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Layers of root nouns in Germanic
Chronology, structure and origin

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The root-noun declension became productive in early Germanic, containing (I) inherited root nouns, (IIa) original substrate or loan words, and transitions from other declensions in (IIb) Proto-Germanic and (III) North Germanic. As ablaut was abolished, the inherited type would display ablaut grades that, in late Proto-Germanic, became predictable from the phonotactic structure of the root.

1. The communis opinio on root nouns

Proto-Indo-European root nouns are constructed by means of a root and an inflectional morpheme: no derivational suffixes are involved. Like athematic nouns in general, root nouns are ablauting, their radical vocalism interchanging between ē̆-, ō̆- and zero grade according to morphophonemic criteria from Pre-Proto-Indo-European times, cf. e.g. Brugmann & Delbrück (1906: 130–146), Hirt (1929: 224–230), Kuryłowicz (1968: 26–36), Schindler (1972a: 8–9), Rasmussen (2003: 354–355), Fortson (2004: 73–74, 103–109) etc. According to Schindler (1972: 32–38), Proto-Indo-European root nouns displayed two basic types of ablaut:

1 e/Ø-ablaut (e.g. PIE nom.sg. *h₂nér, acc.sg. h₂nér-m̥, gen.sg. *h₂nér-ós 'man'), associated with action nouns and with agent nouns derived from verbal roots with stative semantics.

2 o/e-ablaut (e.g. PIE nom.sg. *nōkʷt-s, acc.sg. *nōkʷt-η, gen.sg. *nékʷt-s 'night'); however o/Ø-ablaut if the root contains a resonant (e.g. PIE nom.sg. *pōrk̑-s, gen.sg. *pr̥k̑-ós 'fallow deer'). This type is associated with feminine nouns with resultative or passive semantics and with agent nouns, often with iterative semantics.

According to the communis opinio, root nouns (and consonantal stems in general) were inherited from Proto-Indo-European into Proto-Germanic, but lost their productivity and gradually transitioned to other declensions. Thus, e.g., Krahe (1967: 34):

Von dem im Germ. vorhandenen kons. Stämmen, die sämtlich auf idg. Typen be-ruhen, stellen die unter "a" bis "d" behandelten Restgruppen [one group being the root nouns] dar, die im Laufe der Entwicklung in den Einzeldialekten als selbständige Gruppen ausgestorben und in andere Klassen übergegangen sind.

This view, however, is contradicted by Brøndum-Nielsen (1935: 146, 154–155) who observes that in North Germanic, the root-noun declension comprises words from other declensions. Similarly, Kroonen (2012: 255) asserts that the Germanic root-noun class had become open to loan words and substrate words. The early Germanic root nouns would thus appear to be if not thriving, at least in the process of recovering from their former moribundity. Consequently, a revision of the fate and vitality of the root-noun declension seems to be in order.

This article serves as an abbreviated version of a longer article published in my Ph.D. thesis (Hansen 2014: 20–50). It contains only the main points of my structural layering hypothesis regarding root nouns such as they were presented at the Etymology and the European Lexicon conference in September 2012.
In this article, I claim that root nouns and synchronically unanalysable, monosyllabic consonant stems be stratified into a number of layers. Basing my analysis on the Germanic material listed in section 2 (and 3.4), I propose the following three layers:

I  Root nouns inherited from Proto-Indo-European.
IIa Substrate or loan words.
IIb Nouns transitioned from other declensions in Proto-Germanic.
III Nouns transitioned from other declensions in North Germanic.

2. Material

My list of material consists of 47 lexemes that are inflected entirely or partially as root nouns in Proto-Indo-European (and continued in Proto-Germanic), Proto-Germanic or the individual Germanic languages. Due to limitations of space, an additional 24 nouns attested with root-noun inflection only in North Germanic (layer III, section 3.4) are not included.


1 PG *aik- *'oak'. Root noun in ON eik, OE āc and (maybe) OS ēk, OHG ei(c)h; i- or iō-stem elsewhere. Often affiliated with PIE *h2eǐg̑- 'shine', cf. e.g. Gr. aίγη (e.g. in aίγλωψ 'kind of oak'), Gr. aίγεος 'poplar', Lat. aesculus 'durmast oak, winter oak' vel sim. (< *aḯgcolos); further maybe ORu. jasv 'badger', Ru. jazv 'carp', OIr. āesc 'concha, clasendix'. As an alternative to PIE *h2eǐg̑-, we might consider reconstructing *aḯg̑- with original (post-)PIE *a, which is rendered likely by the semantics (botany) that implies a possible loan-word status, cf. e.g. Kroonen (2013: 9–10) for the Germanic forms and Frisk (1960: 30–31) for the Greek cognates. Layer I or IIa.

2 PG *alh- 'temple, sanctuary'. Root noun only in Goth. alhs; a-stem elsewhere. Possibly to be reconstructed as PIE *h2álki- *'strength' (dat.sg.); semantic connection to PG *alh- rather weak, though. An a-stem PIE *h2ólk-o- also underlying the Germanic a-stem is attested in e.g. Lith. ák̄as, elkas 'sacred grove' and Latv. ēks 'idol'; an i-stem is found in compounded forms such as Gr. ἀλκί-; Connections to PIE *h2leks- 'ward off, guard, protect' (Skto. rūksati 'protects'; Gr. ἀλέξω 'ward off') have also been invoked. A semantic point of reference between the Germanic and Balto-Slavic forms ('sacred grove, temple' etc.) on the one hand and Gr. ἀλκί 'strength' and PIE *h2leks- 'ward off, guard, protect' on the other hand may be seen in OE ǣlht, alh 'temple, place of sacrifice, protected area'. Kroonen (2013: 22) regards the Germanic and Balto-Slavic forms as borrowed from a non-Indo-European language. Layer I, IIa or IIb.

3 PG *anad-, *anid-, *anad- 'duck'. Root noun only in ON ∗nd, ∗nð; i-stem elsewhere. To be reconstructed as PIE *h2enHt(-i)~drops head; web-footed bird; cf. also e.g. Skt. ati- 'duck, web-footed bird, aquatic bird', Gr.(lon.) vj̣va 'duck', Gr.(Att.) νήμα 'duck', Lat. anas (gen.sg. anatis), Lith. antis, OPr. antis. The comparative data suggest that this lexeme is an i-stem or a root noun. In the former case, ON ∗nd, ∗nð 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 an original

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2 Henceforward, for the sake of convenience and brevity, nouns inflected entirely or partially as root nouns or as unanalysable consonant stems will merely be labelled 'root nouns'.

1 2
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If it is to be analysed as an original root noun (layer I), a partial transition from root-noun to i-stem inflection seems to have taken place in Proto-Indo-European already: cf. also Hansen (2014: 112) and Hinderling (1967: 113–115). The presence of the enigmatic second vowel PG *a ~ *i ~ *u may be regarded as further support for a root-noun origin. Thus, Hamp (1978: 30) sees this second vowel of the lexical stem as a "continuation of non-initial non-medial schwa." If such an analysis does not convince, another way of arguing for an inherited root noun is Kümmel’s (2004: 298–300) proposal that an analytic PG *u is inserted between the resonant and the plosive in word-final *-VRT#.

Alternatively analysable as an originally ablauting i-stem PIE *h₂énhtₐ- ~ *h₂ph₂-t-, cf. Kroonen (2013: 26) and Beekes (1985: 63–64). Layer I or III.

5 PG *and-, *anlp-, *und-, *unlp-, *umbi ‘about’ etc. with a wide array of descendants in individual Germanic languages. Fossilised case forms of PIE *h₂énht- ~ *h₂ht- ‘front, forehead; cf. Hitt. ha-an-za / hant-si ‘front’ etc. Outside Anatolian, this root noun is used only adverbially in fossilised case forms.

6 PG *bōk- ‘beech; book’. Root noun in ON bók, OE bōc ‘book’, OS bōk, OHG buoh; ð-and (j)ōn-stem elsewhere. From PIE *bʰeh₂g(e)(h₁ht₂)- or *bʰeh₂g(e)(h₂t₂)- to the root PIE *bʰeh₂g- ‘beech’, cf. Gr. φύσις ‘oak’, Gr./Dor. φυσίς and Lat. fōxus ‘beech’. Root-noun forms are known only in Germanic, the remaining IE branches displaying a feminine o-stem. Griepentrog (1995: 73–74) believes that both forms are archaic and that both originally meant ‘beech’, the feminine o-stem originating as an adjective of appurtenance secondarily altered into a synchronically more transparent feminine õ-stem in Germanic, cf. also Thöny (2013: 105–106). It is equally plausible, however, that the Germanic root noun arose when Proto-Germanic speakers, failing to acknowledge a feminine a-stem, turned it into part feminine root noun, part feminine õ-stem. Layer I or IIb.


8 PG *brān- ‘brow’. Attested as a wo-stem in OE brān ‘brow’ (only pl.), à also ON brún ‘brow; edge’ (pl. brýmn), in reality, an n-stem with radical and suffixal zero grade. To be reconstructed as PIE *brₐus-t- to the root PIE *bʰreust-. *swell’, cf. without the t-enlargement: OIr. brá ‘abdomen, womb; bruinne ‘breast, bosom, chest’ etc. Layer I.

3 Hamp (1978: 29–31) reconstructs nom.sg. PIE *H₁énH₁t-s (≠ PIE *h₂énh₁t-s) > *ánzt-s > *ánw₂-s > PG *änw₂-s; nom.pl. PIE *H₁énH₁t-es (≠ PIE *h₂énh₁t-es) > *ánzt-es > *ánw₂-es > PG *änw₂-es ~ *und-iz; and gen.sg. PIE *H₁₁pH₁t-ós (≠ PIE *h₂₁₁h₁₁t-ós) > *nut-ós > *nép- > *nep- > *ned-/nadd- > *an(ó)-d > PG *an(ó)-d. In contrast to e.g. Griepentrog (1995: 299–300) and Hollinder (1984: 34–36), Fulk (1988: 153–154) supports Hamp’s analysis but adds that the development cannot be restricted to final syllables in light of PG *anad-, *anid-, *anud- being, in his view, an i-stem.

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

5 Originally maybe OE brúa (nom.pl.) < PG *brá(w)jó, i.e. the dual form of the root noun PG *brá-, cf. e.g. Griepentrog (1995: 330).
structured as PIE *h₂br<H·- '(eye)brow', cf. Skt. bhṛč-, Gr. ὄφρος, Lith. brūvis, OCS brvò etc. Layer I.

9 PG *burg- 'city, town, citadel'. Root noun in Goth. baurga 'fortified place; town', OE burg, burh 'city', OFris. burich, burch 'castle; city', OS burg, OHG burg, burk; o澎湃- stem elsewhere. From PIE *bʰṛg̑- to the root PIE *bʰṛg̑- 'elevate', cf. also e.g. Av. bṛhrz- 'mountain', 'high, tall', Ofr. bri 'hill, elevated spot' and further Hitt. parku- 'tall, large, Toch. A pārkār, B pārkārē 'becomes strong', Arm. barj 'high, tall'. Layer I.

10 PG *dulp- 'festival, celebration'. Root noun only in Goth. dulp (only × dat.sg. dulp); normally i-stem in Gothic, e.g. dat.sg. dulpai, and elsewhere. According to Griepentrog (1995: 487), a possible misinterpretation of acc.sg. and not a root-noun at all.

11 PG *dur- 'door' (only pl.). Root noun in ON ðyr, a-, ón- or u-stem elsewhere. From PIE *dʰur̩- ~ *dʰur̩- '(double) door' (only du.), cf. also e.g. Skt. dvārav (with ḍ instead of dh from Skt. dvāv 'two'), Arm. dur-k' (pl.), Gr. θώρα, Gr.(Ion.) θόρη, Alb. derē, Lat. forēs (pl.), Ofr. dorus, Lith. dūrys (pl.). Layer I.

12 PG *fōt- 'foot'. Root noun in ON fōr, OE fōt, OFris. fōt, OS fōt, OHG fuoz, fuaz (normally i-stem); u-stem elsewhere. From PIE *pōd̄- 'foot', cf. also e.g. Skt. pād-, Av. pād-, Gr. πούς (ποδε), Arm. ṣnl, Lat. pēs (pēd-) etc. Layer I.

13 PG *furh- 'furrow'. Root noun only in OE furh; i- and ō-stem elsewhere. From PIE *prok- ~ *pyr̩k- 'stain, cf. the root noun Gr. πούς 'roe deer', πούς 'dewdrop' whose semantic connection to PG *furh- is, however, weak; as pointed out by Griepentrog (1995: 198–199), apportionment to PIE *perk̑- 'dig, tear up' may therefore be a more attractive option, cf. further Lat. porca 'soil between two furrows', PCelt. *riĉa 'furrow' (e.g. Gallo-Lat. rica) etc. Probably layer I.

15 PG *gāit- 'goat'. Root noun in Goth. gaits (or i-stem), ON geit, OE gēt, OS gēt; i-stem elsewhere. From PIE *gʰaϊt- vel sim. (original PIE a-vowel), cf. Lat. haecūs 'young goat, kid'. Apparent cognates without an initial consonant and with a different final consonant also exist, cf. e.g. Gr. aίτ (aiy-') 'goat' and the possible connection to PG *tīgōn- 'billy-goat' > OHG ziga and additional roots with similar semantics. Kroonen (2012: 246–247) follows D’akonov (1985: 132) in presuming borrowing from a Caucasian language into the European languages. Layer I (if original PIE a-vowel) or Ila (if loan word).

16 PG *gans- 'goose'. Root noun in ON gás, OE gās; i-stem elsewhere. From PIE *gʰan̩s- (original PIE *a), cf. also e.g. Skt. haṁsā-, Gr.(Att./Ion.) κηφ, Gr.(Dor./Boeot.) χαύ, Lat. ἄισε, Ofr. gēs 'swan', Lith. žąsis 'goose' etc. Layer I.

17 PG *gauh- 'barker, mocker'. Root noun only in RN gaupz (1x, nom.sg.). Normally seen as derived by means of the verbal noun suffix PG *-ba- from the verb PG *gaujana- 'bark, mock', cf. e.g. Looijenga (1997: 83–84). Layer Iib.

18 PG *hert- 'heart'. Root-noun inflection not preserved in Germanic; reinterpreted as neuter n-stem (Goth. hairto, ON hjarta etc.). From PIE *kerd̄- 'heart', cf. also e.g. Hitt. kerd̄- 'heart, centre, core', Skt. hr̩d̄- 'heart', Av. zor̩d̄-, Arm. sirt, Gr. κῆφ, Lat. cor (cord-), Lith. širdis 'heart; anger'. Layer I.

19 PG *hnut- ~ *gnut- 'nit'. Root noun in OSw. gnut* and OE hnutu (acc.pl. hnutē); also OHG niz, hniiz. From PIE *knid̄- alternating with PIE *kon-id̄- in e.g. Gr. κοβίς (kovi-) 'nit'; Alb. thënti. Kroonen (2012: 247) presumes substrate origin on the basis of the suffix *-id(h)-.
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\[ * \text{-ind}^{(b)} \], etc. also found in e.g. PG \text{*}arwīt- 'pea' corresponding to Gr. ἐρύθυνθος 'chickpea'.

Layer Ia.

PG \text{*}hnot- 'nut'. Root noun in ON hnot, OE hnutu (acc.pl. hnyte); i-stem elsewhere. From PIE \text{*}knud-; for cognates without the \text{-d}-extension cf. e.g. Lat. \textit{max} (\text{-c}) 'nut tree', OIr. \textit{cnu} 'nut'. Kroonen (2012: 248) presumes substrate origin on the basis of the widely divergent root extensions: PG \text{*}-d- (< PIE \text{*}-t-), Lat. \text{-k-} and Celtic vowel length from PIE \text{*}-H- of which PG \text{*}-d- may be described as a substrate suffix \text{*}-u(n)ind\(^{(b)}\). (variant of \text{*}-id\(^{(b)}\).) Layer Ia.

PG \text{*}idis-\text{-}edic- 'lady'. Root noun in OE \text{ides} 'female, lady', OS \text{idis}, \text{ides} 'wife', OHG itis '(divine) woman'. Maybe originally identical with the i-stem ON \text{dis} 'woman, girl; fairy, nymph; goddess' if we choose to follow Grimm (1844 [1865]:4–5) and Kroonen (2012: 248–250). On the basis of the unexpected vowel alternation between the West and North Germanic examples, Kroonen (2012: 249–250) posits a substrate word containing a prefix \text{*}a- (umlauted at an early stage to \text{*}e-) in PG \text{*}idis-\text{-}edic- 'lady' which also displays reduction of the radical vowel resulting from the prefixation, the full vowel being attested in the unprefixed form represented by ON \text{dis}. For previous attempts at an etymology, cf. Hansen (2014: 142). Layer Ia.

PG \text{*}kw̥- 'cow'. Root noun in ON kyr, OE cû, OFris. kû, OHG chuó (also i-stem); i-stem in OS kû. Hollifield (1979: 54) has explained the Germanic paradigm as \text{*}kw̥- (* \text{*}kô- ~ \text{*}kû-) abstracted from the acc.sg. PIE \text{*}gʷom of the diphthongal stem PIE \text{*}gʷōy- ~ \text{*}gʷuy- vel sim. 'cow', cf. also e.g. Skt. gāv-, Av. gāus, Gr. βοῦς 'cow, bull'. Gr.(Dor.) βοῦ, Lat. bōs (bov-) 'cow', OIr. bó etc. Layer I.

PG \text{*}lūs- 'louse'. Root noun in ON lús, OE lūs; i-stem elsewhere. From PIE \text{*}luH-s- (possibly with \text{*}s from hypostasis of the nom.sg. ending), cf. also e.g. W \text{luu} 'louse' (pl.) and Toch. A \text{lwa} 'animal', B \text{bwā} (pl.). Layer I.

PG \text{*}mann- 'man'. Partial root-noun inflection in Goth. mamma (\text{n}-stem), ON madr, mannr (\text{a}-stem), OE man(n), mon(n) (\text{a}-stem), OFris. mann, monn (\text{a}-stem), OS mann (\text{a}-stem), OHG mann (\text{a}-stem). Probably to be compared to PIE \text{*}monu-\text{-}man, cf. e.g. Skt. manu- 'man, progenitor' and the \u015bee\text{-stem} reflected in WG Mannus. An alternative etymology suggests that PG \text{*}mann- split off from PIE \text{*}d̥g̥m-on-\text{-}man, cf. e.g. Lat. homō 'man'. In either case, the transition to root-noun inflection is undoubtedly a secondary development within Germanic. Layer IIB.

PG \text{*}mark- 'border, region; mark (unity)'. Root noun only in ON mork 'mark (unity)' (partially i-stem) and maybe in OFris. merk 'certain currency'; \u015bee\text{-stem} elsewhere, including in ON mork 'border area, forest'. From PIE \text{*}mroǵ̣- ~ \text{*}mr̥g̑-, cf. the root noun of PCelt. \text{*}brog̣- ~ \text{*}brig-. (Gaul. -broges, OIr. brí); secondary i-stem in PCelt. \text{*}mroǵ̣- ~ \text{*}brogi- (> OIr. mruig, bruig 'mark, landscape') and o-stem in Av. marzzōm 'border, mark' (acc.sg.) etc. Probably an original PG a- or \u015bee\text{-stem} (PIE \text{*}mroǵ̣-o/eh₂- > PG \text{*}marka/ô-) with Schweblaut that was formed from the zero grade of the root noun, i.e. PIE \text{*}mr̥g̑- > PG \text{*}mрук\text{-} > PG \text{*}mark-a/ô-. Alternatively, PCelt. may have formed \text{*}brog- analogically from the zero grade PCelt. \text{*}brig- (< PIE \text{*}mr̥g̑-); consequently, the root noun would have been PIE

\text{\textsuperscript{7}} Lat. \text{-k-} may result from laryngeal hardening, though, cf. e.g. Olsen (2010: 214).

\text{\textsuperscript{8}} For the alternative reconstruction of the PIE word for \text{\textit{cow}} as a \text{\textit{u}}-stem \text{*}gʷeh₂-u- rather than a root noun see e.g. Kurtyłowicz (1927: 229–233) and later Beekes (2010: 232–233), Kroonen (2013: 299) and Nielsen Whitehead (ms.).

\text{\textsuperscript{9}} For the alternative etymology of OIr. brí as reflecting PIE \text{*}bhṛghr̥- 'high' see NIL (2008: 30); the full-grade variant of Gaul. \text{*}broges may be of no relevance to our purpose, since it occurs as a second element and in onomastic material only, cf. also Nielsen Whitehead (ms.).
*morg̑- ~ *mr̥g̑-, and the PG form might be a direct continuation of the PIE root noun. Layer I or IIb.

PG *med- 'with, within' with cognates in all the major individual Germanic languages. From PIE *mēdh- ‘with, within, in the middle of’ (loc.sg.). Layer I.

PG *meluk- ‘milk’. Root noun in Goth. milukas (only gen.sg. milukas 1s), ON mjólk, mjolk, OE meolc, OFris. melok, OHG miluch; a-stem in OS miluk (only gen.sg. milukas 1s). From PIE *h₁mel- (hardly PIE *h₁melH₂ > PG *meluk-, cf. Gr. ἁλέγυω ‘milk’ without traces of PIE schwa; however, Lith. mėlų would appear to preserve a trace of the laryngeal, unless the acute accent is due to Winter’s Law or Narten status of the root itself; cf. further Skt. mārgti ‘wipes off’, Av. marzaíaiti, marzaíaiti ‘brushes, touches lightly’, Gr. ἁλέγυω ‘milk’, Lat. mulaeus, Mr. bligim, Lith. mėlų etc. PG *meluk- may be explained as a contamination of full grade *mêlk- and secondary zero grade *mêluk- (according to Griepentrog (1995: 300–301 with further lit.) formed analogically from a secondary full grade PG *mûk-s < *mêlk-s in the nom.sg.). Bammesberger (1990: 197) remains sceptical to that analysis and prefers to explain the *u of PG *meluk- as due to analogical influence from PG *alûk- ‘ale, beer, intoxicant’. Kümmel (2004: 291–292, 301) provides a different analysis: that an anaptyctic nok this, however, remains speculative.

Root noun in Goth. *mûs- ‘mouse; muscle’. Root noun possibly (and if so only partially) in OHG mjolk-s. From PIE *h₃mék-s. From PIE *mūs- ‘muscle’; Lat. mûs ‘mouse’, OCS noštь etc. Layer I.

PG *naht- ‘night’. Root noun in Goth. nahts, ON nátt, nótt, nýtt, OE neaht, niht, OFris. nacht, OS naht, OHG naht. From PIE *nok-t- ~ *nek’t- ‘night’, cf. also e.g. Hitt. nekuz ‘(in the) evening’ (gen.sg.), Gr. νυξ ‘night’, Lith. naktis, OCS noštь etc. Layer I.


PG *(ga-)naut- ‘fellow, companion’. Root noun possibly (if so only partially) in OHG ginōz, kinōz, kanōz; otherwise a- or an-stem in OHG and (a)stem elsewhere. Griepentrog (1995: 490–491) regards the root-noun forms as scribal errors.

PG *nót- ‘large (fishing) net’. Root noun only in ON nót (also i- and ō-stem inflection) which was borrowed into multiple Finno-Ugric languages. Either from PIE *netH₂d- or *noHd- ‘tie together’, probably as a nomen rei actae *noHd- ‘tied together’ (cf. Lat. nōdus ‘knot’), or as a PG yṛdhē-derivation *nōtō- ~ PG *natja- ‘(fishing) net’. In the latter case, the root noun would be secondary and probably late, though cf. Darms (1978: 308–310). Layer I or III.

PG *rik- ‘ruler, king’. Root noun in Goth. reiks ‘ruler’. Borrowed into PG from P Celt. *rig- (< PIE *h₁rēg-, cf. also Lat. rex ‘king’) as reflected in e.g. Ofr. rī before the Germanic sound shift but after PIE *ē > P Celt. *ī. Layer Ila.

PG *si-dl- (?) ‘herring’. Root noun only in ON síld; ō-stem elsewhere (if any attestations beyond North Germanic). Owing to its opaque etymology, PG *s̥i-dl̥- (?) may be a lexical borrowing from an unknown source, i.e. a substrate word. This, however, remains speculative since the phonotactics of the form do not specifically suggest so. Kroonen (2013: 436) tentatively reconstructs an old i-stem PIE nom.sg. *sēl-ōt, gen.sg. *sīl-t-ōs, thereby
sugestting Du. zeelit 'trench' to be related to ON sild. Layer I or IIa – or layer III seeing that root-noun inflection is, after all, found only in Old Norse.

PG *skrūd- - 'robes'. Root noun only in OE scrūd and maybe only as a pseudo root noun 1x or 2x (dat.sg. and acc.pl., respectively) in the Psalter glosses; normally an a-stem in OE and elsewhere. According to Griepentrog (1995: 489–490), no or only scant basis for root-noun assumptions.

PG *spyrhd- - 'track, course'. Root noun in Goth. spaurds, OE spyrd, OHG spurt (normally i-stem). Perfect extra-Germanic cognates in Skt. spṛdh- 'contest, fight', Av. sporsd- 'zeal, alacrity'; all from PIE *spyrdh- - 'competition', cf. further the verbal root in e.g. Hitt. ḫṣparr- 'escape, run away', Skt. spāṛdhate 'competes, fights'. Layer I.

PG *stadj- ~ *stuph- ~ *stud- - 'prop, support, post, pillar'. Consonant stem in OE studu, stuthu (u-stem otherwise) and ON stōd (pl. stēdr, stōdr); ablaut relations uncertain. Root noun status rejected by Griepentrog (1995: 490) but ascertained by Schaffner (2001: 639) who, without mentioning PG *stadj-, reconstructs *stuph- ~ *stud- - on the basis of PIE *sthūr-t-, i.e. the zero grade of PIE *steh2- - 'stand', possibly an extension of PIE *steh2- - 'stand'; compare Skt. sthūnā- 'pillar < PIE *stah2- (with laryngeal metathesis). Layer I.

PG *sūh- - 'plough'. Root noun only in OE sulh; related a-stem in PG *selhā- - 'seal, i.e. (animal) that drags itself along the ground' > e.g. ON seh, SEOH selh. From PIE *selk- - ~ *sjk-; cf. Gr. ἀλκω 'pull, Gr. ὀλκοκ 'furrow', Alb. thi 'pig', Lat. sūs 'pig, sow' etc. Layer I.

PG *sulh- - 'plough'. Root noun status rejected by Griepentrog (1995: 175) who, without mentioning PG *sulh-, reconstructs *sulv- - ~ *surv- - on the basis of PIE *stūv- - 'be accompanied', i.e. root PIE *stōv > PIE *surv- - 'each other' etc. Layer I.

PG *tarbh- ~ *tundh- - 'tooth'. Consonant stem in ON tønn, OE tôp, OFris. tôth, OS tand and OHG zan, zand; u-stem in Goth. tunþus. From PIE *h₂d-ont-/*h₂d-nt- - 'tooth' (present participle of *h₂ed- - 'eat'), cf. also Skt. dān (dant-), Gr. ὀδόν (ὀδοντ-), Lat. dents (dent-), Lith. dantis etc. Layer I.

PG *trafr- - 'fringe'. Root noun only in ON trefr - 'fringes' (pl.) which coexists with tref (pl.) to traf 'scarf'; ō-stem elsewhere. Due to the lack of comparative evidence, Griepentrog (1995: 462) is cautious about accepting inherited root-noun inflection. From PIE *drep- - 'pluck, cut off'; cf. e.g. Skt. drāpi- 'mantle, garment', Gr. δέρπω 'pluck, cut off'. Granted the existence of a root noun PIE *drep- - > PG *trafr- - '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. Layer I or III.

PG *turb- - 'tuft, tuft of grass, bunch of grass', Toch. A tarp 'river bank covered by scrub' etc. Layer I.

PG *þrūh- - 'wooden chock, hollow trunk'. Root noun in ON þrō 'trough', OE þrūh 'trough, pipe; chesi, box', OS þrūh 'fetter', OHG druoh, drū, thrūch 'futter, sling, trap' (primarily i-stem). Etymology uncertain: either from PIE *terihu- - ~ *truh- - 'wear out, tear, weaken' with k-extension or from PIE *trunk-, cf. Lat. truncus 'destroyed, cut off'. Probably layer I.

PG *ifer-judh- - 'last year'. Root noun in ON (i) ḫyrð. From PIE *iet- - ~ *uτ- - 'year', cf. the exact parallels of Skt. pariś 'last year', Arm. herow, Gr. nēpou, Gr.(Dor.) nēpēt. Root noun also in Hitt. witt- - 'year'; cf. further the s-stems Gr. ἔτος, ἔτος, Lat. vetus (vetor-) 'old' etc. Layer I.
3. 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. those ablauting ó/é and those ablauting é/Ø, Schindler (1972: 34–36) establishes a third type, originating as a subtype of the ó/é type. Nouns of this type, which have the root structure -ERT, would develop radical zero grade in the weak form, resulting in a new ó/Ø ablauting type.

Building on this claim by Schindler, Nielsen Whitehead (2010; 2013; ms.) demonstrates that, out of 32 examined roots of the structures -RC and -HC, the vast majority displays generalised zero grade in both the strong and the weak cases. She concludes that root nouns in Proto-Indo-European eventually come to appear in a form that meets three criteria: (1) that the root has to contain at least one consonant in the syllable onset; (2) that it must display a vocalic element; and (3) that no more than one consonant is allowed in the radical syllable coda. The third constraint, however, does not apply to roots with only obstruents in their syllable coda.

Scrutinising the Germanic root nouns reveals that Nielsen Whitehead’s claim is partially valid: the ablaut of a Proto-Germanic root noun is highly predictable from the root structure; cf. also Griepentrog (1995: 419) and Kümmel (2004: 298–299) for similar statements. In particular, I believe that inherited Germanic root nouns display:

1. Radical é/-ó-grade with the structure CV(C): *bōk- (layer IIb also possible), *fōt-, *kwō-, *nuht-, *nōt- (layer III also possible), *traf- (layer III also possible), *wōlh- and *wrōt- (layer III also possible).

2. Radical zero grade with the structure CVRC: *brust-, *brū-, *burg-, *dur-, *furh-, *läs-, *mūs-, *spurd-, *sū-, *sulh-, *turb-, *þrūh-.

3. Preservation of original a-vowel regardless of the structure: *aik- (layer Ia also possible), possibly *alh- (layer Ia or IIb also possible), *gait- (layer Ia also possible), *gans- and *nās-.

The argument of attributing (some of) these root nouns to layer Ia rather than layer I obviously gains further strength under the theory that Proto-Indo-European had no true *a.
As neat as this distribution may seem, a range of apparent counterarguments or exceptions present themselves.

Firstly, in the case of *aik-*, we would a priori expect PIE ʰₙⱽᵣ̥k- > PG ʰᵣⱽk. If, however, we posit ʰᵣⱽk- with an original (post-)PIE *a, we may postulate a lexical borrowing. A further alternative to consider is that Germanic, like Greek, displayed vocalised reflexes of initial laryngeals (at least of PIE ʰ₂j) followed by either *i or *u, cf. Hansen (2014: 166–167; 2015: 43), in other words that PIE ʰ₂jᵣk- yielded PG *aik- by regular sound law.

If reconstructed with PIE ʰⱽᵣ- rather than *a-, *alh- seems to constitute another exception. However, we find root-noun inflection of this lexeme only in Gothic; the remaining Germanic languages display an a-stem which is probably very old since it lacks the anaptyctic PG *u between the resonant and the plosive as normally expected for word-final *-VRT#, cf. e.g. Kümmel (2004: 301). Outside Germanic, we find root-noun inflection in Greek (only attested in dat.sg.), too, albeit with somewhat aberrant semantics. If this is really an inherited root noun and not, say, a PG a-stem (in which case *alh- would belong to layer Ib), the a-vowel may be original. This possibility can only be rejected by invoking a relation to the root PIE ʰ₂kᵣeks- ‘ward off, guard, protect’ Skt. rākṣati, Arm. arācel, Gr. ἀλέκω etc. (IEW 2005: 32). Alternatively, PG *alh- may be a lexical borrowing and thus affiliated with layer Iia, cf. Kroonen (2013: 22).

Adverbial or prepositional forms like *and-, *anb-, *und-, *unb-, *āmbi, *fur- and *med- are not valid counterexamples, since they appear as archaisms in fossilised case forms with adverbial or prefixal function even in the earliest attestations; they probably hark back to a period prior to the introduction of the distributional rules outlined in section 3.1. Consequently, we may disregard them.

Also to be disregarded is *hert-. If the distributional rules are valid, we would expect PG ʰᵣᵽᵣt- < PIE ʰᵣᵽᵽᵣt-. However, this lexeme is attested as a neuter a-stem, never as a root noun, in Germanic. Already in Proto-Germanic, there was a tendency of assigning body parts to root nouns in Germanic, a new full grade would most likely develop as PG ʰᵣᵽᵽᵣt-. In Germanic, such a Schwebeblatt development may have occurred after the zero grade PIE ʰᵽᵽᵽᵽᵽᵽ- was vocalised as PG **ₙᵽᵽᵽᵽᵽ- with the epenthetic vowel inserted before the resonant. Granted the survival of only the zero grade of the root noun in Germanic, a new full grade would most likely develop as PG *ₙᵽᵽᵽ-, not as **ₙᵽᵽᵽ-. This analysis is not unproblematic, though. First, the purportedly secondary full grade is also attested in Av. marzam ‘border, mark’ < PIE *ₙᵽᵽᵽ-; Secondly, PCelt. *ₙᵽᵽᵽᵽ- may easily be secondary, formed in analogy with the zero grade PCelt *ₙᵽᵽᵽᵽ- < PIE *ₙᵽᵽᵽᵽ-, cf. also Schindler (1972: 34–35) who reconstructs PIE *ₙᵽᵽᵽᵽ-; and assumes that PG *ₙᵽᵽᵽᵽ- reflects the PIE root noun directly. Only if we accept either of these premises is *ₙᵽᵽᵽ- a true exception to the distributional rules outlined above.

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3.1.1. Apparent counterexamples

If this transition happened early enough, *hert- would not have been a member of the root noun class at the time when the distributional rules were active.

Secondly, PCelt. *ₙᵽᵽᵽᵽ- may easily be secondary, formed in analogy with the zero grade PCelt *ₙᵽᵽᵽᵽ- < PIE *ₙᵽᵽᵽ-, cf. also Schindler (1972: 34–35) who reconstructs PIE *ₙᵽᵽᵽᵽ-; and assumes that PG *ₙᵽᵽᵽᵽ- reflects the PIE root noun directly. Only if we accept either of these premises is *ₙᵽᵽᵽ- a true exception to the distributional rules outlined above.

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11 PG *fur, *med and *unb- (incl. *ₙᵽᵽᵽ-), i.e. the by-forms of *anb-/*and-*, 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.
According to Kroonen, these and further criteria are met in the four root nouns *stud-.

If a root noun at all, *anid- may have undergone a similar fate. He suggests that these borrowings all appeared in the nom-*tan*-stems in the syllable onset, e.g. *tanp-, with its retained ablaut, was still interpreted as a participle or at least as an "nd-stem" (< PIE *h1d-ónt- ~ *h1d-ŋt- 'eating'), it cannot be expected to follow the distributional rules outlined in section 3.1. A somewhat similar explanation, viz. an ablating t-stem that was still analysable to the language users, might be provided for *si-d- (?!) if, as suggested by Kroonen (2013: 436), this is not a substrate term.

PG *tanp- might count as a counterexample per se (next to expected *tund-). However, if *tanp-, with its retained ablaut, was still interpreted as a participle or at least as an "nd-stem" (< PIE *h1d-ónt- ~ *h1d-ŋt- 'eating'), it cannot be expected to follow the distributional rules outlined in section 3.1.

Finally, *(fer-)ud- should ideally have full, lengthened or o-grade, since according to the distributional rules outlined in section 3.1, all root nouns should have at least one consonant in the syllable onset. However, 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. *pratīcāh 'face' (gen.sg.) < PIE *proti-h3k*-ōs.

A number of items analysed in section 2 (and 3.4) cannot reasonably be treated as counterexamples even if their radical ablaut grade deviates from what the distributional rules outlined in section 3.1 predict, e.g. "PG" *tang- 'tongs'. This is because they had not yet entered the root-noun declension at the stage when the rules were still active. Rather, they were adopted into the root-noun declension at one of the later stages represented by my suggested layers IIa, IIb or III.

3.2. Layer IIa: Substrate or loan words

Kroonen (2012: 242–255) accounts convincingly for some problematic lexemes by listing a number of known substrate markers, including the suffix PG *-it- ~ *-ūt-, seemingly related to Gr. *-it- ~ *ukt- ~ *-it-; the prefix *a/-e- alternating with *O-; and consonant clusters that violate the general phonotactic constraints of Proto-Indo-European and Proto-Germanic. According to Kroonen, these and further criteria are met in the four root nouns *gait-, *hnit- ~ *gnit-, *hnut- and *idis/-edis-. He suggests that these borrowings all appeared unsegmentable to the speakers of Proto-Germanic and were consequently assigned to the root-noun declension.

Kroonen's etymologies have the general advantage to those of a range of other substrate theories that they are proposed on the basis of structural considerations and, in many cases, known possible substrate sources. It is beyond the scope of this article to assess the details of

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12 Kroonen (2012) also includes the two cases of PG *arwít- 'pea' and *wśunk- ~ *wšunk- 'European bison, Bison bonasus', but since these are not monosyllabic root nouns, we may leave them out of consideration here.
Kroonen’s etymologies and general idea, but I will note that the identification of these root nouns as borrowings is of great utility to my claim regarding the predictability of the ablaut grade of inherited root nouns (layer I). Assuming that the items on Kroonen’s list were borrowed into Proto-Germanic at a time subsequent to the active application of the distributional rules outlined in section 3.1, a root noun like PG *gait-*, whose ablaut grade would violate these rules, becomes irrelevant due to its late borrowing.

Besides the items listed by Kroonen (2012), yet another handful of obvious candidates for membership in layer IIa must be considered, viz. *aik- (layer I also possible), *alh- (layer I or IIb also possible), *brōk-, *rik- and *si-dl- (?) (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 transitioned from other declensions in Proto-Germanic

Of the three suggested layers, IIb is 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). It consists of nouns that have transitioned from other declensions into the root-noun declension, probably in Proto-Germanic. In principle, it is likely that layer IIa and IIb are simultaneous, the only difference being that they are fed with material from two different sources.

According to the survey in section 2, the following root nouns may belong here: *alh- (layer I or IIa also possible), *bōk- (layer I also possible), *gauh-, *mann- and *mark- (layer I also possible, cf. section 3.1.1). It may be noted that some of the root nouns fitting the distributional rules outlined in section 3.1 may just as well have entered Proto-Germanic at this later stage. Evidently we often rely on extra-Germanic comparanda when ascertaining if an item belongs to layer I or to layer IIb.

A further complicating factor regarding layer IIb is the lack of transparency as to what motivated the transition of a noun from one of the vocalic declensions to the root-noun declension. Partial case syncretism between the providing a- and ò-stem declensions and the receiving root-noun declension is, in my view, the most appealing explanation. The question remains, however, why so few nouns of this type made the (full or partial) transition to the root-noun declension. Why not, say, PG *gebō- ‘gift’ (→ †geb-) or *fugla- ‘bird’ (→ †fugl-)?

3.4. Layer III: Nouns that transitioned from other declensions in North Germanic

As noted in section 1, it is a long-known fact that the North Germanic root-noun declension was, at some point, revitalised and began to accept new members from other declensions. Contrary to the situation in layer IIb, North Germanic thus saw an extensive influx of nouns to the root-noun declension.

The catalysts behind this North Germanic development are far more transparent than those behind the similar developments of layer IIb, cf. Brøndum-Nielsen (1935: 146, 154–155) and Hansen (2014: 45–46), so we can safely posit a third layer distinct from and considerably younger than the former one. It can hardly be excluded, though, that this layer is a mere continuation of the second layer, i.e. that the developments and mechanisms initiated in layer IIb 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 labelled layer III.

Nouns belonging here include the PG projections *anad-, *anid-, *anud- ‘duck’ (layer I also possible), *bōt- ‘penalty, compensation’ (ON bót), *fingr- ‘finger’ (ON fingr), *flōh- ‘layer, stratum’ (ON flō, flā) (if with root-noun inflection at all, cf. Grießentrog (1995: 452–454)), *glōd- ‘red-hot ember’ (ON glōd), *hand- ‘hand’ (ON hǫnd), *kinn- ‘cheek’ (ON kinn), *klōw-
A few newly created root nouns of layer III are not that easily explained, however. It remains enigmatic what triggered the transitions of *hind- ‘fallow buck, hind’ (ON hind), *kwerk- ‘throat’ (pl. ‘neck’) (ON kverk), *si-dl- (? ‘herring’ (layer I or Ia also possible), *sé-ing- (? ‘bed’ (ON sæ(i)ng), *tik- ‘bitch’ (ON tik), *wik- ‘creek, inlet’ (ON vik), *-t(a)ug- ‘ortug (unity)’ (OEN/Gutn. *-t(a)ug) and maybe *hnik ‘sheaf’ (OEN nek).

4. Conclusion

I have argued that root nouns in Proto-Germanic and the individual Germanic languages may be attributed to three chronological layers:

I Root nouns inherited from Proto-Indo-European.
IIa Substrate or loan words.
IIb Nouns transitioned from other declensions in Proto-Germanic.
III Nouns transitioned from other declensions 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; ms.):

1 Radical ĕ-/ō-grade with the structure CV(C).
2 Radical zero grade with the structure CVRC.
3 Preservation of original a-vowel regardless of the structure.

However, these distributional rules should not be applied to the Germanic material until the subsequently created root nouns of layers IIa, IIb and III have been identified and filtered out. Also, we do not expect the rules to be fully operational until, depending on the preferred analysis, PIE *H in final syllables has been vocalised or an apaptyctic PG *u has been inserted between the resonant and the plosive in word-final *-VRT#. At least three problems remain to be solved, though, viz. (1) that it is often impossible to distinguish between an original, Proto-Indo-European a-vowel (layer I) and an a-vowel that has entered the language through borrowing (layer IIa); (2) that it is not clear what triggered the transitions of layer IIb; and (3) that, even in layer III, we find a residual quantity of root nouns with no obvious catalyst. Future studies will hopefully unravel some of these matters.

References

Layers of root nouns in Germanic


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