Chapter 2: Prosodic Features and the Syllable

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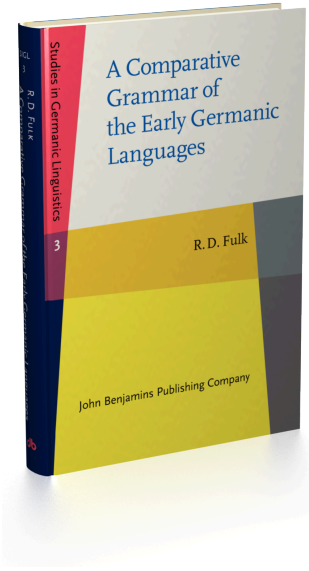

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CHAPTER 2

Prosodic Features and the Syllable

2.1 The Proto-Indo-European lexical accent

A distinction is often drawn between languages with stress accent (or 'expiratory' or 'dynamic' accent in the older literature), as with English, German, and Russian, and those with pitch (or tone, or 'musical') accent, as with Lithuanian and Japanese.[1] In the stress type, the primary features of the accented syllable are greater volume and duration, as well as higher pitch, though the relative importance of these properties varies from one stress language to another; and the lesser expiratory force expended on unaccented syllables tends to lead to weakening (i.e., centralization) or loss of the vowels in them. Unaccented syllables tend to be much better preserved in languages with pitch accent, such as ancient Greek and Vedic Sanskrit, wherein the primary feature of the accent is variation (not merely elevation) in pitch (i.e., the rate of vibration of the vocal cords), though stress may also be involved. It is generally agreed that the PIE accent was of the latter type at the end of the PIE period, though at an earlier time it must have been of the former type, as this is surely the origin of alternations between weak and full grades in ablaut (see §3.1).

A distinction with more significant consequences for Germanic linguistics regards the position of the accent: in many languages the place of the accent within the word is entirely predictable on the basis of a mechanical set of rules. This, for example, is the case in Welsh and Polish, where the accent in words of more than one syllable is on the penult, and in French, where it is on the ultima (if, in fact, any syllable in French receives greater stress), and in Latin, where the accent falls on the ultima if it is a heavy syllable, otherwise on the penult. Such an accent is said to be bound. In languages in which the position of the accent is not predictable, or not entirely predictable, such as English and Spanish, the accent is said to be free. It is apparent that the PIE accent was free, a situation best preserved in Vedic Sanskrit, which is thus often of fundamental value in determining the position of the accent in PIE for a given reflex.[2]

In Greek, Sanskrit, and Lithuanian, a bimoric vowel or a diphthong may bear the accent on either the first or the second mora. Thus, for example, the accent is on the first mora of *ω* in Gk. *αὐτῶν* 'themselves' (gen.) but on the second in *ἐγώ* 'I'. It has very often been assumed that the same opposition between circumflex and acute accent must have obtained in PIE, but since it is now generally agreed that the chief source of the circumflex accent, the loss of laryngeal consonants (§3.1), took place in the IE daughter languages rather than in PIE itself, this cannot have been the case.[3]

Across languages, words serving primarily grammatical functions, such as conjunctions and prepositions, tend to be unaccented. For prosodic purposes these are called clitics (from Gk. *κλιτικός* 'leaning'), because they are perceived to be attached prosodically to a stressed word: they are proclitics if the stressed word follows, enclitics if it precedes.

Some words, most notably some pronouns, occupy a middle tier, being sometimes accented and sometimes not. Doublets of this sort can have some important consequences in Germanic: see §8.1. Finite verbs, in particular, are shown by Gmc. alliterative meters to group with words of this middle tier (see Kuhn 1933). Finite verbs in fact do appear to have been accentually less prominent than nouns, adjectives, and non-finite verb forms, at least in independent clauses, in Proto-Indo-European. The evidence for this is of various kinds. In the manuscripts of Vedic Sanskrit, finite verbs in primary clauses are written without accent, as long as they do not begin a clause or a poetic line, and in Greek the accentuation of verbs resembles that of clitic strings rather than that of nouns (Fortson 2010: 109). In the older Germanic languages, particularly, verbs in primary clauses normally appear as the second element, and this is the same position occupied by unstressed sentence particles in some other IE languages (a phenomenon known as Wackernagel's law: see Wackernagel 1892, Collinge 1985: 217–19).

In general, the PIE accent in thematic formations (including some nouns, adjectives, and verbs) is static, appearing on the same syllable throughout the paradigm, though there are exceptions. In athematic formations the accent is usually dynamic, shifting its position within the paradigm. In general, the dynamic accent appears in a leftward position in the nom. acc. of nomina and the sg. of verbs, otherwise in a rightward position. See Clackson 2007: 79–88 for a succinct account of the attested patterns of variation, and see §7.4 on the accentuation of nouns.

1. It has been pointed out that this terminology is inaccurate, and the distinction is better described as that between an accent distributed across an entire syllabic phoneme and one limited to a single mora of the phoneme: see Szemerényi 1996: §5.2, with references. The precise nature of the distinction is of no importance in the context of early Gmc. grammar. Languages with tone accent are not the same as tonal languages, such as Chinese and Yoruba, in which every syllable may have a discrete tone, whereas tone accent is usually confined to a single syllable in a word. It should be said that the identification of prosodic types is fraught with difficulties practical and terminological. For an informative discussion, see Hyman 2006. 'Stress' and 'pitch' must be understood as relative rather than absolute descriptors in regard to accent types.

2. The term 'free' should not be taken to imply that in a given word any syllable, chosen at random, might be accented. Rather, in every word there was a proper place for the accent, but the place was not predictable (or not entirely predictable) by rule, nor was it limited to any particular part of the word by general rule.

3. In Greek, circumflexion also arose due to loss of intervocalic **s*, **y* (*i̯*), and **w*, and by morphological processes.

2.2 Lexical accent in Proto-Germanic

In Proto-Germanic, the accent inherited from PIE was altered fundamentally, changing from a free pitch accent to a bound stress accent.[1] From the evidence of Verner's law (§6.6) it may be deduced that the accent was still free after the First Sound Shift (§6.4), and most suppose that it had become a stress accent, on the assumption that this is likelier to explain the voicing that took place under Verner's law.[2] Conversion to a bound accent must have taken place at a later time. On the dating of Verner's law, see §6.7.

When the accent shifted in Proto-Germanic, in most lexical categories it came to rest on the initial syllable of the word, as in Italic and Celtic. It was the fixing of the stress accent on the initial syllable that began the extended process of the reduction and loss of inflectional syllables.[3] The prefix **ʒa-/*ʒi-* is never stressed, but other prefixes on nouns and adjectives were usually stressed, though there are isolated exceptions. For example, words bearing the privative prefix *un-* usually alliterate with words bearing

vocalic initials in OE poetry, though exceptions are to be found.[4] The chief exception to the rule of initial stress is that verb roots receive primary stress, leaving prefixes unstressed or with a lesser degree of stress.[5] The chief evidence for root-stress in verbs is of two kinds: alliterative patterns in verse and vowel reductions in prefixes. The usual explanation for the different accentuation of verbs, first proposed by Loewe (1933; already in the 1st ed., 1905: 1.33), is that at the time of the accent shift, prefixes were not yet univerbated with verbs but stood in front of them as proclitics, a property inherited from PIE. Evidence for this analysis may be derived from Gothic, in which other parts of speech may stand between such particles and the verb root, as in 3 sg. *at-uh-þan-gaf* 'and then delivered' (*-uh-* 'and', *-þan-* 'then') and *us-nu-gibiþ* 'render therefore' (*-nu-* 'therefore'). It is for this reason that verbs derived from prefixed nouns have initial stress rather than root stress, as with OE *and-swarian* 'answer' (verb; cf. *and-swaru* 'answer' (noun)).

In addition to primary, full stress, there is secondary stress on the second constituents of compound nouns and adjectives, as with Go. *árma-haìrts*, OE *éarm-hèort* 'merciful'.[6] Another kind of subordinate stress is found in quasi-compounds (including dithematic personal names), i.e. compounds not composed of two free morphemes, such as Go. *and-waírþs* 'present'. As the meter of OE poetry demonstrates, these did not normally bear ictus (and thus, presumably, stress) on the second constituent except when another syllable followed, hence OE *nórð-weard* 'north' (adj.), but nom. pl. *nórð-wèarde*.[7] The difference in degree of stress on the second constituents of compounds and quasi-compounds is proved by the complete resistance of vowels and diphthongs under the former to be reduced, whereas vowel reductions often do apply to the latter, as with compounds that lose their transparency, e.g. OE *fultum* 'aid', early *fulteam*. This degree of stress on quasi-compounds is commonly referred to as tertiary stress.[8] That there really is a degree of stress on the middle syllables of quasi-compounds is demonstrated by instances in which there is no vowel reduction, as in OE *ān-fealdes* 'simple' (gen. sg.) and *wīs-dōmes* 'of wisdom', since diphthongs and long vowels ought not to appear in fully unstressed syllables. Diphthongs and long vowels in the unstressed syllables of words like OE *norð-weard* and *ān-feald* are probably due to the influence of the inflected cases (see Fulk 2002: 82 n. 3). The nature of stress can hardly have been uniform across the Germanic languages,[9] but the metrical similarities of the surviving alliterative poetry in North and West Germanic languages suggest a tiered system of stress relations like that in Old English, e.g. OIcel. *þann er saklauss var* 'him who was blameless' (*Sólarljóð* 22, with non-ictic *-lauss*) beside *vitlaussi mjǫk* 'very foolish' (*Helreið Brynhildar* 5, with ictic *-laus-*).

1. For an overview of early Gmc. prosodics, see Bennett 1972.

2. But cf. Polomé 1994: 18. Alternatives to this analysis have occasionally been proposed. Boer (1916: 110; 1924: 123–4) argues that Proto-Germanic retained a pitch accent for a time after developing the stress accent, and that voicing occurred between the two accents, so that Verner's law may be dated later than the accent shift. (For references to some studies proposing similar ideas, see Boutkan 1995b: 105.) Prokosch (1939: §20a n.) objects that this leaves Verner's law effects in final position unaccounted for and ignores the natural connection between voicing and stress (as seen in, e.g., the distinction between Mod.Eng. *exact*, *exert* with /gz/ and *exercise, execute* with /ks/). Bennett (1972: 100–2) proposes that after the accent shift the PGmc. fricatives had fortis and lenis allophones, the former occurring initially and "medially or finally if the nearest preceding parent vowel or other syllabic had already borne primary accent" (101). This again links medial and final voicing to pitch accent rather than stress, and it fails to account for the problem with the standard analysis that motivates Bennett's search for an alternative, the unexpected initial voicing in PGmc. **ʒa-* < PIE **kom-*. David Fertig has kindly called attention to the dissertation of a former student of his in which it is found that preceding and following pitch may have an effect upon the perception of voicing in fricatives

(Cornish 2007), thus calling into question the assumption that the Gmc. accent was a stress accent at the time that Verner's law applied.

3. Initial stress is necessary but not sufficient to explain the reduction of final syllables: e.g., E. Haugen (1969: 107) points out that Finnish, with an initial stress accent, does not reduce final syllables. In view of the preservation of long vowels in medial syllables in Gothic, Kotin (2012: 34) argues that stress in that language had not yet shifted entirely to the initial syllable.

4. For example, the prefix *un-* alliterates at more than 40 places in *Beowulf*, whereas the consonantal initial of the word to which it is attached alliterates three or four times (at lines 1756, 2000, 2863, probably 2921).

5. That verb prefixes were not entirely unstressed is best illustrated by Gothic prefixes like *faír-* and *faúr-*, given that the vowels *aí* and *aú* do not occur in unstressed syllables of native Go. words. Yet variation in the spelling of the OHG equivalent (*fur-*, *for-*, *fir-*, *fer-*) can be attributed to low stress.

6. In various publications Anatoly Liberman has advocated the view that 'stress' is an epiphenomenon to the variety of vowels permitted in a given syllable (see, e.g., Liberman 1982: 24–6, 1994, perhaps most explicitly 2010: 382–4), an analysis with roots in the Prague Circle (Trubetskoy, Jakobson, and their adherents). One implication of such an analysis is that it is mistaken to refer to 'degrees of stress'. It may in fact be possible to reduce the four apparent degrees of stress in Old English to two (see Fulk 1992: 183–234), but certainly it simplifies the discussion of Germanic stress to have recourse to more than two levels of stress, even if 'stress' in such a discussion is to be understood as an abstraction, not necessarily referring to expiratory force (or other features of stress accent) but to other factors that may involve, e.g., morphology and metrical conventions.

7. For example, the meter demands that there be no ictus on *-lēas* in *sēcean wynlēas wīc* (*Beowulf* 821a) but that *-lēas-* bear ictus in *þāra þe tīrlēases* (843a). For a list of exceptional verses in *Beowulf*, see Fulk 1992: §210. It should be noted than when the second constituent of a quasi-compound follows an unstressed syllable, it is receives ictus regardless of whether it is inflected, hence, e.g., OE *énde-lèas* 'endless'.

8. Some regard even uninflected quasi-compounds like OE *furlang* 'furlong' and *hettend* 'enemy' as bearing tertiary stress: see Hogg 1996, with references. This would explain how there can be a long vowel or a diphthong in the final syllable of an uninflected quasi-compound, though it renders the metrical treatment of such words difficult to explain. On the difficulty of drawing prosodic conclusions from metrical observations, see Minkova 1996. It should be plain that OE plays a central role in discussions of Gmc. stress. This is largely because of the size of the OE poetic corpus and the morphological conservatism of OE relative to ON. Relevant studies of (chiefly) OE stress include Moulton 1977, Suphi 1988, McCully & Hogg 1990, McCully 1992, Colman 1994, Hogg 1996, Gąsiorowski 1997, Hutton 1998a, b, and Russom 2001.

9. For instance, it is generally believed that the restoration of syncopated vowels and the appearance of svarabhakti vowels in Old Saxon indicate a lower degree of primary stress than in the other Gmc. languages (see Suzuki 2004: 11–23, with references), and in Old High German, long vowels appear in syllables that are fully unstressed in cognates, e.g. *-ēn* in *habēn* 'have' (OIcel. *-a*, Go. OE OS *-an*).

2.3 Quantity in early Germanic

The earliest Gmc. languages are to be regarded as mora-counting languages.[1] High German aside, starting ca. 1200 there appear the earliest signs of conversion to isochronous languages, in which all stressed syllables are heavy, taking the form V̄.C or VC.C (where the point marks the syllable boundary), by lengthening of vowels in open syllables and shortening in closed.[2] The term 'isochrony' thus refers to uniformity of syllable quantities. A number of Scandinavian languages remain isochronous to this day, including Icelandic, Faroese, and Standard Swedish and Norwegian. The earliest Gmc. languages, by contrast, had both light and heavy stressed syllables, as well as overlong ones, as in Go. *bandwjan* 'signify', *brōþrjus* 'brothers', and OE *wæstmbǣre* 'fruitful'. Rather than standardizing syllable quantities, then, the earliest Gmc. counted morae and tended to preserve moric quantities. This explains early Gmc. instances of compensatory lengthening of vowels, as in **faŋxana^{n}* > **fā^{n}xana^{n}* > Go. *fāhan* 'take'

and **iƀ-hīeʒ* > OE *īfig* 'ivy'. Another effect of mora-counting is the alternations governed by Sievers' law, whereby PIE *i̯* is nuclearized after a heavy sequence but not a light, producing oppositions like Go. nom. sg. *harjis* 'army' : *haírdeis* 'herdsman' (§5.8, and see Kleiner 1999b). Mora-counting is evident as well in a variety of early IE verse traditions, including Gmc., where a stressed light syllable plus another, regardless of the latter's weight, is metrically equivalent to a heavy syllable: see §2.4 on resolution.

1. See, e.g., Liberman 1982: 57, *idem* 1990a, b. There is no consensual definition of a mora. It may be conceived as a unit of length, either vocalic or consonantal, equivalent to the duration of a short vowel. Moric count begins at the syllable peak and includes all segments in the syllable coda. The first syllable of Go. *manags* 'large' is monomoric (since *n* belongs to the onset of the second syllable), of *hardus* 'hard' bimoric, of acc. *hardjana* trimoric, etc. (though not all would agree that the last is not divided *har.djana*: see §2.5).

2. As a consequence of the High German Consonant Shift (§6.21), some light syllables became heavy due to the conversion of stops to affricates, and some regard this development as part of the process of conversion to isochronous status.

2.4 Syllable division in early Germanic

Conclusions about how syllables were divided in early Gmc. are based on several factors, including scribal practice as regards the division of words at line ends, historical changes in vowel quantities, and the meters of alliterative verse.

Scribal practice in Go. manuscripts is remarkably consistent as regards how words are divided at line ends. In simplices, a word-medial consonant or consonant cluster is divided in such a way that just one consonant begins a new line: typical divisions are thus *ha/bái*, *swis/tar*, *þaúr/nuns*, *tal/zeinái*, *ans/tái*. An exception to the rule is that a cluster of obstruent plus sonorant consonant usually is not divided: examples are *fa/dreinam*, *win/tráu*, *af/tra*. A cluster with a final glide, however, follows the more general rule, e.g. *fulshn/ja*, *waúrst/wa* (Vennemann 1987b: 170–83; Barrack 1998: 24–6).[1] Division of simplices in OE manuscripts is similar to this, the usual practice again being not to divide an obstruent from a sonorant, with the exception of certain clusters (e.g. *tl*, *dl*, *þl*, *sr*) which do not occur word initially.[2]

The lengthening of vowels in open syllables that affected the Gmc. languages in the later Middle Ages provides only partial support for the manuscript evidence for syllabification. The plainest evidence comes from Icelandic and Faroese, where the change was exceptionally regular. Vowels remained short when followed by more than one consonant, the only exceptions occurring before clusters of voiceless stop plus *r*: Mod. Icel. *skopra* 'roll', *betri* 'better', and *akrar* 'fields' all have long vowels. Before *l*, however, there is no lengthening, as in *epli* 'apple', *katlar* 'kettles', and *miklan* 'large' (acc. sg. masc.), all with a short vowel. Moreoever, there is no lengthening before fricative plus sonorant consonant, as in *aðra* 'other' (acc. sg. fem.), *klifra* 'climb', *seðlar* 'banknotes'. More striking is that a cluster of voiceless stop plus glide permits lengthening, as in *sitja* 'sit', *vökva* 'water' (verb), contradicting the pattern of word division in Gothic.[3]

Alliterative verse yields some evidence. In most meters a stressed light syllable may not bear the ictus alone, but it must be 'resolved' with another syllable to do so (Sievers 1893: §9.1). For example, OE *fīftiges wīd* is an acceptable verse, having a heavy initial syllable and thus four metrical positions, whereas †*heofones helm* would not be an acceptable verse, having a light initial syllable that must be resolved with the following syllable, producing a verse of fewer than the requisite four positions. This is

usually explained on the assumption of syllabification as *heo.fo.nes*.[4] Yet in verse, despite the evidence of word division in manuscripts, clusters like *tr* cannot be tautosyllabic: compare *ond þæs betran forð*, in which the first syllable of *betran* can only be heavy.[5] Skaldic poetry presents some especially puzzling evidence. The results of Open Syllable Lengthening in Icelandic and Faroese plainly show that the first syllable of words like OIcel. *betri* was light, yet a certain formal requirement of skaldic verse known as Craigie's law demands a different conclusion. A monosyllable ending in a consonant is, by most accounts, necessarily a heavy syllable, since the final consonant must belong to the coda.[6] Yet *dróttkvætt* meter treats a monosyllable like *fjǫl* in position 4 as if it were light, since a verse like *Ragnarr ok fjǫl sagna* is licit, whereas †*Ragnarr ok fjǫlð sagna* would not be (Gade 1995: 29–30). Likewise, an antevocalic long vowel cannot be a lift unless it is resolved with the following syllable: thus, for example, *búa* is metrically equivalent to *gefa*, implying that *bú-* is a light syllable. This is especially puzzling because †*bua*, with a short root vowel, is an impossibility (see §2.5). Moreover, internal rhymes (*hendingar*) in *dróttkvætt* are treated as if intervocalic consonants, and even consonant clusters, belonged to the syllable coda, for example ***rí****ð**viggs lagar skí****ð****um*; *m****eld****r í móður h****old****i*; *þá varð* ***fast****r við* ***fóstr****a*.[7]

The various sorts of evidence thus do not provide any definitive answer to the question how early Gmc. syllables were divided. It is nonetheless true that certain probabilities can be established on the basis of patterns of syllabification observable in natural languages. Consonant sounds can be ranked on a strength scale, indicating their relative sonority, and generalizations (syllable contact laws) then formulated about preferred and dispreferred syllabifications on the basis of the relative sonority of sounds in contact.[8] Yet the syllabifications that are a crucial factor in certain sound changes are the very ones for which no such syllable preference law can be formulated with assurance: for example, neither *si.tja-* nor *sit.ja-* can be regarded as universally preferred, the former being the syllabification in Icelandic and Faroese, the latter being that required to account for WGmc. consonant gemination. Other sorts of evidence need to be adduced in such instances, as will become apparent in the discussion of Sievers' law (§5.8 *infra*). In regard to Gothic syllable division, see further below on Prokosch's law (§2.5).

1. For a critique of the use of word division to determine syllable division in Go., see Riad 2004. Further studies of Go. and early Gmc. syllable structure include Vennemann 1987b, Frey 1989, Salmons 1990, Murray 1991, Fullerton 1992, Pierce 2002, 2004, 2006.

2. See Lutz 1985, 1986 (interpreting Wetzel 1981); also Suzuki 1985, 1986, Barrack 1998: 26–7.

3. See Stefán Einarsson 1945: 3–6. For Faroese, see Lockwood 1955: 8–9. OE word division is indecisive in these respects: clusters like *fl*, *þr* do not strongly favor division either before or after the first consonant (Lutz 1985: 234), and WGmc. consonant gemination eliminated most of the evidence regarding glides.

4. See §2.5 on Prokosch's law. To the contrary, Kuryłowicz (1949, supported by Liberman 1982: 46, 226; 1994: 238–40) argues that in early Gmc. not only a morpheme but a stressed *syllable* could not end in a short vowel, and this explains resolution and Prokosch's law. Naturally, this requires a rather different idea about syllabification.

5. To be sure, such evidence is not incontestable, since the prehistoric OE loss of *i* in the reflex of **batiza-* cannot be dated with any assurance (see §5.6), and even if it were sufficiently early, retention of the older, resolved value would be characteristic of linguistically conservative OE poetic tradition.

6. It is possible, however, that, from the standpoint of metrical phonology, the final consonant in a monosyllable is extrametrical. Such an explanation might be invoked to explain, for instance, why there is no breaking before *r* in OE *wer* 'man', though there is in *weor.ðan* 'become'.

7. Liberman (2010: 406) remarks about such rhymes that "perhaps they correlated with the morphological type of Old Germanic, as Brink (2004: 87–93) suggested; perhaps they were inherited from the protolanguage."

8. See in particular Murray & Vennemann 1983, Murray 1988, Vennemann 1988b, Barrack 1998.

2.5 Prokosch's law

The preference for a bimoric syllable rime (i.e., nucleus plus coda) in languages (like PGmc.) with stress accent has been given the name 'Prokosch's law'. One formulation of the law is thus the following:

> In stress accent languages an acccented syllable is the more preferred, the closer its syllable weight is to two moras, and an unaccented syllable is the more preferred the closer its weight is to one mora. (The optimal stressed syllable is bimoric, the optimal unstressed syllable is unimoric.)[1]

As a consequence of the law, when PGmc. acquired a stress accent (§2.2), monomoric stressed morphemes became dispreferred, and in a word ending in a stressed short vowel, lengthening of the vowel took place. Examples are OIcel. *þú*, OE *þū*, OS *thū*, OHG *dū* 'you (sg.)' (cf. Gk. *σύ*, Lith. *tù*), OIcel. *sá*, OE *sē* 'this, the' (cf. Go. *sa*), and Go. *nē* 'no', ON *né* 'not' (poetic), OE *nē* 'nor' (cf. Skt. *ná* 'not'). Yet short vowels could remain (or re-develop) in unstressed forms, e.g. *-tu* in ON *skaltu* 'you (sg.) shall' and the preverbal particle Go. *ni*, OE *ne* 'not'. It is to be conceded, however, that doublets of such words with long and short vowels probably existed already in PIE (so, e.g., Sihler 1995: 38; see Johansson 1890: 125–6), and so lengthening is more securely attested in words that lost a final consonant in Gmc., e.g. PGmc. dat. sg. **mez* > OE *mē* 'me' (cf. Go. *mis*, OHG *mir*, and compare how loss of *-z* does not cause lengthening in unstressed syllables), PGmc. **in* > OIcel. *í* 'in', PIE **sm̥od* > PGmc. **swa*, Go. *swa* 'so', but stressed *swē* 'just as', OIcel. *svá*, OE *swā* 'so',[2] and PGmc. **sax^{w}(e)* > OIcel. *sá* 'saw' (cf. Go. *sahu*).

A further implication of Prokosch's law is that the initial syllable of a word such as Go. *kuni* 'race' or OIcel. *fara* 'go' is of a dispreferred type, and this has consequences for Germanic phonology, inasmuch as it may be said that the initial syllable in such words, in a sense, attracts to it the second syllable to form a "foot," a single prosodic unit.[3] This is evident, for example, in the operation of high vowel deletion in the WGmc. languages, particularly OE (§5.6), whereby a light syllable plus another of any weight (which may be called a 'resolved' sequence of syllables) is functionally equivalent to a heavy syllable, after which a final high vowel is lost, hence, e.g., **weorodu* > *weorod* 'troop' and **hwatostu* > *hwatost* 'keenest', but *faru* 'journey' and (Mercian) *hēafudu* 'heads'. Resolved and heavy syllables are also functionally equivalent in the operation of Sievers' law (§5.8). The equivalence is observed as well in the meters of alliterative verse, in which a light syllable must be resolved with another syllable under primary stress to form a metrical position sufficient to bear ictus (see §2.4).

Prokosch's law plainly operated in prehistoric OE, as shown by the evidence of Sievers' law (§5.8). Under the definition of Prokosch's law quoted above, it should be expected to have applied to all the early Gmc. languages, since they all had stress accent. That the law applied is not as plain in regard to Gothic: Riad (1992) regards the law as crucial to understanding Gothic syllabification, whereas Calabrese (1994) rejects this view. Pierce (2013) offers strong evidence in support of Riad's position. The usual

assumption, however, has been that lengthening under Prokosch's law is limited to the NWGmc. languages and does not apply to Gothic: so, e.g., Kuryłowicz 1949, Pascual 2016: 290–1; cf. Goering 2016: 280–9, *idem* forthcoming.

1. Vennemann 1988b: 30. The way that the principle is formulated by Prokosch (1939: §50) is considerably less precise. But Prokosch also says that "after a long syllable, or after two syllables (which phonetically, or metrically, amounts to the same thing) [*i* and *u*] disappear sooner than after a short syllable. This law, which seems to express a general trend of Germanic towards accented syllables of two morae, is clearly preserved" (§49c).

2. Orthography does not prove a short vowel in Go. *swa* (or *sa*, *þu*, etc.), but stressed *swē* can be the result only of lengthening of PGmc. **swa* (cf. PIE **sṷo͡d*), and certainly the vowel is short in *ni* (see below). It is thus to be assumed that this lengthening did take place in Gothic, as should be expected if the formulation of Prokosch's law quoted above is valid. (Otherwise Ringe & Taylor 2014: 65.) For a different derivation of OE *swā*, see Hollifield 1985. The loss of unstressed *i* in Go. *i*-stems but preservation of *u* in *u*-stems seems to point to variable loss, presumably conditioned by syllable weight, with later paradigm regularization, thus providing evidence of the same sort of results of the law evident in WGmc.: see Prokosch 1939: §49c.

3. This insight belongs originally to Kuryłowicz (1949). The idea of the 'Germanic foot' derives from Dresher & Lahiri 1991, adding Sievers' law (§5.8) to the list of dependent phonological processes. For a critique and refinement of Dresher & Lahiri's position, and of responses to it, see Barrack 1998: 164–6. For an introduction to metrical phonology, see Hogg & McCully 1987.