, Lat. itō v. ‘go’, Mr. ethaid v. ‘goes’. ON ið f. ‘profession, job’ has a variant, viz. ON ið f. ‘id.’, which, together with the extra-Germanic comparanda, points at PG *idi- etc. continuing a PIE ti-stem *h₁i-ti- to the root PIE *h₁e₁ ‘go’, cf. also Skt. īti-, īt- f. ‘going, walking’, or even more correctly PIE *h₁e₁-ti-l/h₁i-tēj-, cf. Kroonen (2013: 269). Any connection of this group of words to the root PIE *h₂e₁d₁ - ‘burn’, i.e. PIE *h₂iH₁-i- as alternatively suggested by, e.g., De Vries (1962: 282-283) would seem futile in the light of ON ið which can probably only continue PIE *(h₁)ei- or *(Ḥ)iH-. Literature: IEW (2005: 294-295, though not mentioning PG *idi-), Kroonen (2002: 269), NIL (2008: 221, though not mentioning PG *idi-), Orel (2003: 203), De Vries (1962: 282-283).

PG *ililb- m., iljō- f. ‘footsole’. Represented in ON il f. ‘id.’, OE ill, ile m. ‘footsole, hard skin’, OFris. ili, ile m. ‘footsole’, MLG èle, èlée, èlt n. ‘callus’ etc. Some scholars have supposed that PG *ilan- m. ‘fishing net, weight, anchor etc.’ > ON ili, ili m. ‘id.’, Norw.(dial.) m. ile ‘id.’ is also related to this root, cf. e.g. Kroonen (2013: 269 with lit.), contra which De Vries (1962: 284-285). Initial PG *#i- also in e.g. PG *ilan- m. ‘footsole’ > ON ikli m. ‘id.’ which, however, has been explained by Hyllested (2008) as a lexical borrowing from Saami. No satisfactory etymology. Attempts have been made at connecting PG *ililb-, *iljō- with the root PIE *h₁e₁ ‘go’ as well as with the formally dissimilar Gr. ëlia f. ‘female body-parts’ and Lat. ëlia f. ‘belly’ which are both without etymology (< PIE *iljeh₂-?), cf. e.g. de Vaan (2008: 298). Literature: Boutkan & Siebinga (2005: 191-192), Kluge/Seebold (2002: 232), Kroonen (2013: 269), Philippa et al. (2003: 458-459), De Vries (1962: 284-285).
PG *īlana-, w.v. ‘rush, hurry’. Represented in OS īlan w.v. ‘strive; hurry’, OHG īl(l)an, īlen w.v. ‘id.’ etc. Initial PG *īl- also in e.g. PG *īlō- f. ‘hurry, haste’ > OHG īla f. ‘id.’. Often connected to the root PIE *h₁e₁j- ‘go’, i.e. as PIE *h₁e₁j-(e)lo- vel sim., cf. IEW (2005: 296), or maybe as an l-derivative of an intensive to the root, i.e. PIE *h₁e₁j(l)-h₁i₁j-lje-, cf. Kroonen (2002: 269), but as rightly pointed out by Kluge/Seebold (2002: 232), the original meaning of this verb, i.e. ‘strive’, does not fit well with the semantics of *h₁e₁j- ‘go’. Kluge/Seebold therefore speculates if a zero grade PIE *ih₂- to the root PIE *jeh₂- of Skt. yāṭi v. ‘pursues, revenges, pleads, begs’, Gr. ἕνθες m. ‘eagerness’ would not be a better candidate, especially in the light of the fact that a nearly identical duality of meaning, viz. ‘rush, hurry’ ~ ‘pursue’ on the one hand and ‘plead, beg’ ~ ‘strive’ on the other, seems to be present in Skt. yāṭi; this etymological proposal is rejected by Bjørvand & Lindeman (2000: 430-431) on unspecified formal grounds. Literature: Bjørvand & Lindeman (2000: 430-431), IEW (2005: 296), Kluge/Seebold (2002: 232), Kroonen (2013: 269), Philippa et al. (2005: 498-499), Sehrt (1966: 293).

11 PG *īsa- n. ‘ice’. Represented in Goth. iiz (name of the i-rune), ON ís m. ‘ice’, OE ïs n. ‘id.’, OFris. ïs n. ‘id.’, OS ïs n. ‘id.’, OHG ïs n. ‘id.’ etc. Often compared with Av. īsu- adj. ‘cold, icy, frosty’, aēxa- n. ‘cold’, but Av. īsu- can only be derived from PIE *išu- (or maybe *is-sk̂u-?); a PIE *īsu- would result in Av. īšu-., cf. e.g. Hoffmann & Forssman (1996: 102-104). Though semantically attractive, any attempt to unite Av. īsu- (< PIE *Hik- or maybe *Hîs-k-) with PG *īsa-, which must continue a PIE *HiH(-)s-o-, *h₁e₁j(-)s-o- vel sim. would at first hand seem futile. Judging from the prevailing neuter gender in Germanic, however, I cannot help wondering if PG *īsa- could not, in fact, continue a thematicised s-stem PIE *h₁e₁j-s-o- or maybe even *h₁e₁j-es-o- with the phonological development of PIE *-e₁j- > PG *-e₁- also recognised in, e.g., PIE *tréœes num. ‘three’ > PG *bɾiž num. ‘id.’ and PIE *uēœes pron. ‘we’ > PG *wēž pron. ‘id.’.34 Since PIE *h₁e₁j-es-o- would probably yield PG ṭiža- rather than *īsa-, a reconstruction along the lines of PG *h₁e₁j-s-o- is to be preferred. Av. īsu- would thus not continue the s-stem but rather be derived with an otherwise unknown (s)k̂u-suffix directly to the root PIE *h₁e₁j- in

34 Thematisation of s-stems is a trivial process in the Germanic languages, especially in Gothic and in North Germanic, cf. e.g. Krahe (1967: 42-43), Thöny (2013: 82-84). In West Germanic, however, s-stems have been at least peripherically preserved, cf. e.g. OE lemb n. ‘lamb’ (nom./acc.pl. lombur) and OHG lamb n. ‘id.’ (nom./acc.pl. lembir < *lembiru < PG *lambizō).
the zero grade, i.e. $<\text{PIE} *h_{1i}(s)k\text{-}$u-$. Such an analysis is, however, obstructed by Av. $a\text{êxa}$- whose Av. $-x$- can only be interpreted as PIIR. $^*k^h$- ($<\text{PIE} *k^{\text{w}}h_{1/2}$- or $^*h_{1/2}k^{\text{w}}$-). Consequently, given the nonexistence of a nominal suffix $\text{PIE} *k\text{-Ho}$-, the only possible etymological analysis of Av. $a\text{êxa}$- would include a root final laryngeal, i.e. $\text{PIE} *h_{1i}ejH$-vel sim. $<\text{PIE} *h_{1i}ejH\text{-ko}-f^*h_{1i}ojH\text{-ko}$- (for the development of $\text{PIE} *h_{1/2}k$- $>^*k^h$- cf. Olsen (1994: 274-275)), and thus exclude Av. $isu$-, which cannot continue a form with a root final laryngeal, from the list of cognates unless we choose to follow de Vaan’s (2003: 246-250) suggestion that Av. $i$ may be shortened to $i$ in some cases among which, however, de Vaan (2003: 250) does not include that of Av. $isu$-. The addition of a root final laryngeal offers no problems for the analysis of PG $^*\text{îsa}$-; thus PG $^*\text{îsa}$- $<\text{PIE} *h_{1i}ejH\text{-s-o}$-, $^*\text{HiH-s-o}$- vel sim. but not $\text{PIE} *h_{1i}ejH\text{-es-o}$- which would probably result in PG $^*ejj\text{es/za}$- $>^*ijjis/za$-. Literature: Bjorvand & Lindeman (2000: 432-433), Holthausen (1974: 189), IEW (2005: 301), Kluge/Seebold (2002: 236), Kroonen (2013: 271), Lehmann (1986: 204), Orel (2003: 204), Philippa et al. (2005: 499), De Vries (1962: 287).

13 PG $^*\text{îwa}$- m. ‘yew’. Represented in ON yr m. ‘id.’, OE $\text{îw}$, $\text{êw}$ow m. ‘id.’, OHG $\text{îwa}$ f. ‘id.’ ($<\text{PG} *\text{îwō}$-). Initial PG $^*\text{îi}$- also in e.g. $\text{PG} *\text{îha}$-f$^*\text{îga}$- m. ‘id.’ $>\text{OE} \text{îh}, \text{êoh}$ m. m. ‘id.’, OS $\text{îchas}$ m. (pl.) ‘id.’, OHG $\text{îga}, \text{îgo}$ ($<\text{PG} *\text{îgō(n)}$-) m. ‘id.’. It is tempting to unite these two lexemes as $\text{PG} *\text{îh}^{\text{w}}a$- $>^*\text{îg}^{\text{w}}$a-., cf. e.g. Orel (2003: 203-204) and Holthausen (1974: 189), but Kroonen’s (2013: 271) etymological proposal of PG $^*\text{îwa}$- $<\text{PIE} *h_{1i}ejH\text{-u-o}$- or $^*h_{1i}ejH\text{-u-o}$-, which finds support in extra-Germanic comparanda such as Lith. $\text{iev}â$ f. ‘bird-cherry’, Latv. $\text{iêva}$ f. ‘id.’, Ru. $\text{îva}$ f. ‘willow’ ($<\text{PIE} *h_{1i}H\text{-yo}$-) and further Gr. $\text{òη}, \text{oη}, \text{òa}$ f. ‘elderberry tree, mountain ash’, Lat. $\text{ûva}$ f. ‘branch of grapes; raisins’ ($<\text{PIE} *h_{1i}ojH\text{-yeh}_2$-) and OIr. $\text{e}ó$ m.(?) ‘stem, shaft, yew-tree’ ($<\text{PIE} *h_{1i}ejH\text{-yo}$-?), would render any such attempt futile unless the root is reconstructed as $\text{PIE} *h_{1i}ejH$- to which either of the suffixes $\text{PIE} *\text{-yo}$- or $\text{PIE} *\text{-ko}$-f$^*\text{-ko}$- may be added. Consequently, it seems reasonable to assume that $\text{PIE} *h_{1i}H$- $>\text{PG} *^*i$. Literature: Holthausen (1974: 189), IEW (2005: 297), Kluge/Seebold (2002: 229), Kroonen (2013: 271), Orel (2003: 203-204), Philippa et al. (2005: 498), De Vries (1962: 679).

3.1.2. Possibility of $\text{PIE} *^*h_{3l}$-

14 PG $^*\text{aida}$- m. ‘pyre’. Maybe represented in Crim.Goth. ($\text{sched}-\text{jiit}$ ‘light’ and with certainty in OE $\text{âd}$ m. ‘(bon)fire, pyre, funeral pile’, OS $\text{êd}$ m. ‘firebrand’, OHG $\text{eit}$ m. ‘fire, oven’. Initial PG $^*\text{ai}$- also in e.g. PG $^*\text{aidiana}$- w.v. $\text{l}’\text{burn (tr.), harden with fire}$ >
OHG *eiten w.v. I ‘id.’; PG *ai(d)la- n.(?) ‘flame’ > RN *aila (cf. Grønvik 1996: 27), OE āl n. ‘flame’; PG *ai(d)liana- w.v. I ‘burn (tr.), ignite’ > OE ēlan w.v. I ‘id.’; PG *ai(d)lida-m. ‘fire’ > ON eldr m. ‘id.’, OSw. elder m. ‘id.’, ODa. *eld m. ‘fire; fire blight’, OS *eld ‘id.’; PG *ai(d)sōn- f. ‘forge, fireplace’ > ON eisa f. ‘embers’, MLG ēse f. ‘hearth, forge, fireplace’; PG *aisō- f. ‘kīhn’ > OE āst f. ‘oven’ etc.; PG *ai(d)ma-35 m. ‘smoke, steam; smell’ > ON eimr m. ‘reek, vapor’, OSw. ember m. ‘id.’, OE ām m. ‘branding iron’; PG *aima-uzjōn- f. ‘embers’ > ON eimyrja f. ‘id.’, OE āmyrie f. ‘id.’, OHG eimuria f. ‘pyre, hot ash’; and maybe PG *ai(d)skrōj(a)na- w.v. II ‘roar, rage’ > ON eiskra w.v. II ‘id.’ if this should not rather be compared to PG *aisōj(a)na- w.v. II ‘rush’, for which see (4). Extra-Germanic cognates include Skt. inddhē v. ‘ignite’, ēdha- m. ‘fuel’, Av. aēśma- m. ‘firewood’, Gr. *aitho v. ‘light up, kindle’, *aithoc m. ‘fire, embers’, *tēdāc adj. ‘clear, bright, shining’, Lat. aestās f. ‘hot season, summer’, aedēs f. ‘temple; room’, OIr. áed n. ‘heat, fire’, Lith. ḗesmé f. ‘firewood’ etc.; all derived from the root PIE *h2eida- ‘burn’. If also PG *idis-< PIE *h2eida- in which case forms such as PG *aida-, *ai(d)la-, *ai(d)ma- etc. can hardly represent the zero grade PIE *h2eida- but only the full grade PIE *h2eida- or the o-grade PIE *h2eoida-. As discussed under (33), however, PG *idis-<edis- probably has a different source. Literature: Bjorvand & Lindeman (2000: 429-430), Holthausen (1974: 2-3, 10), IEW (2005: 11-12, 16-17), Kroonen (2013: 8, 11, 14), Lehmann (1986: 298), Lloyd et al. (1998: 1024-1025), Orel (2003: 6-7, 10), Sehrt (1966: 94), De Vries (1962: 96, 98-100, 285).

15 PG *aigana- pp.v. ‘own, possess, have’. Represented in Goth. *aigan (pres. aih, aigum) pp.v. ‘id.’, ON eiga (pres. á, eigum) pp.v. ‘id.’, OSw. ēgha pp.v. ‘id.’, ODa. ēghē pp.v. ‘id.’, OE āgan (pres. āh) pp.v. ‘id.’, OFris. aga, hōga pp.v. ‘id.’, OS ēgan (pres. ēgun, pl.) pp.v. ‘id.’, OHG eigan (pres. eigun, pl.) pp.v. ‘id.’ etc. Initial PG #ai- also in e.g. PG *aigena- ~ *aigana- adj. ‘own’ (originally ptc. of PG *aigana- pp.v. ‘own, possess, have’) > ON eiginn adj. ‘id.’, OE ēgen adj. ‘id.’, OFris. ein, eyn, egen adj. ‘id.’, OS ēgan adj. ‘id.’, OHG eigan adj. ‘id.’; PG *aihti- f. ‘belongings, possessions, property’ > Goth. aihts
f. ‘id.’, ON ætt, átt f. ‘family, race’, OE ēht f. ‘property power’, OHG ēht f. ‘id.’; PG *aigōn- f. ‘ownership, property’ > ON eiga f. ‘id.’, OE āge f. ‘property’; and PG *aigni- f. ‘land property’ > ON eign f. ‘id.’. Extra-Germanic comparanda are found in Indo-Iranian and Tocharian, cf. e.g. Skt. īśe v. ‘has at one’s disposal’ (< PIE *h₂i-h₂k-oj), Av. īśē v. ‘id.’, Toch. AB aik- v. ‘know, recognise’ (< ‘have as one’s own, be master of’). The timbre of the laryngeal is determined by Toch. AB aik-, cf. Adams (1999: 101-102) who notes that the consistent orthography in Tocharian of aik-, i.e. no occurrences of eik-, points at a phonological sequence /āik-/ (< PIE *h₂e-k̂-) rather than /eik-/ (< PIE *h₁oik- or *h₃eik­-). In the light of the reduplicated perfects in Indo-Iranian and the preterite-presentic character of the Germanic verb, it would seem obvious to reconstruct PG *aih as PIE *h₂e-h₂oik-h₂e and *aigum as PIE *h₂e-h₂ik-mé in which case this verb offers no case for a development PIE *h₂i- > PG *ai-. When focus is directed at the ti-stem PG *aihti-, however, a development of PIE *h₂ik-ti- > PG *aihti- cannot be excluded even though radical full grade is equally possible, cf. e.g. Brugmann & Delbrück (1906: 429-438) and particularly Bammesberger (1990: 144). Literature: Bjorvand & Lindeman (2000: 175-176, 179, 1081), Boutkan & Siebinga (2005: 10-11), Holthausen (1974: 2-3, 10), IEW (2005: 298-299), Kluge/Seebold (2002: 231), Kroonen (2013: 8), Lehmann (1986: 14), LIV (2001: 223), Llloyd et al. (1998: 981-983), Orel (2003: 6), Philippa et al. (2003: 667-668), Seebold (1970: 69-72), Sehrt (1966: 92-93), De Vries (1962: 95-96).

16 PG *aigena-, *aiginþ- n. ‘shoot, barb’. Represented in ON eigin n. ‘new sprout of corn’, NNorw eigind n. ‘grain germ, barb’ etc. Initial PG *#ai- also in e.g. PG *aigla- m. ‘shoot’ > Sw.(dial.) egel, ägel m. ‘seed, sprout’. These two formations are derived from a root PIE *h₂ejk- ‘barb’, i.e. seemingly PIE *h₂ejk-ént- and *h₂ejk-(t)ló-, respectively; derivations resembling the latter are found in, e.g., Gr. aiklo/m. (pl.) ‘corners of an arrow’, OPr. ayculo f. ‘needle’ and Ru. igrá f. ‘id.’; further cf. Gr. aixu’f. ‘point of a spear, spear’, Lith. ičmas, jičmas m. ‘spit, broach’ < PIE *h₂ejk-smo/h₂­-h₂-. In the light of the suffixal accent in PIE *h₂ejk-ént- and *h₂ejk-(t)ló- (as revealed by the voiced Verner’s variant in Germanic), radical zero grade would not be unexpected, cf. also Ru. igrá < PIE *h₂ik-tleh₂-. On the contrary, seeing that PG *aignþ-, if properly reconstructed as such, is to be analysed as a participle of an athematic verb, radical zero grade is the standard, cf. e.g. PIE *h₁s-ént- ptc. ‘being’, and PG *aigla- is to be analysed as a concretised abstract

PG *aik-* f. ‘oak’. Represented in ON eik f. ‘id.’, OE āc f. ‘id.’; as an ō- or i-stem in OFris. ēk f. ‘id.’, OS ēk f. ‘id.’ (may also be a root noun); as an i-stem in OHG ei(c)h f. ‘id.’ (may also be a root noun); and as a younger ō- or iō-stem in OHG eihhe, eihha f. ‘id.’. Initial PG *#ai- also in e.g. PG *aikīna- adj. ‘oaken’ > ON eikinn adj. ‘id.’ OE cen, cen adj. ‘id.’; as an ō- or i-stem in OFris. k f. ‘id.’, OS k f. ‘id.’ (may also be a root noun); as an i-stem in OHG ei(c)h f. ‘id.’ (may also be a root noun); and as a younger ō- or iō-stem in OHG eihhe, eihha f. ‘id.’. Often affiliated with the root PIE *h2eig- ‘shine’, cf. Gr. αἰγ- (e.g. in αἰγίλωψ m. ‘kind of oak’), Gr. αἰγερος m. ‘poplar’, Lat. aesculus f. ‘durmast oak, winter oak’ vel sim. (< *aigscolos), Lith. ąžolas, ąžuols, ąžuolas m. ‘oak’ etc.; further maybe ORu. jazь m. ‘badger’, Ru. jazь m. ‘carp’, OIr. áesc sb. ‘concha, clasedix’. If PG *aik- was originally a root noun rather than a vocalic stem as supposed by, e.g., Griepentrog (1995: 24-32), I would a priori expect it to have shown alteration between full or o-grade (PIE *h2eig-/*h2oiģ-) at the Proto-Indo-European stage in the strong case forms and zero grade (PIE *h2iģ-) in the weak forms. However, with only a few peripheral exceptions whose validity may all be debated, cf. Ph.D. article no. 1, Germanic root nouns do not display ablaut. Rather, originally ablauting root nouns in Proto-Indo-European eventually come to appear in a form in Germanic where three criteria are fulfilled, viz. (1) that the root must contain at least one consonant in the syllable onset, (2) that a vocalic element must be displayed in the root, and (3) that no more than one consonant is allowed in the radical syllable coda. If, however, the root contains an original PIE *a, that vowel will always be present in the root regardless of its phonotactic structure. According to these criteria, PIE *h2eig-/*h2oiģ- ~ *h2iģ- would be generalised in the form PIE *h2iģ- within Germanic. Given the validity of this assumption, it would seem that PIE *h2iģ- > PG *aik-. Alternatively, of course, the presence of an original PIE *a in this root cannot be excluded, i.e. PIE *aiģ-; neither can the possibility of PG *aik- being a lexical borrowing, cf. esp. Kroonen (2013: 9-10). Literature: Bjorvand & Lindeman (2000: 180), Griepentrog (1995: 24-32), Holthausen (1974: 2), IEW (2005: 13), Kluge/Seebold (2002: 229-230), Kroonen (2013: 9-10), Lloyd et al. (1998: 974, 984-986), Orel (2003: 7), Philippa et al. (2003: 669), De Vries (1974: 96).

PG *aikana- s.v. ‘make one’s own; assign, allot’. Represented in Goth. (af-)/aikan s.v. ‘deny, abjure’, OHG (in-)eihan s.v. ‘claim’. Initial PG *#ai- also in e.g. PG *aihtrō(j)ana- w.v. II ‘beg, pray’ > Goth. ahtron w.v. II ‘id.’. Kroonen (2013: 10)

PG *aikiana- w.v. I ‘annoy, pester’. Represented in Norw. eikja w.v. I ‘id.’. Initial PG *#ai- also in e.g. PG *aikala- adj. ‘excited (by fear)’ > OE ācol, ācul adj. ‘id.’ and PG *aikana- ~ *aikana- adj./ptc. ‘wild, furious’ > ON eikinn adj. ‘id.’. The verb PG *aikana- should be interpreted as a causative, i.e. < PIE *h₂oig-éje-, cf. Skt. ejayati v. ‘shakes’, derived from the verb PIE *h₂eig-e- v. ‘move, stir, flutter’ > Skt. ējati v. ‘id.’; further cf. Gr. áiyīς f. ‘rushing storm, hurricane’, Lith. aikštis f. ‘passion, glow’, OCS igo f. ‘game, fun’. Even if an original o-grade is seemingly secured for PG *aikiana- (< PIE *h₂oig-éje-), this need not be the case for PG *aikena- ~ *aikana-. If it is, truly, a participle of an unattested strong verb PG *aikana-, we would expect it to show the zero grade, i.e. PG *aikena- ~ *aikana- < PIE *h₂ig-enó- ~ *h₂ig-onó-, unless PG *aikana- belongs to the class of non-ablauting reduplicated verbs, cf. the pattern of Goth. aukan ‘increase’ (inf.), aɪ-auk ‘increased’ (pret.1.sg.), aɪ-aukum ‘increased’ (pret.1.pl.), aukans ‘increased’ (ptc.) (Hill 2009: 187-196; Krahe 1967: 105-106; Krause 1968: 235-236). As for this non-ablauting reduplicated type in general, though, we could wonder what underlies the form of the participle: That PIE *h₂éig-e- > PG *aikana-, PIE *(h₂)e-h₂óig-h₂e > PG *e-aik and PIE *(h₂)e-h₂ig-mé > PG *e-aikum seems quite straightforward, but the expected form of the participle should be PIE *h₂ig-enó- ~ *h₂ig-onó- in any case. Neither should it be reduplicated PIE *(h₂)e-h₂ig-enó- ~ *(h₂)e-h₂ig-onó-; nor PIE *h₂eig-enó- ~ *h₂eig-onó- with a radical full grade vowel. Unless analogical levelling has taken place, which is indeed possible, it would therefore seem that PIE *h₂ig-enó- ~ *h₂ig-onó- > PG *aikena- ~ *aikana-. Literature: Holthausen (1974: 2), IEW (2005: 13-14), Kroonen (2013: 10), LIV (2001: 222).

PG *aikwernan- m. ‘squirrel’. Represented in OE ācwerna, ācwern m. ‘id.’, eihhurno, eihhorno m. ‘id.’. With initial PG *#i- in e.g. PG *ikwernan- m. ‘id.’ > ON íkorni m. ‘id.’. Kroonen (2013: 10-11) manages to unite these two forms in an ablauting paradigm PG *aikwernan- ~ *ikwernan- < PIE *h₂eij-h₂yur-no- ~ *h₂i-h₂yur-no- with parallel or similar formations in, e.g., Pers. varvarrah sb. ‘squirrel’ (< PIE *h₂yur-h₂yur-o-), Lat. vīverra f. ‘ferret’ (< PIE *h₂yir-h₂yir-neh₂-), OIr. iar sb. ‘squirrel’ (< PIE *h₂i-h₂yir-?).
gwywer sb. ‘id.’ (< PIE *h₂ui-h₂uer-), Lith. voverė, voverė f. ‘id.’ (< PIE *h₂ue-h₂uer-īeh₂-) etc. As such, there is no need for the etymological proposal frequently advanced that the *aik- of PG *aikwernan- is related to the root PIE *h₂eig- ‘move, stir etc.’ seen in PG *aikiana- w.v. I ‘annoy, pester’, i.e. ‘squirrel’ < ‘swift, little animal’ vel sim. The mere existence of PG *īkwernan- also speaks against such an etymology: Its radical vowel simply cannot be united with any root containing PIE *h₂ unless, of course, we choose to reconstruct a vrddhi-formation PIE *h₂eig- > *eik- > *eik- (by subsequent application of Osthoff’s Law) > PG *īk- with non-colouring of the vowel, cf. Eichner (1973: 72). Literature: Holthausen (1974: 2), IEW (2005: 13-14, 1166), Kluge/Seebold (2002: 230), Kroonen (2013: 10-11), Lloyd et al. (1998: 974-976), Orel (2003: 7), Philippa et al. (2003: 658), De Vries (1962: 284).

21 PG *aina- num. ‘one, alone, any’; see (2).


23 PG *aiskō- f. ‘demand, investigation’. Represented in OFris. āsk f. ‘claim’, OHG eisca f. ‘question, demand’. Initial PG *#ai- also in e.g. PG *aiskōn- f. ‘question, search, investigation’ > OE āsce f. ‘id.’; PG *aiskō(ja)na- w.v. II ‘demand, inquire, ask; investigate, examine’ > OE āscian, ācsian w.v. II ‘ask, inquire’, OFris. āskia w.v. II ‘demand, claim’, OS ēscon w.v. II ‘promote, further’, OHG eiskōn w.v. II ‘search, look for’; PG *aiskungō- f. ‘demand’ > OE āscung f. ‘id.’, OHG eiskunga f. ‘id.’; and, though

24 PG *aita- m. ‘abscess, ulcer’. Represented in OHG eiz m. ‘abscess, boil’. Initial PG *#ai- also in e.g. PG *aistôn- f. ‘testicle’ > ON eista f. ‘id.’; PG *aitila- adj. ‘swollen’ > ON Eitill m. (name of a sea king), EFris. eitel adj. ‘furious’, OHG eiz(z)ala f. ‘gallnut’; and PG *aitra- n. ‘poison, pus’ > ON eitr n. ‘venom, poison’, OE ātor, āter n. ‘poison’, OS ēttar n. ‘poison, virus’, OHG eitar, eittar n. ‘poison, pus’. Normally, PG *aita- is reconstructed as a verbal noun PIE *h2ojd-o- derived from the root PIE *h2ejd- ‘swell’, cf. also the extra-Germanic comparanda of, e.g., Arm. aitnowm v. ‘swell’, Gr. oĩó, oίð̆avo v. ‘id.’, oĩõð̆ōς n. ‘swelling, tumor’, Lat. aemidus adj. ‘swollen, protuberant’ (< PIE *h2ejd-(s)m-), Lith. inkstas m. ‘testicle, kidney’ (with nasal from jsčios f. (pl.) ‘womb, entrails, interior’) and OCS isto n. ‘testicle’ (pl. ‘kidneys’). In the light of Rasmussen’s (1989: 172) claim that the PIE *-o- appearing in the verbal nouns of the toga-type is always dropped when adjacent to, i.e., a laryngeal, PIE *h2id-o- might be considered an option as well even though we

36 In the light of Ukr. s’káty, we must assume that PSl. *iskati < *jiskati < PIE *h2is-sk’e-, cf. e.g. LIV (2001: 260); for the opposite view that PSl. *iskati < *jiskati in spite of loss of the initial vowel in Ukrainian cf. Derksen (2003: 99-100, 103).

37 No descendants from this verb are attested, though, but it must have existed since it serves as the basis for the abstract noun PG *aiskō-.

PG *ai̇pa- m. ‘oath’; see (2).

PG *ai̇pma- m. ‘son-in-law’; see (6).

PG *ai̇wa- m., aivō- f., *ai̇wi- f. ‘age, eternity’. Represented in Goth aiws m. ‘id.’, OFris. ēwe f. ‘id.’, OHG ēwa f. ‘eternity’. Initial PG *ai̇- also in e.g. PG *ai̇wīn, *ai̇waīn adv. ‘ever, always’ (i.e. acc.sg. of PG *ai̇wi- f., *ai̇wa- m. ‘age, eternity’) > Goth. (ni) ai̇w adv. ‘never’, ON æ, ei, ey adv. ‘always’, OE ēo adv. ‘id.’, OHG io adv. ‘always’, (n)io adv. ‘never’; PG *ai̇wi̇n- f. ‘eternity’ > ON ævi f. ‘id.’, OHG ēwī f. ‘id.’; and PG *ai̇wan- m. ‘id.’ > OHG ēwo m. ‘id.’. Extra-Germanic cognates abound, cf. e.g. Skt. āyu- n. ‘life, lifetime, vital power’ (gen.sg. yoh ‘health!’), āyu- adj. ‘living, vigorous, vital’, Av. āiū- n. ‘life, lifetime, time’ (gen.sg. yaoš), Gr. aïów m./f. ‘(life)time, long time, eternity’, aïèv adv. ‘always’ (< PIE n-stem loc.sg. *h₂eij-ú-én ‘in eternity’), aïèc adv. ‘id.’ aïèi adv. ‘id.’ (< PIE s-stem loc.sg. *h₂eij-ú-és-(i) ‘in eternity’) Lat. aevus m., aevum n. ‘period of time’. The Germanic as well as Latin forms are most likely to continue PIE *h₂eij-ú-o-, i.e. a thematicised variant of the weak stem of the original, acrostatic neuter u-stem PIE *h₂oj-ú- ~ *h₂eij-ú-, cf. e.g. Schindler (1975a: 7) and NIL (2008: 279), which was later replaced by the more regular paradigm PIE *h₂oj-ú- ~ *h₂ej-ú-, cf. e.g. the Indo-Iranian forms. There is no compelling reason for assuming that PG *aiwa- m., aivō- f., *ai̇wi- f. ‘age, eternity’ continues a zero grade form PIE *h₂i-ú-o- since descendants of such a form are not attested in any other Indo-European branches. Literature: Bammesberger (1990: 68), Bjorvand & Lindeman (2000: 1081-1082), Boukhan & Siebinga (2005: 3-4), Casaretto (2004: 200-201), Holthausen (1974: 1, 8), IEW (2005: 17-18), Kluge/Seebold (2002: 264), Kroonen (2013: 16), Lehmann (1986: 22), Lloyd et al. (1998: 1175-1178), NIL (2008: 277-287), Orel (2003: 10-11), Philippa et al. (2003: 663), De Vries (1962: 680, 682).

PG *aiwa- m., aivō- f., *ai̇wi- f. ‘law’. Represented in OE ēw, ēw f. ‘law, religion, marriage’, OFris. ē-, ēwa, ēwe, ē f. ‘law’, OS ēo, ēu m. ‘id.’, OHG ēwa, ēa, ēo f. ‘law, right, will, contract’. Either to be reconstructed as PIE *h₁oj-ú-o- derived from the root PIE
*h₁ej- ‘go’, cf. Skt. éva- m. ‘course’ for an exact cognate, or to be seen as identical to PG *aiwa- m., aiwō- f., *aiwi- f. ‘age, eternity’, for which see (27). In the latter case, which is regarded the more likely alternative by most scholars, a both formal and semantic connection can be established to Lat. iūs n. ‘law’ (gen.sg. iūris, i.e. an s-stem) < PIE *h₂jēu-os ~ *h₂jēu-es- which is probably in itself derived from the secondary weak stem of PIE *h₂jē-u- ~ *h₂jē-u- ‘age, eternity’, cf. NIL (2008: 279), the semantic development of PG* aiwa- etc. being one of ‘pertaining to eternity’ > ‘eternally valid’ > ‘law, contract’. Literature: Bammesberger (1990: 68), Bjorvand & Lindeman (2000: 1081-1082), Boutkan & Siebinga (2005: 2-3), Holthausen (1974: 8), Kluge/Seebold (2002: 228), Kroonen (2013: 16), Lloyd et al. (1998: 1173-1175), NIL (2008: 277-287), Orel (2003: 10-11), Sehrt (1966: 103).

PG *aiwiana- w.v. I ‘despise’. Represented in OE ēwan w.v. I ‘id.’. Initial PG *#ai- also in e.g. PG *aiwiska- adj. ‘shameful’ > OE ēwisc adj. ‘shameless, dishonoured’, MHG eisch adj. ‘horrible’; PG *aiwiskia- n. ‘shame, disgrace’ > Goth. aiwiski n. ‘id.’; PG *aiwiskō- f. ‘dishonour, disgrace, offence’ > OE ēwisc; and PG *aiwiskō(f)ajna- w.v. II ‘make ashamed, treat shamefully’ > Goth. aiwiskon w.v. II ‘id.’. Etymology uncertain, but possibly to be compared to the root PIE *h₂ejg₃wh- ‘shame’, cf. Skt. an-ehās- adj. ‘flawless’ and maybe Gr. aīσχος n. ‘shame’. We would expect the denominal verb PG *aiwiana- to continue a PIE form with radical zero grade, i.e. *h₂ejg₃wh-jē-, but the vocalism of the s-stem PIE *h₂ejg₃wh-os ~ *h₂ejg₃wh-es- attested in Indo-Iranian and Greek may have influenced on the verb for which reason it is virtually impossible to decide whether PG *aiwiana- and its derivatives continue a radical full or zero grade. Literature: Holthausen (1974: 14), Kroonen (2013: 16), Lehmann (1986: 21-22).

PG *aizō- f. ‘peace, clemency; respect, benevolence’. Represented in ON eir f. ‘peace, clemency, mercy’, OE ār f. ‘honour, dignity; kindness, mercy’, OFris. ēre f. ‘honour, tribute’, OS ēra f. ‘id.’, OHG ēera f. ‘id.’. Initial PG *#ai- also in e.g. the denominal verbs of PG *aiziana- w.v. I, *aizō(ka)na- w.v. II ‘forgive; honour’ > ON eira w.v. II ‘spare, forgive’, OE ārian w.v. II ‘respect’, OFris. aria w.v. II ‘id.’, OHG ēren w.v. I, ērōn w.v. II ‘honour, adore’ and PG *aistē(ka)na- w.v. III ‘respect’ > Goth. aistan w.v. III ‘id.’ (< PIE *h₂ej₃s-d(h₃)-eh₁-j(e-) ), i.e. literally ‘be in state of giving respect’. PG *aizō- is normally reconstructed as PIE *h₂ej₃s-eh₂- to the root PIE *h₂ej₃s- ‘respect’, cf. also the extra-Germanic comparanda of, e.g., Marruc. aīsos m. ‘god’ (dat.pl.), Umbr. esono- adj. ‘divine, sacred’ and maybe Gr. αἴ ομαι v. ‘respect’ (< PIE *h₂s-d(h₃)-e ⟨h₁- ⟩ ). However, in the light of Rasmussen’s (1989: 172) claim that the PIE *-o- appearing in the verbal nouns of the toga-type is always dropped when adjacent to, i.a., a laryngeal, PIE *h₂is-ó- might be considered an option, as well. Literature: Bjorvand & Lindeman (2000: 1080-1081), Boutkan & Siebinga (2005: 91), Holthausen (1974: 7), IEW (2005: 16), Kluge/Seebold (2002: 228), Kroonen (2013: 17), Orel (2003: 11), Philippa et al. (2003: 661-662), Sehrt (1966: 105), De Vries (1962: 97).

PG *idi- f. ‘work’; see (9).

34 PG *īdala- adj. ‘void, idle, futile’; see (72).

3.1.3. Possibility of PIE *#h₁-s-

35 PG *airō- f. ‘oar’. Represented in ON ār, ōr f. ‘id.’, OE ār f. ‘id.’. Etymology uncertain, but probably comparable to Hitt. ḫēšša- c. ‘drawbar’, Skt. līḥā- f. ‘pole of a wagon, shaft’, Gr. ὀνάξ m. ‘tiller, handle of rudder, helm’, Lith. įena f. ‘rod’ etc., i.e. PG *airō- < PIE *h₁oH₁-r-eh₂- or *h₁iH₁-r-eh₂-. If Kroonen (2013: 13) is right in his speculations that the Germanic and Baltic forms might reflect an old heteroclite PIE *h₁oH₁-r-eh₂- ~ *h₁eH₁-n-, the former option, i.e. PG *airō- < PIE *h₁oH₁-r-eh₂-, seems most likely at first hand. However, as the example of PIE *ud₁-r-ó- > Skt. uḍrā- m. ‘a kind of aquatic animal’ derived from the heteroclitic noun PIE *yód₁- > *yéd₁- ‘water’ demonstrates, radical zero grade is far from unexpected in this derivational type. Literature: Holthausen (1974: 7), IEW (2005: 298), Kroonen (2013: 13), Orel (2003: 9), De Vries (1962: 12).

36 PG *aþa- m. ‘oath’. See (6).

3.1.4. Possibility of PIE *#H₁- (i.e. undeterminable timbre of the laryngeal)

37 PG *aibra- adj. ‘harsh’. Represented in OE ēfor adj. ‘vehement, dire, hateful’, OHG eipar, eibar, eivar adj. ‘harsh, rough’. Etymology unknown. If etymologically connected to PG *ībra- m. ‘zeal, eagerness’ > MHG īfer m. ‘id.’ and further to Lith. aibrūmas m. ‘saliva, liquid from the mouth’ (< ‘bitter, acrid taste’?) as assumed by a range of scholars but rejected by probably equally many, cf. e.g. Heidermanns (1993: 96), a reconstruction with initial PIE *h₁ seems preferable; thus probably PIE *h₁eH₁b₁-ró- > PG *ībra- and PIE *h₁oH₁b₁-ró- > PG *aibra- and Lith. aibr-. Whether either of the Proto-Germanic formations could continue PIE *h₁H₁b₁-ró-, is difficult to decide; suffice it here to mention that radical zero grade is expected with adjectives in PIE *-ro-. Albeit preferable, an etymological analysis dictating initial PIE *h₁ is not the only option. Given the limited prevalence of the root and derivative in question, virtually any initial laryngeal is possible. That observation especially holds if PG *ībra- is not to be compared to PG *aibra-, if PG *ībra- is to be analysed as a vrddhi formation, i.e. < PIE *H₁eH₁b₁-ró-, or if the root also contains a final laryngeal, i.e. PG *ībra- < PIE *H₁H₁b₁-ro- and PG *aibra- < PIE *H₁oH₁b₁-ró- vel sim. Literature: Heidermanns (1993: 95-96), Holthausen (1974: 2), IEW (2005: 11), Kluge/Seebold (2002: 231), Kroonen (2013: 7-8), Lloyd et al. (1998: 969-970).

38 PG *īsa- m./n. ‘ice’; see (12).
3.1.5. Possibility of PIE *#h₁μ-

39 PG *auda- m./n. ‘riches, wealth; fate, destiny’; see (66).

40 PG *auja- n.? ‘luck, fortune, wealth’. Represented in Goth. awi-(liuþ) n. ‘thanks’, RN auja n. ‘good fortune, wellness’, ON ey sb. ‘luck, fortune’. Initial PG *#ai- also in e.g. PG *awidi- *awida-, *au¯fa-, *auþu- (?) adj. ‘easy, comfortable’ > OE ēðe adj. ‘id.’, OS oðhi adj. ‘id.’, OHG oði adj. ‘id.’ and PG *awidō, *auþa adv. ‘easily’ > ON auð-, OE ēðe adv. ‘id.’, OS oðō adv. ‘id.’, OHG oðo adv. ‘id.’. Extra-Germanic comparanda are, e.g., Hitt. iya(u)watta v. ‘recover’, Skt. ávati v. ‘helps, supports’, āvīt v. ‘has helped, has supported’ (aor.),avitár- m. ‘patron, benefactor’, Lat. iuvō v. ‘support, help’, OIr. (con)-oí v. ‘protect’; all derived from a root PIE *h₁euH- ‘help, support’. According to LIV (2001: 243-244), Hitt. iya(u)watta secures the timbre of the initial laryngeal as PIE *h₁; the existence of the root final laryngeal is secured by the Indic set-forms. In Germanic, a PIE *h₁uH-jo- would probably result in PG †ūja- rather than PG *auja- which, consequently, must represent PIE *h₁ou-jo- < *h₁ouH-jo-. Based on the inclusion of Lat. aveō v. ‘am well; am eager’, avidus adj. ‘desirous’ etc. as descendants of this root, an alternative etymology, cf. e.g. Kroonen (2013: 43), suggests that the root be reconstructed PIE *h₂eu- ‘enjoy, consume’ in which case, however, Hitt. iya(u)watta can no longer belong here and PG *auja- can reflect PIE *h₂ou-jo- as well as PIE *h₂eu-jo-. Given the validity of the assumption that PIE *h₂u- > PG *au-, a zero grade, i.e. PIE *h₂u-jo-, could work as well. 38


41 PG *aula(n)- m. ‘fool, (tall) lanky fellow’. Represented in ON auli m. ‘id.’, NNorw. aul, aule m. ‘angelica silvestris’. Extra-Germanic cognates are Hitt. auli- c. ‘tube-shaped organ in the neck, throat(?), windpipe(?)’, Gr. αὐλός m. ‘hollow tube, pipe, flute’, Lith. aūlas m. ‘leg of a boot; pipe of a mill’, aulīšs sb. ‘beehive’, avilīšs sb. ‘id.’, OPr. aulis sb. ‘shinbone’ etc.; all derived from the root PIE *h₂eu- with an *-l-suffix. If, as commonly assumed, ON (hvann-)jóli m. ‘stalk (of angelica silvestris)’ and NNorw. jól sb. ‘angelica silvestris’

38 De Vries (1962: 18) and Lehmann (1986: 52) wish to separate PG *auja- from PG *awidi-, *awida-, *au¯fa-, *auþa-, *auþu- adj. ‘easy, comfortable’ etc. only to connect the latter with PG *auþia- adj. ‘remote, empty, desert, desolate, waste; destroyed’ etc.
should be affiliated here, too, they must either be seen as the result of late, secondary ablaut or be reconstructed as PG *eula(n)- < *eula(n)- < PIE *h₂ēulo(n)-, i.e. a vṛddhi derivative to PIE *h₂eul-ː; for the non-colouring of long vowels by laryngeal cf. Eichner (1973: 72). A probably more obvious way of solving the problem of connecting PG *eula(n)- to a root with an initial PIE *h₂ is offered by Kimball (1994: 13-14). She states that “[t]hese words cannot be derived from *h₂eul- and *h₂eul-, since the laryngeal is not preserved in Hittite.” If, then, we could reconstruct a root PIE *h₁eu-, the o-grade could be represented in PIE *h₁ou-lo/- etc. > Hitt. auli-, Lith. aulys, PG *aula(n)- etc. and the full grade in PIE *h₁eu-lo > PG *eula(n)-.³⁹ The vocalisms of Gr. αὐλός m. ‘hollow tube, pipe, flute’ would then be interpreted as analogically influenced by the semantically similar form Gr. καυλός m. ‘shaft, stalk (of a plant), quill (of a feather)’, cf. also Güntert (1914: 154). A zero grade formation related to PG *aula(n)- and *eula(n)- might be attested within Germanic, as well, viz. in PG *(haima-)ul(j)ōn- f. ‘sorrel’ > Icel. heimula, heimylja f. ‘id.’, Norw. høymole, heimole f. ‘id.’, Swi. heimele f. ‘Good-King-Henry, chenopodium bonus-henricus’, which must consequently reflect a PIE *h₂ul-ː or probably rather *h₁u-l-jeh₂; cf. further Kolb (1957: 76) and with him Kroonen (2013: 42). Literature: IEW (2005: 88-89), Kroonen (2013: 42), Orel (2003: 29), De Vries (1962: 292).

⁴² PG *auma- adj. ‘poor, miserable’; see (67).

⁴³ PG *eudra-, *ūdra- n. ‘udder’. Represented in ON júgr, júr n. ‘id.’, OE ūder n. ‘id.’, OFris. ūder, iāder n. ‘id.’, OHG ūtar, ǣtaro, ātir m. ‘id.’ etc. Extra-Germanic cognates are Skt. ādhar - ādhan- n. ‘id.’ (< PIE *h₁uHdʰ-r/-r/-), Gr. ὀῦθαρ ~ ὀῦθατ- n. ‘id.’ (< PIE *h₁ouHdʰ-r/-r/-), Lat. āber n. ‘breast; udder’ (< PIE *h₁e/ouHdʰ-r/-); the zero grade of the root PIE *h₁eHdʰ- may also be what underlies Lith. ėdrūoti v. ‘get milk; be pregnant’, Ru. ūdit’ v. ‘ripen (of grain); swell up with liquid’. The even inner-Germanic alternation between PG *eud- and *ūd- heavily points in the direction of PG *eud- continuing the full grade PIE *h₁eHdʰ- and PG *ūd- continuing the zero grade PIE *h₁uHdʰ-.


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³⁹ Admittedly, n-stems displaying radical ablaut are far from common in Germanic. It is therefore quite feasible that the ablaut displayed in the Germanic examples is secondary.
PG *eup adv. ‘up, upwards’. Represented in Goth. iup adv. ‘id.’. According to Johansson (1891: 230-231), another phonotactically relevant derivative of this root may be PG *eufnǐ∅- f. ‘crowd’ > Goth. iumjo f. ‘id.’ which is normally regarded as having no certain etymology. PG *eup adv. ‘up, upwards’ is to be regarded as an ablaut variant with full grade (< PIE *h₁eup-) of PG *upp adv. ‘id.’. The alternation of PG *eup and *upp can only point at PIE *h₁ being the initial laryngeal, i.e. PIE *h₁eup- ~ PIE *h₁up-. The gemination of PG *upp – and originally maybe of PG *eup, too, if PG *eup- < *eupp- – may be caused by the PG suffix *-n- associated with the system of directional adverbs; in this case by the allative PG *-n(a) < PIE *-n*-n-o, cf. Kroonen (2010: 371-373; 2013: 120-121). Alternatively, however, the allatives PG *eup and *upp may both be regarded as secondarily backformed from the locative PG *uppai adv. ‘up, upon, above’, cf. Kroonen (2010: 374-376; 2013: 121), even if it remains unclear to the present author what could have been the basis of the analogical backformation of PG *eup with full grade vocalism from PG *uppai with zero grade vocalism. Literature: IEW (2005: 1107), Kroonen (2010: 367-379), Kroonen (2013: 120-121), Lehmann (1986: 208-209).

PG *eusizan- adj.comp. ‘better’. Represented in Goth. iusiza adj.comp. ‘id.’. Initial PG *#eu- also in e.g. PG *eusilo- f. ‘ease’ > Goth. iusila f. ‘id.’. Often connected to PIE *h₁(∅)es-u- adj. ‘good’, cf. Skt. su- ‘well-’, Gr. υβ- ‘id.’. In the case of PG *eusizan-, a Schwebe-ablauting full grade PIE *h₁éys-is-(on-) is probably the most straightforward reconstruction since radical, stressed full grade is expected in comparatives, cf. e.g Brugmann & Delbrück (1906: 392-393, 547-562, esp. 557-558), as also revealed by the general application of the unvoiced Verner variant in comparatives, cf. e.g. Goth. juhiza adj.comp. ‘younger’ < PG *junhizan- to Goth. juggs adj. ‘young’ < PG *junga-. Still, the PIE form of which PG *junhizan- is a descendant may have been stressed on the radical vowel, but the root appears in the zero grade (PIE *h₂iū-h₃nH-k-is-(on-)) rather than in the full grade. Consequently, it does not seem impossible for PG *eusizan- to also continue a zero grade, i.e. PIE *h₂ús-is-(on-) rather than *h₁éys-is-(on-). Literature: Heidermanns (1993: 179), IEW (2005: 1174-1175), Lehmann (1986: 209), NIL (2008: 239-243).

PG *uba prep. ‘under; above’. Represented in Goth. uf prep. ‘under’, ON of prep. ‘over; about’, OHG ob(a) prep. ‘above, on, over’. Initial PG *#u- also in e.g. PG *upp adv. ‘up, upwards’ > ON upp adv. ‘id.’, OE up adv. ‘id.’, OFris. up, op adv. ‘id.’, OS up adv. ‘id.’,
OHG ūf adv. ‘id.’;⁴⁰ PG *ubanē adv. ‘from above’ > ON ofan adv. ‘id.’; OE ufan, ufane adv. ‘id.’; OFris. ova, uva adv. ‘id.’; OS ofan, ofana adv. ‘id.’; OHG obana adv. ‘id.’; PG *ufuman- adj.comp. ‘highest, upmost’ > Goth. aūhuma adj.comp. ‘higher’; PG *uber-adv./prep. ‘over’ > Goth. ufar adv./prep. ‘id.’; ON yfir adv./prep. ‘id.’; OE ofer adv./prep. ‘id.’; OFris. over, ūr adv./prep. ‘id.’; OS obar adv./prep. ‘id.’; OHG ubar, ubari, ubir, ubirí adv./prep. ‘id.’; PG *uftō adv. ‘often’ > Goth. ufta adv. ‘id.’; ON oft adv. ‘id.’; OE oft adv. ‘id.’; OS oft adv. ‘id.’; OHG ofto adv. ‘id.’; and PG *ubez-(wō-) f. ‘sth. tall; eaves’ > Goth. ubizwa f. ‘portico’, ON ups, ux f. ‘eaves’, OE æfes, yfes f. ‘eaves, brim, brink’, OFris. õse f. ‘gutters’, OHG obasa, obisa f. ‘portico, entrance hall, gallery’; further maybe also PG *ubila- adj. ‘evil, bad’ > Goth. ubils adj. ‘id.’; OE yvel adj. ‘id.’; OFris. evel adj. ‘id.’; OS ubil adj. ‘id.’; OHG ubil adj. ‘id.’; PG *ūba- adj. ‘ill-natured, malicious’ > RN ubar, ON áfr adj. ‘unfriendly; bear, wolf’. Heidermanns (1993: 638) and Kroonen (2013: 557) regard the semantic connection between ‘under; above’ and ‘evil, bad’ as one travelling via ‘immense’ > ‘exceeding the boundaries, overstepping a boundary’, i.e. ‘too much; wrong, bad’. Personally, though, I believe that the semantic starting point is not ‘above’ but rather ‘under’ in which case the semantic link between PG *uba and *ubila- resembles that between G nieder adv. ‘down’ and niedrig adj. ‘mean’. Reconstructed as PIE *h₁upó prep. ‘under’, cf. also Skt. úpa prep. ‘towards, together, with, under’, Av. upā prep. ‘towards, with, on, in’, Gr. ὑπό, ὑπό prep. ‘under, by’, Lat. s-ub prep. ‘under’, OIr. fo prep. ‘under’ etc. and further maybe connected to Hitt. upzi v. ‘rises (of the sun)’. The reconstruction with PIE *h₁ is secured partly by Goth. iup adv. ‘up, upwards’, partly by Hitt. upzi without initial Hitt. h. If, however, Watkins (1969: 30) and Ringe (1988: 433) are right in their assumption that PG *ubila- adj. ‘evil, bad’ is rather related to Hitt. huwappa- adj. ‘evil, ill, bad’, which is derived from huwapp- ~ hupp- v. ‘be hostile towards, do evil against; throw (down), hurl’, a reconstruction with PIE *h₂ would seem more appropriate. What Watkins fails to acknowledge, though, is that the original meaning of Hitt. huwappa- was not ‘be hostile towards, do evil against’ but rather ‘overthrow’, cf. Kloekhorst (2008: 369-371), for which reason Kroonen (2013: 557) chooses to reject the proposed connection between Hitt. huwappa- and PG *ubila- and for which reason the reconstruction PG *uba, *ubila- etc. < PIE *h₁upó (with initial PIE *h₁) can he upheld. If we want to maintain the

⁴⁰ For the immediate etymology of this directional adverb see (44).

47 PG *unhta- adj. ‘accustomed’. Represented in Goth. (bi-)uhts adj. ‘id.’. Initial PG *#u- also in e.g. PG *unhtia- n. ‘custom’ > Goth. (bi-)uhti n. ‘id.’. Extra-Germanic cognates are found in, e.g., OIr. (do-)ucaí v. ‘understand’, Lith. jünkti v. ‘get used to’ (< PIE *h₁u-n-k-) and OPr. jaukint v. ‘exercise’ (< PIE *h₁eyk-gh₁-); all ultimately derived from a root PIE *h₁eyk- ‘get used to, learn’, cf. further Skt. -ucyati v. ‘is used to, takes pleasure in’ and Arm. owsaw v. ‘learned’. PG *unhta- would thus need to be reconstructed PIE *h₁u-n-k-to-. Literature: Kroonen (2013: 559), Lehmann (1986: 73-74), LIV (2001: 244-245).


3.1.6. Possibility of PIE *#h₂u-

49 PG *au- prefix ‘away’. Represented in ON au-. Often reconstructed as PIE *au- (< PIE *h₂ey?-?) adv. ‘away’ also found in Skt. áva adv. ‘down, (down) from’, Av. ava- ‘id.’, Gr. aŭ-, Lat. au- ‘away (from)’, Lith. au- ‘id.’, OCS u- ‘id.’ etc., cf. De Vries (1962: 17-18).

50 PG *auda- m./n. ‘riches, wealth; fate, destiny’; see (66).
51 PG *auja- n.? ‘luck, fortune, wealth’; see (40).
52 PG *aukana- s.v. ‘increase, augment’. Represented in Goth. aukan s.v. ‘id.’, ON auka s.v. ‘id.’, Initial PG *#{au- also in e.g. PG *aukan- m. ‘increase, addition’ > ON auki m. ‘id.’, OE ēaca m. ‘id.’, OFris. āka m. ‘id.’; PG *aukō(ja)na- w.v. II ‘increase, augment’ > OE ēacian w.v. II ‘id.’, OHG ouchōn w.v. II ‘id.’; and PG *aukiana- w.v. I ‘id.’ > OSw. őkia w.v. I ‘id.’, OS őkian w.v. I ‘id.’. Being a strong verb, PG *aukana- is expected to continue a PIE thematic present with radical full grade, viz. PIE *h₂éug-e-, which is actually attested also outside Germanic in Lith. áugti v. ‘grow’; further cf. Tokh. auk- v. ‘grow, increase’, Skt. ójas- n. ‘strength’ (< PIE *h₂eyg-es-), ugrá- adj. ‘strong, powerful, mighty’ (< PIE *h₂ug-ró-), Lat. augeō v. ‘grow, increase’ (< PIE *h₂ug-éje-) and the extended root PIE *h₂eyg-s- > *h₂yek-s- ‘id.’ in, e.g., Skt. ukṣāti v. ‘grows’, Gr. οὔζω v. ‘grow’, ἀὔζω v. ‘increase’ and PG *wahs(j)ana- s.v. ‘grow’ (> Goth. wahṣjan s.v. ‘id.’, ON vaxa, vexa s.v. ‘id.’, OE weahsan s.v. ‘id.’, OFris. waxa, wexa s.v. ‘id.’, OS wahsan s.v. ‘id.’, OHG wahsan s.v. ‘id.’) with further derivatives. One circumstance deserves mentioning, though, viz. that PG *aukana- is not only a strong verb but a strong, reduplicated verb. Consequently, we should consider how to properly reconstruct the participle PG *aukena- ~ *aukana- ptc. ‘increased, augmented’: as PIE *h₂eyg-enó- ~ *h₂eyg-onó- or as *h₂ug-enó- ~ *h₂ug-onó-. Literature: Bjorvand &


54 PG *aula(n) m. ‘fool, (tall) lanky fellow’; see (41).

55 PG *auma- adj. ‘poor, miserable’; see (67).

56 PG *aura- m. ‘moisture, water’. Represented in ON aurr m. ‘id.’, OE ēar m. ‘wave, sea’. Probably identical to PG *aura- m. ‘(moist) earth, soil’ > Goth. aural(hjons)* f. ‘monuments, tombs’, ON aurr m. ‘clay, moist earth, soil’, eyrr f. ‘shoal, tongue of land made up of sand and stone’ (< PG *aurið- f.), OE ēar, ēor m. ‘earth (of a grave)’. Outside Germanic, PG *aura- is undoubtedly related to Gr. ἀυρος adj. ‘without water’ (< PIE *h₂euro- or maybe PIE *h₁-h₂uro-, cf. Peters (1980: 55)), ostron n. ‘urine’, Lat. ūrina f. ‘id.’. Any speculation whether Gr. -peror and PG *aura- continue a radical zero grade form PIE *h₂u-ro- or a morphologically unexpected full grade PIE *h₂euro-ro- is rendered superfluous by the existence of PG *ūra- n. ‘soil(?)’ (> ON úr n. ‘moist, drizzling rain; metal slag, soil containing iron’), of the probably related PG *ūru- m. ‘aurochs’ (> ON úrr m. ‘id.’, yrī f. ‘female aurochs’ (PG *ūrið-), OE úr m. ‘a kind of ox, bison’, OHG ūro m.

PG *ausana- s.v. ‘scoop, pour’. Represented in ON ausa s.v. ‘sprinkle, pour’, MHG ḍsen s.v. ‘scoop out, make empty’, ḍsen w.v. II ‘id.’ (< PG *ausiana-). Initial PG *#au- also in e.g. PG *ausōn- f. ‘bowl; ladle’ > ON ausa f. ‘ladle’, OE ease f. ‘bowl’. Possible extra-Germanic cognates are Pal. hussinta v. ‘pour’ (3.pl.mid.), Gr. (ἡς)-άω v. ‘pour out’ and Lat. hauriō v. ‘draw, scoop up’; both from PIE *h₂s-έ- the latter with analogical full grade and secondary h, though, cf. LIV (2001: 275). That the infinitive stem PG *ausana- continues PIE *h₂s-ε- is of only little debate, but with PG *ausana- being a strong, reduplicated verb, we could wonder, though, how to properly reconstruct the participle PG *azena- ~ *auza- etc. ‘scooped, poured’: as PIE *h₂sεnό- ~ *h₂sεnό- or as *h₂sεnό- ~ *h₂sεnό- (in both cases with generalisation of the unvoiced Verner’s variant). We could also consider if PG *ausiana-, being as it is a continuation of a PIE je-present, could not be formally identical to Gr. (ἡς)-άω and Lat. hauriō < PIE *h₂s-έ- even though a late, secondary formation of a PG *ausiana- on the basis of PG *ausana- is indeed both possible and highly likely. Literature: Bjorvand & Lindeman (2000: 1090-1091), Holthausen (1974: 86), IEW (2005: 90), Kroonen (2013: 43), LIV (2001: 275-276), Orel (2003: 30), Philippa et al. (2005: 472), Seebold (1970: 85), De Vries (1962: 21).

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\(^{41}\) Gąsiorowski (2012: 120) suggests an alternative etymology for PG *űru- m. ‘aurochs’, viz. that it continues PIE *h₂s-ṛ- with a regular development of PG *-Vṛr- > *-ṛ-. The aurochs would then have to be regarded as ‘the red one’, but as Gąsiorowski mentions himself, the European male aurochs was black unlike the Skt. usrā- m. ‘bull’ and usrā- f. ‘(red) cow’ which are assumed by Gąsiorowski to be cognates of PG *űru-.
PG *austera- adv. ‘east’. Represented in ON austr, aust- adv. ‘id.’, OE ēast adv. ‘id.’, OFris. āster adv. ‘id.’, OS ōstar, āst adv. ‘id.’, OHG ōstar, āst adv. ‘id.’ etc. Initial PG *au- also in e.g. PG *aടrʊn- f. ‘Easter’ > OE ēastre f. ‘spring goddess’ (pl. ‘Easter’), OHG ōstara f. ‘Easter’. In related forms from other Indo-European branches, both PIE *aus- (< *h₂eus-) and PIE *us- (< PIE *h₂us-) are found, cf. e.g. Skt. uṣas- f. ‘dawn’, uṣrā- f. ‘id.’, Av. uṣah- f. ‘id.’, Gr. Ἕως, ἠώς, ἁώς, ἀῶς f. ‘id.’, Lat. aurōra f. ‘id.’, auster m. ‘south wind; south’, Lith. aušrā f. ‘dawn’, OCS za ustra ‘tò πρωί’ etc. Though criticised by Forssman (1982-1983: 291), the notion of reconstructing a morphologically expected radical full grade PIE *h₂eus-os ~ *h₂eus-es- for Gr. Ἕως etc. and Lat. aurōra, cf. e.g. Peters (1980: 31-32) and Schrijver (1991: 74-75), and an aberrant weak zero grade form PIE *h₂us-s- in order to explain Skt. uṣas- and Av. uṣah- seems to have gained general support in the scholarly community. As for the formation with the contrastive or comparative suffix PIE *-tero-, it is impossible to tell if a radical full or zero grade is morphologically expected since such formations can be formed secondarily to virtually any base as exemplarily illustrated by the reconstructions of the remaining cardinal points in Germanic: PG *sunphere- adv. ‘south’ < PIE *sh₂un-tero- (zero grade, cf. also Kroonen (2013: 492)), PG *nurpera- adv. ‘north’ < PIE *h₃unj-tero- (zero grade, cf. also Kroonen (2013: 393)), but PG *westeria- adv. ‘west’ (no certain etymology; maybe < PIE *yek*sp-tero-(?), cf. Kroonen (2013: 582-583), but undoubtedly radical full grade); cf. further Brugmann & Delbrück (1906: 323-330, esp. 327) for the formation and nature of the suffix PIE *-tero-. PG *aṭrʊn-, however, has probably been formed with the suffix PIE *-ro- whose base normally appears in the zero grade, i.e. PIE *h₂us-ró- (or, in this case, PIE *h₂us-reh₂- + *-n), but in the light of the morphologically nearly identical forms Lith. aušrā and OCS za ustra, the radical full or o-grade PIE *h₂e/ous-ró- (or PIE *h₂e/ous-reh₂- + *-n) resembles a more probable alternative unless a development of PIE *h₂u- > PBS *au- can (also) be assumed. Literature: Bjorvand & Lindeman (2000: 1091-1092), Boutkan & Siebinga (2005: 28), Holthausen (1974: 87), IEW (2005: 86-87), Kluge/Seebold (2002: 672), Kroonen (2013: 43), NIL (2008: 357-367), Orel (2003: 30), Philippa et al. (2007: 468), Sehrt (1966: 427), De Vries (1962: 21).

PG *aupia- adj. ‘remote, empty, desert, desolate, waste; destroyed’. Represented in Goth. *aup(e)js adj. ‘barren, desolate’, ON auðr adj. ‘desert, empty’, OE adj. ēōdē ‘desert, forlorn’, OHG ōdī adj. ‘desert, empty’. Initial PG *au- also in e.g. PG *aupiō- f. ‘desert’

PG *auzan- (~ *ausan-?) n. ‘ear’. Represented in Goth. ausu n. ‘id.’, ON eyra n. ‘id.’, OE ðare n. ‘id.’, OFris. ðre n. ‘id.’, OS ra n. ‘id.’, OHG ra n. ‘id.’. Normally reconstructed as PIE *h2eųs-(s)-on- ~ *h2eųs-(s)-όν-, i.e. a bodypart-denoting n-stem derivative of the s-stem PIE *h2eųs-es- ‘ear’, cf. also Nussbaum (1986: 200-207, 210-212) though slightly differently Lühr (2000: 291) and Schaffner (2001: 581). Cognates in the other Indo-European branches are, e.g., Av. uś- n. ‘ear’ (only du. uṣi), Gr. oḏi, ὥς, aúdo n. ‘id.’ (gen.sg. oṷάσiος), Lat. auris f. ‘id.’, OIr. áu, ó n. ‘id.’, OCS i xu o. ‘id.’ etc. The o-vocalism of Gr. oṷς etc., if not developed directly from PIE *h2eųs-es-, could easily be explained as caused by influence from semantically related Gr. ὀψ f. ‘eye’ < PIE *okʰw- < *h3ekʰw-, though cf. also Szemerényi (1967: 65) and Peters (1980: 58-60), who alternatively reconstruct the root as PIE *h3aṷs- ~ *h3us- with Gr. οὐσ- as the regular continuant of PIE *h3us-. Whether PG *auzan- continues PIE *h2eųs- or *h2us- is difficult to decide: If PG *auzan- is derived from the PIE s-stem, i.e. PIE *h2eųs-s-on-, only radical full grade is expected with the sole exception of the dual form PIE *h2us-s-ihi1 found in, e.g., Av. uṣi ‘(pair of) ears’, cf. e.g. Schindler (1975b: 259-260, 264). If, though less likely, it is derived as an n-stem directly from the root, quantitative ablaut would be expected in which case we would not be able to tell if the full grade form or the zero grade form had been generalised or if the ablaut is, effectively, still present, i.e. if PG *ausan- < PIE *h2eųs-on- (or as a neuter rather PIE *h2eųs-ú) and PG *auzan- < PIE *h3us-én-. Literature: Bjorvand & Lindeman (2000: 1087-1089), Boutkan & Siebinga (2005: 26), Casaretto (2004: 228), Holthausen (1974: 85), IEW (2005: 785), Kluge/Seebold (2002: 664), Kroonen (2013: 44), Lehmann (1986: 51), NIL (2008: 339-343), Orel (2003: 30-31), Philippa et al. (2007: 465), Schaffner (2001: 575-584), Sehrt (1966: 426), De Vries (1962: 107-108).

PG *uba prep. ‘under; above’; see (46).
PG *ufna-* m. ‘oven’. Represented in Goth. aūhns m. ‘id.’, ON ofn m. ‘id.’, OSw. ughn, oghn, ofn, omn m. ‘id.’, ODa. ofn m. ‘id.’, OE ofen m. ‘id.’, OFris. oven m. ‘id.’, OHG ofan, ovan m. ‘id.’ The velar consonants of Gothic and (Old) Swedish can be accounted for as regularly developed from PG *f, cf. e.g. Hyllested (2012: 11) and Kroonen (2013: 557). Consequently, the frequently cited comparanda of Skt. ukhā- m., ukhā- f. ‘cooking pot’, and Lat. aulla, aula, auxilla f. ‘id.’ must be rejected so as for the true comparanda only to include forms such as Hitt. huppar n. ‘bowl’42, Gr. ἱπνός, ἱπνός m. ‘oven’, Myc. i-po-no- m. ‘dutch oven, i.e. earthenware bowl used for baking on a hearth’ and OPr. wumpnis sb. ‘baking oven’, all of which are derived from a root PIE *h₂eyp-/*h₂up- with PG *ufna- thus representing PIE *h₂üp-no-. As pointed out by Kroonen (2013: 558), among others, even these cognates generally vary too much and display too many irregularities for them to have been regularly developed from one PIE root, for which reason the assumption is cleverly presented that the word for ‘oven, kiln’ etc. is a Wanderwort that has entered the Western Indo-European languages individually. If the cognates from Sanskrit and Latin, i.e. the forms with *-f(h) rather than with *-p-, are included, as well, the likelihood of a Wanderwort origin of the word for ‘oven, kiln, pot’ strongly increases. Literature: Bjorvand & Lindeman (2000: 703-705), Holthausen (1974: 240), IEW (2005: 88), Kluge/Seebold (2002: 663), Kroonen (2013: 557-558), Lehmann (2986: 49), Orel (2003: 433), De Vries (1962: 417).

PG *uhsan- m. ‘ox’. Represented in Goth. aūhsa m. ‘id.’, ON oxi, uxi (backformed from pl. yxn) m. ‘id.’, OE oxa m. ‘id.’, OFris. oxa m. ‘id.’ (pl. ixen), OS ohso m. ‘id.’, OHG ohso m. ‘id.’. Extra-Germanic cognates seem to be Skt. uksān- ‘young bull’, Av. uxsan- ‘id.’, Toch. A ops, B okso m. ‘bull, horned animal’, MIr. oss m. ‘stag, cow’, MW ych m. ‘id.’ (pl. ychen). No clear etymology. Normally regarded as derived from PIE *ukʷ-s-on- to the root PIE *µegʷ- ‘wet, moisten’, thus seen as ‘impregnator’; cf. further Skt. uksāti v. ‘spatters, sprinkles, moistens’, Gr. ὑγρός adj. ‘wet’ and Lat. uxor f. ‘wife’ (i.e. ‘the impregnated one’). Semantically, this etymology is not completely satisfactory: Zimmer (1981: 84-91) points out that PIE *ukʷ(on)- can hardly be ‘a sprayer’ or ‘an impregnator’ since the Indo-Iranian cognates refer to a calf that has not yet procreated and the

42 Hitt. happena- ‘baking kiln, fire-pit’ is rather to be compared with Gr. ὑγρός ‘baked’ < PIE *h₂-p-tó-, cf. Kloekhorst (2008: 298).
Tocharian, Germanic and Celtic ones to a castrated bull, i.e. an ox. He further suggests that PIE *ukson- be regarded as a Wanderwort. Kiehnle (1979: 118-119, 208-209) followed by e.g. Pronk (2008: 1) alternatively suggests that at least the Indo-Iranian cognates reflect PIE *h₂uks-on- to the root PIE *h₂ugets- ‘increase, grow’, but for semantic reasons again, the remaining cognates would thus need to stand isolated.


3.1.7. Possibility of PIE *#h₂u-

64 PG *auzan- (~ *ausan-?) n. ‘ear’; see (60).
65 PG *uba prep. ‘under; above’; see (46).

3.1.8. Possibility of PIE *#Hu- (i.e. undeterminable timbre of the laryngeal)

66 PG *auda- m./n. ‘riches, wealth; fate, destiny’. Represented in Goth. auda(-hafts) adj. ‘fortunate’, Burg. aud(s) m. ‘wealth’, ON auðr m. ‘fate, destiny; wealth’, OE ēad n. ‘possession, riches, property; happiness’, OS ōd n. ‘id’, MHG (klein-)ōt n. ‘jewel, gem’. Initial PG *#au- also in e.g. PG *au̯da- adj. ‘rich’ > OE ēad ‘id.’; PG *audaga-,*audiga- adj. ‘rich; blessed’ > Goth. audags adj. ‘blessed’, ON auðigr adj. ‘rich’, OE ēadig adj. ‘happy, rich’, OS ōdag adj. ‘id.’, OHG ōtag adj. ‘id.’; and PG *audena- ~ audana- adj. ‘granted’ > ON auðinn adj. ‘granted, ordained, given’, OE ēaden adj. ‘id.’, OS ōdan adj. ‘id.’. Often compared with Lat. īber adj. ‘rich, fertile’ < PIE *Houḍ-ro- (?). Kroonen (2013: 41) further adds Lith. įusti v. ‘weave’ and reconstructs PG *au̯da- as PIE *Huy-ḍʰh₁-o- whose initial laryngeal must be identified as PIE *h₂ if PIE *Huy- ‘weave’, cf. Skt. īvur v. ‘wove, have wove’ (perf.3.pl.) (< PIE *Hu-Hu%), is to be compared with the extended root PIE *h₂yebʰ- ‘weave’ found in, e.g., Gr. ἅφαίνω v. ‘weave’ (< PIE *h₂ubʰ-η-ιε-), cf. Hyllested & Cohen (2007: 13). We might consider, though, if the semantic connection between PG *au̯da- m./n. ‘riches, wealth; fate, destiny’ on the one hand and PG *auja- m. ‘luck, fortune, wealth’ and PG *awidi- *awida-, *auipa-, *auþu- (?) adj. ‘easy, comfortable’ on the other is not close enough for them to be of common pedigree, i.e. for both to derive from either of the roots PIE *h₁eH- ‘help, support’ or PIE *h₂eH- ‘enjoy’, and if reconstructed PIE *h₁eH-tro- > *h₁eHbʰ-ro-, even Lat. īber adj. ‘rich,
fertile’ can easily be included; for the development PIE *-h₁₂-tro- > *dʰ-ro- > Pre-Lat. *dʰ-ro- cf. Olsen (1988: 7-12), and for the formation of derivatives in PIE *-tlo-/*-tro- either from agent nouns or, in sporadic cases, directly from heteroclitics, cf. Olsen (2010: 67).

The radical ablaut grades of the forms discussed here are difficult to establish due to the great amount of uncertainty regarding their pedigree. However, if PG *audena- ~ *audana- adj. ‘granted’ is to be interpreted as a participle of an otherwise unattested strong, reduplicated verb, cf. e.g. Orel (2003: 28) and Kroonen (2013: 41), we could wonder how to properly reconstruct it: as PIE *Hey(H)-t/dʰ-enő- (?) or as *Hu(H)-t/dʰ-enő- (?) ~ *Hu(H)-t/dʰ-onó- (?) or as PG *auma- adj. ‘poor, miserable’. Represented in ON aumr adj. ‘id.’, OSw. ömber adj. ‘id’ etc. Initial PG *#au- also in e.g. PG *aumōn- f. ‘misery’ > ON auma f. ‘id.’ and PG *aumkō(j)ana- w.v. II ‘commiserate, feel pity for’ > ON aumka w.v. II ‘id.’. Except for the neat comparandum of Toch. B aume n. ‘misery’, cf. Adams (1999: 132), this lexeme has no satisfactory etymology. Attempts have been made, though, to connect this adjective with Gr. ἐνίας adj. ‘empty’ (remodelled from *dnaia < PIE *h₁uh₂-ni-., cf. Peters (1980: 51-52)) to the root PIE *h₁υeh₂- ‘empty’, cf. also Skt. Ṽnā- adj. ‘lacking, missing’, Lat. vānus adj. ‘hollow, devoid’, PG *wana- adj. ‘lacking, missing’ (> Goth. wans adj. ‘id.’, ON vanr adj. ‘id.’, OE wan adj. ‘id.’, OS wan adj. ‘id.’, OHG wān adj. ‘id.’). Others prefer a connection of PG *auma- adj. ‘poor, miserable’ to PIE *au- (h₂eu-?) adv. ‘away’ found in PG *auphia- adj. ‘remote, empty, desert, desolate, waste; destroyed’. A third etymological proposal originally offered by Noreen (1923: 169) and most recently reintroduced by Kroonen (2013: 35) regards PG *auma- adj. ‘poor, miserable’ as dissimilated from PG *arma- adj. ‘id.’ > Goth. arms adj. ‘id.’, ON armr adj. ‘id.’, OE earm adj. ‘id.’, OFris. erm adj. ‘id.’, OS arm adj. ‘id.’, OHG aram adj. ‘id.’ etc., cf. the classical etymology suggested by Johansson (1891: 223-224) that PG *arma- < *arbma- < PIE *orbʰ-mo- < *orbʰ-no- ‘orphan’ < PIE *h₃orbʰ - also seen in Gr. ὀφαντός adj. ‘orphan; bereaved, bereft’ and Lat.
orbus adj. ‘bereaved, bereft’.


PG *uhjō(ja)na- w.v. II ‘sound’. Represented in Goth. aúhjon w.v. II ‘id.’, Icel. ýja w.v. II ‘remind, drop a hint’. Possibly related to Latv. aūka f. ‘gale’, Scr. uka f. ‘shouting’; both from PIE *Houk-eht₂-. Alternatively PG *uhjō(ja)na- may be analysed as a zero grade derivative of the verb PG *wahana- s.v. ‘remark’ to the root PIE *yeükʷ- ‘speak’ or simply as onomatopoetic. Literature: Kroonen (2013: 558), Lehmann (1986: 48-49).


PG *ūt adv. ‘out’. Represented in Goth. ūt adv. ‘id.’, OE ūt adv. ‘id.’, OFris. ūt adv. ‘id.’, OS ūt adv. ‘id.’, OHG ūz adv. ‘id.’. A variant of PG *ūt appears as PG *uz ( < *ut-s + C(+voice)) adv./prep. ‘id.’ > Goth. us, ur- adv./prep. ‘id.’, ON ór, or-, ør- ‘id.’, OE or- ‘id.’, OFris. or-, ur- ‘id.’, os. ur-, or- ‘id.’, OHG ur-, ar-, ir- ‘id.’. Extra-Germanic comparanda include Skt. úd-, ūt- ‘up, upwards’, Gr. ὑ-, Lat. ās-(que) ‘continuously, incessantly’, Lith. už- ‘up, upwards’, OCS vź-, vš- ‘id.’ etc.; all from PIE *(H)ud adv./prep. ‘up, upwards; out, outwards’. Lengthening of the vowel in PG *ūt is probably caused by the

Meillet (1898: 280) has proposed an alternative etymology for PG *arma- adj. ‘poor, miserable’, viz. that PG *arma- < PIE *(h₁)oɾ-mo- adj. ‘weak’ also seen in Arm. ołorm sb. ‘mercy’, adj. ‘piteous’ (dissimilated from *oɾ-orm) and in Hitt. erman-, arman- n. ‘sickness, illness’.

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3.2. Material with PG *#i- and *#u- reflecting the zero grade of PIE *#/VC- and *#/uVC-
In the following Proto-Germanic lexemes, PG *#i- and *#u- should be regarded as the zero grade of PIE *#VC- and *#uVC-.

71 PG *irha- m. ‘he-goat’. From PIE *irk-o-, i.e. a zero grade formation of PIE *iork-‘kind of deer’ vel sim. seen in Gr.(Hes.) ἱόπκες f.(?) ‘kind of deer, roe, gazelle’.
72 PG īdala- adj. ‘void, idle, futile’. From PIE *ih₁-tlo-(?) to the root seen in W ial f. ‘brightening’ and Ru. jālyj, jālovýj adj. ‘infertile, unused (of land)’. An alternative etymology suggests PIE *h₂IHeʰ- to PIE *h₂e̞dʰ- ‘burn’ which is, though, not known to have had any word-internal laryngeal.
73 PG *īliana-, w.v. I ‘rush, hurry’; see (11).
74 PG *-ud ‘year’ (only in PG *fer-ud ‘last year’). From PIE *ut-, i.e. formed to the zero grade of the root PIE *yel- ‘year’.
75 PG *uhjōna-, *uhjōjana- w.v. II ‘sound’; see (103).
76 PG *uhsan- m. ‘ox’; see (63).
77 PG *unpi- ~ unphi- f. ‘wave’; see (69).
78 PG *urzan- m. ‘black grouse, capercaillie’. Probably from PIE *urs-on- ‘male animal’, i.e. a zero grade of PIE *yers-on- seen in, e.g., Skt. rsabhā- adj. ‘manly, powerful’, m. ‘bull, chief’ (← *varsabh- by reanalysis) and Gr. ἄρσην adj. ‘male’; cf. further Pronk (2008).
79 PG *utra- m. ‘otter’. From PIE *ud-ro-, i.e. formed to the zero grade of the root PIE *yed- ‘water’.

3.3. Material with PG *#i- reflecting PIE *e_/NC
In the following Proto-Germanic lexemes, PG *#i- should be regarded as a variant of PG *#e- in front of a nasal followed by another consonant.
80 PG *in prep. ‘in’, *instar- n. ‘intestinal fat’, *inpera- n. ‘entrails’ etc. (< PIE *h₁en- ‘in’).
81 PG *inkan- m. ‘pain, torment’. From PIE *h₁eng- ‘torture, press’ vel sim.
PG *inkwa(n)- m. ‘lump’. From PIE *engʷ-*, i.e. a secondary full grade of the root PIE *negʷ-* ‘lump, wound’ vel sim. also found in, e.g., Lat. inguen m. ‘swelling on the groin; groin’.

3.4. Material with PG *#u- reflecting the supporting vowel of PG *#uR- < PIE *#R-
In the following Proto-Germanic lexemes, PG *#u- should be regarded as the supporting vowel of PG *#uR- < PIE *#(H)R-, i.e. PG *#ul- < PIE *#(H)ul-, PG *#um- < PIE *#(H)um-, *#un- < PIE *#(H)un- and PG *#ur- < PIE *#(H)r-.

PG *um(bi) adv./prefix/prep. ‘around, about’. From PIE *h₂ŋbʰi, i.e. a fossilised instr.sg. to the root noun PIE *h₂ent- ‘face, front’.

PG *un- prefix ‘un-’. From PIE *u-.

PG *unda prep. ‘until’. From PIE *h₂ŋt-ḍó.

PG *unda, *under- etc. adv./prefix ‘under’. From PIE *ŋdʰ-o-, *ŋdʰ-ero-.

PG *under- prep. ‘among’. From PIE *h₁ŋ-tero- derived from PIE *h₁en(i) ‘in’.

PG *unhtwoð(n)- f. ‘dawn, last part of the night’. From PIE *gʰ₃t-, i.e. a zero grade formation of the root PIE *nekʷᵗ- ‘night’.

PG *unka(n)- m. ‘snake’. From PIE *h₂gʷh₁, i.e. a zero grade formation of the root PIE *nekʷᵗ- ‘night’.

PG *unnana- s.v. ‘love, grant’. From PIE *h₂ŋ₃-n-h₂-, i.e. a zero grade of the root PIE *h₂ŋ₃neh₂-(?) ‘enjoy’.

PG *unpi- ~ unþið- f. ‘wave’; see (69).

PG *unis- pron. ‘us, our’. From PIE *ŋs-, i.e. the oblique stem of the pers.pron. 1.pl.

PG *unsti- f. ‘storm’. From PIE *h₂g₁h₁-sti-, i.e. a zero grade of the root PIE *h₂enh₁- ‘breathe’.

PG *urba- n. ‘inheritance; piece of cattle’. From PIE *h₃bʰ-o-, i.e. a uniquely Germanic zero grade formation next to normal PIE *h₃orbʰ-o- which is also attested in Germanic as PG *arba- m./n. ‘working animal, worker(?), servant’.

3.5. Material from other sources (analogue reshapings, onomatopoeias, lexical borrowings)
The following Proto-Germanic lexemes contain an initial PG *#i-, *#ai-, *#i-, *#u-, *#au- or *#eu- that may stem from other sources than those already mentioned, e.g. analogical reshaping, folk etymology, onomatopoeia or lexical borrowing.

PG *ainia- m. ‘juniper’; see (3).
96 PG *ai̯p̣i̱n- f. ‘mother’, *ai̯p̣ōn- f. ‘id.’. From PIE/Pre-PG *ait-, i.e. probably a Lallwort, cf. e.g. Basque aita ‘father’ of with a similar structure, albeit obviously of different pedigree.

97 PG *ai̯p̣ma- m. ‘son-in-law’; see (6).

98 PG *au̯gan- n. ‘eye’. The radical vowel has undoubtedly been influenced analogically from PG *ausan- n. ‘ear’; the expected development would rather be PIE *h₂ekʷ-on- > PG *agʷan- > *agan- (or *awan-?), cf. Seebold (1967: 126-127).

99 PG *au̯jō- (or perhaps rather PG *awjo-) f. ‘wetland, island’. Developed regularly from PG *agʷjō- < PIE *h₂ekʷ-jeh₂- in itself a derivative of PIE *h₂ekʷ-eh₂- ‘water’.

100 PG *idis-/edis- f. ‘lady’; see (26).

101 PG *i̯iz- pron. ‘you, your (pl.)’. The oblique stem of the pers.pron. 2.pl.; probably analogically reshaped from PG *uz- (< PIE *s-) on the basis of also analogically reshaped nom. PG *jīz ‘you (pl.)’.

102 PG *i̯aruna- ~ *i̯arnana- n. ‘iron’. Lexical borrowing from PCelt. *i̯arno-.

103 PG *u̯hjō̯(ja)na- w.v. II ‘sound’; see (68).

104 PG *u̯hsan- m. ‘ox’; see (63).

105 PG *u̯wō̯n-, *u̯wwilō̯n- etc. f. ‘owl’. Onomatopoetic; also PG *ūfa(n)- m. ‘id.’.

4. Ordering of data and preliminary conclusion

The following tables 2-9 will summarise the assumed prehistory of every Proto-Germanic lexeme discussed in section 3.1, i.e. the estimated likelihood of each of them to continue a PIE form with *#Hi- or *#Hu-.

Table 2: PG lexemes possibly reflecting PIE *#h₁i-

<table>
<thead>
<tr>
<th>Likely/possible</th>
<th>Uncertain</th>
<th>Unlikely/impossible</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4) PG *aisō̯(ja)na- w.v. II ‘rush’</td>
<td>(1) PG *aï̯mə- m. ‘smoke, steam; smell’</td>
<td>(2) PG *aï̯ma- num. ‘one, alone, any’</td>
</tr>
<tr>
<td>(8) PG *i- pron. ‘he, she, it’</td>
<td>(4) PG *aiskrō̯(ja)na- w.v. II ‘roar, rage’</td>
<td>(2) PG *ainahan- adj. ‘single’</td>
</tr>
<tr>
<td>(9) PG *idi- f. ‘work’</td>
<td>(4) PG *tiskrō̯(ja)na- w.v. II ‘be furious from excitement or pain’</td>
<td>(2) PG *ainaka- adj. ‘only, special’</td>
</tr>
<tr>
<td>(9) PG *ida- n. ‘constant moving,</td>
<td>(6) PG *ai̯p̣ma- m. ‘son-in-law’</td>
<td>(2) PG *ainakjō̯n- f. ‘widow’</td>
</tr>
<tr>
<td>Likely/possible</td>
<td>Uncertain</td>
<td>Unlikely/impossible</td>
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<td>-----------------</td>
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</tr>
<tr>
<td>(14) PG *aid- m.</td>
<td>(14) PG *aidma- m.</td>
<td>(15) PG *aigona- pp.v.</td>
</tr>
<tr>
<td>‘pyre’</td>
<td>‘smoke, steam; smell’</td>
<td>‘own, possess, have’</td>
</tr>
<tr>
<td>(14) PG *aidiana- w.v. I</td>
<td>(14) PG *aima-uzjö- f.</td>
<td>(18) PG *aikan- s.v.</td>
</tr>
<tr>
<td>‘burn (tr.), harden with fire’</td>
<td>‘embers’</td>
<td>‘make one’s own; assign, allot’</td>
</tr>
<tr>
<td>(14) PG *aidla- n (?)</td>
<td>(14) PG *aidskrötjana- w.v. II</td>
<td>(19) PG *aiñana- w.v. I</td>
</tr>
<tr>
<td>‘flame’</td>
<td>‘roar, rage’</td>
<td>‘annoy, pester’</td>
</tr>
<tr>
<td>(14) PG *aidlana- w.v. I</td>
<td>(18) PG *aißrå(t)anja- w.v. II</td>
<td>(20) PG *aißweran- m.</td>
</tr>
<tr>
<td>‘burn (tr.), ignite’</td>
<td>‘beg, pray’</td>
<td>‘squirrel’</td>
</tr>
<tr>
<td>(14) PG *aidlida- m.</td>
<td>(22) PG *aira-, *airu- m.</td>
<td>(21) PG *aína- num.</td>
</tr>
<tr>
<td>‘fire’</td>
<td>‘messenger’</td>
<td>‘one, alone, any’</td>
</tr>
<tr>
<td>(14) PG *aiddsön- f.</td>
<td>(22) PG *airinötjana- w.v. II</td>
<td>(21) PG *aínahan- adj.</td>
</tr>
<tr>
<td>‘forge, fireplace’</td>
<td>‘be a messenger, negotiate’</td>
<td>‘single’</td>
</tr>
<tr>
<td>(15) PG *aißena- ~ *aißana- adj.</td>
<td>(23) PG *aißahla- n.</td>
<td>(21) PG *aínska- adj.</td>
</tr>
<tr>
<td>‘own’</td>
<td>‘heart’</td>
<td>‘only, special’</td>
</tr>
<tr>
<td>(15) PG *aißhti- f.</td>
<td>(26) PG *aípma- m.</td>
<td>(21) PG *aínskjon- f.</td>
</tr>
<tr>
<td>‘belongings, possessions, property’</td>
<td>‘son-in-law’</td>
<td>‘widow’</td>
</tr>
<tr>
<td>(15) PG *aigôn- f.</td>
<td>‘ownership, property’</td>
<td></td>
</tr>
<tr>
<td>(15) PG *aigni- f.</td>
<td>‘land property’</td>
<td></td>
</tr>
<tr>
<td>(15) PG *aigena-,*aiginh-? n.</td>
<td>‘shoot, barb’</td>
<td></td>
</tr>
<tr>
<td>(16) PG *aigla- m.</td>
<td>‘shoot’</td>
<td></td>
</tr>
<tr>
<td>(17) PG *aik- f.</td>
<td>‘oak’</td>
<td></td>
</tr>
<tr>
<td>(17) PG *aikina- adj.</td>
<td>‘oaken’</td>
<td></td>
</tr>
<tr>
<td>(19) PG *aikala- adj.</td>
<td>‘excited (by fear)’</td>
<td></td>
</tr>
<tr>
<td>(19) PG *aikena- ~ *aikana- adj./ptc.</td>
<td>‘wild, furious’</td>
<td></td>
</tr>
<tr>
<td>(20) PG *ikwernan- m.</td>
<td>‘squirrel’</td>
<td></td>
</tr>
<tr>
<td>(23) PG *aiskô- f.</td>
<td>‘demand, investigation’</td>
<td></td>
</tr>
<tr>
<td>(23) PG *aiskiôn- f.</td>
<td>‘question, search, investigation’</td>
<td></td>
</tr>
<tr>
<td>(23) PG *aiskojana- w.v. II</td>
<td>‘demand, inquire, ask; investigate, examine’</td>
<td></td>
</tr>
<tr>
<td>(23) PG *aiskungô- f.</td>
<td>‘demand’</td>
<td></td>
</tr>
<tr>
<td>(24) PG *aita- m.</td>
<td>‘abscess, ulcer’</td>
<td></td>
</tr>
<tr>
<td>(24) PG *aistôn- f.</td>
<td>‘testicle’</td>
<td></td>
</tr>
<tr>
<td>(24) PG *aitila- adj.</td>
<td>‘swollen’</td>
<td></td>
</tr>
<tr>
<td>(24) PG *aitra- n.</td>
<td>‘poison, pus’</td>
<td></td>
</tr>
<tr>
<td>(29) PG *aiwiana- w.v. I</td>
<td>‘despise’</td>
<td></td>
</tr>
<tr>
<td>(29) PG *aiwiska- adj.</td>
<td>‘shameful’</td>
<td></td>
</tr>
</tbody>
</table>
| (29) PG *aiwiskia- n. | ‘shame,
<table>
<thead>
<tr>
<th>Table 4: PG lexemes possibly reflecting PIE *#h3i-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likely/possible</td>
</tr>
<tr>
<td>(35) PG *airō- f. ‘oar’</td>
</tr>
<tr>
<td>(36) PG *aïþa-m. ‘oath’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 5: PG lexemes possibly reflecting PIE *#Hi-, i.e. undeterminable timbre of the laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likely/possible</td>
</tr>
<tr>
<td>(38) PG *tsa- m./n. ‘ice’</td>
</tr>
<tr>
<td>(37) PG *aïbra- adj. ‘harsh’</td>
</tr>
<tr>
<td>(37) PG *îbra- m. ‘zeal, eagerness’</td>
</tr>
<tr>
<td>(38) PG *tsa- m./n. ‘ice’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 6: PG lexemes possibly reflecting PIE *#h1u-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likely/possible</td>
</tr>
<tr>
<td>(41) PG *(haima-jul(j)jôn- f. ‘sorrel’</td>
</tr>
<tr>
<td>(43) PG *ûdra- n. ‘udder’</td>
</tr>
<tr>
<td>(45) PG *eusîzan- adj.comp. ‘better’</td>
</tr>
<tr>
<td>(45) PG *eusîþô- f. ‘ease’</td>
</tr>
</tbody>
</table>
Table 7: PG lexemes possibly reflecting PIE *h₂u-

<table>
<thead>
<tr>
<th>Likely/possible</th>
<th>Uncertain</th>
<th>Unlikely/impossible</th>
</tr>
</thead>
<tbody>
<tr>
<td>(51) PG *auja- n.? ‘luck, fortune, wealth’</td>
<td>(49) PG *au- prefix ‘away’</td>
<td>(52) PG *aukana- s.v. ‘increase, augment’</td>
</tr>
<tr>
<td>(51) PG *awidi- *awida-, *auha-, *auhu- (?) adj. ‘easy, comfortable’</td>
<td>(50) PG *auda- m./n. ‘riches, wealth; fate, destiny’</td>
<td>(52) PG *aukan- m. ‘increase, addition’</td>
</tr>
<tr>
<td>(51) PG *awidō-, *auhō adv. ‘easily’</td>
<td>(50) PG *auda- adj. ‘rich’</td>
<td>(52) PG *aukō(j)ama- w.v. II ‘increase, augment’</td>
</tr>
<tr>
<td>(52) PG *aukena- ~ *aukana- ptc. ‘increased, augmented’</td>
<td>(50) PG *audaga-, *audiga- adj. ‘rich’</td>
<td>(54) PG *aula(n)- m. ‘fool, (tall) lanky fellow’</td>
</tr>
</tbody>
</table>
Table 8: PG lexemes possibly reflecting PIE *#h₃u-

<table>
<thead>
<tr>
<th>Likely/possible</th>
<th>Uncertain</th>
<th>Unlikely/impossible</th>
</tr>
</thead>
<tbody>
<tr>
<td>(65) PG *uba prep. ‘under; above’</td>
<td>(64) PG *auzan- (~ *ausan-?) n. ‘ear’</td>
<td></td>
</tr>
</tbody>
</table>

(53) PG *auk(e) adv./conj. ‘also; and’

(56) PG *ūra- n. ‘soil(?)’

(58) PG *austrōn- f. ‘Easter’

(59) PG *auḏia- adj. ‘remote, empty, desert, desolate, waste; destroyed’

(60) PG *auzan- n. ‘ear’

(54) PG *eula(n)- m. ‘(stalk of) angelica silvestris’

(54) PG *(hallama)-ul(j)ōn- f. ‘sorrel’

(55) PG *auma- adj. ‘poor, miserable’

(56) PG *aura- m. ‘moisture, water’

(56) PG *aura- m. ‘(moist) earth, soil’

(57) PG *ausana- s.v. ‘scoop, pour’

(57) PG *ausōn- f. ‘bowl; ladle’

(60) PG *ausan-? n. ‘ear’

(61) PG *upa prep. ‘under; above’

(61) PG *ubanē adv. ‘from above’

(61) PG *ubanan- adj.comp. ‘highest, upmost’

(61) PG *uber- adv./prep. ‘over’

(61) PG *uφtō adv. ‘often’

(61) PG *ubez-(wō-) f. ‘sth. tall; eaves’

(61) PG *ubila- adj. ‘evil, bad’

(61) PG *uiba- adj. ‘ill-natured, malicious’

(62) PG *ufna- m. ‘oven’

(63) PG *uhsan- m. ‘ox’
**Table 9: PG lexemes possibly reflecting PIE *#Hu-, i.e. undeterminable timbre of the laryngeal**

<table>
<thead>
<tr>
<th>Likely/possible</th>
<th>Uncertain</th>
<th>Unlikely/impossible</th>
</tr>
</thead>
<tbody>
<tr>
<td>(66) PG *audena- ~ audana- adj.</td>
<td>(66) PG *auda- m./n. 'riches, wealth; fate, destiny'</td>
<td>(67) PG *auma- adj. 'poor, miserable'</td>
</tr>
<tr>
<td>(66) PG *auda- adj. 'rich'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(66) PG *audaga-, *audiga- adj.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(68) PG *uhjō(j)a-na- w.v. II 'sound'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(69) PG *unpī-, unpjō- f. 'wave'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(70) PG *ūt adv. 'out'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(70) PG *uz adv./prep. 'out'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on tables 2-9 above, it seems safe to assume that:

1. PIE *#h₁i- > PG *#i-. Both PG *#ai- and PG *#i- are listed in the table, but with PG *#i- as one of the two options, PG *#i- must be the expected outcome since it, unlike PG *#ai-, cannot be explained in any other way than by PIE #h₁i-;
2. a development of PIE *#h₂i- > PG *#ai- cannot be secured, but it can be stated with a great amount of certainty that no examples of PIE *#h₂i- > PG *#i- can be found;
3. PIE *#h₁i- may be represented in only one example in Germanic for which reason the statistical evidence does not allow for a statement as to the Germanic outcome;
4. PIE *#H₁- comes with too vague examples;
5. PIE *#h₁u- > PG *#u-. Both PG *#eu- and PG *#u- are listed in the table, but with PG *#u- as one of the two options, PG *#u- must be the expected outcome since it, unlike PG *#eu-, cannot be explained in any other way than by PIE #h₁u-;
6. a development of PIE *#h₂u- > PG *#au- cannot be secured, but it can be stated with a great amount of certainty that no examples of PIE *#h₂u- > PG *#u- can be found;
7. PIE *#h₁u- may be represented in only one example in Germanic for which reason the statistical evidence does not allow for a statement as to the Germanic outcome;
8. PIE *#H₁u- comes with too vague examples; and
9. PIE *#H₁H- > PG *#i- and PIE *#H₁uH- > PG *#ū- regardless of the timbre of the laryngeals as exemplified by (13) PG *īwa- m. ‘yew’, (20) PG *īkwernan- m. ‘squirrel’,
(38) PG *īsa- m./n. ‘ice’ and (43) PG *ūdra- n. ‘udder’, (56) PG *ūra- n. ‘soil(?), (56) PG *ūru- m. ‘aurochs’, respectively.

It might be worth attaching a comment or two on the proposed development of PIE *#h₂i- > PG *#ai- and of PG *#h₂u- > PG *#au-. As I stated above, it is true that this development cannot be established with absolute certainty. Various analogical and other processes may simply have blurred the picture considerably. However, I personally find it remarkable that, out of 33 possible or likely examples of PIE *#h₂i-, 32 contain PG *#ai-, the remaining one containing PG *#i- < PIE *h₂iH-. Not a single example contains PG *#i-. Correspondingly, 12 out of the 14 examples for which PIE *#h₂u- has been judged possible or likely contain PG *#au-, the remaining two containing PG *#ū- < PIE *h₂uH-. Again, we find no examples with a short monophthong, i.e. with PG *#u-. Needless to say, many of the examples may contain regular or analogically arisen full or o-grade, but I would be utterly surprised and find it statistically significant if not even a single of these examples would have descended from PIE *#h₂i- or *#h₂u- by means of regular sound change.

If we can thus conclude that the suggested sound changes of PIE *#h₂i- > PG *#ai- and PIE *#h₂u- > PG *#au- are indeed quite likely, a new question almost automatically arises, viz. why a parallel development cannot be posited for PIE *#h₁ and *#h₃. Honestly, we cannot estimate with certainty the development of PIE *#h₁ and PIE *#h₃. Consequently, we cannot exclude the possibility of these sequences also yielding forms with initial diphthongs in Germanic. As for PIE *h₁, however, there is no doubt that the Germanic outcome was an initial monophthong, i.e. PG *#i- and *#u-. In my opinion, we may find the reason for this discrepancy between the developments of at least PIE *h₁ and *h₂ in the circumstance already mentioned (cf. section 3) that the forms with initial diphthong might have arisen in a specific sandhi environment, viz. the sequence PIE *-C#Hi/uC- > *-CHi/uC- where a supporting vowel could be developed in order to ease the pronunciation, i.e. PIE *-C#Hi/uC-. From that point of view, it is easy to understand why a PIE *h₂ with a pronunciation probably on the lines of [x], cf. e.g. Rasmussen (1983 [1999]: 77), would be considerably more prone to generating a supporting vowel, i.e. [CXi/u] vel sim., than PIE *h₁ with a pronunciation probably on the lines of [h] which would probably just be eliminated when adjacent to a consonant, i.e. [C(h)i/u] vel sim.
5. Excursus: PG *ubila*-‘evil, bad’ and *ufna-‘oven’ – why not †aubila- and †aufna-?

One of the preliminary conclusions presented in the previous paragraph, viz. that PIE *#h2u- did not develop into PG *#u- and cannot be said not to have developed into PG *#au-, relies on the premises that PG *ubila- adj. ‘evil, bad’, including maybe also PG *uba prep. ‘under; above’, and PG *ufna- m. ‘oven’ have not developed from a form with a word-initial *h2. Thus, I have suggested that PG *ubila- adj. ‘evil, bad’ and PG *uba prep. ‘under; above’ < PIE *h2up- and that PG *ufna- m. ‘oven’ is, in fact, a Wanderwort together with its pseudo-cognates of Hitt. huppar n. ‘bowl’, Gr. ἰπνός, ἰπνός m. ‘oven’, Myc. i-po-no- m. ‘dutch oven, i.e. earthenware bowl used for baking on a hearth’ and OPr. wumpnis sb. ‘baking oven’.

Not every scholar would accept these premises. PG *ubila- adj. ‘evil, bad’, including maybe PG *uba prep. ‘under; above’, is often seen reconstructed as PIE *h2up- and thus compared to Hitt. huwappa- adj. ‘evil, ill, bad’ derived from huvwpp- ~ hupp- v. ‘be hostile towards, do evil against; throw (down), hurl’. Similarly, PG *ufna- m. ‘oven’ is often reconstructed with initial PIE *h2, i.e. PIE *h2up-no-, in the light of its obvious, semantic connection with Hitt. huppar n. ‘bowl’, and the formal difficulties concerning the comparison of these two forms to Gr. ἰπνός, ἰπνός, Myc. i-po-no- and OPr. wumpnis are, if not disregarded, then at least heavily downplayed. If, as indicated by the list of forms in table 7 above, PG *#au is actually the regular result of PIE *#h2u-, we would have expected PIE *h2upiló- to yield PG †aubila adj. ‘evil, bad’ rather than *ubila- and PIE *h2úpno- to yield PG †aufna- m. ‘oven’ rather than *ufna-. Consequently, the only possible solution for scholars not accepting the etymologies proposed by me would seem to be that PIE *#h2u- > PG *#au-, i.e. what has been presented here as the communis opinio, in spite of all the fitting candidates for PIE *#h2u- > PG *#au-.

The regular sound change presented by Hyllested & Cohen (2007: 13) for Greek, viz. that there are “[…] no examples in Greek of u-diphthong + a labial reflecting either PIE full-grade *HewP- or PIE zero grade *HuP- in initial position (where P = any labial, i.e. any of /p, b, bʰ, m/),” may actually serve as inspiration for a compromise between those advocating for PG *ubila- < PIE *h2upiló- and PG *ufna- < PIE *h2úpno- and those believing in the possibility of a default development of PIE *#h2u- > PG *#au-.

Even a mere browse through the entire Proto-Germanic corpus will reveal that Proto-Germanic offers conditions comparable to those of Greek. In Proto-Germanic, it turns out, we find almost no examples of a u-diphthong followed by a labial consonant in initial position. In fact, no more than three counterexamples can be found.
PG *auma- adj. ‘poor, miserable’ with derivatives. Only attested in North Germanic and probably to be regarded as a spontaneous dissimilation from PG *arma- adj. ‘id.’ < *arbma-. See (67) for additional details.

PG *eufniōn- f. ‘crowd’. Probably derived from PG *eup adv. ‘up, upwards’, cf. below; alternatively seen as etymologically enigmatic. See (44) for additional details.


Whereas PG *auma- adj. ‘poor, miserable’ can thus easily be dismissed, PG *eup adv. ‘up, upwards’ constitutes a considerably stronger counterexample. Despite Kroonen’s (2010: 374-376; 2013: 121) attempt to explain it as secondary from PG *uppai adv. ‘up, upon, above’, I fail to see any phonological, morphological or other motivation for the introduction of full grade vocalism and therefore must suspect that the full grade represented in PG *eup is original and archaic, cf. also Kroonen’s (2010: 375-376) own reference to the partly similar situation found in directional adverbs in Hittite where locative adverbs with radical zero grade, e.g. Hitt. parā adv. ‘forwards’ (< PIE *pr-ō), are occasionally matched by allatives with radical full grade, e.g. Hitt. pēran adv. ‘before’ (< PIE *pēr-m). With PG *eup thus being, in fact, an example of a u-diphthong followed by a labial consonant, we cannot apply Hyllested & Cohen’s (2007: 13) constraint for Greek on Proto-Germanic without any amendments unless PG *eup is really secondary. For Proto-Germanic, the constraint would have to be limited to the u-diphthong with PG *a as its vocalic element, i.e. PG *au > PG *u / #_C[+lab] represented by PG /fl, p, b, m/. Consequently, it seems safe to assume that a PG *aubila adj. ‘evil, bad’ (< PIE *h₂upilō-) and a PG *aufna- m. ‘oven’ (< PIE *h₂úpno-) would automatically yield PG *ubila- and PG *ufna-, respectively, i.e. the Proto-Germanic reconstructed forms underlying the forms actually attested in the ancient Germanic languages.

As a closing matter of curiosity, it also deserves mentioning that this or a similar constraint was reintroduced in English in connection with the Great Vowel Shift as exemplified by, e.g., OE rūm n. ‘room’ > ME roum > Eng. room /rʌm/, not Eng. †/rawm/ as otherwise expected, cf. Hyllested & Cohen (2007: 13-14).
6. Conclusion

In this article, I have demonstrated that, contrary to common belief, we can neither state with certainty nor suggest tentatively that PIE *#Hu- > PG *#u-. Neither can we state nor suggest that PIE *#Hi- > PG *#i-. Based on the analyses presented in this article, it would rather seem that:

1. PIE *#h₁i- > PG *#i-. Both PG *#ai- and PG *#i- are listed in the table, but with PG *#i- as one of the two options, PG *#i- must be the expected outcome since it, unlike PG *#ai-, cannot be explained in any other way than by PIE #h₁i-;

2. a development of PIE *#h₂i- > PG *#ai- cannot be secured, but it can be stated with a great amount of certainty that no examples of PIE *#h₂i- > PG *#i- can be found;

3. PIE *#h₃i- may be represented in only one example in Germanic for which reason the statistical evidence does not allow for a statement as to the Germanic outcome;

4. PIE *#H₃i- comes with too vague examples;

5. PIE *#h₁u- > PG *#u-. Both PG *#eu- and PG *#u- are listed in the table, but with PG *#u- as one of the two options, PG *#u- must be the expected outcome since it, unlike PG *#eu-, cannot be explained in any other way than by PIE #h₁u-;

6. a development of PIE *#h₂u- > PG *#au- cannot be secured, but it can be stated with a great amount of certainty that no examples of PIE *#h₂u- > PG *#u- can be found;

7. PIE *#h₃u- may be represented in only one example in Germanic for which reason the statistical evidence does not allow for a statement as to the Germanic outcome;

8. PIE *#Hu- comes with too vague examples; and

9. PIE *#H₁uH- > PG *#i- and PIE *#HuH- > PG *#u- regardless of the timbre of the laryngeals.

Basing my estimation on statistical evidence, I would even dare stating that it would be statistically significant if not even a single of the many examples of PG *#ai- and *#au- deemed possible or likely of continuing PIE *#h₁i- and *#h₂u- does not also continue PIE *#h₂i- and *#h₂u- in reality.

Furthermore, if we may draw partial parallels to Germanic from the developments seen in Greek and English, viz. that any example of PG *#au- followed by a labial consonant would result in PG *#u-, it would seem that the conclusions presented above hold good regardless of the pedigree of PG *ubila- adj. ‘evil, bad’, *uba prep. ‘under; above’ and *ufna- m. ‘oven’.
Article no. 4: The outcome of PIE *-ēi(C)# and *-ēu(C)# in Germanic

By suggesting an interconnected series of soundlaws for the outcome of Proto-Indo-European falling e-vowel diphthongs in final syllables in Proto-Germanic and in the individual Germanic languages, viz. PIE *-ēi(C)# > PG *-ai(C)#, PIE *-ēi(C)# > PG *-ei(C)#, PIE *-euy(C)# > PG *-au(C)#, and PIE *-euy(C)# > PG *-eu(C)#, this article renders superfluous the old, prevalent assumption of competing o-grade allomorphs in some of the oblique cases of the PIE i- and u-stems. Consequently, the i-stem gen.sg. is reconstructed only as PIE *-eis (not as †-ois in addition), the u-stem gen.sg. only as *-eis (not as †-ois), the u-stem loc.sg. only as *-ēu (not as †-ōy), the u-stem voc.sg. only as *-eu (not as †-ōy), etc.

1. The importance of the Germanic “Auslautgesetze”

To many scholars of Indo-European linguistics, the question of the Germanic “Auslautgesetze” constitutes a frustrating puzzle and an endless sequence of circular argumentation that may actually raise more questions than it answers. Meillet (1922: 79-80) stated these concerns quite succinctly in his Caractères généraux des langues germaniques: “Le traitement des finales est imparfaitment connu. Les exemples de chaque type de faits sont rares, et l’original indo-européen n’est pas toujours déterminable. On opère avec des formes grammaticales, suspectes par leur nature même d’avoir subi des actions analogiques.”

Even if the situation has indeed improved since Meillet’s days, many issues still lack tenable solutions; solutions that the scholarly community definitely ought to seek, for when carefully examining the different Proto-Germanic outcomes of Proto-Indo-European final syllables, i.e. the syllables containing the desinences, we soon come to realise that a correct and thorough understanding of the Germanic “Auslautgesetze” may actually contribute considerably to the solutions to long-lasting problems of PIE phonology and desinential morphology. One such case is the question of the development of word-final diphthongs where the scholarly community has, so far, posited a range of adversely and unmotivatedly competing PIE desinences.

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The present study offers a new explanation of the development of the PIE ē-vowel diphthongs in final syllables. The corresponding ā/ō-vowel diphthongs will play only a minor role. What is, in other words, the expected outcomes of PIE *-ēj(C)#, *-ēj(C)#, *-ēy(C)#, and *-ēu(C)#? When in final position, precisely these diphthongs play a pivotal role in our understanding of the desinential morphology of the PIE i- and u-stems in particular. In fact, they are found nowhere else in the PIE desinential system except for in the mainly Greek (and Baltic) βασιλέως- or ἵππευς-type and its seeming parallel type πάτρως (< *-ōys).

2. The Proto-Indo-European state of affairs

The oblique cases of the PIE i- and u-stems may be formed in one of two ways: either by the derivational suffix in the unaccented zero grade represented by the glide j or u (corresponding to the i or u of the stem) followed by the standard desinence in the accented full grade, e.g. i-stem gen.sg. *-i-élōs or u-stem dat.sg. *-u-ēj (open inflection), or by accented ‘full grade’ of the derivational suffix followed by unaccented zero grade of the desinence proper, e.g. i-stem gen.sg. *-ē/ōj-s or u-stem dat.sg. *-ē/ōy-ēj (closed inflection). Only the latter principle, which was also by far the one most frequently adopted in the formation of oblique cases of PIE i- and u-stems, is of relevance here.

The existence of these two types was known and recognised fairly early, cf. e.g. Wackernagel & Debrunner (1929: 138-144) who also very briefly mentions a third type represented, in Indic, only by Skt. sāhkāy- ‘friend, companion’. To my knowledge, however, serious attempts at an explanation of the existence of the two types were not provided until Szemerényi (1970: 160-165) suggested that the subsidiary type (with gen.sg. in *-i-os, *-u-os, or type I, in Szemerényi’s terms) would originally have contained only nouns whose underlying stem contained an open syllable, whereas stems in underlyingly closed syllables would originally have yielded the prevalent type (with gen.sg. in *-ej-sl-oj-s, *-oju-sl-eu-s, or type II, in Szemerényi’s terms). Stems of the structure CeC-i/u- would thus yield oblique cases of type I whereas stems of the structure CeCC-i/u- or CeC-Ci/u- would result in oblique cases of type II.

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45 It has been suggested that this type did not, in fact, contain an original diphthong, cf. e.g. Szemerényi (1957: 159-181), Schindler (1976: 351-352), Rasmussen (1989: 273-274) and Olsen (2008).

46 This distributional theory has the additional advantage of providing a rationale for the preference of type II to type I.

Most i- and u-stems are not primary but, in fact, secondary, e.g. ti- and tu-stems. Such secondary stems would
Table 1: Szemerényi’s (1970: 162) original, reconstructed desinences of type II:

<table>
<thead>
<tr>
<th></th>
<th>i-stems</th>
<th>u-stems</th>
</tr>
</thead>
<tbody>
<tr>
<td>nom.sg.</td>
<td>*-i-s</td>
<td>*-u-s</td>
</tr>
<tr>
<td>acc.sg.</td>
<td>*-i-m</td>
<td>*-u-m</td>
</tr>
<tr>
<td>gen.sg.</td>
<td>*-eij-s / *-oj-s</td>
<td>*-ou-s / *-eu-s</td>
</tr>
<tr>
<td>dat.sg.</td>
<td>*-eij</td>
<td>*-ou-oi / *-eu-eij</td>
</tr>
<tr>
<td>loc.sg.</td>
<td>*-ëi47</td>
<td>*-óu / *-ëu</td>
</tr>
<tr>
<td>voc.sg.</td>
<td>*-eij</td>
<td>*-ou</td>
</tr>
<tr>
<td>nom./voc.pl.</td>
<td>*-eij-es</td>
<td>*-ou-es / *-eu-es</td>
</tr>
</tbody>
</table>

If we were to believe the linguistic data represented in table 1, it would seem incontrovertible that, in a number of cases, the PIE speakers could choose between two competing desinences, e.g. i-stem gen.sg. *-eij-s vs. *-oj-s and u-stem nom./voc.pl. *-ou-es vs. *-eu-es. Needless to say, unregulated allomorphy – as well as free variation in general – is far from being an unknown typological phenomenon in the world of linguistics,48 but we should always try to provide realistic explanations for the variation, e.g. if any variant is more original. Szemerényi (1970: 163-165) actually did this. He proposed an original distribution with e-vowel pertaining to the oblique cases of the i-stems and o-vowel pertaining to the oblique cases of the u-stems. He further believed this *e and *o to have developed from earlier **i and **u, respectively, i.e. PIE **-iij- > *-eij- and **-uuy- > *-ouy-, and he regarded the i- and u-vowels as resulting from some kind of pre-PIE Sievers development where an

virtually automatically produce closed stem syllables seeing that the general, minimal root structure of PIE is CeC, cf. e.g. Benveniste (1935: 170).

47 Szemerényi (1970: 110) explains the long grade loc.sg. form PIE *-ëi as the result of earlier **-eij-i. The corresponding u-stem form PIE *-ëu and, secondarily according to Szemerényi, *-ëu would then have emerged as the result of proportional analogy to the i-stem desinence. The original u-stem loc.sg., i.e. the form not originating from analogical processes, might, then, be what underlies the Skt. by-form -avi < PIE *-euy-i, cf. e.g. Wackernagel & Debrunner (1929: 157) and Kuiper (1942: 214-215).

48 We need not go any further than to other parts of the PIE desinential system where, only to mention one example, free variation seems to have prevailed between *m and *b in the dat./abl.pl., instr.pl., and dat./instr./abl.du. of any PIE nominal paradigm but the thematic one (with instr.pl. in PIE *-ôis rather than †-o-mis/-o-b¹is), cf. e.g. Fortson (2004: 116). Later, of course, the former variant was generalised in Germanic and Balto-Slavic, the latter variant in the remaining branches.
i or a u would be inserted before a homorganic glide in order to facilitate the pronunciation of heavy consonant clusters. In this way, a straightforward basis for mutual analogical levelling between the morphologically parallel i- and u-stems has been created so as for u-stems to add the e-vowel forms (*-ey-) to the existing inventory of o-vowel forms (*-oy-) and vice versa for the i-stems. Elegant and ingenious as this explanation may seem, it fails to account for the precise nature of this otherwise unattested pre-PIE Sievers development as well as for the fact that e-vowel forms have infected the u-stem paradigm to a significantly higher extent than o-vowel forms have infected the i-stem paradigm. Thus, as can be seen from table 1, Szemerényi lists four secondary e-vowel forms in the u-stem paradigm (gen.sg. *-ey-s, dat.sg. *-ey-ej, loc.sg. *-ey, and nom./voc.pl. *-ey-es) but only one secondary o-vowel form in the i-stem paradigm (gen.sg. *-oi-s). In my view, this distribution can suggest hardly anything but a general preference for e-vowel forms to o-vowel forms.

Rasmussen (1996: 137-141) attempts to account for at least the first of the difficulties of Szemerényi’s model, viz. the precise nature of this otherwise unattested pre-PIE Sievers development. By positing that, underlyingly, the derivational suffixes of the i- and u-stems were not the ‘naked’ vowels *-i- and *-u- alone but rather the corresponding glides *-i- and *-u- preceded by the suffixal full grade e-vowel, i.e. *-ej- and *-ey-, Rasmussen renders the assumption of the said pre-PIE Sievers development superfluous. With application of a process where all unstressed vowels are deleted at a pre-PIE stage, the stem would then initially have appeared in the form of *CeC-i/-u- or *CeCC-i/-u- to which the true case forms should be added. However, Rasmussen argues that this pre-PIE stage would not allow stems ending in three or more consonants; consequently, a structure like *CeCC-i/-u- would not be allowed, and the underlying e-vowel of the derivational suffix would be retained, i.e. *CeCC-ej/-u- rather than the structurally inadequate †CeCC-i/-u-. When regularly shifting the accent one slot rightwards in the oblique cases of the two different types of i- and u-stems, i.e. *CeC-i/-u- with expected deletion of the suffixal vowel and *CeCC-ej/-u- with retention of the suffixal vowel in order to avoid the stem ending in three consonants, we would end up with e.g. gen.sg.-forms in *CeC-i/-u-é/os and *CeCC-ej/-u-s or *CeC-Céj/-u-s, respectively, from which the forms normally reconstructed for PIE are easily

49 Rasmussen (1996: 581) supports his argument by calling the readers’ attention to the fact that no PIE suffix /-nt/- exists, only /-ent/- added to a preceding stem final or root final consonant.
deducible by application of yet another round of deletion of unstressed syllables and subsequent, paradigmatic levelling of the zero grade of the root from the oblique cases into the strong cases.

However, given Rasmussen’s model of positing an underlying e-vowel in both the i- and u-stems, no account can be provided for the presence of o-vowel forms. Admittedly, such a suffixal o-grade could have arisen in the voc.sg. or nom./voc.pl., which, in a proterokinetic paradigm such as the one posited for the type II i- and u-stems, would be accentuated on the root syllable with weakening or at least alteration of the suffixal vowel as a consequence, but Rasmussen’s article does not mention that option. It should also be noted that, even if the type II i- and u-stems are basically proterokinetic, they fail to show the expected, unaccented o-vocalism of “true” proterokinetic paradigms in the two most prominent cases, viz. nom.sg. and acc.sg. Such o-grade forms are found merely within the residual sakhây-type mentioned above, cf. e.g. Kuiper (1942: 197-198). For the sake of convenience, we shall therefore regard all case forms of the type II i- and u-stems except for the nom.sg. and acc.sg. as oblique or weak even if this is not in accordance with standard terminology.

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50 As for the system of Proto-Indo-European accent and ablaut, I choose to follow Rasmussen (1978 [1999]: esp. 17-20, 27-28, 44-45 LG 1+3+7) who operates with and elaborates on the theoretical model of the Erlanger Schule. He thus claims that e-grades are accentuated and that unaccented original PIE *e are first turned into *o only to be lost altogether at a later stage (zero grade). However, if lengthened by means of influence from the *s of the PIE nom.sg. or the *h₂ of the PIE collective, the o would be preserved. Hence follows that an original proterokinetic paradigm would be nom.sg. *CéC-eC-s > *CéC-oC-s > *CéC-óC-s, acc.sg. *CéC-eC-m > *CéC-oC-m > *CéC-C-m (⇒ *CéC-oC-m in analogy with the pattern of the hysterokinetic paradigm type) and gen.sg. *CéC-eC-élós > *CoC-éC-élós > *CC-éC-s, whereas an original hysterokinetic paradigm would be nom.sg. *CeC-éc-s > *CoC-éc-s > *CoC-éc-s > *CC-éC-s, acc.sg. *CeC-éc-m > *CoC-éc-m > *CC-éC-m and gen.sg. *CeC-éc-élós > *CoC-oc-élós > *CC-C-élós. From this follows that the residual i-stem type of Skt. sakhây- is, in principle, a ‘true’ proterokinetic i-stem with nom.sg. in PIE*-ôs. The two prevalent types of i- and u-stems, however, seem to resist analysis within the framework of this theoretical model since we would a priori expect the type I (open inflection with gen.sg. in PIE *-j-osl-uy-ôs) to have a nom.sg.  ḫj-s/ţêy-s and an acc.sg. ḫj-m/ţêy-m, not *-isl-us and *-iml-um as actually attested, and the type II (closed inflection with gen.sg. in PIE *-j-isl-ûy-s) to have a nom.sg. ḫj-s/ţêy-s and an acc.sg. ḫj-m/ţêy-m, not *-isl-us and *-iml-um as actually attested. Rasmussen (1978 [1999]: 42) seeks to explain this discrepancy by means of prevocalic sandhi variants where original (i.e. before the series of soundlaws mentioned above came into effect) nom.sg. PIE *-eisl-êus lV- was reinterpreted as *-eîl-êus lV- (⇒ *-eîl-ôg sV- > *-il-u sV- by application of the same soundlaws). For a different account of the prehistory of the i- and u-stems cf. e.g. Beekes (1985: esp. 150-164).
To my knowledge, the scholarly community has yet to propose a theoretical model that can account smoothly for the suffixal o-grade forms of the oblique cases of the PIE i- and u-stems. Consequently, we should ask if there were, in fact, any o-grade forms at all. At first sight, any such speculation would seem futile seeing that, after all, suffixal o-grade forms of the oblique cases of the i- and u-stems seem to be attested in most Indo-European branches, viz. in Indo-Iranian, Balto-Slavic, Italic, Celtic, Anatolian and Germanic.

3. Apparent suffixal o-grade forms in the individual branches

At first glance, Indo-Iranian might be the easiest branch to account for. As a consequence of the Indo-Iranian merger of PIE *ē, *ā, and *ō into *ā, cf. e.g. Wackernagel & Debrunner (1896: 4-5), it is simply not possible to determine if a given Proto-Indo-Iranian diphthong *āi would have resulted from PIE *ēi, *āi or *ōi and, correspondingly, if a given PIIr diphthong *āu would have resulted from PIE *ēu, *āu or *ōu. Only in one position does a difference arise between the outcomes of (short) PIE *e, *a, and *o in PIIr, viz. in open syllables where Brugmann’s Law dictates that PIE *o > PIIr *ā rather than *a, cf. e.g. Wackernagel & Debrunner (1896: 13-14). For the i- and u-stems, such surroundings are found only in the dat.sg. (PIE *-ē-ej/*-ō-ej) and nom./voc.pl. (PIE *-ēu-es/*-ōu-es) where the Indo-Iranian ubiquity of the short-vowel diphthong *-au- and the consequent absence of the corresponding long-vowel diphthong *-āu- strikingly point towards PIE *-ēu- rather than *-ōu-, e.g. Skt. sūnāve ‘son’ (dat.sg.). The PIIr i-stem loc.sg. *-āi (and u-stem

51 Beekes (1985) actually operates with only e-grade forms in the oblique cases of the PIE i- and u-stems. For instance, he, as one of the few scholars dealing with this problem, reconstructs only e-grade forms in the gen.sg. (Beekes 1985: 128). However, to my belief, Beekes still fails to account for the appearance of the alleged o-grade forms. Bammesberger (1990: 126) reconstructs PG *-aiž as PIE *-ojs but doubts that this form could really be of Proto-Indo-European age.

52 Though irrelevant to the i- and u-stems due to lack of decisive material, a difference of outcome is also found where palatalisation of a preceding velar plosive would reveal the origin of a PIIr *a as PIE *e rather than as *a or *o, cf. e.g. Wackernagel & Debrunner (1896: 139-144).

53 An instance of PIIr *-āu- may be claimed for the Iranian by-form nom.pl. Av. -āunu, OPers. -āva, cf. e.g. Hoffmann & Forssman (1996: 131). However, this form may be seen as analogical from the residual proterokinetic type of Skt. sakhāy- where o-grade vowels are, indeed, expected. Thus, for the sakhāy-type, which is also attested in Iranian, we would expect PIE nom.sg. *-ōjs, acc.sg. *-oja etc., cf. Kuiper (1942: 197-198) and also Beekes (1985: 85-89) for parallel assumptions regarding some of the Iranian singular forms with ā.
loc.sg. *-āu) can be explained from PIE *-ēj and *-ōj (and *-ēy and *-ōy) alike, and the PIIR i-stem gen.sg. *-ais (and u-stem gen.sg. *-aus) and i-stem voc.sg. *-ai (and u-stem voc.sg. *-au) that all contain tautosyllabic glides can likewise be developed from PIE e- and o-vowel forms alike. Consequently, the remaining Indo-European branches must be the ones to show whether suffixal ē- or ō-grade forms should be reconstructed for the i- and u-stem gen.sg., loc.sg. and voc.sg.

Balto-Slavic seems to offer suffixal o-grade forms in some of the oblique cases of the u-stems, e.g. Lith. gen.sg. -aũs, voc.sg. -au and nom.pl. -ausl-ous (dialectal) for the Baltic material, and OCS gen.sg. -u, dat.sg. -ovi, loc.sg. -u, voc.sg. -u, gen./loc.du. -ovu, nom.pl. -ove and gen.pl. -ovþ for the Slavic material. Stang (1966: 73-75, 215-216), however, is among a number of scholars who are not convinced that these outcomes actually mirror original PIE *-οu-. If, as assumed for Balto-Slavic by e.g. Kortlandt (1979: 57; 2008: 8) who elaborates on Stang’s theories (1966: 73-75, 215-216) for Baltic, Proto-Balto-Slavic *e is rounded to *o before intervocalic *w, i.e. PIE *-eũV > PBS *-ewV- > *-owV-, we could easily eliminate most instances of apparent, suffixal o-grade vowels in the oblique cases of u-stems in Balto-Slavic. The u-stem gen.sg. PBS *-aus, loc.sg. *-aũ-ōu,55 and voc.sg. *-au would have to be explained by paradigmatic levelling from the already affected cases,56 as actually recognised already by Vaillant (1958: 110). With his claim that PIE *ć > PBS *jā before taotsyllabic *y, Olander (2014: 65-66, 147-148, 169-170, 196-197, 254-256) also fails to see the need for the reconstruction of o-grade variants of the oblique cases of the i- and u-stems.

54 In Sanskrit, the original PIIR i-stem loc.sg. *-āi was replaced by the corresponding u-stem desinence, but it still prevails in Iranian as Av. -ā in gorazdā ‘in/by walking’ and maybe also as a sandhi variant -ā in Sanskrit, cf. e.g. Hoffmann & Forssman (1996: 134).
55 An alternative u-stem loc.sg. *-oũ-ũ is found in Žemaitic and High Latvian. Stang posits a development *-oũ-ũ [Stang’s notation] < *-uo < PIE*-oũ which, if correct, implies the necessity of positising an original o-coloured vowel in the u-stem loc.sg. Stang (1966: 215-216) recognises himself, though, that *-oũ-ũ might have arisen from the enlarged form -uoję.
56 If we were to accept the theories of handbooks such as Vaillant (1950: 110) who argues that the soundlaw PIE *-eũV- > PBS *-ewV- > *-owV- would only happen if V = V[−front], we would also need to count the dat.sg. and the nom.pl. to the cases with paradigmatic levelling in favour of PBS *-au-. In a recent article, Olander (2012) posits a special development of original PIE *-os > Proto-Slavic (PS) *-as, even when a glide is inserted in between, i.e. PIE *-oũs > pre-PS *-aũs > PS *-aj > e.g. OCS -i, cf. especially Olander (2012: 332-333). Olander has further suggested (p.c.) that a parallel development would have taken place with a u-diphthong, i.e. PIE *-oũs > pre-PS *-aũs > PS *-ay > e.g. OCS-ũ. Since the OCS u-stem dat.sg. is, in fact, -u rather than ŭ (≠ *-ũ), it is seen that the origin of that desinence cannot be PIE *-oũs. More fruitful speculations would result in a development along the lines of PIE *-eũs > PS *-aũs (postdating the Slavic development of *a > *o before final *s) > PS *-ay > e.g. OCS -u.
Similar soundlaws may be posited with certainty for Italic and with probability for Celtic. It is a well-established fact that PIE *eũ yielded Plt. *ou in every position of the word (as in PIE *neũs 'new' > Lat. novus), cf. e.g. Sihler (1995: 40) for Latin and Buck (1904: 46) for Sabellic. As such, accounting for u-stem case forms such as OLat. u-stem dat.sg. -ueɪ (> Lat. -uĩ), Osc. gen.sg. -ous, and Umbr. dat.sg. -u/-o (in triũfũ/triũfũ) as developed from forms with original e-vowel diphthongs is entirely straightforward. The Celtic situation is just as propitious. Thurneysen (1975: 39-40, 122) operates with a soundlaw PIE *e > OIr. ou (> ó in stressed syllables in Old Irish), by which process OIr. u-stem gen.sg. -o (Ogham -OS) may be derived from PIE *-eũ-s as well as from PIE *-ou-s, and Lambert (2003: 44), among others, apply an identical soundlaw to the Gaulish material, i.e. PIE *e > Gaul. ou. Consequently, the apparent o-grades of the Gaul. u-stem dat.sg. -ooũ and nom.pl. -oves, cf. Lambert (2003: 62) and also Pedersen (1913: 91), may be ascribed to the same phenomenon as the corresponding desinences of Old Irish and Italic. The Old Irish i-stem gen.sg. -ol-a (Ogham -OS) deserves mentioning here, too, since it is, by some scholars, e.g. Pedersen (1913: 94), reconstructed as PIE *-oũš, albeit with the questionable assumption that word-final PIE *-oũš is treated differently than PIE *-oũ, cf. the OIr. o-stem nom.pl. -i < PIE *-oũ. Alternatively, we could ask if PIE *-eũš could not simply have been remodelled as *-oũš in analogy with the u-stems whose *-ouš has developed from PIE *-eũs by regular soundlaw. After all, a high level of parallelism prevails between these two stem types in general, cf. e.g. Pedersen (1913: 94) – who even advocates himself that OIr. -ol-a < PIE *-oũš by means of regular sound change – on the interparadigmatic levelling between the gen.sg., the gen.du. and the gen.pl. forms of the stem types in question.

The o-grades of Anatolian cannot be as easily dismissed as those of the previous branches. To my knowledge, no soundlaws can explain e.g. the Hitt. i-stem gen.sg. -ayaš or the u-stem gen.sg. -awaš from PIE *-eũš and *-eũs, respectively (with subsequent addition of the productive gen.sg. -aš < PIE *-os).\footnote{In general, suffixal a-vowels are prevalent throughout the entire i- and u-stem paradigm, though competing with the zero grades -(i)ũ-/-uũ-} According to e.g. Kimball (1999: 213-214, 220-221), original short-vowel diphthongs are generally monophthongised: PIE *-eũ > Hitt. -e or -i (no consensus), PIE *-oũ > Hitt. -e and PIE *-eũl/*-ou > Hitt. -u. A sequence Hitt. -ai- could only result from an original long-vowel diphthong, and – again according to Kimball (1999: 226-230) – probably only from the o-grade diphthongs PIE *-oũ and *-oũ, since PIE *-eũ > Hitt. -e and PIE *-eũ > Hitt. -ũ.\footnote{Some scholars do, however, propose a change of PIE *eũ > Hitt. au, cf. Kimball (1999: 230).} Ironically, Hitt.
*-aiš < PIE *-ōjs and Hitt. *-auš < PIE *-ōys might be exactly what we need in order to establish that Anatolian provides no evidence for suffixal o-grades of the oblique cases of the i- and u-stems. Weitenberg (1984: 352-356, 369-376) mentions that Hittite tends towards generalising the full grade suffix -āu- of the u-stem nom.sg. form throughout the entire paradigm, and we have to bear in mind that this is the residual sakhāy-type (represented in Hittite by e.g. lingaiš ‘oath’ or the neuter plural-collective hastai ‘bone(s)’) – or, more precisely, the parallel type with nom.sg. in PIE *-ōys (represented in Hittite by e.g. harnauš ‘birthstool’), cf. also e.g. Kronasser (1962-1966: 202-208, 250-251). These two types are far more predominant in Anatolian than in any other branch of Indo-European. Granted the validity of that assumption, the Anatolian o-grade forms belong to or have arisen in a different paradigm type, viz. the residual sakhāy-type, and are thus of no relevance to us.

Finally, for the sake of completeness, it should be mentioned that Greek with e.g. its i-stem gen.sg. -εως < -ηος (< pre-Gr. *-ējos remodelled from *-ejs by application of the lengthened suffixal vowel of the loc.sg. and the full grade gen.sg. form) and its u-stem gen.sg. -εος (< pre-Gr. *-eos remodelled from PIE *-eus, cf. Szemerényi (1970: 165)) does not show any instances of what could be interpreted as o-grade forms in the relevant desinences. Nor does Armenian with e.g. its i-stem gen.sg. -i < PIE *-ijs and its u-stem gen.sg. -ow < PIE *-u̯os which should be regarded either as examples of the type I i- and u-stem inflection or simply as the results of addition of the productive case endings to the suffix in the form -i/-u- standardised from the strong cases, cf. Olsen (1999: 77, 106).

With the relevant data from Indo-Iranian, Balto-Slavic, Italic, Celtic and Anatolian examined and accounted for, we may now conclude that we could find no unequivocal evidence for suffixal o-grade forms of the oblique cases of the i- and u-stems in these branches (except for Anatolian whose o-grade forms belong to or have arisen in a different paradigm type, viz. the residual sakhāy-type), and we shall now turn our attention to the last of the Indo-European branches in which apparent, suffixal o-grade forms of the oblique cases of the i- and u-stems seem to occur, viz. Germanic.

4. Accounting for the Germanic evidence: a selection of previous attempts

Among the Germanic languages, we encounter an array of apparent, suffixal o-grade forms in the oblique cases of the i- and u-stems, e.g. Goth. i-stem gen.sg. -ais, u-stem gen.sg. -aus, i-stem dat.sg. -ai, u-stem dat.sg. -au and OE u-stem nom.pl. -a. The communis opinio regarding their origin still
seems to be the one presented in e.g. Krahe (1966: 133-134; 1967: 30-33) following, among others, Brugmann & Delbrück (1911: 135, 156, 175-177, 215):

\[
\begin{align*}
&\text{PIE i-stem gen.sg. } ^*{-oi}s > \text{Goth. } -a\text{s} \\
&\text{PIE i-stem dat.sg. } ^*{-e}\text{i} > \text{Goth. } -ai \text{ (as also PWG } ^*{-i}) \\
&\text{PIE u-stem gen.sg. } ^*{-o}u\text{s} > \text{Goth. } -aus, \text{ ON } -ar, \text{ OE } -a, \text{ OS } -o, \text{ OHG } -\text{d} \\
&\text{PIE u-stem dat.sg. } ^*{-e}\text{u} > \text{Goth. } -au \text{ (as also RN } -iu, \text{ OHG } -iu) \\
&\text{PIE u-stem dat.sg. } ^*{-\text{o}u} > \text{OE } -a, \text{ OS } -o \text{ (only Krahe, cf. also Szemerényi (1970: 162))} \\
&\text{PIE u-stem voc.sg. } ^*{-ou} > \text{Goth. } -au \\
&\text{PIE u-stem nom.pl. } ^*{-o}u\text{es} > \text{OE } -a \text{ (only Krahe, cf. also Szemerényi (1970: 162))}^{59}
\end{align*}
\]

In this account, Krahe only explains the apparent o-grade forms of the i- and u-stem dat.sg., developed from the PIE loc.sg., by PIE e-grade forms. In doing so, he follows Bazell (1937: 1-4) who, in turn following and elaborating on Streitberg (1896: 245-246), seems to imply the following phonological development: PIE \(^*{-e}\text{i} > \text{PG } ^*{-ai}\) and PIE \(^*{-e}\text{u} > \text{PG } ^*{-au}\). The remaining case forms are still explained by application of PIE o-grade forms. Given the validity of that assumption, Germanic would, in fact, be the sole Indo-European branch to require unambiguous PIE o-grade forms in the relevant case forms.

Boutkan (1995: 83-89, 236-257) more or less adopts the \textit{communis opinio}, represented by Krahe’s outline in the present article, albeit with a couple of minor exceptions. Firstly, since, in his interpretation of the Germanic “Auslautgesetze”, syllable structure constitutes the decisive factor for the outcome of the final syllables in the individual Germanic languages (as opposed to the standard view which is based on the prosodic or moraic nature of the mere vowel of the final syllable, cf. e.g. the concise account given by Jasanoff (2004: 247-255)), he need not operate with any difference between acute and circumflex vowels and diphthongs.\(^60\) This difference of opinion, while pivotal to Boutkan’s outline of the Germanic “Auslautgesetze” in general, will be of no relevance to our purpose. Secondly, Boutkan, while accepting the notion that PIE \(^*{-e}\text{i} > \text{Goth. } -ai\), PWG \(^*{-i}\) and that PIE \(^*{-e}\text{u} > \text{Goth. } -au\), OHG \(-iu\) etc., chooses to follow Kortlandt (1990: 6) by

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59 Also attested in Old Frisian as \(-a\), cf. e.g. Bremmer (2009: 63). Parallel to the PIE u-stem nom.pl. \(^*{-o}u\text{es} > \text{OE } -a\), all scholars, incl. Krahe, posit an uncontroversial u-stem nom.pl. PIE \(^*{-e}u\text{es} > \text{Goth. } -jus, \text{ ON } -er, \text{ OS } -i, \text{ OHG } -i\).

60 Boutkan (1995) thus distinguishes between protected (i.e. final vowel followed by consonant) and non-protected (i.e. vowel in absolute final position) final vowels.
positing a different PG outcome in order to account for the coexistence of high- and low-vowel reflexes from the same PG source in the different Germanic languages, viz. PG *-ëi and *-êu rather than the Bazell/Krahe variants PG *-ai and *-au. Thirdly, he chooses to elaborate on and refine an idea by Bazell (1937: 4) that OE -a < PG *-ewiz (not †-iwiz) < PIE *-yes.

In a short but, to our purpose, highly relevant footnote, Rasmussen (1996: 137) suggests that the Goth. u-stem gen.sg. -aus is developed from PIE *-eys (supposedly through the intermediate stage of PG *-auz) rather than from *-oys. In this way, as Rasmussen also remarks, no u-stem gen.sg. of any Indo-European language seems to point to *-oys. By means of analogy to the parallel u-stems, the Goth. (feminine) i-stem gen.sg. could hardly be reshaped as anything but -ais.

With the addition of Rasmussen’s footnote to the views of Boutkan (elaborating on Bazell), we are left with a picture that points increasingly towards the elimination of PIE suffixal o-grade forms in the oblique cases of the i- and u-stems. Nonetheless we can hardly help noticing a somewhat adverse lack of system in the developments above, i.e. the developments that have been proposed by previous scholarship – either with or without any disclosure of intent to render the position of PIE suffixal o-grade forms in the oblique cases of the i- and u-stems superfluous. In addition, none of the developments posited may account for the Goth. u-stem voc.sg. -au as descending from anything but PIE *-ou.61 Admittedly, most scholars would probably expect a case as marginal as the voc.sg. to be highly prone to paradigmatic levelling from the more prominent cases; consequently, this latter objection is of only minor relevance.

5. Accounting for the Germanic evidence: a new attempt

Any new account of the problem presented here should avoid “patchwork solutions” and rather search for a more general soundlaw or a coherent series of general soundlaws. Consequently, in the

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61 I choose to follow Braune & Ebbinghaus (1973: 71) and with them Boutkan (1995: 254-255) in their distributional analysis of the Goth. u-stem voc.sg. where -au coexists with -u and where free variation seems to prevail. However, when realising that -au is present 7x in sunau ‘son’ and 1x in magau ‘boy’ whereas -u is only present 1x in sunu and 1x in daũfu apart from 7x in Greek personal names (← Greek voc.sg. -o), we would have to conclude that -au is original and that -u has entered the paradigm due to influence from Greek or due to its appearance (apart from the Greek personal names) in the orthographically unstable Mss. Ambr. A and Ambr. B where, as also in the Gospel of Luke and in the Ms. Cal., the employment of <u> and <au> vowel forms is seemingly randomised throughout the entire u-stem paradigm.
present study, the following, interconnected series of soundlaws will be suggested as an alternative to those presented in the previous paragraph:

PIE *
\text{e}i(C)\# \rightarrow PG *-\text{ai}(C)\#

PIE *
\text{e}u(C)\# \rightarrow PG *-\text{au}(C)\#

PIE *
\text{e}i(C)\# \rightarrow PG *-\text{ei}(C)\# (> *-\text{i}(C)\#)

PIE *
\text{e}u(C)\# \rightarrow PG *-\text{eu}(C)\#

These soundlaws share the advantage of typological adequacy in relation to the general reductional and apocopical tendencies of unaccented syllables in Proto-Germanic and, secondarily, in the individual Germanic languages, cf. e.g. Krahe (1966: 127-134). Thus, both PIE *
\text{e}i(C)\# \rightarrow PG *-\text{ei}(C)\# and PIE *
\text{e}u(C)\# \rightarrow PG *-\text{eu}(C)\# may be described as shortening by one mora. Even if PIE *
\text{e}i(C)\# \rightarrow PG *-\text{ai}(C)\# and PIE *
\text{e}u(C)\# \rightarrow PG *-\text{au}(C)\# can hardly be cases of true shortening, I would, while recognising that such a hypothesis is entirely unfalsifiable, tentatively suggest interpreting the development of PIE *\text{e} \rightarrow *\text{PG a} as an underlying reduction through the intermediate stage of a schwa-like vowel at a very early stage, i.e. before unstressed PG *\text{e} started tending towards developing into *\text{i} in various positions. Subsequently, the schwa-like vowel would be interpreted by the speakers of Proto-Germanic as a. Thus, PIE *
\text{e}i(C)\# \rightarrow \text{pre-PG *-\text{ai}(C)\# > PG *-\text{ai}(C)\# and, correspondingly, PIE *
\text{e}u(C)\# \rightarrow \text{pre-PG *-\text{au}(C)\# > PG *-\text{au}(C)\#.}

Table 2 seeks to illustrate how the relevant material may or may not fit with the soundlaws just proposed. In order to establish the soundlaws, material from the oldest stages of the main Germanic

62 In a narrow sense, only the two first soundlaws offer a solution to the problem of apparent, suffixal o-grade forms of the oblique cases of the i- and u-stems, but it should be noted that we also need to include the two latter ones in order to obtain the full picture of the relevant desinences without leaving any form unaccounted for. In other words, since explaining e.g. RN -iu and OHG -iu from PG *-au (< PIE *-\text{e}y) would now seem impossible or at least unlikely, an alternative explanation must be sought, and, in this case, PG *-eu < PIE *-\text{e}u – a PIE desinence with cognates in other Indo-European branches – appears to be the straightforward option.

63 Whether a similar development can be upheld for the development of the PIE o/a-vowel diphthongs into Germanic, i.e. if the development of PIE *-\text{oi}/*-\text{ai} and PIE *-\text{oy}/*-\text{au} > PG *-\text{ai} and *-\text{au}, respectively, could also have passed through the intermediate stage of pre-PG *-\text{i} and *-\text{u}, respectively, falls outside the scope of the present study.
languages, i.e. Gothic, Runic Norse (Proto-Norse), Old Norse, Old English, Old Saxon and Old High German, has been inserted into the table as well.

Table 2: Relevant Germanic material possibly reflecting PIE *-e₁ and *-e₂.65

<table>
<thead>
<tr>
<th></th>
<th>PIE</th>
<th>PG</th>
<th>Goth.</th>
<th>RN/ON/66</th>
<th>OE</th>
<th>OS</th>
<th>OHG</th>
</tr>
</thead>
<tbody>
<tr>
<td>i-stem</td>
<td>-*e₁-</td>
<td>-*e₂-</td>
<td>qenais</td>
<td>vetter-ges</td>
<td>bēnæ/</td>
<td>&lt;- dat.sg.</td>
<td>&lt;- dat.sg.</td>
</tr>
<tr>
<td>gen.sg.</td>
<td></td>
<td></td>
<td></td>
<td>Norw. alfer-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i-stem</td>
<td>-*e₁-</td>
<td>-*e₂-</td>
<td>qenai</td>
<td>winai</td>
<td>bēnæ/</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>dat.sg.</td>
<td></td>
<td></td>
<td></td>
<td>brūdi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i-stem</td>
<td>-*e₁</td>
<td>-*e₂</td>
<td>-</td>
<td>-</td>
<td>wini D</td>
<td>stedi D</td>
<td>ensti D</td>
</tr>
<tr>
<td>loc.sg.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-*e₁-</td>
<td>-*e₂-</td>
<td>qenai D</td>
<td>-</td>
<td>-</td>
<td>bēnæ/e D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

64 I have made no attempt to distinguish between different stages of Runic Norse; consequently, we should apply the relevant data on our analysis with a considerable amount of caution.

65 A wide array of additional forms has not been listed in the table, viz. the following desinences that have obviously developed from interparadigmatic analogy, also cf. Krahe (1967: 30-33) and Boutkan (1995: 236-258). For Gothic: Masculine i-stems in the singular in general (<- a-stems), i.e. gen.sg. -is, dat.sg. -a, and voc.sg. -Ø. For Old Norse: i-stem gen.sg. -s (< a-stems), -ar (< -o- and/or u-stems); i-stem dat.sg. -Ø (< -i-stems), -o (< -i-stems; subsidiary ending); u-stem gen.sg. -s (< a-stems), u-stem dat.sg. -Ø (< u-stem acc.sg.). For Old English: i-stem gen.sg. -is, -es (< a-stems); i-stem dat.sg. -Ø (only Northumbrian, < old i-stem instr.sg. *-i or consonant stem instr.sg. *-i?); u-stem gen.sg. -es (< a-stems), -e (< -i-stems), -Ø (with heavy roots; possibly analogy from the corresponding dative); u-stem dat.sg. -e (< a- or -i-stems), -Ø (with heavy roots; possibly u-stem instr.sg. used as a dative). For Old Saxon: i-stem gen.sg. -Ø (< consonant stems), -(i)es (< ia-stems); i-stem dat.sg. -Ø (< consonant stems), -(i)æ (< ia-stems), -iu (< i-o-stems); u-stem gen.sg. -es (< a-stems), -(i)æs (< ia-stems); u-stem dat.sg. -æ (< a-stems), -(i)æ (< ia-stems), -i (< i-stems), -Ø (with heavy roots; possibly u-stem instr.sg. used as a dative). For Old High German: i-stem gen.sg. -es (< a-stems), -Ø (< consonant stems); i-stem dat.sg. -e (< a-stems), -Ø (< consonant stems); u-stem gen.sg. -es (< a-stems); u-stem dat.sg. -e (< a-stems), -Ø (only in hant; possibly u-stem instr.sg. used as a dative).

66 In addition, maybe Antonsen’s i-stem dat.loc.sg. RN fælai (Charnay Clasp, 550-600 AD). However, this inscription is poorly understood in almost every regard and can hardly count as evidence for or against the developments suggested in table 2.

67 The capital D designates the synchronic use of the form as a dative.
### 5.1. Remarks on the i-stem gen.sg.

While offering much-needed solutions to some of the issues discussed in the present article, my hypothesis is not entirely seamless and raises new issues to be solved. One such new issue is the RN i-stem gen.sg. -īz attested in RN ekgudi jaungandiz... (Nordhuglo stone, Norway, 425 AD) which Antonsen (1975: 47), representing the standard interpretation, translates as ‘I, the priest of Ungandiz’, i.e. RN i-stem gen.sg. -īz < PG *-eis – a form hardly deducible from PIE *-eis if we are to believe the development of PIE *-eis > PG *-ais posited above; a development PG *-eis < PIE †-eis is even less likely in PIE terms. An alternative and in fact more preferable solution is offered by Boutkan (1995: 245) who firmly believes RN ungandiz to reflect the ia-stem nom.sg. *-īz (< PG *-īz), i.e. “I, the priest Ungandijaz”. However, thanks to a recent e-mail correspondence with Roland Schuhmann, I now regard the case form RN -īz as resulting from the i-stem nom.sg. -īz (rather than i-stem gen.sg. or ia-stem nom.sg. †-īz) seeing that, in contemporaneous RN forms such as RN stainawarijaz, the alleged contraction of PG *-īz > RN -īz in post-unstressed position has not taken place.

Puzzling high-vowel reflexes of the i-stem gen.sg. are not found only within Runic Norse. Also the PWG reflex *-ī poses at least a couple of issues to be accounted for. The main issue strongly resembles that of the RN form above, viz. that PWG *-ī would imply an i-stem gen.sg. PG *-īz <
PG *-eis < (non-existing) PIE †-ējs. The second issue is how to account for the parallel OE i-stem gen.sg. -eal-e which seemingly reflects the expected form PG *-aiz < PIE *-eis. Two mutually exclusive strategies may be applied. We may choose to follow either the explanation offered in the present article that PWG *-ī (< *-iz), paralleling the situation of the ō-stems, had spread analogically from the i-stem dat.sg. PWG *-ī before the latter was regularly shortened or the proposal outlined by Boutkan (1995: 245), following Kortlandt (1990: 6), that PG *-aiz > pre-PWG *-ei(ə) > PWG *-ī, implying that the OE i-stem gen.sg. -eal-e does not represent a direct development from PG *-aiz but rather has been taken over from the ō-stems by means of interparadigmatic analogy.

5.2. Remarks on the i- and u-stem dat./loc.sg.

What would most likely disturb many scholars of Indo-European linguistics is the assumption, implied by my hypothesis, of an endingless i-stem loc.sg. PIE *-ēj and, correspondingly, of a u-stem loc.sg. *-eu, i.e. forms without the hic-et-nunc particle PIE *-i. Even if endingless loc.sg. forms are well attested within other paradigms, cf. e.g. Skt. n-stem loc.sg. rājan ‘king’ beside rājan-i, they are normally not reconstructed for the PIE i- and u-stems which does not necessarily imply, however, that it is fat-fetched to do so. Such forms might actually be attested in Indo-Iranian, cf. Brugmann & Delbrück (1911: 176-177) and, in more detail, Beekes (1985: 112), e.g. Av. mṛūte ‘to say’, Skt. vásto ‘by illumination’ (infrequent ending), OPers. gāḍav-ā ‘on the square’ etc. For various reasons including a number of sandhi mechanisms, however, Wackernagel & Debrunner (1929: 155) chooses to disregard the existence of such PIE short-diphthong loc.sg. forms in Indo-Iranian. With the dubious relevance of the short-diphthong loc.sg. forms borne in mind, the dat.sg. may offer a more attractive alternative. Granted that an i-stem dat.sg. PIE *-ēj developed from PIE *-ei-ej by haplology,68 we could easily assume the analogical creation of a corresponding u-stem dat.sg. PIE *-eu.

However, though disregarded by Wackernagel & Debrunner (1929: 155), the idea of an endingless loc.sg. should perhaps not be abandoned quite yet seeing that, in fact, a u-stem loc.sg. PIE *-eu might be exactly what underlies Gr. ἀνεύ prep. ‘without, far from’, to which not only a desinential but also a perfect, lexical cognate may be found in PG *enau (< PIE *-euy) and *ēnu

68 As has also been suggested for e.g. Lat. -ī, Osc. -ei, and OCS -i, cf. Brugmann & Delbrück (1911: 170-171) and Szemerényi (1970: 162). Sihler (1995: 316), however, posits a regular, phonological development PIE *-ej-ej > *-eej > *-ēj > *-eii-ē > Lat. -i.
prep. ‘without’ as reflected in OHG aano, ano prep. ‘id.’ (with variants ana, ane, an and ultimately ânu < PG *ēnu) and OS âno prep. ‘id.’, both from PG *ēn-au, cf. Lloyd & Springer (1988: 289-290). Beekes (2010: 102) rejects any etymological connection between the Greek and the Germanic forms and prefers to reconstruct Gr. āveo as a u-stem loc.sg. *sn(H)-eu to PIE *sen(H)- ‘without’, cf. also Skt. sanutār- prep. ‘away, off, aside’ and Lat. sine prep. ‘without’, based on his disinclination towards Eichner’s Law. Consequently, in Beekes’ view, even if Gr. āveo could formally reflect PIE *h₂n-eu, PG *ēn(a)u < PIE *ēn(e)u could never reflect PIE *h₂ēn-eu- with lack of laryngeal colouring of a following long vowel as suggested by Nikolaev (2007: 165). Whether or not we accept Nikolaev’s explanation through Eichner’s Law, we would have to agree that the Goth. by-form inu prep. ‘without’ (< PG *enu or *inu) is hardly explicable from any root constellation containing PIE *h₂. Kroonen (2013: 118) does provide a solution to the Goth. inu, though, viz. the application of the heavily debated process of pretonic shortening also known as Dybo’s Law. As such, Kroonen would reconstruct PIE *h₂ēn-ú- > post-PIE *ēnú > PG *enu > Goth. inu, and PIE *h₂ēn-eu- > PG *ēnau- > PWG *ānau- > OHG aano etc. Alternatively, inu could be a mere Gothic shortening of PG *ēnu in a weakly stressed, i.e. prepositional, form.

5.3. Remarks on the u-stem nom.pl.

Admittedly, the u-stem nom.pl. does not contain a word-final diphthong. The reason for its inclusion in table 2 in spite of this is the dual purpose of the present study, viz. (1) to eliminate or render superfluous all previously posited instances of suffixal o-grade vowels in the oblique cases of i- and u-stems, and (2) to provide evidence for a new coherent series of soundlaws affecting word-final diphthongs. Whereas the u-stem nom.pl. with its word-internal diphthong is of no relevance to our purpose no. (2), it certainly does meet the requirements for being relevant to our purpose no. (1).\(^{70}\) As previously mentioned, only the OE (and Old Frisian) u-stem nom.pl. -a, which has traditionally been reconstructed as PIE *-o(u)es, may cause us problems in our attempt to satisfy

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69 Or, in Kroonen’s (2013: 118) terms, NWGm. *āneu seeing that such a form would also account perfectly well for ON án, ón prep. ‘without’.

70 The nom.pl. is a strong case; not a weak or an oblique one. Consequently, we could reasonably argue that it also falls outside the scope of purpose no. (1), viz. to eliminate or render superfluous all previously posited instances of suffixal o-grade vowels in the oblique cases of i- and u-stems. It is included here nonetheless because it contains the same suffixal PIE *-o(u)- as the weak or oblique cases.
our purpose no. (1); the remaining Germanic forms may be derived straightforwardly from the expected form, i.e. PIE *-e̞es. The OE form may be accounted for in a number of ways.

Firstly, we might consider regarding it as the result of an analogical process in which the original u-stem nom.pl. was replaced with the corresponding form of other stems, e.g. the ō-stems (West Saxon and Late Kentish -a) or the a-stems if we dare run the risk of operating with either an otherwise unattested a-stem nom.pl. OE *-a < PG *-ōz besides attested -as/-æs or an acc.pl. OE *-a < PG *-anz as attested in OHG, OS and Old Low Franconian (but not in OE where the nom.pl. -as/-æs has replaced the old acc.pl.). As for the a-stem nom.pl., another and far more serious issue is that a reconstruction along the lines of PG *-ōz for the a-stem nom.pl. might not be valid at all. According to Boutkan (1995: 187-191), all the attested forms could and should be explained from PG *-ōs-ez (> Goth. -ōs, OE -as/-æs, OS -as/-os) alternating with PG *-ōz-ez (> Goth. -ōs, ON -ar, OFris. -ar (especially in the area around Emsigoland)).71 As such, no actual foundation for that specific analogy remains.

Providing us with a second alternative, Bammesberger (1985: 366-370) suggests that OE -a continues the old a-stem nom.du. PG *-au < PIE *-ō(ũ). According to Bammesberger, the motivation for such a substitution would be found in the fact that the original u-stem nom.pl. would virtually disappear in Old English if the soundlaws ran their course, i.e. traditionally expected PG *-iwiz > pre-OE *-ju > OE -Ø' (geminating effect of Umlaut-causing *-j-; subsequent loss of *u after heavy syllables, e.g. pre-OE *sunju > OE †synn ‘sons’). Whether or not such a suggestion might seem attractive to the individual scholar, we would have to admit that, by accepting it, we would run a risk identical to that of one of the first alternatives, viz. that of operating with an otherwise unattested form.

In my view, Boutkan’s (1995: 83-89) suggestion that OE -a is the result of a regular, phonological development therefore seems far more appealing. As such, PIE *-e̞es > PG *-ewiz (rather than PG †-iwiz, as usually assumed) > PWG *-ew [vel sim.] > OE -a, OS -i, OHG -i.

5.4. Diphthongal desinences reflecting PIE *-ō̞i/*-āj and *-ō̞u/*-āu or similar constellations
Although other diphthongal desinences (reflecting PIE *-ōi/*-āj and *-ōu/*-āu or similar constellations) should ideally be left out of consideration here as not directly pertinent to the present study, a list of expected correspondences will nevertheless be given in table 3 so as to illustrate in particular that, when we apply our new soundlaws on the Germanic material, a problematic

difference arises between the outcome of “original” PG *-ai (< PIE *-oi/*-ai) and “secondary” PG *-ai (< PIE *-eij).

Table 3: Germanic material reflecting PIE *-ēij/*-ēij and *-ēij/*-ēij:

<table>
<thead>
<tr>
<th></th>
<th>PIE</th>
<th>PG</th>
<th>Goth.</th>
<th>RN/ON</th>
<th>OE</th>
<th>OS</th>
<th>OHG</th>
</tr>
</thead>
<tbody>
<tr>
<td>o-stem</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dat.sg.</td>
<td>*-ōi</td>
<td>*-ai</td>
<td>-</td>
<td>hanhai</td>
<td>degi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*-ōj</td>
<td>*-ē?</td>
<td>üta</td>
<td>uti</td>
<td>üte</td>
<td>üta/e</td>
<td>üz(e)</td>
</tr>
<tr>
<td>loc.sg.</td>
<td>*-o(u)</td>
<td>*-au</td>
<td>ahtau</td>
<td>áta</td>
<td>cahta</td>
<td>ahto</td>
<td>ahto</td>
</tr>
<tr>
<td>nom.du.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*-ōj</td>
<td>*-ē?</td>
<td>blindai</td>
<td>-arjost-e</td>
<td>blinde</td>
<td>blinda/e</td>
<td>blinte</td>
</tr>
<tr>
<td>nom.pl.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(strong adj.)</td>
<td>*-ēj</td>
<td>*-ai</td>
<td>gibai</td>
<td>-</td>
<td>giefae/e</td>
<td>gebae/e</td>
<td>-</td>
</tr>
<tr>
<td>a-stem</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dat.sg.</td>
<td>*-e-tu</td>
<td>-*adau?</td>
<td>nimadau</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ipv.3.sg.</td>
<td>-o-ntu</td>
<td>-*adau?</td>
<td>habandau</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ipv.3.pl.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>opt.1.sg.</td>
<td>*-oij-m</td>
<td>*-ai“</td>
<td>(nimau)</td>
<td>nime</td>
<td>nima/e</td>
<td>neme</td>
<td></td>
</tr>
<tr>
<td>opt.2.sg.</td>
<td>*-oiht-s</td>
<td>*-aiz</td>
<td>nimaes</td>
<td>nemir</td>
<td>nime</td>
<td>(nima/es)</td>
<td>(nemês)</td>
</tr>
<tr>
<td>opt.3.sg.</td>
<td>*-oij-t</td>
<td>*-ai(p)</td>
<td>nimai</td>
<td>nemi</td>
<td>nime</td>
<td>nima/e</td>
<td>neme</td>
</tr>
<tr>
<td>opt.3.pl.</td>
<td>*-oij-nt</td>
<td>*-ain</td>
<td>nimain-a</td>
<td>nemi</td>
<td>nimen</td>
<td>nima/en</td>
<td>nemën</td>
</tr>
<tr>
<td>pass.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*-oj</td>
<td>*-ē?</td>
<td>haitada</td>
<td>haite</td>
<td>hâtte</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>opt.pass.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-*-au</td>
<td>-*adau</td>
<td>haitaidau</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

72 Goth. *-ai is found in this desinence rather than the expected †*-a due to analogical influence from stressed final diphthongs of monosyllabic words; more precisely from the corresponding forms of the demonstrative pronoun represented, in this case, by Goth. m.nom.pl. *þai ‘they’.

73 In Gothic, we encounter a series of enigmatic verb forms ending in -*au, viz. the imperative 3.sg. -*adau, the imperative 3.pl. -*andau, and the optative passive (1./3.sg. -*aidau, 2.sg. -*aizau, pl. -*ândau). As for the source of the imperative forms, Boutkan (1995: 326-327, 355-356) has ingeniously suggested a combination, or contamination, of PIE *-etôd (fut.ipv.) and PIE *-n(j)tu (ipv.3.sg./pl.). So far, however, the exact prehistory of the forms of the optative passive remains enigmatic. In any case, these forms are of no relevance to the present study and will therefore not be discussed into further detail.
In protected position, i.e. when followed by a consonant, the two different PG *-ai’s seem to produce the same outcome in the individual Germanic languages, viz. e.g. Goth. -aiC, ON -eC, OE -æC/eC, OS -æC, and OHG -iC. When the PG *-ai’s are in absolute final position, however, the clarity of the developmental chain rapidly decreases. In other words, the two *-ai’s produce different outcomes in the individual Germanic languages, viz. e.g. Goth. -aiC, ON -eC, OE -æ, OS -æC, and OHG -iC. When the PG *-ai’s are in absolute final position, however, the clarity of the developmental chain rapidly decreases. In other words, the two *-ai’s produce different outcomes in the individual Germanic languages, viz. e.g. Goth. -aiC, ON -eC, OE -æ, OS -æC, and OHG -iC.

Due to the divergent quality of the resulting vowels of the “original” PG *-ai in absolute final position, it has tentatively been denoted as ‘*-æ ’ in table 3. In my view, this situation can be understood in only one way, viz. that the “original” PG *-ai had developed into *-æ vel sim. in absolute final position before PIE *-ej developed into “secondary” PG *-aj; otherwise even “secondary” PG *-aj would have developed into *-æ vel sim. in absolute final position.74 We may thus reasonably – by adhering to Boutkan (1995: 468) for at least the more commonly accepted stage (1) – state the following relative chronology of our delicate ‘PG *-ai problem’:

(1) PG *-aiC# > Goth. -aiC#

(1) PG *-ai# > Goth. -a# (hence the tentative notion of PG *-æ# rather than *-ai#)

(2) PIE/pre-PG *-eiC# > PG *-aiC# > Goth. -aiC#

(2) PIE/pre-PG *-ei# > PG *-ai# > Goth. -ai#

6. Conclusion

By proposing a series of four Germanic soundlaws (illustrated in table 4) pertaining to PIE word-final e-vowel diphthongs, the present article offers a coherent explanation of the Germanic evidence of alleged o-grade forms of the gen.sg. and loc.sg. of PIE i-stems and the gen.sg., loc.sg. and voc.sg. of the PIE u-stems; and by adopting Boutkan’s explanation of the alleged o-grade form PIE *-ojes of the u-stem nom.pl. (as seen in OE -a), I have found alternative explanations for all Germanic evidence of alleged o-grade forms in the oblique cases of PIE i- and u-stems. With previous

74 Guus Kroonen (p.c.) has perceptively pointed to the fact that, even if the development of PIE *-ej > PG *-aj be posterior to that of “original” PG *-ai > *-æ vel sim. in absolute final position, it must predate the apocope of PIE/pre-PG *e in the imperative 2.sg. of the Germanic class I weak verbs, cf. e.g. Goth. -ei. Otherwise, this form, too, would have developed into †-ai.
scholarship having offered alternative explanations of the evidence from the remaining Indo-European branches, we may therefore state that the very notion of o-grade forms in the oblique cases of PIE i- and u-stems (as also in the strong cases of the voc.sg. and nom.pl.) has now been rendered superfluous.

In addition, I have suggested that the development of at least PIE *-ej > PG *-ai must postdate that of original (pre-)PG *-ai# (from PIE *-aj[-aiy]) > PG *-ae# vel sim., cf. also table 4, since these two outcomes would otherwise have coalesced.

Table 4: Summary of the phonological development from PIE to Germanic:

<table>
<thead>
<tr>
<th>PIE</th>
<th>PG</th>
<th>Goth.</th>
<th>RN/ON</th>
<th>OE</th>
<th>OS</th>
<th>OHG</th>
</tr>
</thead>
<tbody>
<tr>
<td>*-ei/ _/(C)#</td>
<td>*-ai</td>
<td>-ai</td>
<td>-ai/-e</td>
<td>-æ/-e</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*-eu/ _/(C)#</td>
<td>*-au</td>
<td>-au</td>
<td>-au/-o</td>
<td>-a</td>
<td>-a &gt; -ol/-u</td>
<td>-ol/-u</td>
</tr>
<tr>
<td>*-ei &gt; *-i</td>
<td>-</td>
<td>-i</td>
<td>-i</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*-eu/ _/(C)#</td>
<td>*-eu</td>
<td>-i</td>
<td>-iu</td>
<td>-</td>
<td>-</td>
<td>-iu &gt; -i</td>
</tr>
<tr>
<td>*-oi/ _/(C)#</td>
<td>*-aiC#</td>
<td>-aiC#</td>
<td>-ai/-e</td>
<td>-e</td>
<td>-a/-e</td>
<td>-a/-e</td>
</tr>
<tr>
<td>*-æ# ?</td>
<td>-a#</td>
<td>-a</td>
<td>-æ/-e</td>
<td>-æ/-e</td>
<td>-æ/-e</td>
<td>-æ/-e</td>
</tr>
<tr>
<td>*-øy/ _/(C)#</td>
<td>*-ai</td>
<td>-ai</td>
<td>-e</td>
<td>-æ/-e</td>
<td>-æ/-e</td>
<td>-æ/-e</td>
</tr>
<tr>
<td>*-øy/ _/(C)#</td>
<td>*-au</td>
<td>-au</td>
<td>-a</td>
<td>-a</td>
<td>-o</td>
<td>-o</td>
</tr>
</tbody>
</table>

It should be noted, though, that previous scholarship has offered partial alternatives to the Germanic evidence, as well, cf. e.g. Bazell (1937: 1-4) and Rasmussen (1996: 137). To my knowledge, however, my account of the problem is the first to offer a coherent solution to all the evidence and also the first to operate mainly with regular soundlaws rather than analogical processes. As such, every Germanic form relevant to the present study – with the sole exception of either the PWG i-stem gen.sg. *-i or the OE i-stem gen.sg. *æ/-e – can be explained by the mere application of regular soundlaws.
3. Conclusion

As I stressed in the beginning of my thesis, its primary aim and purpose is to identify archaisms in Germanic and to separate these archaisms from innovations which have been disturbed by analogical processes, thereby aiding the scholarly community in its quest to reconstruct and obtain greater knowledge about earlier linguistic stages. In other words, only by knowing what elements of Germanic can be discarded as innovations created by means of analogy will the scholarly community be capable of inferring information from Germanic for the understanding of earlier linguistic stages such as, above all, Proto-Indo-European.

3.1. Archaisms and innovations in nominal derivational morphology

I have conducted two studies on archaisms and innovations in the field of Germanic nominal derivation where phonological developments of unstressed syllables have led to a collapse and a subsequent rearrangement of the entire system, thereby making it virtually impossible for the scholarly community to identify the important archaisms. These two studies on Germanic nominal derivation and inflection centre on root nouns and primary i-stem nouns.

In Ph.D. article no. 1, I have argued that root nouns in Proto-Germanic and the individual Germanic languages may be attributed to three chronologically defined layers, the first of which consists of root nouns inherited from Proto-Indo-European. Building on an idea originally developed by Nielsen Whitehead (2010; 2013), I have further demonstrated that we may recognise the archaic, inherited root nouns from their phonotactic characteristics. With the exception of a mere handful of forms which can all be otherwise accounted for, inherited root nouns, which were originally ablauting in Proto-Indo-European, generalise their radical ablaut grade so as for roots of the structure (C)CVRC to level in favour of the zero grade originally pertaining to the weak stem and for roots of the structures (C)CVT(C), (C)CVH(C) and CVC to level in favour of a fuller ablaut grade originally pertaining to the strong stem. Regardless of the radical phonotactics, however, a true PIE a-vowel always remains and is never reduced into the zero grade.

Conversely, the second and third layers consist of root nouns that have entered this inflectional class at a later stage and are thus to be regarded as innovations. Lexical borrowings and nouns from other inflectional classes reanalysed as root nouns in parts of the Germanic dialect continuum constitute the second layer, whereas the huge amount of North Germanic root nouns originating
from other inflectional classes belong to the third layer which may actually be regarded as a mere North Germanic continuation and further development of the second layer.

As for the Germanic primary i-stem nouns treated in Ph.D. article no. 2, I have ventured to demonstrate that, even though i-stem nouns functioning as verbal abstracts are synchronically and productively formed from a stem displaying the same ablaut grade as the preterite participle of related strong verbs, truly archaic i-stems display only radical o- and zero grade. Moreover, these two types, i.e. the zero grade type and the o-grade type, were originally identical. As demonstrated by Rasmussen (1989: 158-175) for the Proto-Indo-European feminine eh2-stems, i.e. the Germanic ō-stems, the radical phonotactics constitutes the determining factor for when to expect zero grade and when to expect o-grade. When this system was transferred to Germanic, the original distribution of o- and zero grade was abandoned in favour of a new ablaut distribution dependent on the ablaut system of the strong verbs, and the old system is only recognisable through a handful of i-stems displaying aberrant ablaut grades in comparison with the strong verbs pertaining to them.

This new system together with, i.a., the reanalysis of old s-stems as i-stems has given rise to a wide array of possible Germanic ablaut grades in the root syllable, i.e. zero grades, o-grades, full grades and lengthened grades, but anyone of these not adhering to the distributional rule of o- and zero grade described above is to be regarded as an innovation and can thus safely be discarded.

3.2. Support from Germanic historical phonology

Every historical and comparative morphological analysis relies on the assumption of a set of regular and recurring phonological correspondences between the languages studied. Hence follows that, if these correspondences have been suggested on an erroneous basis, any morphological analysis building on them runs the risk of being severely flawed, as well. Thus, the importance of phonological regularity cannot be underestimated.

For this reason, I have included two articles suggesting new Germanic sound changes in my thesis. In Ph.d. article no. 3 I have demonstrated that, contrary to common belief, PG *#ai- stands a good chance of being the regular outcome of PIE *#h2i- just as PG *#au- is likely to be the regular outcome of PIE *#h2u-. At least that is what is clearly suggested by the statistical evidence of a double-digit number of possible or likely candidates of PIE *#h2i-/*#h2u- > PG *#ai-/*#au- as opposed to no possible or likely candidates of PIE *#h2i-/*#h2u- > PG *#i-/*#u-. As for the sequences of initial PIE *h₁ and possibly also *h₃ followed by PIE *i or *u, there is no compelling reason for discarding the communis opinio of these sequences yielding PG *#i- and *#u-, respectively. Furthermore, if we can draw parallels to Germanic from the developments seen in
Greek and English, viz. that any example of PG *#au- followed by a labial consonant would result in PG *#u-, it would seem that the conclusions presented here remain valid regardless of the pedigree of PG *ubila- adj. ‘evil, bad’, *uba prep. ‘under; above’ and *ufna- m. ‘oven’ which are often seen reconstructed with initial PIE *h₂ in the scholarly literature.

The proposed sound change of PIE *#h₂i- > PG *#ai- sheds new light on the etymology of PG *aik- f. ‘oak’. If not a lexical borrowing from some unknown source and if not containing an original (post-)PIE *a, PG *aik- would normally be analysed etymologically as PIE *h₂eig- or *h₂eig-, thereby violating the distributional rules governing the assignment of radical ablaut grade to root nouns according to the structure of their roots, but with the application of this new regular sound change of PIE *#h₂i- > PG *#ai-, we are capable of reconstructing PG *aik- as PIE *h₂eig- which conforms perfectly well to the distributional rules outlined above.

The last article, i.e. Ph.d.-article no. 4, is concerned with the linguistic prehistory of the Germanic i- and u-stem desinences, thereby potentially adding to our understanding of analogical and other processes operating in the i-stems as well as in the u-stems. By proposing a series of four Germanic sound changes pertaining to PIE word-final e-vowel diphthongs, viz. PIE *-ej(C)# > PG *-ai(C)#, PIE *-eu(C)# > PG *-au(C)#, PIE *-ei(C)# > PG *-i(C)# and PIE *-ey(C)# > PG *-eu(C)#, I have offered a coherent explanation for the Germanic evidence of alleged o-grade forms of the gen.sg. and loc.sg. of PIE i-stems and the gen.sg., loc.sg. and voc.sg. of the PIE u-stems. Furthermore, by adopting Boutkan’s (1995: 83-89) explanation for the alleged o-grade form PIE *-ojes of the u-stem nom.pl. as attested in OE -a, I believe to have found alternative explanations for all Germanic evidence of alleged o-grade forms in the oblique cases of PIE i- and u-stems. Consequently, with only one exception, we can now explain every desinence of the Germanic i- and u-stems by the mere application of processes of regular sound change. In other words, almost every such desinence must now be regarded as an archaism.
References


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Abstract (English)

The present Ph.d. thesis entitled *Archaisms and innovations: four interconnected studies on Germanic historical phonology and morphology* consists of two articles on archaisms and innovations in the derivational system of Germanic nouns and two articles on regular sound changes that may support the conclusions reached in the former two articles.

The first article *Layers of root nouns in Germanic: chronology, structure and origin* suggests that we can recognise Germanic root nouns inherited from Proto-Indo-European by the circumstance that their radical ablaut grade is predicted by the phonotaxis of their root. Germanic root nouns violating these principles have entered the inflectional class of the root nouns at a later stage. Few exceptions exist, but these may all be accounted for in various ways. The seeming exception of PG *aik*- f. ‘oak’ deserves special mentioning in that the new regular sound change of PIE *#h₂i- > PG *#ai-, which I suggest in the third article *The outcome of PIE *#Hi- and *#Hu- in Germanic* along with a parallel sound change of PIE *#h₂u > PG *#au-, allows for the interpretation of PG *aik- as PIE *h₂iĝ- which is the shape expected for a root noun of that phonotactic structure.

The second article *The structure, form and function of the Germanic primary i-stems* also centres on derivational morphology; in this case, however, with the i-stems as the object of study. For the primary i-stems, I tentatively suggest that the archaic-looking types of i-stem adjectival agent nouns and i-stem action nouns or verbal abstractions that occur with both radical o-grade and zero grade originate from only one type in which, as was the case with the root nouns, the choice of radical ablaut grade depends on the phonotaxis of the root. When handed down to Germanic, however this system was abandoned and shaped anew in a manner compatible with the ablaut system of the Germanic strong verbs, thereby giving rise to new radical ablaut grades in the primary i-stems.

In order to obtain a better understanding of possible transitions of nouns between i-stems and other inflectional classes, the fourth article *The outcome of PIE *-êi(C)# and *-êu(C)# in Germanic* makes a few adjustments to the standard assumption on the history of some of the i-stem case endings by suggesting a series of regular sound changes pertaining to PIE e-vowel diphthongs in final syllables.

With its primary focus on how to identify archaisms and subsequently how to separate them from later innovations in Germanic derivational morphology, this thesis will hopefully contribute to the further development of the general field of Germanic and Indo-European studies by identifying and removing some such forms that can easily be disregarded as innovations by future scholarship.
Abstract (Danish)

Denne ph.d.-afhandling med titlen *Archaisms and innovations: four interconnected studies on Germanic historical phonology and morphology* består af to artikler om arkaism og innovationer i det germanske nominalderivationssystem og to artikler om nye lydlove, som kan tjene til støtte for de konklusioner, der nås i de forudgående to artikler.


Den anden artikel *The structure, form and function of the Germanic primary i-stems* handler også om derivationsmorfologi; her dog med i-stammerne som primært forskningsobjekt. For i-stammerne foreslår jeg, at de arkaisk udseende typer af adjektiviske nomina agentis og nomina actionis eller verbalabstrakter, som foreligger med både o- og nultrin i roden, oprinder i én og samme type, hvor rodstrukturen er afgørende for, hvilket aflydstrin i-stammen vil udvise. I germansk bliver dette system opgivet og omarrangeret til at være afhængigt af aflydssystemet i de stærke verber, som de knytter sig til. Herved opstår mulighed for nye aflydstrin blandt i-stammerne.

For at vi bedre skal kunne forstå de mulige stammeklasseovergange mellem i-stammerne og andre fleksionsklasses, justerer den fjerde og sidste artikel *The outcome of PIE *-ėi(C)# and *-ėu(C)# in Germanic* en anelse på nogle af de i forvejen kendte processer vedrørende et par i-stammekasusendelser. Nærmere bestemt foreslår jeg en række nye lydlove, der opererer i ediftonger i final stavelse.

Med sit primære fokus på, hvordan arkaism kan idenficeres og adskilles fra senere innovationer vil denne afhandling forhåbentlig bidrage til germanistikkens og indoeuropæistikkens videre udvikling ved at gøre opmærksom på sådanne former, som den fremtidige forskning let kan se bort fra og således ikke længere behøver at bekymre sig om.