GOTHIC, GERMANIC, AND NORTHWEST GERMANIC

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1981
DEDICATED TO
THE MEMORY OF
MY FRIEND EDUARD WESTERICH
(JUNE 26, 1900 – APRIL 6, 1974)
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Chapter I
Introductory Remarks

In the next chapter we give a detailed analysis of the greater part of the derivational morphology, the inflectional morphology, and the phonology of Wolfsian Gothic (as reproduced in Streitberg, 1950). In spite of the number of good traditional handbooks on the subject and the frequency of the more recent considerations of isolated phenomena of Go. phonology, a fairly exhaustive and detailed account of this corpus still seems necessary. This is so because much of the work on Gothic, dealing as it does with one or only a few rules considered in isolation, is certainly incomplete and quite often erroneous. This is of course to be expected since morphological and phonological rules are related in various respects and interact in so many ways that the formulation given to any one of them usually affects the form of numerous others.

Accordingly, we have found that almost every one of our Go. rules in chapter 2 - when considered in the light of the other rules of the language - has taken a form not congruent with any of those previously proposed in the literature. One example out of many is our version of a rule formulated early in the history of Go. philology and commonly referred to as Thurneysen's Law. (This is phonological rule 1.2.3 in section 3 of chapter 2). We argue in chapter 2 that this rule has been misstated since its initial discovery and formulation by Thurneysen (1988). Another such case is Sleevs' Law (phonological rule 1.1.3 in section 3 of chapter 2).

Section 3 in chapter 2 on derivation and compounding and section 4 on inflectional morphology are perhaps best considered for reference instead of for reading through from beginning to end. A more syncopic view of the morphological rules may be obtained by consulting the paradigms given in appendix 1 of chapter 2.) Whether or not our views on the nature and function of morphological rules are correct remains to be seen. We formulate them explicitly so that the reader can at least know what we have considered to be morphological as opposed to phonological phenomena, and can evaluate our phonological rules in section 5 of chapter 2 accordingly. The principal emphasis of the chapter is on these rules of Go. phonology.

Chapter 3 is an attempt to formulate a coherent
account - based in large part on the material (in particular section 5) of chapter 2 - of three of the salient problems of historical Gmc. phonology. These are the question of umlaut in Germanic, that of the so-called /ei/ and /ey/, and finally that of the reduplication of verbs in Gothic and in the NWGmc. languages. In accordance with Marchand's dictum (1970:122), "Das Gotische bleibt noch wie vor der Grundstein für die Erforschung der germanischen Sprachen," we believe that some of the conclusions reached in chapter 2 can be brought to bear in the resolution of the questions posed in chapter 3.

Although frequent reference is made in chapter 3 to the content of chapter 2, chapter 3 can nonetheless be read independently without one first having gone through chapter 2. Similarly, chapter 2 can be considered in and for itself without reference to chapter 3. And of course there will be many who will not choose to read either chapter 2 or chapter 3. Finally, in the appendix to the present chapter we give a list of the abbreviations frequently used throughout the book.

**Frequently Used Abbreviations**

- **A**: adjective
- **Ac**: accusative
- **Act**: active
- **Art**: article
- **Be-rules**: morphological rules applying to adjectives and nouns
- **Def**: definite
- **Dt**: dative
- **Du**: dual
- **ev**: eventually, i.e.
- **Sg**: singular
- **SG**: singular
- **St**: strong
- **Sub**: subjunctive
- **Sp**: surface phonetic constraint
- **V**: verb
- **Vb-rules**: morphological rules applying to verbs
- **West Germanic**: Wg
- **Gmc.**: Germanic
- **Gn**: genitive
- **Go.**: Gothic
- **IE**: Indo-European
- **Imp**: imperative
- **Ind**: indefinite pronoun, also indicative
- **Int**: interrogative
- **MNG**: Middle English
- **Mn**: masculine
- **MS**: morpheme structure
- **N**: noun
- **Nm**: nominative
- **NWGmc.**: Northwest Germanic
- **OE**: Old English
- **OF**: Old Frisian
- **OGm**: Old High German
- **ON**: Old Norse
- **OS**: Old Saxon
- **Pers**: person
- **Pl**: plural
- **Pr**: pronoun
- **Ph**: pronominal
- **Ph-rules**: morphological rules applying to pronouns
- **Pp**: pretérito-presente
- **Prep**: preposition
- **Pres**: present
- **Part**: participle
- **Pass**: passive
Chapter II

Gothic

1. The Form of the Description

This chapter contains a portion of the grammar of Gothic - the major part of its morphology and phonology. Before considering the form in which we have cast these rules, we shall first consider briefly how such rules might fit into the grammar as a whole.

Put in very general terms, we consider a grammar to be a set of rules or principles on the basis of which grammatical utterances or sentences of a language are produced. Such rules are of three basic types: 1. Rules of remote or deep structure which generate the basic sentence structures. 2. Transformational rules which map or modify the basic structures into derived structures. 3. Interpretive rules which take the output of 1 and 2 and assign to it output a phonological configuration. Here we shall be concerned with rules of type 3, the interpretive rules of Go. morphology and phonology.

To give a concrete example, let us consider the derivation of the following Go. sentence (Luke 21:7): Jah gahar sunu semana bana frombaur jah biwond imma jah sagala inn in uzalin, "And she bore her son the first-born and wrapped him and laid him in a manger." Let us assume that the remote structure of this sentence might be something like this:

A. [MAY₁, BORE Mayer's₁, SON Mayer's₁, SON WAS THE FIRST-BORN Mayer's₁] AND [MAY₁, WRAPPED Mayer's₁, SON Mayer's₁] AND [MAY₁, LAID Mayer's₁, SON IN A MANGER Mayer's₁]

After the application to structure A of the lexical insertion rules and transformations like anaphoric pronounization, relative-clause reduction, conjunction reduction, case marking, agreement, and the like, the resultant structure would be something like this:

B. [a] AND [a] BORE
   [b] Conj [b] V, Pat, St 4th class, 3rd Pers. Sg. Ind
   [c] /jah/ [c] /ga-bir/

1

(a) SON
   (b) N, Sg, u-class, Ac, Sg, Mn
   (c) /sun/
   (d) Possessive, Pf, 3rd Pers. Sg. Ac, Sg, Mn
   (e) /sim/

(a) THE
   (b) Def Art, Ac, Sg, Mn
   (c) /frun/, /bur/
   (d) Conj, Ac, Sg, Mn
   (e) /jah/

5

(a) FIRST-BORN
   (b) N, Compound, Ac, Sg, Mn
   (c) /frun/, /bur/
   (d) Conj, Ac, Sg, Mn
   (e) /jah/

6

(a) WRAPPED
   (b) V, Pat, St, 3rd Class, 3rd Pers. Sg. Ind
   (c) /bi-wind/
   (d) Possessive, Pf, 3rd Pers. Sg. Mn
   (c) /a/

8

(a) AND
   (b) Conj
   (b) V, Pat, Wk, 1st Class, 3rd Pers. Sg. Ind
   (c) /jah/
   (c) /lag/

9

(a) LAID
   (b) V, Pat, Wk, 1st Class, 3rd Pers. Sg. Ind
   (c) /lag/
   (c) /lah/

10

(a) HIM
   (b) Pf, 3rd Pers. Ac, Sg, Mn
   (c) /lah/

11

(a) MANGER
   (b) Prep
   (b) N, Sg, n-Class, Ac, Sg, Mn
   (c) /in/
   (c) /usei/

13

The structure under B consists of a sequence of fourteen morphemes represented in fourteen matrices specified...
as to their (a) semantic, (b) morphosyntactic, and (c) phonological features. The morphological and phonological rules of Gothic given in sections 4 and 5 of this chapter apply to structures like B. The morphological rules applying in this particular instance are these: Rule Sb27 inserts /w/ after matrix 1 (/sun/) since it is a u-class noun; Sb8 inserts /ana/ after matrix 4 (/län/) since it is marked as a Fn, 3rd Pers, Ac, Sa, Mn, the same rule also inserts /ana/ after matrix 5 (the definite article /p/) and after matrices 9 and 12 (the Ac Sa Mn of the 3rd Pers Fn /l/). To the weak verb /lag/ (matrix 11), three Yb-rules of morphology apply: Yb17 which inserts /l/ after /lag/ because it is marked as a j-class weak verb, Yb12 which inserts /w/ after /lag/ = /l/ since /lag/ is marked as a weak verb in the past, and rule Yb3 which inserts /w/ after /lag/ = /l/ = /l/ since /lag/ is marked as a weak verb in the past, third person singular indicative. Finally, two rules of noun morphology apply to /usert/ since it is marked as an n-class Mn Sa Ac noun; Sb12 which inserts /l/ after /usert/ and Sb20 which inserts /n/ after /usert/ = /l/. After the application of these morphological rules (including the rule for compounds given under 3.3 below), the resultant phonological structure — disregarding the presence of the word boundaries — is this:

C. /jah ga-bir sun-u aín-wa ana b-ban-wa-bur jah bl-wind
   1  2  3  4  5  6  7  8
   9 10 11 12 13 14

The segments in C are the fully specified systematic phonemes of Gothic, an enumeration of which is given under A in section 2 of this chapter. The phonological rules of Gothic apply to structure C to produce the final phonetic output. The phonological rules applying to structure C are these: Rule 1.1.1, ablaut, applies to matrices 2 and 8 to produce /ja-que/ and /bl-ünde/ respectively. Rule 2.1.1, the rule of voiceless assignment, applies to all the matrices; rule 2.1.2, vowel deletion, applies to matrices 9 and 12; rule 2.1.3, breaking, applies to matrix 6; and rule 2.2.2 for the distribution of voiced stops versus consonant consonant applies to matrices 1, 6, 8, and 11. This results in the final phonetic output:

D. /jah ga-bir sunu aínana pána fru̯umábor jah bi-wand ina
   jah laüds ina in usertin/..

where ' denotes primary and ' secondary stress.

The phonetic segments are those under A with the addition of the following:

B.1. /b, d, g/ like /b, d, g/ under A except that they are devoiced by phonological rule 2.2.2 below.
   2. /f/ like /f/ under A except that it is +high and +back by phonological rule 2.2.7 below.
   3. Possibly, /h/ like /h/ under A except that it is +high, +continuant, -stressed, and -voiced through

The Phoones of Gothic

A. f h np t k k b d g a z l n r

consonant + + + + + + + + + + + + + + + + + +
nsonorant + + + + + + + + + + + + + + + + + +

vocalic + + + + + + + + + + + + + + + + + +
coronal + + + + + + + + + + + + + + + + + +

anterlor + + + + + + + + + + + + + + + + + +

high + + + + + + + + + + + + + + + + + +

low + + + + + + + + + + + + + + + + + +

back + + + + + + + + + + + + + + + + + +

round + + + + + + + + + + + + + + + + + +

nasal + + + + + + + + + + + + + + + + + +

lateral + + + + + + + + + + + + + + + + + +

tense + + + + + + + + + + + + + + + + + +

voiced + + + + + + + + + + + + + + + + + +

strident + + + + + + + + + + + + + + + + + +

long + + + + + + + + + + + + + + + + + +

stress + + + + + + + + + + + + + + + + + +
phonological rule 2.2.1.

4. Possibly, /e/ like /ə/ under A except that it is tense by phonological rule 2.1.8.

The phonotactics in this case the so-called "surface phonetic constraints" (hereafter SPC) which are the admissible phonological sequences after the application of the phonological rules, are C below. The admissible morpheme-initial consonantal sequences are given under C.1.1; the admissible word-final consonantal sequences under C.2.1.1.

C.1.1. In #GČV, i.e. in any morpheme (or word) beginning with only one -vocalic segment (CV), C1 may be any -vocalic segment except /e/ or /e/.

1.2. In #GČV, morphemes beginning with two -vocalic segments, the following conditions prevail.

C2 = f + (I, r; w) + h + (l, r; n)

1 2 1 2 1
p + (I, r; l) + t + (r; w) + k + (l, r; n) + b + (l, n; n)

1 2 1 2 1
s + (r; w) + g + (l, r; l) + s + (p, t, k, l, m, n, w)

1 2 1 2 1
or w + (l, r; l)

1 2

That is, a sequence may begin with /f/ followed by either /f/ or /e/ as in 'flood' and fragan 'ask', etc. There is one possible instance of a sequence /ef/, e.g. in gramakt 'dampness', which may however be an orthographic error.

C.1.3. In #GČV, C3 = s + (p, t, k) + r.

1 2 3

2.1. In VČ, i.e. in any word ending in only one -vocalic segment, C1 may be any -vocalic segment except /f/.

2.2. In VČ, C2 = f + (t, l; n) + p + (p, l; r; m, n; w)

1 2 1
h + (t, s, l; r, m, n) + t + (t, s, l; r; w) + k + (l, k, r; n) + b + (l, n; n) + d + (d, r; w) + g + (d, l; r, m, n; w) + s + (t, k; k, a, g, s, m, n)

1 2 1 2 1
s + (d, g, n; w) + l + (f, p; h, p; t, k, b, d, g, l, s, n; l; m; w) + r + (f, p; h, k, p, t, k, b, d, g, s, s; r) + m + (f, p; b, s; s, l; r, m; n; n) +

1 2 1
(p, k; k, s, d, g, s, n; w).

There are no word- or morpheme-final sequence *

2.3. In VČ, C3 = f + t + r, g + t, i.e. /f/ followed by /tr/ or /st/ h + t + (r; w) + s + (t, n; w)

1 2 1 2 3 3
l + (p, d) + r, h + m, l 2 1 2 3 1 2 3 2 3
s + k; r + (f, h; s) + t, (k, x; z) + h + r; 2 3 1 2 2 2 2 2
m + (t, l; b + r) + n + (t, d; g) + r, g + 1 3 3 3 3 3 3 3 2
or (l; w), s + (t, l; d + w).

There are no sequences in *Vp2##, *Vp1, *Vp1, *Vp1.

2.4. In VČ, C4 = 1 + (f; s) + t + r, h + s + n; 1 2 3 3 3 3 3 2

Or /tr/ and followed by a -vocalic segment, it is /tr/.

If unstranded, and followed by a -vocalic segment, it is /tr/.

If unstranded, and followed by a -vocalic segment, it is /tr/.

In addition to the vocalic segments given under A above, we poset the underlying diphthongs /ai/, /au/, /iu/.

If followed by a -vocalic segment or if unstressed, the first two are realized as /ai/, /au/ by phonological rule 2.1.5 in section 5 below. Otherwise they are realized as /ai/, /au/ by 2.1.4. Hence the diphthongs /ai/, /au/ never occur unstressed. The diphthongs /ai/, /au/ by phonological rule 2.1.4. If stressed and followed by a -vocalic segment, it is /ai/.

If unstressed and followed by a -vocalic segment, it is /ai/.

If unstressed and followed by a -vocalic segment, it is /ai/.

And in unstressed position no true diphthongs occur, only the diphthongs /ai/ and /ai/ (Examples of forms may be found under the rules mentioned.)

Other distributional facts about the vowels are these:

1. According to rule 2.1.3, the short vowels /e/, /o/ cannot occur unstressed and after the principal stress in a word. They can occur under main stress, and /e/—as opposed to /o/—can occur pretonically. (The reason for this is that Go, pretonic /e/ is a reflex of IE /e/, while IE /o/, which would presumably have also been retained in Gothic pretonically just as /e/ was, had already changed to /a/ in German.)

2. Long /aI/ is produced only by rule 2.2.8. Thus there is some question as to whether it should be considered among the phonemes of the language. In any event, long /aI/ occurs only under main stress in native Go words.
The distribution of the Go. vocalic segments given in A above as well as the diphthongs //iu// and the diphthong //iu// may be summarized as follows:

1. In C-vowel, i.e. before the main stress in a word, the vocalic nucleus V may be any single vocalic segment except //i/ or //u//, but no diphthong-like sequences except possibly //Iw// or //Ju//.

2. In V, i.e. under the main stress in a word, V may be any single vocalic segment and any diphthong-like sequence.

3. In C-vowel, i.e. after the main stress in a word, V may be the short vowels //a/, //i/, //u/ and any long vowel except //a/-. The only diphthong-like sequences occurring here are //Iw// and //Ju//.

Although we have included the reasons for our particular phonemization mainly in our discussions of the individual phonological rules, we shall here touch on a few general questions brought up in such sources as Antonsen (1972), Beade (1971, 1972), Beck (1973), Marchand (1970, 1971), Moultou (1960, 1974, 1961, 1972), Vennemann (1971), and Wurzel (1972). There is comparatively little disagreement in these sources on the consonants. First, concerning our analysis, we have posited //H// and //K// as unit phonemes instead of //H/+H/ and //K/+K/ since they function as unit phonemes in the environment of phonological rules like 1.2.2 (reduplication) and 1.2.3 (Thurneysen's Law). In this context, //H// and //K// will no longer function in any of our rules as a unit segment. Second, we have considered the stops //b, d, g// as the underlying segments and then formulated rule 2.2.2 to realize them as continuants in specific environments instead of continuing segments continuants //b, d, g// and then formulating rule 2.2.2 to realize them as stops in the appropriate environments. As discussed above under rule 2.2.2, we have done this because the rule would need one extra feature in its formulation to produce //b, d, g//. In instances of this type where two possible analyses are similar, we see no principled way of deciding between them. It may be in such cases that for some speakers, the underlying segments were stops which were then realized as continuants in the appropriate environments. Finally, concerning the consonants, we consider //H/ to have been aspiration, //H//, rather than the very consonant //H//, particularly when occurring in vowel triangles. 2. Graphic considerations such as the following from Marchand (1973:56):

We shall assume with the majority that the digraph //el// represents //el// and that //ay// as represented //ay// or //ay// and //ay/ or //ay/, respectively. One of the major sources of //ay// and //ay// is rule 2.1.5 by which forms like //tau-ian// 'to do' //R:/ //tau-ian//, written //tau-ian//, vs. the Pat //taw-\da// by 2.1.4 //taw-\da// //taw-\da//, written //taw-\da//. And //tau// 'both' by 2.1.4 //taw-\da// //tau-\da//. One of the major sources of short //e/ and //o/ in the diphthong //el// by which forms like //pluh/ 'we throw' //pluh// //pluh//, we dragged' //pluh// //pluh//, eventually to (3) //el// and (4) //el//, eventually to (3) //el// and (4) //el//, eventually to (3) //el//. Wilfilingual Gothic had reached stage 2 of this development. We further assume that long vowels (except for //ay// and //ay//) were phonetically tense and short vowels - tense (i.e., lax). Thus it was quite natural in Wilfilingual orthography to represent the short lax //e/ and //o/ (phonetically short //e// and //o//) with //el// and //ay//. In our transcriptions we shall only mark length, //e// vs. //e//, //ay// vs. //a//, etc., and not use an additional sign to designate the redundant laxness of short vowels as //e// /vs. //e//, //ay// //a/. On one point concerning monophthongization our analysis differs from that of recent sources like Antonsen (1972:119) Beade (1973:357), Vennemann (1971:127), and Wurzel (1975:120), who posit a monophthongal pronunciation such as //ay// for the digraph //ay//. One of the principal motivations for this hypothesis has been to have to "fill a hole" in the vowel triangle. Here, on the other hand, we assume graphic //ay// to represent //ay// -- the only real diphthong in the language in the sense of having both segments vocalic -- by which rule 2.1.4 could alternate with the diphthong //ay// as in the NnG trig //tree// vs. NnG //tree//. We assume this for the following reasons: 1. Hole //ay// do not bother us, //ay//, particularly when occurring in vowel triangles. 2. Graphic considerations such as the following from Marchand (1973:56):

This [the hyphenation of //ay// - makes it quite improbable that //ay// was a diphthong like //ay// and that //et// and //et// (which are never hyphenated) were monophthongs. It might be objected that one occurrence of //ay// (//luk//) should not be taken to indicate that //ay// was a diphthong or two vowels in hiatus, and that the lack of division //a// / or //a// / could be merely fortuitous. //ay// and //et// are at least 30 times as frequent in our text as //ay//...that we do not find them divided even once time cannot be considered fortuitous. This is another indication that //ay// and //et//
are monophthongs in Gothic.

and, we may add, that ju is a diphthong. Furthermore, when ai is pronounced in hiatus as a sequence of two vowels, this is indicated in the text with a dieresis, Shift/"wens" from /ga + ildja/. But when i and u occur in similar hiatus, this is never indicated with a dieresis. Hence biuglel 'one may meet' (Linde 1932) from /bi + u = gi Judges/ is not written "biuglel or *biuglel. If ju were like ai and in fact represent a monophthong, one would in such cases expect the use of the dieresis for hiatus. The sequence /ju/ behaves as one would expect a diphthong to behave in Gothic in view of our observations under D3 above. It never occurs in unstressed position, but only as //jo// or //ju//. Finally, in phonological rule D.1.9 below we cite evidence that the ju in the word situr 'steer' was diphthongal, not monophthongal.

Another matter of some dispute has been the status of length in Gothic. Marchand has stated rather differently (1970: 119), "Vorläufig kann man sagen, daß es ungewiß ist, ob die Länge von phonemischen Beleg war." Here we follow Beck (1971) and Yenemann (1971, esp. 94-8) in assuming that length as opposed to tenseness was a phonemically distinctive feature in Gothic. Thus if our analysis of /æ/ and /æ/ is correct, these two segments differed only in length, being -tense. And the initial vowels in two words like air 'early' vs. airmia 'earth' would then have differed only in length: //Arm/ vs. //Arm/.

We have also considered to be separate phonemes /i/ vs. //i/, /i/ vs. //i/, /u/ vs. //u/, and /u/ vs. //u/. The distribution of /i/ and /i/ although partially predictable by rule 2.1.8, is not totally predictable in view of the occurrence of forms like lins 'above' vs. lins 'yoke'. Similarly, the distribution of /i/ and /i/ is in great part predictable by the broad rule 2.1.8. However, before the main stress within a word, both /i/ and /i/ could occur in contrastive environments. For example, the vowel in the reduplicative prefix is /æ/ by rule 2.1.2. Thus it would be possible to have two reduplicative verbs, one whose stem begins with /i/ and the other with the same stem but formed with the verbal prefix //i/, e.g. //e/ /bl/ /er/. Now the 3rd Sg Pat Ind of the first verb would be /bl/while the 3rd Sg Imp of the second would be /bl/ — minimal pairs.

Like the distribution of /i/-/i/ and /i/-/i/, that of /a/ and /a/ is almost completely predictable by rule 2.1.8 and that of /a/ and /a/ by rule 2.1.3. We have nonetheless considered these segments separate phonemes even in some cases where their occurrence is predictable. The rationale for this is that there are numerous forms such as warst 'work' in which the word-final /a/ appears by rule 2.1.8 throughout the paradigm and haurn 'horn' where by rule 2.1.3 only /a/ appears. Thus there are no alternations in these paradigms such as warst vs. *warst or haurn vs. * hWnd. In such cases we see no reason to posit an underlying form like /warst/ or */harrow/ which would never appear as such. Hence we posit underlying forms with /a/ and /a/. (Accordingly, those parts of rules 2.1.3, 2.1.4, and the like which determine the total distribution of phonological segments are perhaps more properly considered morpheme structure rules rather than phonological rules.) For similar reasons we have posited */E/ and */O/ as phonemic segments, even though their distribution with /a/ and /a/, respectively, is completely predictable by rule 2.1.5.

There are paradigms like //Ein/ vs. *Haujan/ /haujan/ 'bear' where there is no /a// vs. /a// or */O/—/a// alternation. Here again we see no reason to derive these words from underlying forms like *Ea/ or */Haujan/ which never appear as such on the surface.

In this same connection we note that the only occurrences of long /a/ in native Go. words arise from rule 2.2.8. Hence a form like ughshts //un-gang-t-i/ by phonological rules 2.1.2 and 2.2.8. However, since in several paradigms only /a/ occurs without alternating with /a/, we have posited /a/ as an underlying segment for these cases. In view of all this one could, depending upon one's theoretical stance, reduce the phonemic inventory of Gothic as given under A above by deriving //a// and //a// from underlying //a//, //E//, and //O// from underlying //a// and //a/, and finally //a// from an underlying segment //a/n.

There are doubtless some additional phonological rules and phonetic segments in Gothic which we have not included. 1. There was probably a rule which realised sonorant consonants /l, m, n, r/ as vowels //al//, m, n, r//. When occurring in -vocile environments as in tag 'test'//tag//, etc. 2. Another possibly aspirated voiceless stop consonants not preceded by obstruents as in tag //tag// vs. staps //staps// 'place'. 3. One probably marked -long vowels as -tense. And //a//, the rule of nasal deletion and vowel shortening (2.2.8) possibly produced -long and +nasal vowels as output, e.g. bulta 'seemed' //bulta//.

3. Derivation and Compounding

We assume that the syntactic structure of the forms given under prefixing, suffixing, and compounding below are produced by the lexical transformational rules of Gothic.

3.1. Derivational Prefixes

The following are the prefixes of Gothic which do not occur independently as prepositions or adverbs. (We consider those constructions with morphemes which can otherwise occur independently to be compounds.)

...
Gothic

1. /ands/ = N or V as in anda-rabli 'evening', where the prefix was added to a N, and anda-nas 'reservation', a noun formed by adding the prefix to a V stem.
2. /b/ = V.
3. /als/ = V as in din-dallan 'distribute'.
4. /fer/ = V as in far-bairt 'promises'.
5. /tra/ = V.
6. /val/ = V.
7. /an/ = A, N, or V.
8. /tas/ = V as in tus-herian 'doubt'.
9. /twis/ = V as in twis-staian 'depart from'.
10. /an/ = A or N.

3.2. Derivational Suffixes

The following are the principal derivational suffixes of Gothic. A few like /fud/ in hund-fabi 'courtier' have been omitted under the assumption that, although an independently occurring /fad/ 'master, leader' is unattested in our corpus, it nonetheless may well have existed and thus hund-fabi might be more properly a compound. A few suffixes like the /an/ in ta-then 'ten' we have omitted as so limited in productivity that they are more reasonably considered inalienable parts of the lexical items in which they appear.

1. N + /ags/ = A, i.e., adding /ags/ to a noun produces an adjective, e.g., aud-aggs 'blessed'.
2. N + /ahs/ = A, ain-shs 'single', possibly also proper-shs 'brothers' (an in-class N or possibly an AI).
3. V + /ahs/ or /ahs/, possibly in free variation, = A or N.
4. V + /hs/ + /ahs/ = A, harsh 'harshful', alahs 'a fighter'.
5. M or V + /fahs/ = Mn jia-class N, nok-ahs 'scribe', nok-ahs 'investigator'.
6. (9) N + /ahs/ = A, us / N + /ahs/ = Fn jia-class N, aru-ahs 'arrow', as-laia 'ax', (9) fil-ahs 'crowd'.
7. N or V + /als/ = N, i.e., class N, as in am-shs 'a horse', kaup-shs 'best'.
8. V + /ahs/ = Mn consonant-class N (paradigm 1:6 in appendix 1), /ahs/ = Mn consonant-class N, fril-shs 'love'.
9. N + /als/ = N, jia-class A, dauu-shs 'destined for'.
10. V + /als/ = N, jia-class A, dauu-shl 'destiny'.
11. V + /als/ = N, jia-class A, dauu-shs 'destined for'.
12. V + /als/ = N, jia-class A, dauu-shs 'destined for'.
13. V + /als/ = N, jia-class A, dauu-shs 'destined for'.
14. V + /als/ = N, jia-class A, dauu-shs 'destined for'.
15. V + /als/ = N, jia-class A, dauu-shs 'destined for'.

Vb of Vb1 = Pn l- or o-class N (paradigm 1:9 in appendix 1), dauu-shs 'baptism' from /d0ibl-in/ by /l/ is realized as /l/ by Sievers' law (phonological rule 1.1.3).
17. N + /in/ = N as inflectional morphemes Sb2 + Sb32 = Wk o-class V, skaal-oin 'serve'.
18. A or N + /in/ = Fn N-class N, aif-gel 'dolatry', fifi-si 'freedom'.
19. A, N, or V + /ig/ = A, sin-gels 'old', wito-gels 'legal', aitana-gels 'holding to'. This suffix is related etymologically to /ag/ and perhaps synchronically by a morphosyntactically conditioned minor rule.
20. R + /in/ = A, galaus-gels 'believing', tril-uls 'wooden'.
21. N + /in/ = Mn a-class N, gait-ein 'small goat'.
22. V + /in/ = A (9) Adv. unwon-lag 'unexpectedly'.
23. Numeral + /aj/ = A, ain-fajg 'simple'.
24. /as/ + N or V + /i/ = inflectional morphemes Sb14 = Wk jia-class N, ga-30sh = 'shoes'.
25. A or N + /is/ = Mn a-class N, fre-laig 'freedom'.
26. N + /i/ = inflectional morphemes Sb14 = J-class A, aramsh-eig 'far from home'.
27. A or V + /i/ = inflectional morphemes Sb14 = Mn or Fn n-class N, Mn or Nt jia-class N, ait-ae 'glutton', andast-abj 'enemy', barn-iak 'childhood'.
28. N + /al/ bi = Mn, Fn, or Wk jia-class N, mag-ula 'boy', maaw-joo 'girl', barn-iak 'child', possibly laaw-joo 'improvement'.
29. V + /in/ = A, fulg-ein 'hidden'. This suffix is etymologically related to the inflectional suffix Vb8 /an/.
30. N + /a/ = Mn jia-class N, a-ein- 'law', a-ein 'law'.
31. V + /in/ = Wk o-class N, ga-shs 'darkness' where /i/ is realized as /l/ by rule 1.2.3., Thurneysen's Law.
32. N + /isk/ = A, barn-jak 'childish'.
33. A, N, or V + /ip/ = Mn o-class N, unshsh-ina 'impurity', aifungshsh-ina 'abyss', inniius 'innovation'. An etymologically and perhaps synchronically related suffix is /eip/ in sai-see 'shelter'.
34. M or N + /a/ = Mn a-class N, a-ein 'law'.
35. N + /a/ = Mn or Nt jia-class N, bir-lain 'beauti'.
36. N + /a/ = Mn or Nt jia-class N, bir-lain 'beauti'.
37. N + /a/ = Mn or Nt jia-class N, bir-lain 'beauti'.
38. A + /a/ = A, aina-sins 'alone', niu-30sh 'childish'.
39. V + /a/ = Mn or Nt jia-class N, bir-lain 'beauti'.
40. V + /a/ = A or Fn jia-class N, anasu-ni 'visible', sok-ska 'believe'.
41. A (including the Past Prt of V) or N + /a/ = Wk jia-class V, full-run 'become full', Monk-kun 'become loosed', gaaw-ska 'become peaceful'.

Derivational Suffixes
42. A or V + /-b/ = Mn u-class N, marnink-odug 'humanity' in which /-b/ is realized as /-m/ (Thurneysen's Law), caun-bun 'lament'.
43. Mn o-class V + /-s/ or /-u/ to inflectional morphemes V±/ 
   [Vəs] = Pn l-class N, jehb-on 'invitation'.
44. A or V + /-d/ = A or N, framad-ns 'old', ligns 'bed'.
45. V + /-a/ = Mn or Pn l-class N, lalub 'flight', urrun 'departure'.
46. N + /-am/ = A, lusum-an 'desired'.
47. V + /-al/ = Mn a-class N, breh-pl 'trouble', swartl-pl 'link' where /-a/ is realized as /-a/ by rule 1.2.3
   (Thurneysen's Law), swart-pl 'bond'.
48. N or V + /-an/ = Pn l- or o-class or Mn ja-class N, aruba-an 'arrow' (/-a/ to /a/ by rule 1.2.3), iluju-an 'mama'
   'expectation' from /us-lid-en-a/-.
49. V + /-ar/ = Mn, gidl-str 'tax' from /gidl-str/, gid-
   blostrels 'one who honors God', a compound /#pl#
   bliot-str-1 (the Sbl4 morpheme) -#//.
50. V + /-sw/ = Pn ja-class N, waurame 'work' from /wok-str-a/ (the Sbl4
   morpheme)/.
51. V + /-a/ = Pn j- or a-class N, was-pl 'clothes'.
52. A or V + /-e/ = Mn l-class N, asstwa 'postage' from
   /sa-at-stra/-, amalga 'blasphemy' from /us-a/m-wal-t-a/-,
   gasko-ta 'creation'.
53. V + /-e/ = Mn u-class N, blif-tus 'chief
   V + /-a/ = A, umacht-tu 'unapproachable' from /un-
   atgang-t-a/.
54. V + /-u/ = Mn j-o class N, duf-tuli 'boasting'.
55. A or V + /-p/ = Mn l-class or Pn ja-class N, gamin-
   pa 'community', gamin-pl 'memory'.
56. V + /-un/ = Mn a-class N, jih-bul-a 'fasting'
   where /-u/ is realized as /-a/ (by rule 1.2.3) (Thurneysen's Law),
   mald-aflie 'power' /-aflie/.
57. A or /?/ V + /-n/ = Mn n-class N, nehn-plu 'neighbor
   from /nehn-pl-1/ ( = Sbl4) -a ( = Sbl4/.
58. V + /-an/ = Mn ja-class N, baktos 'parents'.
59. V + /-aw/ = Mn consonant class N, waid-se 'witness'.

3.3. Compounding

The following rules insert morphemes between the constituent
(whether we shall refer to as X and Y) of com-
ounds. Both X and Y are freely occurring lexical items,
not bound morphemes or compound and other of the derivative
suffixes given above. In all cases of compounding not
mentioned specifically below, the compound X + Y is formed
without any involving morphological material, e.g.

twalib wintrus ‘twelve + winter’ = ‘twelve years of age’.

1. (a) Insert /-a/ obligatorily (probably by an exten-
   sion of morphological rule SB) in section 4 below if X is
   an a-, ja-, os- or n-class N or an a-, j-, o- or l-class A.
   Also, if X is frakbin 'purchaser' or harsh 'house' (both l-
   class N's), or asta (a consonant class N), or if X + Y is
   man + npuris 'murderer' or andi 'seed'. (b) Insert /-a/
   optionally if X is broh 'brother' or midgard 'middle
   of the house'. (c) The following are exceptions to the above
   conditions where /-a/-insertion does not apply: X = aglajit
   'lewdness', anap 'oath', abul 'heir', haush 'high',
   nklu 'large', biau 'servant', bludi 'king', biau
   'goodness', bbiiv 'woman', and all Mn a-class N formed
   with derivative suffix /I/ or /-i/. Also, /-a/-insertion does
   not apply if X + Y = all + midgands 'all-ruler' (as opposed
   to all+wadi 'honesty'), gud + blostrels 'God-worshipper',
   gud + bsets 'God's house' (as opposed to gud-a-faurni 'God
   fearing'); fisi + nai 'freedom' (where Fisi is perhaps a
   derivative suffix), laus + hands 'empty-handed', laus +
   gibs 'with an empty stomach, famished', (jaid-lur) - gards
   'earth', wein + dregiu 'wine-drinker', wein + bim 'wine-
   house'.

Examples of (la) are fiper-a-piin 'ring' (where X, fisier, is a Mn a-class N), ekran-a-niin 'without fruit'
(laus is a suffix, but also occurs as an independent A),
frab-a-marnicse 'foolishness', (X is a ja-class N), hibil-
ari 'euphemism' (X is an o-class N, agsh-a-daur)
(X is an n-class N, ara-a-haite 'merciful' (X is an a-
class A). Examples of (lb) are Brod-a-lubu or Brod-
lubu 'brotherly love' and midgard-a-wadin or midgard-
la-wadin 'partition wall'. Examples of (lc) are as given
above, e.g., dwiąz-al 'reward of victory', not feladis-
laun, etc.

2. (a) Insert /-a/-obligatorily (possibly by morphe-
   ological rule SbI4 in section 4 below) immediately after X
   if X is an l- or ja- or o-class A. (b) Insert /-a/-optional-
   ly if X is brain 'pure' or midgard 'middle
   of the house'. (c) As an exception to the above
   conditions, the /-a/-insertion rule does not apply if X =
   brudh 'bride' (an l-class N) or if X = irajit = eauta 'greedy
   where aglajit 'lewdness' is a ja-class N (cf. also aglaj-
   i-warden 'landlord').

Examples of (2a) are gast-i-gope 'hosipital' (X is an
l-class N), frak-a-marnicse 'foolishness' (X is a ja-
class N). The /-a/ is realized as /-a/ by phonological
rule 2.1.4. The role of /-a/-insertion under l-class also
applies in this case but the /-a/ is inserted immediately after
the X frab.). Will-a-hit distributionship' (X is a - and
n-class N), pumon-i-fale 'leader of 1000 men' (X is a ja-
class N, therefore no /-a/-insertion). Examples of (2b)
are brain-a-harits or brain-a-haits 'pure in heart'
(both forms with /-a/-insertion), and midgard-i-a-
wdigned 'partition wall'. An example of (2c) is brudh-fale 'bride-
yard'.

3. Insert /-l/-obligatorily (by morphological rule
  vB17 below) if X is lm-class Wh V. E.g., plub-a-
 class
'blessing' from the V blupfian 'bless' and /m^[iip-ut-s/ 'saying', and wing-i-eu* 'winnowing shovel' where X is the verb (dis)wibuan 'grind to pieces'.

a. (a) Insert /a/ optionally (probably by morphological rule SB2 below) if X is a u- or an n-class N or a u-class A. (b) Insert /a/ optionally if X = propp 'brother'.

Examples of (a) are fals-u-eir 'great' and hand-u-waurhtu 'hand-made'. The example of (b) is propp-u of S-lub 'Brotherly love'. This rule may also apply if I is asuffix: dauq-s-bleip 'destined to die', hand-u-ag-s 'else' (possibly from /hand-u-ag-s/ by phonological rule 2.1.2), and just-u-sam 'desirable'.

5. Finally, in a few instances certain of the morphological rules of inflection apply to the first constituent X of a compound. Instances of this are a burp-s-wawdun 'city wall' where the -s- is probably the OldG ending from morphological rule SB2 below (the -s- in pruq-s-fill 'leprous' may be from the same source), (b) sein-s-altrim 'selfish' where the -s- may be the NEM ending of morphological rule SB5, and (c) mid-j-un-ard 'earth' where the -j- is the reflex of /j/ inserted by rule 2 above (indicating a j-class A) and where the -j- may be a Wa A ending affixed by morphological rules SB2 (which however usually inserts /o/ or, not /u/ and SB20, /u/).

4. Inflectional Morphology

The following morphological rules have been labeled as Sh-rules (substantive rules) which apply to N, A, and certain pronominal forms, Pn-rules (pronominal rules) which apply in the derivation of pronominal forms, Vb-rules (verb rules) which apply to verb forms, and Be-rules which apply in the derivation of the suppletive verb 'be'. In appendix 1 to this chapter we give the paradigms which these morphological rules generate.

Although we have already given in section 1 of this chapter an outline of our concept of the place and function of the morphological rules in a total grammar of Gothic, a word remains to be said about certain of the details of their formulation. As our example we refer back to one of the matrices given under B in section 1 of this chapter, namely that for the V morpheme /lag/ 'lay', which in the context in B contains the features V, Pat, Wa, j-class, 3rd Pers. 3g. The morphological rules which apply to this matrix are VB3, VB12, and VB17. We formulate VB3 as follows:

VB3: Insert /a/ in #Stem $k$ ---# if Stem contains Pat, Ind. 1g, or 3g Pers. Wa, or Pat or 'will'

That is, the morpheme /a/ is inserted after the stem and word-finally if the stem matrix contains the features present, indicative, and singular, and first or third person, and weak, preterite-present, or the V 'will'. Since /lag/ contains the features Pat, Ind. 3g, 3rd Pers., and Wa, the rule applies and inserts /a/ as #tag/MN/a#.

The notation $k$ means that as few as one and as many as two additional morphemes may be inserted within the word between the stem and the /a/. In the case of /lag/, there are two intervening morphemes, /a/ by rule VB12 and /l/ by rule VB17. The environment of VB12 is #Stem $k$ #Wx#; that is, exactly one additional morpheme occurs between the stem and /a/ and at least one morpheme and as many as four may occur between /a/ and the end of the word. In each rule we designate these possible intervening morphemes. In VB12 the Mn morpheme may be /a/ (written as) by VB6 if the stem is a Wa 4-class V (hab-a-di- 'had'), /l/ by VB17 as in the case of lag-1-da if the stem is a Wa j-class V, or /a/ by VB7 if the stem is a Wa o-class V (saih-o-da 'annointed').

Finally, the morphological rules are unordered. In the case of /lag/, the rules VB3, VB12, and VB17 may apply in any order. If VB3 applies first, then /a/ is inserted as #tag/MN/a# with at most two open morpheme spaces between /lag/ and /a/. Then if VB12 applies, /a/ is inserted as #tag/MN/a/Wx#. And if VB17 applies, its environment is #Stem -- Wx# and /l/ is inserted as #tag/MN/a/Wx#. This may be illustrated by the following table:

<table>
<thead>
<tr>
<th>Rule</th>
<th>Stem</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>VB3</td>
<td>/a/</td>
<td>#tag/MN/a/</td>
</tr>
<tr>
<td>VB12</td>
<td>/d/</td>
<td>#tag/MN/a/Wx#</td>
</tr>
<tr>
<td>VB17</td>
<td>/l/</td>
<td>#tag/MN/a/Wx#</td>
</tr>
</tbody>
</table>

Applying in any sequence, the morpheme rules VB3, VB12, and VB17 each leave enough empty morphemic spaces (designated by the W's in figure A) so that the other morphemic rules can apply. Finally, we list the morpheme insertion rules below in the alphabetical order of the inserted segments.

4.1. The Sh-rules

SB1. Insert /a/ in #Stem $k$ ---# if Stem contains (A, Wa) or (N, n-class), and (a) (Mn, Pl, not /b/ /am/ or /am/ or (i) optionally Ac)) or (b) (Nt, Pl, Nt or Dt, not /am/ /name/ and not /wat/ /water/ or (c) /am/ /am/ /name/, Nt or Ac, Sg or (i) optionally Pl)), or (d) (Mn, Sg, Mn of Art or (i) optionally Prs), Prt). That is,
/ā/ is inserted if the stem is a weak adjective or an n-class noun and /a/ in the masculine plural — except for the noun /ām/ 'man' — or in the singular nominative or (i) optionally in the accusative, or (b) if the weak adjective or n-class noun is in the neuter plural, genitive or dative (except for the nouns /ām/ 'man' and /wāt/ 'water'), or (c) if the noun is /ām/ 'man' in the nominative or accusative singular or (ii) optionally plural, or (d) in the nominative singular masculine of the article or (iii) optionally in the nominative singular masculine of the present participle. In optionality 1, /ā/ alternates with /i/ (/ə:12/). Hence as the AsGMn of n-class N both /gum-a-n/ 'man' by Sbl or /gum-1-n/ by Sbl2 can occur. In optionality 11, Sbl applies only if rule /s20/ (/ŋ/) also applies. Hence for the Mn or AsPl of /ām/ both /mān-a-n/ or /mān-1-a-n/ occur. In optionality 111, Sbl alternates with /s21/ (/j/). Hence for the MnSgm or the Prs Prt both /gibanda/ or /gibanda/ (/gibanda/) can occur.

Mō = /i/ (/s20k), /i/ (/s20t), /i/ (/s20n). Mō = /a/ (/s21k), /a/ (/s21t), /a/ (/s21n).

S2b. Insert /a/ in /#Stem Mō/ —— # If Stem contains Nō, Mō or Nō, a- or ja- or 1-class, Dō, Sō.

S2b. Insert /a/ in /#Stem Mō/ —— # If Stem contains Pt, and (a) is Nō, Mō or Nō, Dō: a-, ja- or 1-class or /māt/ 'night', /ā/ /māt/ or /mān/ 'man', or /wāt/ 'water', but not /mān/ 'month', or (b) is a St A, N a- or 1-class, or /tw/ 'two' or Ar2 in Nō, Ac 1-class /i/ (/t/), /i/ (/s20), /i/ (/s21), /i/ (/s20t), /i/ (/s20n).

S2b. Insert /add/ in /#Stem Mō/ —— # If Stem is /tw/ 'two' in AsPl. This rule is the morphological remnant of Holmberg's Law.

Mō = /a/ (/s21k), /a/ (/s25).

S2b. Insert /Et/, spelled /a/, in /#Stem Mō/ —— # If Stem contains Pt, (a) Nō or Dō, or (b) Art or /tw/ 'two', (Dō or (Nō, Mō)).

Mō = /i/ (/s20k), /i/ (/s25). Mō = /ə/ (/s21k), /ə/ (/s21n), /ə/ (/s21t).

S2b. Insert /Et/, spelled /a/, in /#Stem Mō/ —— # If Stem contains Pt, (a) Nō or Dō, and (a) Nō or Dō of a St A or an 1-class N or (b) Dō of an 1- or 1-class N or of Art, or of 3 Pt (the 1-class pronoun). Leftmost Mō = /i/ (/s21k), /i/ (/s25). Rightmost Mō = /a/ (/s20k), /a/ (/s20n), /a/ (/s20t).

S2b. Insert /Et/, spelled /a/, in /#Stem Mō/ —— # If Stem contains Pt, Nō, and (a) Nō or Dō of a St A or an 1-class N or (b) Dō of an 1- or 1-class N or of Art, or of 3 Pt (the 1-class pronoun). Leftmost Mō = /i/ (/s21k), /i/ (/s25). Rightmost Mō = /a/ (/s20k), /a/ (/s20n), /a/ (/s20t).

S2b. Insert /Et/, spelled /a/, in /#Stem Mō/ —— # If Stem contains Pt, Nō, and (a) Nō or Dō of a St A or an 1-class N or (b) Dō of an 1- or 1-class N or of Art, or of 3 Pt (the 1-class pronoun). Leftmost Mō = /i/ (/s21k), /i/ (/s25). Rightmost Mō = /a/ (/s20k), /a/ (/s20n), /a/ (/s20t).
Shb4. Insert /3/ in **#Stem — M#** if Stem contains (a) A or N in class N (but not Not of St A), or (b) Ac or L-class (but not Not of St A), or (c) Ahm 'every'. Environment b represents an extension in the environment of this rule. See also phonological rule 1.1.2, the /u/-to-/u/ rule.

\[ M = \text{the endings of ja- or jo-class N and the St A endings.} \]

Shb5. Insert /l/ in **#Stem M#** if Stem contains Gn, Sn, Mn, or Nt, and N (but not n, t, or u-class N or Manh 'man'), or St A or Art or Ind or Int.

\[ M = /l/ (SB29), /v/ (SB27), /m/ (FB7), /p/ (PB24). \]

Shb6. Insert /l/ in **#Stem M#** if Stem is an a-class St N marked as taking /l/ (We have also listed this as derivative suffix 31 above.)

\[ M = \text{the St a-class endings.} \]

Shb7. Insert /l/ in #**Stem M#** if Stem contains Mn Fl of L-class N, of or /pri/ 'three', of 3 Fl Mn, or of 1 Fl Mn ("we").

\[ M = /l/ (SB30). \]

Shb8. Insert /l/ in #**Stem M#** if Stem contains A, Pr, Prt, Pr or Mn in class M.

\[ M = /l/ (SB19), /v/ (SB20), /o/ (SB25), /a/ (SB29), /a/ (SB30). \]

Shb9. Insert /m/ in **#Stem M#** if Stem contains DT Fl (but not of 1 or 2 Fln).

\[ M = /m/ (SB19), /v/ (SB20), /o/ (SB25), /a/ (SB29), /a/ (SB30). \]

Shb10. Insert /m/ in **#Stem M#** if Stem contains DT Fl (but not of 1 or 2 Fln).

\[ M = /m/ (SB19), /v/ (SB20), /o/ (SB25), /a/ (SB29), /a/ (SB30). \]

Shb11. Insert /n/ in **#Stem M#** if Stem contains (A) A or N in class N, Fl of (Sn, Mn or Fln, but not Nn) or (Sn or Fl, Nt, but not Mn or Ac), or (b) the AcSgn optionally (i) the Sn or Ac Fl of /manh/ 'man', or (c) optionally (ii) the Nasg of Fl n-class N. In the first optionality, SB50 applies only if Sb1 (a) also applies. In optionality 11, SB50 applies infrequently. Otherwise no rule applies. Hence the Nasg of n-class N may be either managed 'crowd' or managed.

\[ M = /n/ (SB19), /v/ (SB20), /o/ (SB25), /a/ (SB29), /a/ (SB30). \]

Shb12. Insert /n/ in **#Stem M#** if Stem contains Fl Ac. (a) Mn, St A or N (but not n-class N) or (b) Ac or L-class (but not Not of St A), or (c) Ahm 'every'. Environment b represents an extension in the environment of this rule. See also phonological rule 1.1.2, the /u/-to-/u/ rule.

\[ M = /n/ (SB19), /v/ (SB20), /m/ (FB7), /p/ (PB24). \]

Shb22. Insert /n/ in **#Stem M#** if Stem contains Gn Sn (but not of 1 or 2 Fls Fln).
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Gothic

Sb30. Insert /s/ in **Stem ** if Stem contains Mn or Ph and (a) Me or An, Fl, 3 Pers (but not the Mn Pl Mn of St A, *tw*, 'two', or Art), or (b) Mn Pl of 1 or 2 Pers Ph.

Mn = /a/ (Sb1), /e/ (Sb3), /ai/ (Sb33), /a/ (Sb14), /a/ (Sb17), /a/ (Sb18), /a/ (Sb20), /a/ (Sb21), /a/ (Sb22), /e/ (Sb26), /a/ (Sb27), /a/ (Ph10), /a/ (Ph24).

Sb31. Insert /s/ in **Stem ** if Stem contains Mn Sg and (a) Mn or Phn of all N except ci-, jo-, n-, or r-class N or /man/*-/*man*/ or (b) Mn or Phn of St A except those of the ci- or jo-class or (c) Mn of 3 Pers Phn or of Ints or (d) optionally, Mn of Prs Prt. In the optionally, the MnSgMn of the Prs Prt may also be /a/ (Sb1).

Me = /a/ (Sb10), /e/ (Sb18), /a/ (Sb27), /a/ (Ph7), /a/ (Ph10), as well as the Vb-rules for Prs Prt and Pat Prt.

4.2. The Vb-rules

Pn1. Insert /a/ in **Mn ** if matrix contains Pn, On, 1 or 2 or Ref.

Mn = /a/ (Ph1), /a/ (Ph12), /a/ (Ph14), /a/ (Ph16), /e/ (Ph17), /a/ (Ph18), /a/ (Ph19), /a/ (Ph21), /a/ (Ph25), /a/ (Ph30).

Pn2. Insert /an/* in **Stem ** Mn ** if Stem contains Dt Sg, Mn or Me or of /n/*-/*n*/ or /man/*-/*man*/ or /man/*-/*man*/ every'.

Mn = /a/ (Sb4). Mn = /a/ (Sb4).

Pn3. Insert /ano/* in **Stem ** Mn ** if Stem contains Acng, Mn or Me or of /man/*-/*man*/ or /man/*-/*man*/ every'.

Mn = /a/ (Sb4). Mn = /a/ (Sb4).

Pn4. Insert /ar/ in **Mn ** if matrix contains On, Du or Pl, 1 or 2 or Pl.

Me = /a/ (Ph14), /a/ (Ph17), /e/ (Ph18), /a/ (Ph19), /a/ (Ph25), /a/ (Ph30).

Pn5. Insert /ato/* in **Stem ** Mn ** if Stem contains Mn or An or Me of /n/*-/*n*/ every'.

Mn = /a/ (Sb4). Mn = /a/ (Sb4).

Pn6. Insert /e/* in **Stem ** if Stem contains Int Pn, Mn or Me, Instrumental Sg or, optionally Du, Mn.

The possibility alternates with /ame/ (Pn2). Morpheme Pn6 may possibly occur in the endings /ame/ and /ame/ (rules Pn6 and Pn28).

Pn7. Insert /a/ in **Stem ** if Matrix contains Int Pn or /e/ every'.

Me = the endings of the Int Pn /a/ or of those of the

indefinite /a/*-/*e*/ every'.

Ph5. Insert /l/ in **Mn ** if matrix contains 1 or Ref Pn, Du or Ac Sg, or Me Du.

Leftmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25). Rightmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25).

Ph6. Insert /r/ in **Mn ** if matrix contains 1 or Ref Pn, Du or Ac Sg, or Me Du.

Leftmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25). Rightmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25).

Ph10. Insert /r/ in **Mn ** if matrix contains Acg, Mn or Me or of /man/*-/*man*/ or /man/*-/*man*/ every'.

Me = /a/ (Ph1), /a/ (Ph12), /a/ (Ph14), /a/ (Ph16), /a/ (Ph18), /a/ (Ph19), /a/ (Ph21), /a/ (Ph25), /e/ (Ph30).

Ph11. Insert /a/* in **Mn ** if matrix contains 1 or Ref Pn, On.

Leftmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25). Rightmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25).

Ph12. Insert /l/* in **Mn ** if matrix contains 1 or 2 or Ref Pn, On.

Leftmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25). Rightmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25).

Ph13. Insert /a/* in **Mn ** if matrix contains 1 or 2 or 1 or Ref Pn, Du or Ac Sg.

Leftmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25). Rightmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25).

Ph14. Insert /a/* in **Mn ** if matrix contains 2 or 3 or Ref Pn, Du or Pl.

Me = the endings of the 2 or 3 or Ref Pn, Du or Pl.

Ph15. Insert /a/* in **Mn ** if matrix contains 1 or 2 or Ref Pn, Ac SG.

Me = /a/ (Ph1), /a/ (Ph12), /a/ (Ph14), /a/ (Ph16), /a/ (Ph21), /a/ (Ph25).

Ph16. Insert /a/* in **Mn ** if matrix contains 1 or Ref Pn, Du or Ac Sg.

Me = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25). Rightmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25).

Ph17. Insert /l/* in **Mn ** if matrix contains 1 or Ref Pn, Du or Ac Sg.

Leftmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25). Rightmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25).

Ph18. Insert /r/* in **Mn ** if matrix contains 2 or 3 or Ref Pn, Du or Ac Sg.

Leftmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25). Rightmost Mn = /a/ (Ph15), /e/ (Ph21), /a/ (Ph25).
\[ n_1 = /a/ (v_b6), /i/ (v_b17), /o/ (v_b25). n_2 = /e/ (v_b10) \] and all Pat tense endings.

\[ Vb13. Insert /a/ in \#Stem M^2 \quad \text{M}^2 \quad \text{if Stem contains} \quad 3 \text{ Prt, Ind or Imp act of St V, Wk V \quad or \quad 'be'.} \]

\[ M_2 = /a/ (v_b1), /e/ (v_b5), /i/ (v_b12), /o/ (v_b25), /u/ (v_b9). M_1 = /i/ (v_b25). M_0 = /i/ (v_b9). \]

\[ Vb14. Insert /a/ in \#Stem M^1 \quad \text{M}^1 \quad \text{if Stem contains} \quad 2 \text{ Pl Act,} \]

\[ M_1 = /i/ (v_b8), /i/ (v_b25), /o/ (v_b25), /u/ (v_b9). \]

\[ Vb15. Insert /i/ in \#Stem M^2 \quad \text{M}^2 \quad \text{if Stem contains} \quad \text{Pat Ind} \quad 2 \text{ Sg of Wk V, PP, or 'will'.} \]

\[ M_2 = /i/ (v_b7), /i/ (v_b12), /i/ (v_b17), /o/ (v_b25). M_1 = /i/ (v_b1). \]

\[ Vb16. Insert /e/ in \#Stem M^2 \quad \text{M}^2 \quad \text{if Stem contains} \quad \text{Pat (but not Sg Ind or Prt) of Wk V, PP, or 'will'.} \]

\[ M_2 = /e/ (v_b6), /e/ (v_b12), /o/ (v_b25). M_1 = /e/ (v_b1). \]

\[ Vb17. Insert /i/ in \#Stem M^2 \quad \text{M}^2 \quad \text{if Stem contains} \quad \text{Wk j-class V but not 'add' or 'be' or St V.} \]

\[ M_2 = /i/ (v_b13), /o/ (v_b31), /a/ (v_b1). \]

\[ Vb18. Insert /o/ in \#Stem M^2 \quad \text{M}^2 \quad \text{if Stem contains} \quad \text{Prt Act of 2 or 3 Sg or of 2 Pl of St V or Wk V of} \]

\[ \text{or not-class.} \quad M_1 = /i/ (v_b17), /o/ (v_b1). \]

\[ Vb19. Insert /i/ in \#Stem M^3 \quad \text{M}^3 \quad \text{if Stem contains} \quad \text{Sub Pat or Sub Prs of Pr or Ind Prs of 'will'.} \]

\[ M_2 = /i/ (v_b25), /o/ (v_b10), /o/ (v_b14), /e/ (v_b22), /a/ (v_b25), /u/ (v_b31). \]

\[ Vb20. Insert /n/ in \#Stem M^2 \quad \text{M}^2 \quad \text{if Stem contains} \quad \text{Pl Act} \]

\[ M_1 = /o/ (v_b31). \]

\[ Vb21. Insert /n/ in \#Stem M^2 \quad \text{M}^2 \quad \text{if Stem contains} \quad \text{Inf} \]

\[ M_1 = /a/ (v_b31). \]

\[ Vb22. Insert /n/ in \#Stem M^2 \quad \text{M}^2 \quad \text{if Stem contains} \quad \text{3 Pl Act.} \]

\[ M_1 = /a/ (v_b31). \]
Phonological Rules

5.1. The Minor Rules

1.1. Vocalic

1.1.1. Ablaut alternations (within inflectional paradigms)

A. Alternations of stressed vowels in the stems of St and Pp V

a. $\text{a} \rightarrow \text{a}: /\text{St V, Pet, but not Prt}^-\text{vocalic}^+\text{vocalic}^-$

\[
\text{high} \ 
\text{long} \\
/\text{St V, Pet but not Stg Ind or Prt}^-\text{vocalic}^+\text{vocalic}^- \\

\text{i.e., in stems with the basic vowel }/\text{i/ or }/\text{u/ which is followed by exactly one nonvocalic segment. Also one other }V:\n
\text{[Pat Stg and Pp, but not Prt of }/\text{t/ }/\text{eat}^-\text{vocalic}^+\text{vocalic}^-$

\[
\text{high} \ 
\text{long} \\
\]

b. $\text{vocalic}^+\text{vocalic}^- \rightarrow \text{e:}$

\[
\text{high} \ 
\text{long} \\
/\text{St V, Pet but not Stg Ind or Prt}^-\text{vocalic}^+\text{vocalic}^- \\

\text{i.e., in stems with the basic vowel }/\text{i/ or }/\text{u/ which is followed by exactly one nonvocalic segment. Also one other }V:\n
\text{[Pat Stg and Pp, but not Prt of }/\text{t/ }/\text{eat}^-\text{vocalic}^+\text{vocalic}^-$

\[
\text{high} \ 
\text{long} \\
\]

c. $\text{vocalic}^+\text{vocalic}^- \rightarrow \text{a}$

\[
\text{high} \ 
\text{long} \\
\]

order of their input segments; Hence the rule of /\text{i/}-shortening (1.1.6) precedes that of /\text{e/}-deletion (1.1.8).

Under each of the phonological rules we give examples of its application as well as the rationale underlying our formulation of the rule. In appendix 2 to this chapter we give the ordering relations obtaining among the rules.
I.e., in stems with the basic vowel /i/ or /u/ which may be followed optionally by either /i/ or /u/. This results in /i + i/ = /ii/, /i + u/ = /iu/, /u + i/ = /ui/. The sequence /u + i/ = */ui/* does not occur. The vocalic nucleus of the stem may be followed by at least one and at most two nonvocalic segments. This rule also applies to the following V:

"Pat, Sg or Pl or Prt"

(Br—ng/ 'bring')

d. "vocalic" "vocalic" (i.e., /ii/ or /uu/)
  +high
  +long
  1 2
  ⇒ / "vocalic" (i.e., /i/ or /u/)
     +high
     +long
     1 2

"St V, Pat, but not Sg Ind"

1. /i/ ⇒ / "St V, Pat, but not Sg Ind" "vocalic"

I.e., in stems with the basic vowel /i/ which is followed immediately by at least two nonvocalic segments.

"St V, Pat Prt" "consonant"

I.e., in stems where the stem vowel is immediately followed by /l, m, n, r/. Also:

"Pat Prt"

(Br—k/ 'break')

f. /a/ ⇒ / "Pp V, Prs Sg Ind"

"vocalic, +high, -long (i = i, u)"

I.e., insert into the stem immediately after the basic stem vowel /i/ or /u/ the vowel /a/. Also in the following:

"St V, Pat Sg Ind"

(/i/—ng/ 'knead' or
  /w—ng/ 'fight'

B. Alternations of stressed vowels in the stems of reduplicating St V

1. /i/ ⇒ / "St V, but not /sleep/ 'sleep', Pat, but
   not Prt"

Rule 1.2.2 below (the reduplicating rule) applies to the V which undergo alternation B. It also applies in the complementary environment of part A above. That is, all St V marked as Pat, but not Prt, which do not undergo any of the alternations under A automatically undergo the reduplicating rule 1.2.2.

C. Alternation of the stressed vowel in a N stem

1. /u/ ⇒ / "On or Dt Sg"

   (f—n/ 'fire'

D. Alternations in the vowel in the inflectional ending of a N or in the second (and unstressed) syllable of a N stem

a. Optional: /u/ ⇒ / "N, u-class, inflection ending, namely the
   Sg

b. /a/ ⇒ / "N, r-class, Nm or Ac Sg

I.e., insert /a/ in the stem between the next-to-last son-

vocalic segment and the stem-final /r/.
The basic vowel in St V stems is that of the present tense; and the basic vowel in Pp. verb stems is that of the Prp Pl Ind. We shall consider the reasons for assuming this directly. Examples of the application of rule 1.1.1 are (Aa) jakan 'go' vs. Pp. jakan 'go'; St V stems (except for /wa/ 'grow' which is listed) in which the base vowel /a/ is followed by more than one nonvocalic segment such as haidan 'hold' cannot undergo this rule to become 'hold'.

Rather, it undergoes the rule of reduplication 1.2.2 to become haidaln 'beheld'. (Ab) giban 'give' Pat Pl gaban; trudan 'read', Pat Pl probably trudam; but iban 'eat', Pat Pl iban.

St Gt, Pat Pl iban, Pat Per ibam; (Ab) greplan 'grasp' /grijpan/ vs. Pat Gt /grijpa/ (by rule 2.1.5) → /grjpa/, written grjapā nlutan 'enjoy', Pat Gt rout for /rjut/ from /rjutan/ /rjutan/ 'clothe' vs. Pat Gt /lauk/ (2.1.5) → /10k/ /lauk/ blagzw 'beat'.

Pat Gt blagzw; Pp Pl kumun 'we can', Pp Gt kampu and Pat Prt binaun 'permitted' from /bl-nht-t-/. Prs bl-nah.

Some Pp V retain the same basic vowel throughout; e.g. ok 'fear', Pp Sub okal and mag 'can', Pl magum. Pat mantā; and thus these V do not undergo the ablaut rule. Also brigan 'bring', Pat Pl /brίg-d-a/ → brända (rules 1.7.1, 1.2.6, and 2.2.6) → /brahta/; (Ab) greplan, Pat Pl griplan, Pat Prt griplan. (Ab) bindan 'tie' vs. Pat Pl bundum. Pat Prt bundan. Blagzw. Pat Pl blagzw.

Pat blagzwam where this rule applies because the base vowel /a/ is followed by at least two nonvocalic segments; likewise intrugian 'implant', Pat Pl intrugian, Pat Prt intrugians; niman 'take', Pat Prt nummaw because the basic stem vowel /a/ is followed by /m/; 'AT' Pp Prt witun 'know', Pp Gt 1 waiti; the St V digan 'knead', Pp Gt presumably daic; (Ab) tgtan 'let/am' vs. Pp Gt laical (letam) /lak/ (2.1.5) vs. (Ab) Nang 'for fire', GtNang funing, (Ab) Nang numun or numuu and (Ab) Dsg prob 'brother', DESG DSG prob.

The ablaut rule applies to forms entered in the lexicon with their basic vowels specified. As mentioned above, the basic vowel of the St V is that of the Prs; and the basic vowel of the Pp V is that of the Prs Pl Sub, and all Pp V stems. Thus the basic vowel for any V is the one which occurs in the most forms within the paradigm. This fact, however, is not the only reason for considering this particular vowel as basic.

Another argument for considering the vowel of the present one in St V is that in the history of Gothic, whenever St V have shifted their classes as the result of some sort of phonological change, the resultant newly formed present-tense form has invariably been considered basic. The verb with its new Prs tense vowel has then realigned itself and formed its other tenses according to the ablaut rule as we have formulated it above. For example, V's like jalan 'send', peihan 'thrive', preihan 'push', and weihan 'fight' were all originally in German /linən/, /pinən/, and the like with short /i/ followed by a nasal and another consonant in the stem. Accordingly, their paradigm was — with the application of ablaut Ac and Ac above and of Verner's Law — thus: Pp /limən/, Pat Gt /ləmn/, Pat Prt /ləmnən/, with the addition of the Ocs. version of rule 2.2.8 (nasal deletion and vowel lengthening), this paradigm became /limən/, /lən/, /ləmnən/; In Gothic the base form was invariably considered that of the Prs. /limən/, which then automatically underwent the ablaut alternations Ac and Ac: /limən/ (Ac) — /laimən/ (ev) — /laimən/ /laimən/ (Ao) → /limən/# /laimən/ /laimən/.

In Gothic the base form was invariably considered that of the Prs. /limən/, which then automatically underwent the ablaut alternations Ac and Ac: /limən/ (Ac) — /laimən/ (ev) — /laimən/ /laimən/ (Ao) → /limən/# /laimən/ /laimən/.

Pat Prt laihana. Similarly, /prinən/ became Go. khram, brain, brahtum, brahtam. It is significant that a Pat Gt form like /laimən/ was never considered the basic form for such V's in Gothic. In that case, /laimən/ and the like would automatically have become reduplicating St V: *lakuh-, *lakuhun-, lailahun-, laihana. Similarly, in all the other Ocs. languages whenever a St V becomes Ac, the base form is invariably the Prs-tense form. Thus in English help, holpen became help, helped and not help, holped.

The V's dian 'die' and slúwun 'hasten' present a problem. The attested paradigm of the latter is slúwun, slúwum slúwun, slúwun. If the base form is considered /slúwum/, alternations Ab and Ao apply resulting in slúwun, slúwum for /slūum/ from /slūum/ by rule 2.1.5, slúwun for /slūum/ by Ab, and slúwun. The additional Pat Prt slúwum may mean that alternation Ab was optional for the V's /slou/ and /slum/.

The V standan, stop, stopum, standam 'stand' undergoes alternation As. Accordingly, the base form is /stop/ which undergoes alternation As for the nonparticipial Pp forms and rules 1.2.4 (Verner's Law) and 1.3.5 (V-insertion) for the Prs and Pat Prt.

As for the ablaut alternations under D, it is not obvious which forms should be considered basic; it is thus quite possible that they should read Of: → u and a → ə. These are to be considered ablaut alternations because they are not phonologically conditioned and occur only in the given morphosyntactic environments. Hence while both ənau and ənau 'son' can occur, an alternation like ənau and ənauu 'you all' does not.

We have described only the intraparadigmatic ablaut alternations and not those occurring in derivation such as traúblan 'to make go' from traúblan 'drive' may 'move', from wigan 'to shake', or raúst 'red' and u-rafta 'honorably'. Most such alternations would be describable through the inclusion of additional environments to the ablaut alternations already given. The only one not given in the ablaut above is → ə in /fish-ška/ 'four-fold'
from fidelis 'four'.

Finally, we emphasize that we have been able to state all the ablaut alternations applying to St V stems in terms of the MS of the stem and the morphosyntactic features of tense (Pres, Past) and Prt. We have not had recourse to additional morphosyntactic classification such as 1st-class St V, 2nd-class St V, and the 3rd. And those St V which do not meet the MS constraints of the ablaut rule under A automatically undergo the rule of reduplication (1.2.2).

1.1.2. Deletion from /ano/ (Pn3 morpheme)

\[\text{ano: } \not\in \text{nono, and possibly optionally } \not\in \text{o:}\]

\[1 \ 2 \ 3 \ 2 \ 3\]

\[\text{/Ac Sg Mn or /Ein/ 'no one'}\]

E.g., Ac Sg Mn /Ein-ano-hun/ → alinnuhun, possibly (if not an orthographic error) alinnuhun. Otherwise this morpheme is /ano/ as in Ac Sg Mn biili-anoh 'every'.

1.1.3. Sievers' Law

1.1 → 1.1

\[1 \ 2\]

\[\text{a. } [\text{Ao or N, ja-class, Nm}\]

\[\text{Sb16 morpheme} \quad \text{Sb11 morpheme} /y/\]

\[\text{b. } \text{St or Wk V, j-class}\]

\[\text{impl. or (Wk V, j-class,} \quad \text{Vb17 morpheme} \quad \text{Vb21 morpheme} /n/\]

\[\text{nominalized}\]

\[\text{c. } [\text{Nn Pl of j-class N}]

\[\text{Sb18} \quad \text{Sb30 morpheme} /s/\]

\[\text{or (Nn Pl Mn or /pri/ 'three' or of 3 Pn 'they')}\]

That is, the morphemes Sb14, Vb17, Sb17, and Pn10 (all realized as /i/) are generated in the specified morphosyntactic environments by inserting another /i/ in the immediately following position.

That is, the sequence /il/ is realized as /i/ in the specified morphosyntactic environments. The second /i/ in the sequence in (2a) may be the Sb15 morpheme, the Vb18 morpheme, or the /i/ inserted by part (1a) of Sievers' law. (Parts 1 and 2 of this rule are ordered.) In the first possibility in (2a) the rule applies very seldom; in the second, about half the time. The second /i/ in (2b) and (2c) is inserted by parts (1b) and (1c). A "long syllable" is defined as follows:

\[\text{[wocallic]}\]

\[\text{[long]}\]

\[\text{[wocallic]}\]

I.e., a syllable with a long vowel and ending in at least one nonvocalic segment, or a syllable ending in at least two nonvocalic segments, or a syllable with at least two vocalic nuclei and ending with at least one nonvocalic segment.
The Minor Rules (Vocalic)

E.g., (1a) and (2a): NmsGnMl, herd-l-y 'shepherd' (stem + subj + sb3l) by Sievers' Law 1.1.3 (2a) \rightarrow herdils (1.1.3) (2a) \rightarrow /herdis/ (ev) \rightarrow /herdis/ (ev), as opposed to NmsGnMl, har-l-y 'arey' (1.1.3 (2a)) \rightarrow harlils, to which 1.1.3 (2a) does not apply because har/ is not a long syllable, but by 2.1.4 \rightarrow harlils (ev) \rightarrow /harlils/.

Also the NmsGnMl of the A 'wilb-l-y 'wild' (stem + Shl4 + Shblb) by 1.1.3 (2a) \rightarrow wilplis (ev) \rightarrow /wilplis/ (ev). A single example of optionality in 2a is associated with the longer nasal of the MSGm of the EM andhant-l-i-e 'office' (2a) \rightarrow andhantins (ev) \rightarrow /andhantins/ (andhants) attested once) as opposed to andhantilas (attested three times) to which 2b does not apply and 2b.5 does.

The same optionality in the MSGm of other Ja-class Ml is in gamswilis 'peace' attested four times vs. gamswilis attested six times, and Waldus 'power' attested once vs. Waldus attested twice. 2b.5 can apply only if the N of V stem ends in at least one nonvocalic segment. Hence the 3 Sg Frs /sto-l-1-1/ 'judge' where neither any part of 1 nor 2a can apply, but by rule 2.1.4 \rightarrow stoilis (ev) \rightarrow /stoilis/ (vse), the Imp /sto-l-1/ (stem + Vo17) by 1b \rightarrow stoilis (2b) \rightarrow /stoilis/ (vse).

E.g., (lb) and (2b): 3 Sg Frs /sok-i-l-1-1/ 'seek' (2b) \rightarrow sokkilis (ev) \rightarrow /sokkilis/ seleh as opposed to /nasal-1-1/ 'save' where 2b does not apply, but by rule 2.1.4 \rightarrow nasjalis (ev) \rightarrow /nasjalis/ (vse). But the Imp /sok-i-l-1-1/ (stem + Vo17 + Vbl2 + Shblb), the 1-m listed as derivative suffix 16 by lb \rightarrow sokkilis (2b) \rightarrow sokkilins (ev) \rightarrow /sokkilins/ seleh as opposed to /nasal-1-1/ with the same suffixes and the same derivation. The Imp /hir-l-1/ (stem + Vo17) does not undergo lb or 2b, hiri other times of nonvocalizations of Xk Ja-class Ml's such as compounds like /plip-i-l-1-1/ 'the master' (stem + Vo17 + stem - derivative suffix 16 + Shblb) \rightarrow /plip-i-l-1-1/ (vse), the Ja-class A Nms Sg Mn (also probably the same form in the ON Sg Mn) freis 'free' presents an unusual case. If the stem is considered to consist of only two consonants, /fr/, then the derivation is as follows: Nms Sg Mn /fr-i-t/ (stem + Shblb + Shblb) by lb \rightarrow /fr-i-t-1/ by 2a (where the phonological condition for a long syllable is fulfilled, \(-vocalic\) \(-vocalic\) namely ending in, and in this case consisting entirely of two nonvocalic segments) \rightarrow /fr-i-t-i/ (ev) \rightarrow /fris/ (vse). A form like the DT Sg Mn would be derived as /fr-i-l-amma/ (stem + Shblb + Shblb) by 2.1.7 (glide insertion) \rightarrow /fralamma/.

The 2b.5 is such forms like /frilis/ 'freedom' (stem + Shblb + derivative suffix 16) is also inserted by rule 2.1.4. Presumably the NtsSgMn or Ac would be fri and optionally fria. The IE antecedents of Sievers' Law have been described by Sievers (1876, esp. p. 190) and in a later addendum by Eggertsen (1936, esp. p. 325). According to Sievers, if prevocalic /j/, /w/ were realized as /i/, /u/ after long syllables, and as /i/, /u/ after short ones, Eggertsen proposed the additional proviso that IE prevocalic /j/, /w/ were realized as /i/, /u/ after long syllables. Our formulation of Sievers' Law under 1 (whereby /l/ \rightarrow /i/), is reminiscent of Eggertsen's hypothesis whereas /j/ \rightarrow /j/, while the alternation under 1/l/ \rightarrow /i/ may well be the reflex of Sievers' original /j/-to/-i/ rule after long syllables (i.e., /l/ to /i/) after long syllables, otherwise /i/ to /l/ by rule 2.1.4 below. Whatever the IE situation may have been, it is clear that in Gothic the rule applies only to /l/, not to /m/, and that it has become in large part morphologically conditioned. It was thus a dying rule, having been to a large extent superceded by Go. phonological innovation and /al/ (vse, w-alternation below).

Our version of Sievers' Law is more complex than other recent formulations such as those in Vennemann (1971), Pullerton (1977), and Schwiderg (1977). The complexity of our formulation is attributable to two facts: First, we have included all morphosyntactic and lexical-expectation information in the rule instead of considering individual lexical items marked with features like "Sievers' Law" or "Sievers' Law". Second, our rule applies to a larger domain than do the other formulations and is to our knowledge the only descriptively adequate version.
E.g., Pat 1 Sg Ind /bus/-i-d/a/ (stem + Vb17 + Vb12 + Vb3) by 1.1.4 → busaga (1.2.1) → busaga (1.2.8) → busaga (2.1.1) → /busaga/ also Pat Prt /busha/ bauh from /bush-1-d-a/ Pet 1 Sg Ind /pazan-1-d-a/ (stem + Vb17 + Vb13 + Vb3) by 1.1.4 → pazana (1.2.1) → pazanha (1.2.8) → /pazanha/ also Pat Prt /pazanha/. Also Pat 1 Sg Ind /koip-at-1-d-a/ (stem + derivative suffix 7 + Vb17 + Vb12 + Vb3) by 1.1.4 → koipat-ad-a (1.2.8) → /koipat-ad-a/ written koipatada, but Pat Prt where 1.1.4 does not apply: koipatada. This rule would also apply to /bring/ 'bring' (Pat /bran/ by 1.1.1 ablaut) if it is considered for the purposes of this particular rule a Wk V.

1.1.5. /1/ (Sba4 morpheme)-deletion

I (Sba4) → [A, 1-class.]

Phonological conditions:

long syllable

where "long syllable" is as defined in rule 1.1.3 (part 2A).

E.g., NswSng /hrz3n-1-a/ (stem + Sba4 + Sba3) by 1.1.5 → /hrz3n/,

On the other hand, the NswSng /hrz3n-1-a/ (stem + Sba4 + Sba3) → /hrz3n/ where the Sba4 is not involved. Likewise, the DswSng /hrz3n-1-aam/ → /hrz3njam/,

where the Sba4 morpheme is retained since it is immediately followed by a vowel. Likewise NswSng /snt-1-a/ (stem + Sba4 + Sba3) → /snt/ 'peasful', where the Sba4 morpheme is retained since /snt/ is a short syllable.

1.1.6. /1/ (Vba9 morpheme)-shortening

I: 1 / V stem /Vba9 morpheme/ [¬vocalic]

Phonological conditions:

long syllable

where "long syllable" is basically defined as in rule 1.1.3 (part 2A), except that the syllable need not necessarily end in a nonvocalic segment.

[¬vocalic] (or diphthong)

[¬vocalic] 2

[¬vocalic] 3

1.1.7. /or/ (Sba24 and Sba26 morphemes)-to-/a/ rule

o: → a / [N or Ac Pi Mt] Sba24 or Sba26 morphemes

[¬vocalic] stress

[¬vocalic] 0

E.g., (a) NswPiMt /word/ omor /words/ (stem + Sba24) → /worda/ huwura vs. the NswPiMt of the Art /or-/ (stem + Sba24) → /or/; not /pa/ since the Sba24 morpheme is stressed. Also Nw or Ac Sg Pn /gib-0/- /gift/ → /gib/ (stem + Sba24 + Sba2) → /gib/ since the Sba26 morpheme is stressed. The rule does not apply to the AcSgPn ni... NswPiMt 'not for a single hour' /m'or/-i-/un/ (stem + Sba26 + hun) because the Sba26 /or/ is not word-final.

The rule is morphologically conditioned in that there are numerous word-final unstressed /or/-a to which it does not apply, e.g., NswPiPn /gib-0/- (stem + Sba25), ImpSg /sib-0/- 'anoint' (stem + Sba25).

1.1.8. /or/ (Sba26 morpheme)-deletion

o: → / [Nw Sg Pn joi-class N] Sba24 morpheme /or/ Sba26 morpheme

Phonological conditions:

long syllable

where "long syllable" is basically defined as in rule 1.1.3 (part 2A), except that the syllable need not necessarily end in a nonvocalic segment.
not *halli.

1.1.9. /a/ (St827 morpheme)-to-/1/ rule

u (St827) → 1 /u-class A/ → [vocalic]

E.g.: * [numan} /nomn or Pn /hard-u-12/ 'hard' ( = stem + St827 + St01)

eV → //hardu//, but Dt Sp Mn /hard-u-amma/ ( = stem +

St827 + St07) by 1.1.9. → hard-1-amma (2.1.6) → //hard-

amma//. Likewise, the Nm or Ac Sp Nt can be either hardu

or hard-data.

Rule 1.1.9 probably represents an extension in the

environment of morphological rule S0k which inserts /a/

immediately after the stems of 1-class A. This rule tended
to supplant St827 in the A paradigm so that by the time the
later Ugo languages are attested, u-class A had for the

most part disappeared, becoming either regular (as in para-
digm 2.1 in appendix 1 to this chapter) or 1-class A (para-
digm 2.1.1).

1.1.10. Word-stress rule


derivational

prefixes, en-
clitic parti-
cles, or red-
duplicative pre-
fixes from rule

1.2.2 below.

That is, the first vowel occurring in a word takes the main
stressed except if this vowel occurs in a verbal derivational
prefix, in an enclitic particle, or in the reduplicative
syllable in the 3rd form of reduplicative St V's. The verbal
derivational prefixes are given in section 3.1 of this
chapter. These are all prefixes which can occur with a V,

hence /ba/, which may be added to V's as well as to A's

and N's. On the other hand, the prefix /un/, which may be

added only to A's — including Prt — is not a verbal pre-

fix in the sense intended here. The verbal prefixes are

thus /una//, /ba//, /tre//, /tri//, /ga//, /usa//,

/twa//, and /unpa//. Enclitic particles are all constitu-
ents which can occur between a verbal prefix or the first

element of a verbal compound (of which more directly) and a

verbal stem, e.g. ni-un-gaf 'handed to' or ni-un-gatiel

'meet'.

One example of the application of the stress rule is in

the fact that in reduplicative V's such as halitl 'ordered

/neoHb/'. In deriving such forms one can assume that rule

1.2.2 for reduplication applies after 1.1.10. /#E#Ea/

(1.1.10) → /#E#Ea// (1.2.2) → /#E#Ea//. Other

examples of the stress rule are #tus#beralak# 'doubt' →

#tus#beralak#, and #unpa#bliuhas# 'fire from' →

#unpa#bliuhas#, where neither vowel in unpa is stressed

since they both occur in a verbal prefix. Likewise the N

#g#g#bargia# 'false citizen' is stressed #g#g#bargia#

(//gaborgia//). The gg is unstressed because, even though

it occurs in a N stem here, it is nonetheless a verbal pre-

fix in the sense defined above.

However, the prefix un in unbarnah 'childless' is

stressed since it is not a verbal prefix. The structure of

this A is something like [... un [... [... barn] ... [...]]

1 N 2 N 3 N 4 N 5 N

That is, it is an A (A2), which itself consists of the N

/barn/ and the derivitive suffix /anh/ (suffix 2 in section

1.2 of this chapter). The stress rule applies cyclically
to such constructions in that it first applies to the inner

most constituent here, the N', [... un [... [... barn] ... [...]]

1 N 2 N 3 N 4 N 5 N

The rule then applies to the next outer constitu-
ent, which is the A2, and in doing so restresses the mor-
pheme /barn/. Finally, the rule applies to the outermost
constituent A3. This results in the stress pattern

[... un [... [... barn] ... [...]]]. For such cases we accept

1 N 2 N 3 N 4 N 5 N

the convention that the vowel stressed last in the cycle
receives the primary stress and any other stressed vowels

inside the construction are reduced by one. Thus the final

stress configuration of this word is un-barnahs with pr

imary stress on un, secondary on barn, and minimal stress on

anh (a derivitive suffix 2 + morpheme Stb1).

For N compounds like pusundappa 'leader of 1000 ren'
we assume a structure like the following:

[... # pusundap# [...] # tap# # tap# # tap# # tap# #]. I.e., it is a N (N1)

N 2 N 3 N 4 N 5 N

consisting of two other N's (N1 and N2). The stress rule

again applies cyclically in that it first applies to the

innermost N's resulting in the stress configuration

[... pusundap# tap# [...]. The rule then applies to the outer-

most N, namely N5, restressing the /u/ in /pusundap/.
This is then by our convention /unana-suns/. Some compounds have as constituents prepositions or adverbs like /ana/ or /unana-suns/ 'invisible has a structure like this:

\[ \text{un} \#\# \text{ana} \#\# \text{sluns} \#\# / \text{i.e., it consists of} \]
\[ k_1 \quad A_2 \quad N \quad \quad A_3 \quad A_4 \quad N_k_1 \]

A N transformed into an A (A_4), which itself is a constituent of a negative A (A_3). The stress rule applying cyclically stresses first /sluns/ then /ana/. According to our 1.2 convention, this is /ana-suns/. Then the stress rule applies to /un/, again reducing by convention the other two stresses already in the construction. The final result is 1 2 3 thus /un-ana-suns/. We add in connection with this example that diphthongs in Gothic apparently are not under primary, secondary, or the least tertiary stress. Under less than 3 stress, diphthongs seem never to occur; under such stress, phonological rule 2.1.5 realizes some diphthongs as monophthongs; and under similar conditions, rule 2.1.6 realizes certain other diphthongs as sequences of a vowel and a nonvocalic sonorant segment.

Verb compounds are similar to the immediately preceding example in that they consist of an independently occurring preposition or adverb and a verbal stem. For example, /stixiban/ 'hand to' has the structure

\[ \text{[st]} \#\# \text{gib-an} \#\# / \text{i.e., it is a} \quad V \quad \text{(V)} \quad \text{which} \]
\[ V_1 \quad P \quad P \quad V_2 \quad V_3 \]

consists of a preposition (P) followed by a V (V_2). In its cyclic application, the stress rule applies to the P and V_2 constituents first, then to V_1. This results in the final configuration /#stixiban/#.

In formulating the stress rule, we posit the presence of word boundaries (#) between the prefixed constituent and the verbal stem. Corroborative evidence for the presence of a # boundary in this position is the fact that enclitic particles u, wh, ban, or ban can be inserted in V constructions only after #. E.g. they can be inserted word-finally as in was-uh wasat /#has-uh/ and after derivative or compound prefixes as in bl-u-ku/ #has-uh/, #has-lau-lau/ 'believe'.

The form /#stixiban/# is understandable in light of /#stixiban/#. But forms like #has-git-u-ai #has-git- u-ai/ and /#has-lau-lau/ 'believe' #has-lau-lau/ 'believe' are impossible. This means that enclitic-particle insertion in V's is possible only at a # morpheme juncture and not at other junctures such as between a stem and an inflectional ending.

We should add in this connection that enclitic-particule insertion does not apply between the reduplication prefix added by rule 1.2.2 and a V stem. Hence, only so-called /bowed/ can occur, not /mej-bau-ro/ or the like. This probably means that the reduplication rule 1.2.2 adds the re-duplicative syllable with no intervening # boundary between it and the V stem. Enclitic particles also do not occur between a prefix and an A or a N stem. This may mean that the syntactic rule of enclitic insertion applies only word-finally to A or N. (It may also mean that there is no # boundary between a verbal prefix like /bi/ if followed by an A or a N stem.) In any event, we assume that such prefixes, whether occurring with A, N, or V stems, were unstressed.

The evidence for most aspects of the stress rule is comparative. That is, the other attested Gmc. languages have stress rules like this one. However, there can be no comparative evidence for our assumption about the absence of stress from reduplicative prefixes and enclitic particles since the other Gmc. languages do not have a reduplication rule like 1.2.2 below nor do they enclitic-particle. We give in our discussion of rule 1.2.2 our reasons for assuming that reduplicative syllables were unstressed. We may assume that enclitic particles like -uh in at-uh-gaf cited above were unstressed since if they had been stressed, the breaking rule 2.1.3 would certainly have applied to them to produce forms like at-uh-gaf instead of at-uh-gaf. Other evidence internal to Gothic for positing the stress rule as formulated here is that it provides plausible environments for several other rules, among them the /or-/to-/a/ rule 1.2.7. Thurneysen's Law 2.1.3, the rule of vowel deletion 2.1.2, the rule of /i/, u, j, w/-alternation 2.1.4, monophthongization 2.1.5, and the unstressed /a/-to-/a/ rule 2.1.8.

1.2. Consonantal

1.2.1. Consonantal change in A and V stems

In the following table, the presence of a consonantal change in /a/ or /b/ is indicated by 'a' or 'b' respectively. Changes in the V stem are indicated by 'a' or 'b' respectively. Changes in the A stem are indicated by 'a' or 'b' respectively.

-sonorant

-continuant

+stene

+voiced

+low
"A or V stem, but not Pro, 2 Sg ind of Pro, V's /mag/ 'can' or /oig/ 'fear'.

Any nominalising derivational suffix or any verbal suffix whatever, derivational or inflectional.

-sonorant

i.e., \[ D, B, s \] \[ \Rightarrow \] \[ T \] / in the environment specified.

\[ \text{St. V. Pat but not Prit.} \text{ vocalic.} \text{ stress. MS+ conditions: the stressed stem vowel is either} \]

/a/ \[ \Rightarrow \] \[ -\text{vocalic} \] \[ 0 \] \[ \text{except for /wha/ 'grow',} \]

[\text{with or without a number of (superscript n) obstruct consonants, the consonants are repeated and the vowel} /a/ \[ \text{is prefixed to the stem.} \]

(b) If the stem begins with one or more nonvocalic sonorants /l, n, m, r j/ \[ \text{MS+}, \]

[these segments are reduplicated before /a/, all of which are prefixed to the stem.} \]

(c) Finally, if the stem begins with a consonant cluster whose first member is an obstruct followed by one or more nonvocalic sonorants, that cluster is reduplicated before the prefixed /a/, but without any of the nonvocalic sonorants which may have occurred in it.

That is, St V with the MS stressed stem vowel /a/ followed by at least two nonvocalic segments (but not /wha/ 'grow') or with the stem vowels /ai, ei, o, ei, o/ form their nonparticipial past as follows: (a) If the V stem begins with none or with any of (superscript n) obstruct consonants, the consonants are repeated and the vowel /a/ is prefixed to the stem. (b) If the stem begins with one or more nonvocalic sonorants /l, n, m, r, j, w/ \[ \text{MS+}, \]

[these segments are reduplicated before /a/, all of which are prefixed to the stem.} \]

(c) Finally, if the stem begins with a consonant cluster whose first member is an obstruct followed by one or more nonvocalic sonorants, that cluster is reduplicated before the prefixed /a/, but without any of the nonvocalic sonorants which may have occurred in it.

That is, St V with the MS stressed stem vowel /a/ followed by at least two nonvocalic segments (but not /wha/ 'grow') or with the stem vowels /ai, ei, o, ei, o/ form their nonparticipial past as follows: (a) If the V stem begins with none or with any of (superscript n) obstruct consonants, the consonants are repeated and the vowel /a/ is prefixed to the stem. (b) If the stem begins with one or more nonvocalic sonorants /l, n, m, r, j, w/ \[ \text{MS+}, \]

[these segments are reduplicated before /a/, all of which are prefixed to the stem.} \]

(c) Finally, if the stem begins with a consonant cluster whose first member is an obstruct followed by one or more nonvocalic sonorants, that cluster is reduplicated before the prefixed /a/, but without any of the nonvocalic sonorants which may have occurred in it.

The MS conditions for the application of this rule constitute the complementary environment of part A of the ablaut rule 1.1.1 above. Thus any St V marked as Pat (but not Prit) and which does not fulfill any of the MS conditions to undergo any of the alternations given under 1.1.1.A automatically undergoes the reduplication rule 1.2.2. For example, the first statement of the ablaut rule 1.1.1.A realizes /as/ as /oi/ in the nonparticipial Pat of St V with the MS of stem vowel /a/ followed by one and only one nonvocalic segment. The complementary MS to which the reduplication rule must apply is accordingly stem vowel /a/.
followed by at least two nonvocalic segments, e.g., Halian 'head' vs. Pat Hailiath. As with the ablaut rule, the base forms of V's undergoing the reduplicating rule contain the vowel of the Pre-tense forms.

Additional examples are aikan 'deny' vs. Pat aalik //akik//, Freisian 'tense' vs. Pat tlaic //tlaik//, garadan 'worry' //gadar//garadan// vs. Pat garai //gii//. (This form indicates that /w/ should be considered a single segment instead of a sequence /w/ + /#/) under such an analysis the Pat would have been //haili // //haili//. aicilan 'sleep' vs. Pat aiialee //aiialee//, studden 'get', vs. Pat staicild, walan 'blow' vs. Pat Plwawoon //eewoon//. As specified in the rule, the reduplicative prefix must always occur immediately before the V stem. Hence only forms like garai //aikan 'worried' can occur, not "taicilan' //studden 'got'.

There is almost universal agreement in the literature on the subject that the stress rule 1,16 placed the stress on the reduplicative syllable as //haili// and the like instead of //haili//. But this assumption, when considered in the context of a total phonology of Gothic, occasions at least three major difficulties. We shall consider here the other phonological rules involved in this question.

One of the specious reasons which have been advanced for considering the reduplicative syllable stress-bearing concerning the vowel-lowering rule 2,1,6. According to this rule, certain stressed long vowels are lowered when occurring before other words. This lowering may not be completely phonologically conditioned. It must contain at least one morphosyntactic proviso like "Not in the Pat of St V's, Vennemann, in a vain attempt to formulate the rule in purely phonological terms, considers the /w/ in the Pat forms like salawun 'we sowed' //salawun// (instead of *salawun ////salawun//) to have been unstressed. By this he believes to be able to state the rule of vowel lowering as applying only to stressed vowels and as such in purely phonological terms (1971:118). 'There is no need for the assumption that this lowering takes place morphologically conditioned by the time of Wulfilian Gothic (Voysey, 1968) 727.' However, this play still does not make the vowel-lowering rule phonologically conditioned since there are pronominal forms like agel //aiel// 'she who' as opposed to *agel //aiel//, duet //duyt// 'you who' instead of *hauel //huiel//, and the conjunction both //both// 'is that' instead of *huiel //huiel//, where the rule of vowel lowering does not apply. There is thus no way of stating rule 2,1,6 in purely phonological terms. Hence Vennemann's sole motivation for assuming the

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stress in reduplicated V's as //sauum// and the like instead of //sauum// in order to formulate rule 2,1,6 in strictly phonological terms now collapses.

There are additional — and weightier — reasons for considering the stems and not the prefixes of reduplicating V's to have been stressed. One of these is Schmierer's observation (1977:50) that if in fact the stem vowel in forms like saiiaum 'sowed', saalwum 'blow', and saalian 'despised' were unstressed and the reduplicating vowel stressed, then one would expect by the rule of vowel deletion (our rule 2,1,2) forms like *saiiaum, *saalwum, and *saalian to occur.

Another indication of the stress of reduplicative V's concerns the rule of breaking (2.1.3) whereby /I/ u/ are realised as /u/ or /I/ stressed and followed by /r, h, w/. However, if /I/ u/ occur after the main stressed vowel in a word under stress and before segments other than /r, h, w/, then they remain /I/ or /u/ o cannot occur in this environment. Now in view of this distribution of /I/ u/ vs. /s/, /s/, if the stress in forms like siallot 'let' and saaasalp 'slept' really were //siallot// and //siaasalp/, the occurrence of //s// instead of //I// in these forms would be inexplicable. One should expect *siallot and *siaasalp. The traditional fiction, as perpetuated by Vennemann (1971:126), is that the //s// in the reduplicating syllable was the result of an unproven analogy whereby the few reduplicating V's beginning with /r, h, w/ (six of them attested for Gothic) in which the stressed //I// in the reduplicating syllable would be realised as /u/ caused the other 27 reduplicating V's in Gothic to substitute //s// for earlier /s/ and "auratgestsheisches //s/". Under our account, the breaking rule simply does not apply to pre-tonic vowels within the word so the //s// of the reduplicating syllable was retained in Gothic from Indo-European, as was the //I// in a prefix like /I/s/.

In view of this evidence, we conclude that the stress in reduplicating V's was on the stem, not the prefix. There is also some diachronic evidence that in the immediately Pre-G. (i.e., Gmc.) period the stress was also on the stem vowel of such V's: Pladdke (1963:108) remarks, "[Auch im Okt. ist der Bynum salian i walawun nicht ohne phonologisches verbindung mit dem time of Wulfilian Gothic (Voysey, 1968) 727.]" However, this play still does not make the vowel-lowering rule phonologically conditioned since there are pronominal forms like agel //aiel// 'she who' as opposed to *agel //aiel//, duet //duyt// 'you who' instead of *hauel //huiel//, and the conjunction both //both// 'is that' instead of *huiel //huiel//, where the rule of vowel lowering does not apply. There is thus no way of stating rule 2,1,6 in purely phonological terms. Hence Vennemann's sole motivation for assuming the
devolve from earlier Omc. /æsliɛp/ or possibly /æsliɛb/. Of course, the stress patterns at the time of origin of Verner's Law was that of Indo-European. But Go. remnants like saelēp indicate that in this early Go., period the reduplication prefix of these V's was not stressed. And in view of the evidence cited above, there is no reason to believe that this had changed in Gothic.

1.2.3. Thurneysen's Law

\[
\begin{align*}
\text{sonorant} & \rightarrow [\text{sonorant}] /\#X [\text{vocalic}] Y[\text{voiced}] \\
+\text{continuant} & \rightarrow [\text{low}] \rightarrow [\text{voiced}] \\
-\text{voiced} & \rightarrow [\text{continuant}] \\
\text{stress} & \rightarrow [\text{sonorant}] A \text{or } N, \text{ but not derivative} \\
\text{stress} & \rightarrow [\text{sonorant}] \\
(1, \text{ i.e., } /j/, \text{ w}) & \rightarrow [\text{low}]
\end{align*}
\]

I.e., f, b, h, s & → b, d, g, z, respectively, in the specified environment. Here the variables X and Y contain no word boundaries (##), and stress means 1, 2, or 3 stress and stress less than 3 stress. (See on this the rule of word stress 1.1.10 above.) The lexical exceptions occurring with derivative suffixes 33 /lp/ to which 1.2.3 cannot apply are these: arm-hairstide, lap = lpa 'depth', ga-taint = lpa 'tactice', bauh = lpa 'height', baut = lpa 'security', and bauh = lpa 'hollines'.

According to this rule, the voiceless continuants listed above are voiced when occurring in a posttonic (i.e., after the main stress in the word) unstressed syllable which begins with any voiceless segment, followed optionally by /j/, i, u, w/ realized in this environment only as /j/ and /w/ by rule 2.1.4 below, which is in turn followed obligatorily by an unstressed vocalic segment.

E.g., armu-ana 'arrow' (stem = derivative suffix 6 /as/ as opposed to hlaaw-ana = 'graves' formed with the same derivative suffix to which 1.2.3 has not applied because /w/ is voiced; Slb /rəw/-is-a/ 'darkness' (stem = derivative suffix 33 /-is/ - /is/) by 1.2.3 → /rəw/-is, /ri-wis/ /rigis as opposed to Slb /4g-is-a/ 'fear' (stem = same suffixes) to which 1.2.3 does not apply, realized as agaiz; /riw/-is-a/ 'debt' (stem = derivative suffix 33 /-is/ - /is/) by 1.2.3 → /riwpa/ /rupwa, as opposed to daubia 'deadness' formed with the same suffixes to which 1.2.3 does not apply; /chis-is-pu-u-z/ 'noises' (stem = 7 VoB - derivative suffix 42 = Sh32 - Sh31) by 1.2.3 → /chis/-wou lipu-u-z (ev) /Shjish32u sahdius as opposed to gahrurupum = 'description' (stem = ga-bor = same suffixes) to which 1.2.3 does not apply because /r/ is voiced; possibly, /wit-wou iid-1/- 'witness' (stem = derivative suffix 60 - Sh18) by 1.2.3 → /wit-wou-id-i-id/ - /witwoid-iid/ - /witwooledi/ - /witwooledi/ - /witwooleida/, (For additional examples, see the derivative suffixes in section 3.2 of this chapter.)

We have formulated this rule to apply only to A or N, although V could have been included; it would then have applied vacuously to all V forms (e.g., Pa Pi 1 mseidhmu = 'salve'//mseidhmu/ since all continuing consonants in the appropriate environments in these endings are voiceless anyhow. The rule does not apply to adverbs like lujaspro = 'above' (not *lujadspro), also it does not apply to A's like lujaspro = 'desired' (not *lujadspro), doubtless because the structural description was /#nuat-um#sean#/, i.e., it was a compound with a for rule 1.2.3 inadmissible morpheme bond intervening between the unstressed /u/ and the voiceless /#/.

Also, the stress configuration is as described (see rule 1.1.10) with secondary stress on /lan/, much as in Modern High German with the same suffix. Thus a further proviso of rule 1.2.3 should probably be that the affected segment cannot be followed within the word by a vowel of any more than 3 stress. Thus the rule will not apply between constituents of a compound. Another proviso may be that the rule applies from left to right: /wit-wou-ip-i/- 'witness' (stem = derivative suffix 60 - derivative suffix 32 - Sh26/ /witwoooli/ /witwoolida/ /witwooleida/, not *witwoolid/.

The original version of this rule as posited by Thurneysen (1906:209) was this: "...umittelbar hinter unbetonten (nicht haupttonigen) Vokalen erscheinen stimmhohe Spiranten, wenn im Anlaut der unbetonten Silbe ein stimmlöser Konsonant steht; dagegen stimmlose, wenn jene Silbe mit einem stimmlasten Konsonanten anlautet..."
That is, in the environment specified, voiceless consonant segments /f/, /h/, /x/ are realised as //h/, /j/, /w/ and conversely the voiced consonant segments /b/, /d/, /g/, /z/ are realised as //f/, /v/, /h/, /n/. Although the formulation in 1.2.3) is simpler and as much more general than that in 1.2.3) it does not work. If one takes the rule seriously and lists all the exceptions to 1.2.3) as we have done with 1.2.3) then Thurneysen's version is complex in the extreme and quite possibly unstable. There are numerous forms which fail to fulfill all the environmental conditions, yet which do not undergo 1.2.3). E.g., arzdum 'work' not *arzdum, arzdum 'of barley' not *arzdum, hidum 'beggar' not *tildum, haubila 'head' not *haubila, elilur 'silver' not *elilur, twillilis 'twelve' not *twillilis, ulilum 'ball' not *ulilum, and many more isolated lexical exceptions as well as systematic ones like the comparatives of a stems ending in voiced consonants to which is added /is/ (not */is/) and the Pat of numerous Wk V's in *ded. (masadum), not */ded- (masidpam). To reiterate the point, if in Thurneysen's formulation 1.2.3) one had taken into account all the exceptions (as was done in our version 1.2.3), Thurneysen's version would be seen to be much more complex.

Another factor favoring version 1.2.3) over 1.2.3) is the fact that this same process of voiceless consonants in the environment specified was productive in the Gothicisation of Biblical names such as the Unsl Moses-is from Moses, the DBsl Ioseb-a 'Joseph' (Skulkr 212) also attested as Ioseb, and the Unsl Iose-b-is from Ioseb, etc. In such forms an originally voiceless consonant has become voiced as per rule 1.2.3). On the other hand, the devoicing of continuant consonants as would have been affected by Thurneysen's original version 1.2.3) is never found as a Gothicisation of such names, e.g. Unsl Dawel-is not *Dawelis, Herodadiin not *Herodadiin or *Herodadien, and Kaurasai not *Kaurasain, etc.

We therefore conclude that our version 1.2.3 does indeed reflect the situation in Gothic, a situation which is not to be found in any other Gmc. language. The question which then arises is how and why did Gothic get a rule like 1.2.3)? We suggest that this rule arose as a result of one aspect of early Gmc. phonotactics (or MG conditions).

If one takes what is probably the most generally accepted view of the First Sound Shift, the steps involved were — using the bilabial consonants as illustrative of the entire series — the following:

A. The First Sound Shift.
   1. p \rightarrow p^{\text{u}}
   2.a. p^{\text{u}} \rightarrow f
      b. b^{\text{u}} \rightarrow b
   c. Verner's Law, whereby voiceless consonants became voiced if preceded by an unstressed consonant, i.e., either p^{\text{u}} \rightarrow p^{\text{u}} or f \rightarrow B.

3.a. b \rightarrow p^{\text{u}}
   b. The change from IE to Gmc. stress...

Now if the sequence of events under A is correct, then there must have been a stage in early Germanic after stage 2 and before stage 3) when two MG constraints prevailed which excluded the following sequences:

B.a. V f V V V
   b. V f V V

(where V is an unstressed vowel and the other V's are either stressed or unstressed vowels).

That is, if we consider the changes from Indo-European to Germanic resulting from steps 1 and 2 under A, we find the following possibilities:

C. Indo-European Germanic
   a. V f V V → V f V V
   b. V f V V → V f V V
   c. V f V V → V f V V

Under these circumstances, there is no possibility of the occurrence of either of the prohibited sequences under B.

After the introduction of Gmc. stress and the resultant retraction of stress to word-initial position, a sequence like (B.b) above became possible in Germanic. Its historical derivation would be IE V p V V (steps 1 and 2 in A) → V f V V (Gmc. stress) → V f V V (sequence (B.b) above). But at this time the sequence V f V V (sequence (B.a)) was still impossible.

The fact that Thurneysen's law as we have formulated...
it in 1.2.1 specifically excludes the sequence (5,3) constitutes in our view an argument in favor of our formulation. (On the other hand, the original version 1.2.1 excludes V b V b V, a sequence which could indeed arise from (5,5) above after the introduction of Gem. whereas and which thus constituted a possible sequence in early German.) The Go. rule 1.2.3 is thus seen to be a reflection of a VG condition of early Germanic. By the time of attested Wulfilaen Gothic, the rule was in the process of being lost in that incipient morphosyntactic conditioning had begun. And of course by the time the other Gem. languages are attested, Thurneysen's Law has been completely lost.

1.2.4. Verner's Law (within inflectional paradigms)

|-consonant | +consonant |
|-continuant | -low |
|-voiced |

/a/ All forms except the Prs Sg Ind of

| /pur [f] | 'need' |

b/ Prs or Pat Prt of

| /sta [p] | 'stand' |

c/ Optional: 'All forms of

| /e: | 'have' |
d/ Optional: 'Pat, but not Pdt forms of

| /e: | le:p | 'sleep' |

where the optimality under a applies in 12 of out of 10 of the time.

E.g., (a) Prs 1 Sg Ind parf | 'I need' vs. 1 Pl Ind paubuum, Prs 1 Sg Sub paubland, Pat 1 Sg Ind /pref-t-a/ (i.e. stem - VD2 + Vb), by 1.2.1 -> paubta // paubta; (b) Prs Inf /stap-an/ 'stand' (1.2.3) -> standan (1.2.3) -> /standan// vs. Pat 1 Sg Ind /stap/ (1.1.1) -> /stap//, also the Pat Pdt /stap-an/ (1.2.4) -> /stand-an (1.2.3) -> stand-an (ev) -> standan; (c) Prs 1 Sg Ind /sh/ 'have' (1.2.4) either //sh|sh/ or Erg (2.2.1) -> /sh/ 'have'.

(continued on next page)
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Gothic

b. V stem, Derivational suffix 32
-sonorant
-sonorant
-sonorant
-sonorant
-sonorant
-sonorant

That is, (a) the inflectional suffix Vbl2 is realized as /s/ when occurring with the V /-its-i/ and (b) the derivative suffix 32 is realized as /s/ when affixed to any V stem ending in /t, d, p/. 

E.g., (a) Pat 1 Sg Ind /-its-i/ (stem + Vbl2 + Vbl3) by 1.2.7 ➞ /-its-i//. Other V's do not change Vbl2 /t/ to /s/, such as Pat 1 Sg Ind /-its-t/ 'hit' (1.2.6) ➞ //its-t//. 

(b) /-its-t/ 'apostasy' (+ prefix + stem + derivational suffix 32 = Vbl3) by 1.2.7 ➞ /-its-t//. 

Note that rule 1.2.7 does not apply to V stems ending in /s/. Hence the construction /urhrle-t/ 'uprising' (+ prefix + stem + derivational suffix 32 = Vbl3) is realized as wruris, not wurriss.

1.2.8. /s/ (Vbl2 and Vbl3 morphemes) realized as /t, p/

Vbl3 morphemes ➞ a. [-continuant] /-vocalic

b. [-continuant] /Pat of

E.g., (a) Pat of Pp V /-its-i/ 'have room' (1.2.6) ➞ /-its-i//. 

(b) Pat of /-its-t/ (1.2.6) ➞ /-its-t//. 

We have probably conflated these two separate phonological processes. Rule 1.2.8.a is probably the manifestation of a phonologically conditioned rule by which nonback obstruent consonants assimilate for voicing to a preceding segment:

1.2.8.a' [-continuant] ➞ [-voiced] /-vocalic

[-sonorant]

[-sonorant]

[-back]

[-voiced]

We limit 1.2.8.a' to nonback obstruents in view of the form intrupjan 'grasp onto' instead of *intrupjan. Rule 1.2.8.b may well be part of Wernicke's Law (1.2.4).

1.2.9. /s/ (Vbl3 morpheme)-deletion

z ➞ /s/ 'A or N, Nm Sg Mn

Vbl3

a. [-continuant] = /s, z/

[-coronal]

[-trident]

b. [-vocalic] = [-sonorant] = /k/,

[-long]

[-nasal]

[-lateral]

That is, the Vbl3 morpheme /s/ is deleted from N or A stems ending in the segments specified. E.g., (a) /drus-a/ 'fall' ➞ drug, not *druss which would be phonologically possible (cf. /estas/ 'apostasy'); (b) Nmsg /wer/ 'wear, not *weirs (which form can occur however, meaning 'worse'); and the Nmsg of the A anar 'other', unarm 'our', no: /anar/ e.g., the Nmsg en ar 'there' for /estar/, which also fits environment (b) since the second segment of the dipthong is a short vowel. However, if the vowel of the V stem is long, /s/ remains as in hors /hors-t/ and swara /swara-t/ 'honorated' from /swara-t/ 'honorated'. This rule thus furnishes some additional evidence that the digraph ur represents a dipthong, not a long vowel; in the latter case, one would expect *urrs.

A further morphosyntactic condition on this rule may be that it does not apply to 1-class a's, e.g., the Nmsg en atar 'moral', not *enatar, and un atar 'talkative', not *unatar. In these cases, however, it is not clear if it represents short /s/ or long /s/.
Rule 2.1.1 does not apply over the boundary between a stem and a derivational suffix, nor over a word-boundary (##). E.g., friel or friel 'for freedom' from /friel-1/ (stem + Sb14 + derivational suffix 10). The form friel arises by the rule of glide insertion (2.1.7).

2.1.2. Vowel deletion

![Image]

That is, the word boundary ## is deleted in the environments specified. Although optional, this rule (particularly part (a)) applies often, perhaps 99% of the time. Its effects are manifested in the application or non-application of other rules, in particular rule 2.2.1 (the rule of consonantal devoicing) and rule 2.1.2 (vowel deletion).

E.g., hasuh 'every' from /hasuh/, which would have been realized as *hasuh by rule 2.2.1 if 1.2.10 had not applied; the relative *hasuh by 1.2.10 → /pata/ (2.1.2). There are also a few attested instances where 1.2.10 has apparently not applied, thus triggering rule 2.2.1 of consonantal devoicing bidjanandabupun 'asking' (Matthew 7:7) from /bidjanandabupun/ instead of the more usual bidjanandabupun. Similarly, in some cases the non-application of 1.2.10 prevents the application of rule 2.1.2 of vowel deletion; hasuh 'what' (if Corinthians 6:15) from /hasuh/ instead of /hasuh/ which would have arisen from the same source if 1.2.10 and 2.1.2 had applied.

5.2. The Major Rules

2.1. Vocalic

2.1.1. Like-vowel contraction

![Image]

That is, two like vowels, one long and the other short, are realized as the corresponding long vowel. E.g., NspMain /pri-i-a/ 'three' (stem + Sb17 + Sb30) by 2.1.1 → /pri-i:/ (stem); Neplmn /pr-i-a/ 'they' (stem + Sb10 + Sb30) by 2.1.1 → /pri-i/ by 2.1.1 (stem + particle /i/) by 2.1.1 → /pri:/ by 2.1.1 (stem + particle /i/).
The Major Rules (Vocalic)

under rule 1.2.2 above must have been stressed mātaud, mawān, and jellāum. If they were stressed on the reduplicative syllable, then by 2.1.2e they would assuredly be *mājē, mawāin, and *jellāun.

Finally, we emphasize that 2.1.2e does not apply over word boundaries (##). Hence the Jg Prs Sub form ghānī 'let him cone' is attested (Matthew 27:49) from /mājē-
/tu/, to which the ##-deletion rule 1.2.10 has not applied. Similarly, the form armāl 'mercy' is attested, possibly from something like /armāl/, to which the /v/ and /u/ function as derivative suffixes separated from the stem by word boundaries (##), over which the rule does not apply.

2.1.3. Breaking /l, v, u/-/a, o/- alternation

\[+\text{vocalic}\] \rightarrow 1. [\text{high}] /##1\text{-stress} /##1\text{-stress} 2##

\[+\text{low}\]  
\[+\text{long}\]  
\[A\]  
\[B\]

where the variables X, Y, and Z may contain instances of nonstressed vowels to which the rule can also apply.

2. \[+\text{high}\]  
\[+\text{back}\]  
\[h\]  
\[w\]  
\[a\]

\[A\]  
\[B\]

where no morpheme boundary of any kind occurs between the stressed vowel and the following /h, h/, r, tr/.

The two parts of this rule are ordered. Part 1 says that any /-low and -long vowel /a, o, i, u/ must be realized as /a, o, i, u/ if it occurs as the main stressed vowel within a word (matrix A) or if it occurs as an unstressed vowel anywhere after the main stressed vowel within the word (matrix B). We adopt the convention that the rule applies regardless of its environmental conditions if fulfilled. Hence part 1 can apply repeatedly not only to a stressed vowel (matrix A), but also to any number of postonic vowels (matrix B). Part 2 says that the vowels /e, o, i, u/ must be realized as /e, o, i, u/ if stressed and immediately followed — with no intervening morpheme boundary — by /h, h/, r, tr/. Further, stressed /l/ is realized as /l/ before /tr/.

We note in connection with the immediately preceding that 2.1.2e does not apply if the preceding vowel is stressed. Hence forms occur like Pat 1 Sg Ind staîda /sta³la/ 'Ibuild' from /sta³la/ = /sta³la/ + /vā/, and /sta³la/ + /vā/, not *staîda basaîda /ba³šiwa/ 'I build' from /ba³šiwa/ = /ba³šiwa/ + /vā/, not *staîda and the Prs Ptv stamband 'rowing' for /stamband/ from /stamband/ = /stamband/ + /vā/ + /vā/ + /vā/, not *stamband. In view of all this, we assume that the reduplicative forms like hənən 'sowed', wələjən 'slewed', and jelləun 'deeposed' discussed
(1) the morpheme sītism 'four' (from /sītis Grant/ by 2.1.4), when occurring in compounds, appears in an ablauted form without the /o/; /sītis-dogh 'four-day' /sītis-dogh-sītis-dogh/, which would appear as /sītis-dogh-sītis-dogh/ if the /u/ before /r/ were stressed. Likewise, the /u/ in /tulahm 'drag' /tulahm/ is retained before a following /u/ since the /u/ is unstressed. Part 1 also applies in the Gothicisation of loan words such as Go. intelligatur 'speech' /intelligatur/ (with retention of the Latin stress) from Latin speculator. In the Gothicisation of this form, the unstress /o/ is realised by 2.1.3(1) as Go. /u/, but the pretonic /e/ is retained since pretonic vowels are not affected by either part 1 or part 2 of this rule. A similar Gothicisation is /diabolos/ Go. /diabolos/ by part 1 of this rule. (The Go. form /diabolos/ /diabolos/ is also found, which probably indicates that the form was not yet completely assimilated.)

A Gothicisation affected by both parts 1 and 2 of this rule is Go. /urkus/ /urkus/ 'jug' from Latin urceus /urkys/. The derivation of this form is /urkys/ (2.1.3(1)) → /urkis/ (2.1.3(2)) → /orchis/ (2.1.4) → /sectos/ (2.1.5). Another such form is /pāpurpūcaps/ 'purple' /pāpurpūcaps/ from /pāpurpūcaps/ (1 stem + /vbsk/ + /vbsk/ + /vbsk/), which derives in turn from Latin purpura /purpuras/. The form is derived as /pāpurpūcaps/ (2.1.3(2)) → /pāpurpūcaps/ (2.1.4) → /pāpurpūcaps/ (2.1.5). Other instances of part 2 of the rule are to be found in St V paradigm such as the Pat Pl 1 Ind /bīsh-u-m/ 'we throw' which by the ablaut rule 1.1.3A is realised as /bīshom/ (just as /bīshom/ 'we tied' is derived from Latin /bīshum/). The form is derived as /bīshom/ (2.1.3(2)) → /bīshom/ (2.1.4). Where the orthographic conventions are also present /bīshom/ in the case of the Go. form is from Gmc. /bīshom/ (by rule 2.1.4) and is an ablauting form of /bīshom/.

In the other Gmc. languages the corresponding A is /ītus/. Now, in the orthographic conventions are also present /ītus/ /ītus/ (in the case of the Go. form is from Gmc. /ītus/ by rule 2.1.4) below and is an ablauting form of /ītus/.

However, an additional argument for considering rule 2.1.3(2) to apply to /ī/ before /tr/ is the fact that the Go. version of the name 'Ptolemy' /ptolv/ from Ok. /ptolv/ is always realised as /ī/ in /ptolv/ (2.1.1). On the other hand, the Go. version of a name like /ptolv/ /ptolv/ from Ok. /ptolv/ /ptolv/ is occasionally realised by 2.1.3(1) as /ptolv/ (2.1.10) above).

Our account of breaking has as possible exceptions only these forms, 'has' /hæs/ 'can', 'wail' /wæl/. The first of these, if in run. /wæl/, might be expected to occur as Go. /hæs/ by part 1 of our rule.}

Ja, es scheint unhägllich, daß unter Umständen auch im einfachen Wort der Hauptsprache von

That is, if the adverbs with /en/ were indeed stressed /jenpro/ and /jenši/, then part 1 could not apply to /e/ because it occurs pretonically. And the morpheme /jen/ could then have been lexicalised as such (perhaps with a feature like "No breaking rule") and would occur everywhere as /jen/.

The remaining problematical cases are sipau and walsa. The former may stand for /epipon/ in which case it is irrelevant for the breaking rule. Or the form may have been completely unstressed /epis/, in which case neither part 1 nor part 2 of the breaking rule would apply. As for walsa, it may represent /weis/ or as an exclamation in the sense of "wohl!" it may have been stressed /weis/. In either case it would not have been affected by the breaking rule. (A number of other possible explanations for these forms are given in Braun-Emblinghaus (1961:25).)

2.1.4. /e, i, u, j, w/-alternation

+e-norant]  1a. [+vocalic] (applying before the word-stress rule 1.1.10)
+high          /[vocalic]  
+long          /[vocalic]  

[=back]  [vocalic]
#  #

1b. [-vocalic] (also applying before the word-stress rule 1.1.10)
/at  [vocalic]

2. [-vocalic] (applying after the word-stress rule 1.1.10)
/a. Not: short 'A or N
[stem]  [a-class]  [boundary]
[X]

(continued on next page)
servant* (1.1.5) -> pla: (2.1.4.2b) -> //pier// vs. OnGg
pla:1-4-1-o/ 1-a/ ( = stem - Snt h1 + Snt h2 + Snt h3) by 2.1.4.2b -> pla:os (ev) -> //pla:os// vs. NOnGs /mau:1-0/ -o/ 'maid' (1.1.5) -> mau: by 2.1.4.2b -> //mau:1// mau: vs. OnGg
mau:1-0-4-1-o/ (2.1.4.2b) -> mau:1-04-1-o/ (2.1.4.2b) -> mau:1-04-1-o/ -> //mau:1// mau:os (ev) -> //mau:os// NOnGs.

In a few instances the distributions of /i/-/j/ and
/n/-/w/ are unpredictable and so we have considered them
separate phonemes. E.g., luga *'above' vs. juk *'yoke' as
well as writan *'persecute' and wits *'face', while forms
like urikan and ulite (or. uliandos *'camel') would cer-
tainly seem to be phonologically possible, in such cases
we posit as underlying forms /lupa/, /juk/, /wirik/, /wits/, and /ulband/.

2.1.5. Monophthongization of /ai, au/ to /ei, /i/

+vocalic [+sonorant] [+high]
+long
+back
+round

That is, /ai/ (or /aj/) and /au/ (or /aw/) are realized as
/ei/ and /i/, respectively, (a) before a nonvocalic seg-
ment or word-finally and (b) when unstressed.

E.g., (a) /ba:pp#1/ and /ba:p#:p#2/ *'both' -> //ba://

Unlike the formulations of this rule in Vennemann
(1971:126) and Schmierek (1977:60), our rule 2.1.6 applies
to all long stressed vowels, i.e., not just to /ei, /io/ but
to /i/, /oi, /ai/ as well. Since /ai/ occurs in native Go
words only through rule 2.1.6 below, it does not occur
before a vocalic segment and so cannot undergo 2.1.6. Rule
2.1.6 also does not seem to apply to /i/, /io/ in any infor-
tional paradigms, although there is etymological evidence
in the occurrence of forms like treau *'trust' for
/trau:/ from earlier /trai:/ and banu *'build' for
/bana:/ from earlier /bau:/ and banu. The rule applies to
/a/, /o/, /e/; there seem to be no attested Go. forms with stressed
/1/ to which 2.1.6 could have applied.
2.1.7. Glide insertion

Optional: $\rightarrow 1$

\[
\begin{array}{|c|c|}
\hline
& \text{Word-internal} & \text{[\text{-vocalic}]}
\\
\hline
\text{stress} & \text{morpheme boundary}
\\
\hline
\hline
{1} & 2
\\
\hline
\end{array}
\]

where either vowel 1 or vowel 2 or both must be +high and +back, i.e. /I/ or /I/.

That is, the glide /I/ is inserted in the environment specified. The optionality is twofold: If vowel 1 is /I/ (I), the rule applies at about 99%; if vowel 2 is /I/ (I), then it applies at about 60% of the time.

E.g., GoP↓3/p3e; 3/3three -/\text{\text{-}prijel}/, I Pl Ind Prs /\text{\text{-}sijem}/ 'we are' -/\text{\text{-}slum}/ if the rule applies and /\text{\text{-}slum}/ if it does not. (Both forms occur in I Corinthians 13:12.) And the I Ge Ind Prs /se-s-l-g/ 'sow' (2.1.6) -/\text{\text{-}so}-\text{\text{-}sijel}/ (ev) -/\text{\text{-}sljel}/ 'we slay' /\text{\text{-}sljel}/ 'freedom' -/\text{\text{-}sljel}/ 'prijel'. The rule also applies to non-do. proper names (with retention of the original stress): Hapari from /\text{\text{-}sio}-\text{\text{-}sljel}/, Abilin (perhaps Abilin) from /\text{\text{-}sio}-\text{\text{-}sijel}/, and Akhel from /\text{\text{-}sio}-\text{\text{-}sijel}/.

This rule does not apply to a form like the Inf ti\unu /\text{\text{-}sio}-\text{\text{-}sijel}/, because there is no morpheme boundary between the /\text{\text{-}sio}/ and the /\text{\text{-}sijel}/. It also does not apply if vowel 1 is not stressed: E.g., Di\unu of the relative Prf /\text{\text{-}sio}-\text{\text{-}sijel}/ 'Israel, not /\text{\text{-}sio}-\text{\text{-}sijel}/. It is possible that after an unstressed vowel, /\text{\text{-}sio}/ instead of /\text{\text{-}sijel}/ might occur on occasion, e.g. Halili\unu 'heathenish' from /\text{\text{-}sio}-\text{\text{-}sijel}/ /\text{\text{-}sio}-\text{\text{-}sijel}/. Finally, it would seem that rule 2.1.7 was in the process of expanding its environment in view of the occurrence of the Prf Prf *sai\unu\unu /\text{\text{-}sio}-\text{\text{-}sijel}/ instead of *sai\unu\unu from /\text{\text{-}sio}-\text{\text{-}sijel}/.

2.1.8. /s/-to-\text{\text{-}s}/ rule

Optional: [\text{\text{-}vocalic}] \rightarrow [\text{\text{-}high}]

\[
\begin{array}{|c|c|}
\hline
& \text{[\text{-}vocalic]} \quad \text{[\text{-}high]}
\\
\hline
\text{+high} & \\
\text{+tense} & \\
\text{+back} & \\
\text{+long} & \\
\text{+stress} &
\\
\hline
\end{array}
\]

That is, unvoc. /s/ \rightarrow //\text{\text{-}s}/ (a tense, short /c/) in the environment specified. E.g., Pala\unu\unu 'tentation, ' (Luke 4:13) instead of the more usual prais\unu\unu 'sang' (Luke 16:18) instead of the more usual prain\unu\unu 'cane' (Mark 10:23) instead of rain\unu\unu. This alternation may possibly not be the result of a phonological rule, but rather an orthographic variation. (See on this Braune-Ebbinghaus 1961:19.) If it is a legitimate phonological rule, then it applies very rarely.

2.1.9. /I/-/I/ alternations

Optional: [\text{\text{-}vocalic}] \rightarrow [\text{\text{-}high}]

\[
\begin{array}{|c|c|}
\hline
& [\text{\text{-}high}]
\\
\hline
\text{+high} & \\
\text{-low} & \\
\text{-back} & \\
\text{+tense} & \\
\text{+long} &
\\
\hline
\end{array}
\]

That is, long /I/ may be realised optionally as /I/ and /I/ as /I/. E.g., raina 'woman' (Luke 2:5) instead of dalai, where 'village' (Mark 8:26) instead of welma, i.e., the who (Mark 9:1) from /I/ instead of lita.

According to Braune-Ebbinghaus (1961:16, 8, Ann. 2), the alternation of /s/ to /s/ occurs 'sienlich halten'; that of /I/ to /I/ 'nicht ganz selten' (Ibid., p. 21, 917, Ann. 1). Like rule 2.1.6, rule 2.1.9 may be reflecting merely an orthographic variation. However, if these alternations are merely graphic, it is curious that similar alternations do not occur among other Go. graphemes that are formally similar such as s-d-j, small g-small f, m-u, au-p, al-p, and the like. There are still other alternations of /I/, /I/, and /I/ as well as of /I/ and /I/ which our rules 2.1.8 and 2.1.9 do not capture. They may reflect infrequently applying optional rules. Examples of them may be found in Streitberg (1920:48-50) and in Marchand (1936, esp. pp. 144-15).

2.2. Consonantal

2.2.1. Consonantal devolving

This rule takes the following form:
The fact that /w/ from /g/ is always written g is striking. As noted in the literature, the difference between the alternations /b/-/f/, /p/-/b/, and /s/-/s/ on the one hand and that of /f/-/v/ on the other is that the first three pairs of segments are independent phonemes in that the latter member of each pair can also occur inter-vocally: e.g., afar 'after' vs. asa 'man', hajliwalk 'heathenish' vs. hajli 'type', hajli 'save' vs. hajli 'praise'. But there are no native Go words with an inter-vocalic /w/ such that a contrast like */daxa// vs. DTsg //daxa//= 'day' could exist. Since the contrast of /g// with */x/ is subphonemic — the traditional argument runs — and since the scribe would naturally record only the phonemic contrasts in his language, it is to be expected that the scribe would not record the */g/-/x/ alternation. Hence one has the NDig daga 'day' for //daxa//= and the NDig dagla for //dage//=.

However, subphonemic orthography is found on occasion in Gothic, e.g., the // which arises by rule 2.2.7 below is usually transcribed with g as in brigagen 'bring' for //brigagen//=, but it is sporadically transcribed with n as in brigtip (Luke 15:22). The graphemes /g/ for //ng// might well be expected since Go orographic practice upon which Wuflin in great part based his system designates this sequence in this way, e.g., Gye 'angel' for Agelahan. Now in view of the facts that subphonemic orthography does occur sporadically, that x existed in the Go, alphabet, and that this sign is frequently used in the transcription of non-Go names like kristus 'Christ' as well as for the number '600', the question arises, why out of the numerous occurrences of g for //x//, the sign x does not occur even once to represent //x//.

A possible explanation for this state of affairs is that /f/ was simply not devoiced by this rule (hence the specification /back in our formulation). In that case, the rule applies only to /b, d, x/. This applies not altogether surprising since /g/ has often been seen to elude phonological processes which affect front consonants such as /b, d, /.

as /h, d, / may well be optional for /b, d, x/ Orthographic variants occur to which the rule may not have applied, e.g., hals 'breath' (Luke 4:3), goed 'good' (Luke 6:15), and rigit 'darkness' (Matthew 6:13). A complete listing of such forms is in Stretberg, 1905-8. There are of course two possible interpretations of such forms: They may be instances of morphophonemic writing, or they may be phonetically accurate, in which case rule 2.2.1 is in fact optional. Considering for the moment the former possibility, it is interesting that in Stretberg's enumeration of the graphemic exceptions to rule 2.2.1, x (instead of g) occurs ten times in the environment of rule 2.2.1, b 23 times, and d 19 times. If one assumes that the number of total occurrences of /b/, /h/, and /d/ in this environment is approximately the same for each of them, then the ratio of exceptions to total occurrences of the segment would be 10orer 23= /b/ 23= /h/ 23= /d/. Thus rule 2.2.1, if optional, applied most often to /h/, less often to /h/, and least often to /d/. If this interpretation of the graphemic evidence is correct, then the rule of obstruent devoicing so prevalent among Goq. languages probably began by applying optionally to front consonant consonants, later applied to back ones, and finally in a number of Goq. languages applied to both continuant and stop consonants.

2.2.2. Distribution of voiced and continuant conso-

nants

That is, (a) /b, d, / / and (b) /v/-/v/ after a vocalic segment.

(a) /b, d, / / word-initially, e.g., Inf
/binden//= //binda//=, but the NDig /hribia/ 'thread' -> //ribia//=, and the DTsg //dys// 'desd' pre-fix stem = derivative suffix lit. +g6) by 2.2.1 /dys=//. The genitivae in trigens 'true' and
Gothic

daddan 'suckle' are //trijams/ and //daddjan//. It is also possible that these sequences were //eg// and //eh//.

The formulation of part (a) of this rule is based on the assumption that the rule of consonantal devolting 2.2.1 affects only consonantal continuants. Hence band 'tied' (not *band) is presumably //band//, gazda 'head' (not *gazda) //gazda//, and gahuda 'thought' (not *gahups) //gahudas//. There is no Go. orthographic evidence for part (b): It is based solely on the evidence from the other Go. languages in whose earliest attested stages /b/ in this environment seems to have been //b//. (See also on this Moulton 1945:77.)

Finally, it is possible to describe the alternations of this rule as the realization of underlying consonantal segments /b, d, g/ as stops /b, d, g/ in the appropriate environments, (a) [vocalic] and (b) [back]. However, such a rule would need the extra feature -strident in its formulation to exclude /s/ from its domain.

2.2.3. Geminate-consonant simplification

///+consonant\n///\n\n/ a. [consonant] Obligatory: -consonant

///\n\n/ b. [consonant] Optional: -consonant, except for the immediately preceding.

That is, (a) geminate sonorant consonants are simplified obligatorily before a continuant obstruent and optionally before other types of consonants; and (b), all geminate consonants, sonorants as well as obstruents, are simplified when following a consonant.

E.g., (a) NmHg /man/n-a 'man' -> /mann//, Dtg /mann/ -> /mann/, but Nn or Ao PI /mann-z/ (2.2.3) -> mann (ev) -> /mann// the 4 /fuln= endings/ 'fuln' ( + stem + derivative suffix b) is realized both as fuln- and fuln- the 2 Sg Pra Ind of the Pp 2 /kann-t/ 'can' is realized both as kann and kann: (b) NmHg /#aat#star-t- s##/ 'postasxy' ( = prefix + stem + derivative suffix 52

+ S31) by 1.2.1 -> //aat#star-t-s## (1.2.8) ->
///aat#star-t-s## (2.2.1) -> //aat#star-t-s## (2.2.3) ->
///aat#star-t-s##, aldn 'old age', probably from /ald-dom/ ( = stem + derivatives suffix 12), NmHg /halz-x/ 'neck' ( = stem + S31) by 2.2.1 -> halz (2.2.3) -> /halz//.

Braune-Robinson (1961:57.8, #80) remark that gesi-

nates "...in der Regel vereinfacht: kant, kons, rant [2 Sg Pet.], urum-, sagen gewohnlich fulnan, nur einige Male fulnan." Thus the optionality in part (a) may apply more often to the nasal resonants /n/ and /m/ than to /l/ or /y/.

2.2.4. Consonant-cluster simplification

Optional [consonant] \n
/ [vocalic] [consonant] \n
E.g., fingjung 'fifty' from //timp-tig.u-n-s/, timjan 'build' from //nhr-j-1-a-n/.

2.2.5. /h/-assimilation

Optional [consonant] \n
/ [vocalic] [features] \n
/ low \n
/ [consonant] \n
[features] \n
E.g., /#aab#par## 'and then' -> jab ban or jag ban, /#aab#ba-b-a-n## 'and to live' -> jaf liban or jaf lihan, /#aab#para-m## 'neither do you know' -> nur kann't or nur kann't, but not hurhur 'hunger' as *hurhur since there is no word boundary ## between the /h/ and the /r/.

This rule applies less than half the time. It applies most frequently if the /h/ precedes a particle or a pronoun (probably unstressed) beginning with /h/; e.g. /#aab#- par## or #aab#-

2.2.6. /h/-deletion

/h/ \n
/h/ \n
/ a. Obligatory: [vocalic] \n
/ b. Optional: [vocalic, stress] 

/ c. Optional: 

a.

b.

c.
E.g., (a) /work-staw/ 'work' (stem + derivative suffix 50)
by 1.5.2.1 → worhsaw (2.2.6) → /worhsaw// waurstw. (b) 
huikelu 'what kind of' from /hulik-uh/ (c) jabos
'things' (Mark 8:8) from /hlabab-o+g+/. niikam 'crowd' (Luke 6:17) instead of the more usual bhuwma.

2.2.7. Nasal assimilation

\[ \text{nasal} \rightarrow [\text{coronal}] \ \text{or} \ [\text{sonorant}] \ \text{or} \ [\text{coronal}] \] 

/\text{anterior} \ \text{or} \ /\text{back} \] 

/\text{anterior} \ \text{or} \ /\text{back} 

Except for:

+coronal

+strident, i.e., /s, z/

where no morpheme boundary of any kind occurs between the two segments in the environmental statement.

That is, any nasal consonant is assimilated to an immediately following (and with no intervening morpheme boundary) nonsonorant consonant, except for /s, z/. E.g., gawgaw 'to go' /gawgaw/, simf 'five', fipen 'find'. But the rule does not apply over a morpheme boundary: andanums 'acceptance' from /#andums#-um-t-s/ (stem + derivative suffix 52 + SB31), not *andunums*. It also does not apply if the following segment is /s/ or /z/: am 'shoulder' not *an, also gromnts 'place of wood' and prnomts 'locust' (assuming for these cases that no morpheme boundary intervenes between the /m/ and the /s/).

Finally, nasals do not assimilate to following sonorant consonants: namjan 'name' not *namjan, and simle 'once, not *simle.

In accordance with Ox. orthographic practice, /h/ is usually written g: gromologists /gromolog/z/. iglis 'you two' for //tokis//. But, as mentioned under rule 2.2.1 above, forms written with n for /h/ also occur: prisngn (Luke 15:22), ingis (Luke 19:31), pankelip 'thank' (Luke 14:31).

2.2.8. Nasal deletion and vowel lengthening

The form taken by this rule is the following:

\[ [\text{vocalic}] [\text{nasal}] /h/ \rightarrow [\text{vocalic}] \_h/ \ \text{long} \] 

1 2 3 1 2 3

That is, the sequence vowel + nasal consonant + /h/ must be realized as the corresponding long vowel + /h/. E.g., 1.Sg Ind Pat /punk-a-t-s/- 'seemed' (stem + Vb17 + Vb12 + Vb3) by 1.1.4 → punkda (1.2.1) → punda (1.2.6) → pusha (2.2.6) → /pusha/, /#andunums#-um-t-s/ 'unapproachable' (stem + derivative prefix 10 + preposition + V stem 'go' + derivative suffix 54 + SB31) by 1.2.1 → /#anums#-um-t-s/ (2.2.6) → /#andunums#-um-t-s/ (ev) → /unyagts/.\n
The vocalic segment may have been nasalized by this rule as well as long. This seems to have been the case in at least one other Sem. language (see on this Haugen, 1956).

2.2.9 /n/-deletion

\[ n \rightarrow [\text{SB}20 \text{morpheme}] / [\text{SB}19 \text{morpheme}] \] 

\[ /m/ \] 

E.g., DTP1 /gun-a-n-m/ 'man' (stem + SB1 + SB3 + SB19) → guman (ev) → /guman/. This rule may possibly be completely phonologically conditioned in that /mn/ may always be realized as /m/ word-finally.

2.2.10 /s/-to-/ť/-rule

\[ [\text{coronal}] \rightarrow [\text{coronal}] \ \text{or} \ [\text{tense}] \ \text{or} \ [\text{strident}] \ ] 

[Obligatory: Prefix] #/\text{r}/ \] 

[Optional: Prepo-] 

\[ [\text{voiced}] \ \text{or} \ [\text{strident}] \] 

That is, /s/ (or /ʃ/) if rule 2.2.1 is considered to have applied is realized as /ť/ optionally if in a prefix followed by /r/ and optionally if in a preposition followed by /r/. E.g., /#s#-um-t-s/- 'exit' (stem + SB1 + SB31) by 1.2.10 → urunst (ev) → /urunst/. In one instance this rule applies with the preposition /us/, or rigiga 'out of darkness' (II Corinthians 4:6) instead of /us rigiga/.
Appendix 1
Paradigms

The paradigms under 1. below include the N endings as generated by the Sh-rules in section 4.1 above in this chapter. The paradigms under 2. are the A’s and numerals (also generated by the Sh-rules). The paradigms under 3. are the pronouns as produced by the Sh-rules and the Pr-rules in section 4.2 above. Finally, the paradigms under 4. include the V endings as produced by the Vb-rules (section 4.3) and the Be-rules (section 4.4). The forms are given in terms of the systematic phonemes (figure 2 in section 2 of this chapter).

1. Nouns (Sh-rules)

1.1. Mn, a-class

<table>
<thead>
<tr>
<th>NomSg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>gabi</td>
<td>z</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>gabi</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
</tr>
</tbody>
</table>

1.2. Mn, ja-class

<table>
<thead>
<tr>
<th>NomSg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>herda</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
</tr>
<tr>
<td>herda</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

Short-syllable stems of this class have the same morphology as /herd/, but are realised differently by phonological rules 1.1.3 and 2.1.4: NomSg har-da-s → /harda/ "army".

1.3. Mt, a-class

<table>
<thead>
<tr>
<th>NomSg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>waurd</td>
<td>w</td>
<td>w</td>
<td>w</td>
<td>w</td>
<td>w</td>
<td>w</td>
</tr>
<tr>
<td>waurd</td>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
</tr>
</tbody>
</table>

1.4. Mt, ja-class

Like paradigm 1.3 above except that rule Sb6 applies, e.g.: NmSg kun i "tribe".

1.5. Ph, o-class

<table>
<thead>
<tr>
<th>NomSg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>gabi</td>
<td>z</td>
<td>z</td>
<td>z</td>
<td>z</td>
<td>z</td>
<td>z</td>
</tr>
<tr>
<td>gabi</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
</tr>
</tbody>
</table>

1.6. Ph, jo-class

Like paradigm 1.5 above except that rule Sb6 applies, e.g.: NmSg band i o: (1.1.8) → /bandi/ "fetter".

1.7. Mn, 1-class

<table>
<thead>
<tr>
<th>NomSg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>balg</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
</tr>
<tr>
<td>balg</td>
<td>a</td>
<td>a</td>
<td>a</td>
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</tbody>
</table>

1.8. Ph, 1-class

<table>
<thead>
<tr>
<th>NomSg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>estal</td>
<td>z</td>
<td>z</td>
<td>z</td>
<td>z</td>
<td>z</td>
<td>z</td>
</tr>
<tr>
<td>estal</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
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</tbody>
</table>
1.9. Nt. 1- and oI-class

Nouns with the syntactic structure V stem (j-class Wk) - /ln/ (i.e., derivative suffix) 16 \( \rightarrow \) Vol2 + (Vb22) + N. Endings form their Sg according to paradigm 1.8 and their Pl according to 1.5, e.g., NeSp taliqinu ‘blasphemy’. NeP1 taliqinu. (The N /himi/ ‘village’ also inflects according to this paradigm. Similarly derived verbal Nouns from the other Wk V classes inflect according to paradigm 1.8: NeSp lupuna ‘invitation’, NeP1 lupunia.)

1.10. Mn and Phn, u-class

NeSp sun (u or oI) 1 n n 32 → sunus or sunuwa ‘son’.
GnSp sun (u or oI) 1 n 32
DtSp sun (u or oI) → sunus or sunuwa.
AcSp sun (u or oI) 1 n 32
NeP1 sun i u s (2.1.4) \( \rightarrow \) sunus/.
GnP1 sun i u e (2.1.4) \( \rightarrow \) sunuwa/.
DtP1 sun u m \( \rightarrow \) sunum/.
AcP1 sun u n n 32

1.11. Mn, u-class

NeSp feh (u or oI) \( \rightarrow \) feihu or feihu ‘money’.
GnSp feh (u or oI) 1 n 32
DtSp feh (u or oI) → feihu or feihu.
AcSp feh (u or oI) → feihu or feihu.
The PI forms of this class are not attested.

1.12. Mn, n-class

NeSp gum a ‘man’.
GnSp gum a 1 n n 32
NeP1 gum a n n 32

1.13. Nt, n-class

NeSp hert a ‘heart’ harti.
GnSp hert i n n 32
DtSp hert i n n 32
AcSp hert o 1 n 32
NeP1 hert o n n (1.1.7) \( \rightarrow \) hertewa/.
GnP1 hert a n e 1 n 32
DtP1 hert a n m (2.2.9) \( \rightarrow \) hertam/.
AcP1 hert a o n n (1.1.7) \( \rightarrow \) hertewa/.
The Ns /man/ ‘name’ and /wat/ ‘water’ are like /kh/ immediately above in that they do not have the Sb or Sb2 rules in the PI. Hence the PI of /man/ is manna, manma, manman. The N /faim/ ‘fire’ does not have the Sb2 rules in the Sg.

1.14. Mn, n-class

NeSp tung o ‘tongue’ MnSp tung o n n 32
GnSp tung o n n 32
DtSp tung o n n → DtP1 tung o n n (2.2.9) \( \rightarrow \) tu gom/.
AcSp tung o n n

1.15. Mn, lI-n-class

This paradigm is like 1.14 except instead of Sb22 //s/ rule Sb18 /1/ applies; e.g., NeSp
manag ‘crowd’, NeSp nanag i n n 32 \( \rightarrow \) nanagla. 
1.16. Mn, Ph, Mt. r-class
NmG bro^pr (1.1.1) \(\rightarrow\) bro\(\overline{a}p\)ar/ 'brother'.
GnG bro\(\overline{a}l\)pr
DtG bro^pr
AcG bro^pr (1.1.1) \(\rightarrow\) bro\(\overline{a}p\)ar./
10 27 30
NmPl bro^pr i u s (2.1.4, 2.2.1) \(\rightarrow\) bro\(\overline{a}r\)jus/. 
GnPl bro\(\overline{a}l\)pr e;
27 19
DtPl bro\(\overline{a}l\)pr u m
21 30
AcPl bro\(\overline{a}l\)pr u n t.

1.17. Mn, md-class
NmG nas\(\overline{a}j\)d s 'savour'. 
NmPl nas\(\overline{a}j\)d s
GnG nas\(\overline{a}j\)d i z
GnPl nas\(\overline{a}j\)d e;
DtG nas\(\overline{a}j\)d
DtPl nas\(\overline{a}j\)d a m
AcG nas\(\overline{a}j\)d
AcPl nas\(\overline{a}j\)d z.

1.18. Ph, consonant class
NmG borg s \(\rightarrow\) bu\(\overline{a}r\)ge 'city'. 
NmPl borg s
GnG borg z
GnPl borg e;
DtG borg
DtPl borg i m
AcG borg
AcPl borg z.

The N 'nacht/ 'night' is in this class except that the 
DtPl is n\(\overline{a}h\)tan t ( = stem \(\rightarrow\) n\(\overline{a}h\)tan + s\(\overline{a}h\)tan). 
The N's 'weht/ 'thing' and 'dulp/ 'festival' can follow 
either this paradigm or 1.6.

1.19. Mn, mixed class
1. NmG mann a 'man'.
GnG mann z
DtG mann
AcG mann a n
NmPl mann (a n or \(\emptyset\)) z \(\rightarrow\) mannasa/ or /\(\emptyset\)ansa/.

2. NmG risk i 'ruler'. 
NmPl risk i
GnG risk i
DtG risk
AcG risk

The N /menop/ 'month' is in this class except that 
the DtPl is menopum ( = stem + Sb\(\overline{a}\)\(\overline{a}\)z + Sb\(\overline{a}\)\(\overline{a}\)z).

2. Adjectives (Sb-rules)

2.1. Strong declension
5
NmG\(\overline{a}m\)n blind e 'blind'. 
NmPl\(\overline{a}m\)n blind e \(\rightarrow\) blindai.
GnG\(\overline{a}m\)n blind e
GnPl\(\overline{a}m\)n blind e a\(\emptyset\);
DtG\(\overline{a}m\)n blind
DtPl\(\overline{a}m\)n blind a m
AcG\(\overline{a}m\)n blind
AcPl\(\overline{a}m\)n blind e.

NmG\(\overline{a}m\)n blind \(\emptyset\) (1.1.7) \(\rightarrow\) /blinda/.
GnG\(\overline{a}m\)n blind e \(\emptyset\) e \(\emptyset\) (ev) \(\rightarrow\) /blindEs\(\overline{a}\)\(\overline{a}\)z/.
DtG\(\overline{a}m\)n blind e
AcG\(\overline{a}m\)n blind e (same as NmG\(\overline{a}m\)n).

NmG\(\overline{a}m\)n blind \(\emptyset\) e
GnG\(\overline{a}m\)n blind e a\(\emptyset\);
GnPl\(\overline{a}m\)n blind e a\(\emptyset\);
DtG\(\overline{a}m\)n blind e
DtPl\(\overline{a}m\)n blind e a m
AcG\(\overline{a}m\)n blind e a\(\emptyset\)
AcPl\(\overline{a}m\)n blind e (same as NmG\(\overline{a}m\)n).
2.1.1. Strong declension, i-class

\[
\begin{align*}
\text{NaSpMn} & \mid i \mid z (1.1.3, 2.1.4, ev) \rightarrow \text{//midjins/} \\
\text{fr} & \mid i \mid z (1.1.3, ev) \rightarrow \text{//frisis/} \text{//fris/} \\
\text{wilp} & \mid i \mid z (1.1.3, ev) \rightarrow \text{//wilpiz/} \text{//'wilt'}. \\
\text{GnSpMn} & \mid i \mid i \mid z (2.1.4, ev) \rightarrow \text{//midjins/} \\
\text{fr} & \mid i \mid z (1.1.3, ev) \rightarrow \text{//frisis/} \\
\text{wilp} & \mid i \mid z (1.1.3, ev) \rightarrow \text{//wilpiz/} \\
\text{DtSpMn} & \mid i \mid \text{anna} (2.1.4, ev) \rightarrow \text{//midjanna/} \\
\text{fr} & \mid \text{anna} (2.1.7) \rightarrow \text{//frjanna/} \\
\text{wilp} & \mid \text{anna} (2.1.4) \rightarrow \text{//wilpjanna/}.
\end{align*}
\]

That is, this paradigm is the same as 2.1 except that rule Sbl4 applies.

2.1.2. Strong declension, i-class

\[
\begin{align*}
\text{NaSpMn} & \mid i \mid z (ev) \rightarrow \text{//sutis/} \text{'sweet'}. \\
\text{hrEn} & \mid i \mid z (1.1.5, ev) \rightarrow \text{//hrEins/} \text{//hrains 'pure'}. \\
\text{GnSpMn} & \mid i \mid z \rightarrow \text{//sutis/} \\
\text{hrEn} & \mid i \mid z \rightarrow \text{//hrEins/} \\
\text{DtSpMn} & \mid i \mid \text{anna} (2.1.4) \rightarrow \text{//sutjanna/} \\
\text{hrEn} & \mid \text{anna} (2.1.4) \rightarrow \text{//hrEnjanna/}.
\end{align*}
\]

This paradigm is the same as 2.1.1 except that Sbl4 does not apply in the GnSpMn or Nt.

2.1.3. Strong declension, u-class

\[
\begin{align*}
\text{NaSpMn} & \mid \text{hard} u \mid z (ev) \rightarrow \text{//hardus/} \text{'hard'}. \\
\text{GnSpMn} & \text{hard} u \mid i \mid z (1.1.9) \rightarrow \text{//harduiz/} \text{realized either as} \text{//hardius/} \text{if 1.1.3 applies or as} \text{//harduis/} \text{if 1.1.3 does not apply and} \\
& \text{2.1.4 does.} \\
\text{DtSpMn} & \text{hard} u \mid \text{anna} (1.1.9, 2.1.4) \rightarrow \text{//hardjanna/} \\
\text{NaSpMn} & \text{hard} u \mid (\# or ata) \rightarrow \text{//hardu/ or by 1.1.9} \text{//harda/}.
\end{align*}
\]

2.2. Weak declension, m-class

This class has the same endings as the N paradigm 1.13, 1.13, and 1.14 above, e.g.

\[
\begin{align*}
\text{NaSpMn} & \text{blind} a \rightarrow \text{//blind/} \\
\text{mid} & \mid a (2.1.4, ev) \rightarrow \text{//midja/} \\
\text{sut} & \mid a (2.1.4) \rightarrow \text{//suitja/} \\
\text{hrEn} & \mid a (2.1.4) \rightarrow \text{//hrEnja/} \\
\text{hard} & \mid a (1.1.9, 2.1.4) \rightarrow \text{//hardja/}.
\end{align*}
\]

2.3. Present participles

\[
\begin{align*}
\text{NaSpMn} & \text{giband} (a \text{ or } z) \text{ 'giving'.} \\
\text{NaSpMn} & \text{giband} i i \text{ applies to the Fn forms.}
\end{align*}
\]

Otherwise this paradigm is like 2.2 above except that Sbl6 /is/ instead of Sbl2 /oi/ applies to the Fn forms.

2.4. Numerals

2.4.1. /tw/ 'two'

\[
\begin{align*}
\text{GnPlMn} & \text{tw add} \varepsilon; \text{NaPlMn} \text{ tw 0i (1.1.7) } \rightarrow \text{//tw/} \\
\text{GnPlMn} & \text{tw add} \varepsilon; \text{AcPlMn} \text{ tw 0i (same as NaPlMn)} \\
\text{GnPlMn} & \text{tw add} \varepsilon; \text{Otherwise this paradigm has the same endings as 2.1} \\
& \text{//tw/ occurs only in the Pl.}
\end{align*}
\]

2.4.2. /pri/ 'three'

\[
\begin{align*}
\text{NaPlMn} & \text{pri 1i (2.1.1, ev) } \rightarrow \text{//pris/} \text{//pris/} \\
\text{GnPlMn} & \text{pri i (2.1.7) } \rightarrow \text{//prie/} \\
\text{DtPlMn} & \text{pri m} \\
\text{AcPlMn} & \text{pri n } z \\
\text{NaPlMn} & \text{pri 0i (2.1.7, ev) } \rightarrow \text{//pris/} \\
\text{GnPlMn} & \text{pri 0i (presumably, possibly pri 0i).}
\end{align*}
\]

2.4.3. /pru/ 'four'

\[
\begin{align*}
\text{NaPlMn} & \text{pru m} \\
\text{AcPlMn} & \text{pru n } z \text{ (same as NaPlMn).}
\end{align*}
\]

2.4.4. /pru/ 'five'

\[
\begin{align*}
\text{NaPlMn} & \text{pru 0i (1.1.7, 2.1.7) } \rightarrow \text{//pris/}.
\end{align*}
\]
3. Pronouns (Pln- and Sb-rules)

3.1. First Person

Pln1

NmNg 1
Pn16 Pn12 Pn1
GnSg m 1n a → mewr.
Pn8 Pn29
DtSg m 1 n Pn15
AcSg m 1 k Pn22
NmDu u 1 t (2.1.4) → //wit//.
GnDu u nk ar a Pn13
DtDu u nk iz
AcDu u nk iz Pn9 Sb30
NmPl u 1 s (2.1.4, ev) → //wis// wew.
Pn19 Pn4 Pn1
GnPl u ne ar a Pn13
DtPl u ns (‘f or is’) by 2.2.1 → //uns// or //unsiks//.
AcPl u ns (‘f or is’)

3.2. Second Person

Pn23 Pn27

NmSg b 1 n Pn12 Pn1
GnSg b 1 n a Pn26 Pn29
DtSg b 1 n Pn15
AcSg b 1 k Pn14 Pn22
NmDu j 1 t Pn16 Pn4 Pn1
GnDu j nk ar a Pn13
DtDu j nk iz (2.1.4, 2.2.1, 2.2.7) → //inkw// iegite.
AcDu j nk iz Pn6 Sb30
NmPl j u z

Appendix 1

GnPl j sw ar a Pn13
DtPl j sw iz (2.1.4, 2.2.1) → //itsis//.
AcPl j sw iz

3.3. Reflexive

Pn21 Pn12 Pn1
Pn21 Pn8 Pn29
Pn21 Pn8 Pn15
Gn s im a Dt s iz Ac s iz

3.4. Third Person

Pn10 Sb31

NmSgSn i z (2.2.1) → //iz//.
Pn29
GnSgSn i z Sb7
DtSgSn i amma (2.1.2) → //imm//.
Sb5
AcSgSn i an (2.1.2) → //ina//.
Sb17 Sb30
NmPlSn i iz z (2.1.1, 2.2.1) → //isz// eiz.
GnPlSn i iz eiz
DtPlSn i m
Sb19
AcPlSn i n z
NmPlSn a i Sb28 Sb26 Sb29
GnPlSn i or z Sb6
DtPlSn i z Sb26
AcPlSn i or (1.1.7, 2.1.7) → //ja//.
Sb30
NmPlSn i or z Sb28 Sb25
GnPlSn i or z Sb19
DtPlSn i m Sb26 Sb30
AcPlSn i or (2.1.7, 2.2.1) → //ta//.
NmSgSnt i 1 at (2.1.2) → //ita//.
Sb29
NmSgSnt i 1 z Sb7
DtSgSnt i amma (2.1.2) → //imm//.
Sb9
AcSgSnt i 1 at (same as NmSgSnt).
Sb24
NmPlSnt i 1 or (1.1.7, 2.1.7) → //ja//.
Appendix 1

3.5. Definite Article

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That is, this is the enclitic particle /i/ added either to the forms of paradigm 3.5 or on occasion to those of paradigm 3.4.

3.6. Demonstrative

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That is, this is the same paradigm as 3.5 with the enclitic particle /uh/.

3.7. Relative

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That is, this is the same paradigm as 3.5 with the enclitic particle /uh/.

3.8. Interrogative

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3.9. Indefinite

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3.10. Nne Mm Pn/ Nn Pn

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<td>Sb</td>
<td>b</td>
</tr>
<tr>
<td>Nne</td>
<td>Mm</td>
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<tr>
<td>Nne</td>
<td>Mm</td>
<td>Nn</td>
<td>m</td>
</tr>
</tbody>
</table>

The endings of this paradigm are like those of 2.1 except for the following:

<table>
<thead>
<tr>
<th>English</th>
<th>Mnemonic</th>
<th>Syllable</th>
<th>Syllable Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nne</td>
<td>NmPn</td>
<td>Nn</td>
<td>p</td>
</tr>
<tr>
<td>Nne</td>
<td>MmPn</td>
<td>Nn</td>
<td>m</td>
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<tr>
<td>Nne</td>
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<tr>
<td>Nne</td>
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<td>Nne</td>
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</tr>
<tr>
<td>Nne</td>
<td>Mm</td>
<td>Nn</td>
<td>m</td>
</tr>
</tbody>
</table>

That is, this is the same paradigm as 3.5 with the enclitic particle /i/ added either to the forms of paradigm 3.5 or on occasion to those of paradigm 3.4.
4. Verbs (Vb-rules)

4.1. Strong verbs

2

PraActIndSgl nim a 18 31
2 nim 1 z 19
3 nim 1 d (2.2.1, 2.2.2) \( \rightarrow \) //nimip/.

26

Dual nim nos 1 28
2 nim a ts 20
Pil nim i a 19 14
2 nim 1 d 1
1 22 13
3 nim 1 and 1 d \( \rightarrow \) //nimand/.

30

SubSgl nim o: \( \rightarrow \) //nimau/, Dual nim E: ts 7 31 20 4
2 nim E: z \( \rightarrow \) //nimis/, Pil nim E: i a 14
3 nim E: 2
30
2 nim E: 2
22 4

Dul nim E: wa 3
3 nim E: n a 1 20

ImpSgl nim Pil nim i a m 1 13 9
3 nim 1 d 0;
2 nim 1 d 28
1 22 13 9
Dual nim a ts 21
Inf nim i a m 24
Prt nim a nd + Sub-rules for A'ae.


5 11 5

PraIndSgl nim a d a SubSgl nim E: d 0;
2 nim a z 2 nim E: 2 z 0;
3 nim a d 3
3 nim E: d 23
Pil nim i nd a Pil nim E: nd 0;
2 nim a nd 2 nim E: nd 0;
3 nim i nd a 3
3 nim E: nd 0;
29 28

PstActIndSgl nam Dual nem u ts 27 4
2 nam t Pil nem u 14
3 nam 2 nem u 22
29

Dul nem u 3 nem u n 19 10

SubSgl nem i o: (1.1.6, 2.1.4) \( \rightarrow \) //nemjau/ 31
2 nem i i 2
3 nem i (1.1.6) \( \rightarrow \) //nemjau/ 30

Dual nem i wa 28
2 nem i ts 20 4
Pil nem i i a 24
3 nem i i n a 22 4

PevPrt num + Sub morphemes for A'ae.

The PstActInd 2 Sg or V's whose stems end in a vowel has the Vb1 morpheme, e.g. sesost z t (2.2.1) \( \rightarrow \) //sesost/ //sesost 'sowed'. The Vb17 morpheme // occurs in the Pst of certain St V's (listed under rule //Vb7//), e.g. the Inf ind 1 a n (ev) \( \rightarrow \) //bi jan// 'sank'.

4.2. Weak verbs

4.2.1. j-class

The Pra forms are nos 1 'save' - the same endings as those of the St V paradigm 4.1. The 2 Sg Iap
17
is nas i (1.1.3) \( \rightarrow \) /nasē/ 'nose'.
17 12 3

PatActIndSgl nas i d a 15 51
2 nas i d e x 3
3 nas i d a 16

Dal nas i d e x + the corresponding Pat-
tense endings of the
nas i d e x St V paradigm 4.1.

Fla nas i d e x

Etc., down to

4.2.2. oI-class

PsvPrt nas i d + the Sb morphemes for A's.

4.2.2. oI-class

PsvActIndSgl salb o i a (2.1.2) \( \rightarrow \) /salōb/ 'anoint'.
18 31
2 salb o i s (2.1.2, 2.2.1) \( \rightarrow \) /salōbə/.
13
3 salb o i d (2.1.2, ev) \( \rightarrow \) /salōbə/.

That is, this class has the same endings as
class 4.2.1 except that instead of Vb17 /I/,
rule Vb25 /oI/ applies. Phonological rule 2.1.2
also applies, as in the following:

25 26
PsvActIndDal salb o i o s (2.1.2) \( \rightarrow \) /salōbə/.
7
SubSgl salb o i Ei (2.1.2) \( \rightarrow \) /salōbə/.
31
2 salb o i Ei s (2.1.2, ev) \( \rightarrow \) /salōbə/.
3 salb o i Ei (2.1.2) \( \rightarrow \) /salōbə/.

PatActIndSgl salb o i d a (2.1.2, ev) \( \rightarrow \) /salōbə/.

PatActIndSgl salb o i d o t (2.1.2, ev) \( \rightarrow \) /salōbə/.

4.2.3. Ei-class

PatActIndSgl hab a 1 28
2 hab Ei s 26
3 hab Ei a 26

2 hab Ei d 3

Dal hab o e 3

4.2.4. noI-class

The Pre has the same endings as the St V paradigm
4.1 above (but without a Psv); and the Pat has the
same endings as Wk V oI-class 4.2.2. E.g.,

4.3. Preterite-present verbs

PsvActIndSgl wkt \( \rightarrow \) wait 'know'.
27 26
2 wkt t (1.2.1) \( \rightarrow \) /wēstə/.
28 20
3 wkt t 20

Dal wit u 22
3 wit u n

SubSgl wit i o t (1.1.6, 2.1.4) \( \rightarrow \) /witjə/.
31
2 wit i s (2.2.1) \( \rightarrow \) /witəs/.
31
2 wkt i s (1.1.6) \( \rightarrow \) /witə/.
30
2 wkt i :t
4.5. The verb 'will'

PrsIndSgl will 1: 0r (1.1.6, 2.1.4) → //will// willau.
  31
  30 will 1: a (2.2.1) → //will// willis.
  33
  30
  33 will 1: (1.1.6) → //will// will.
  31
  33
  32
  30 Dal will 1: wa
  33 20 4
  32 20 4
  33 20 4
  32 20 4

In all other forms /wil/ is a Wx j-class V and follows paradigm 4.2.1 above.

4.6. The verb 'go'

For the Prs and PetPrt forms, the stem is /gang/ which follows the St V paradigm 4.1 above. For all the Pet forms — except the Pet — the usual stem /idd/ which follows the j-class Wx V paradigm 4.2.1 above, except that rules Vbl2 /4/ and Vbl7 /i/ do not apply. Examples of such forms are:

3

PetIndSgl idd j

As a Pet form the stem /gang/ is found once (Lukk 19.12). It follows the j-class Wx V paradigm 4.2.1. E.g.,

10 7 31
17 12 3

PetIndSgl gang 1 d a

In the Pet and the other forms of the Prs this V is /wis/ which follows the St V paradigm 4.1 above.
Appendix 2

Rule Ordering

In the following overview of the precedence relations obtaining among the phonological rules, the symbol \( \rightarrow \) means "must precede" and \( \not\rightarrow \) "no rule". Each ordering is numbered, and derivations illustrating each numbered ordering are given below.

1.1.1 Ablaut

\( \rightarrow \) (1) 2.1.1 Breaking.

(2) 2.1.5 Monophthongization of /ai, au/ to /æ/, /u/.

(3) 2.2.8 Nasal deletion and vowel lengthening.

1.1.2 Deletion from /ano/ (the Ph3 morpheme)

\( \not\rightarrow \)

1.1.3 Sievers' Law

\( \rightarrow \) (4) 2.1.1 Like-vowel contraction.

1.1.4 /l/ (Vbl2 morpheme) - deletion

\( \rightarrow \) (5) 1.2.1 Consonantal change in A and V stems.

1.1.5 /l/ (Sh1 morpheme) - deletion

\( \not\rightarrow \)

1.1.6 /l/ (Vbl9 morpheme) - shortening

\( \not\rightarrow \)

1.1.7 /a/ (Sh24 and Sh26 morphemes) - to /a/ rule

\( \not\rightarrow \)

1.1.8 /a/ (Sh26 morpheme) - deletion

\( \not\rightarrow \)

1.1.9 /u/ (Sh27 morpheme) - to /u/ rule

\( \not\rightarrow \) (9) 1.1.1 Ablaut.

1.1.10 Word-stress rule

\( \rightarrow \) (10) 1.1.7 /a/ (Sh24 and Sh26 morphemes) - to /a/ rule.

(11) 1.2.2 Reduplication.

1.2.1 Consonantal change in A and V stems

\( \rightarrow \) (19) 1.2.8 /a/ (Vbl2 and Vbl3 morphemes) realized as /t/.

(20) 2.1.3 Breaking.

(21) 2.2.3 Geminate-consonant simplification.

(22) 2.2.6 /l/-deletion.

(23) 2.2.8 Nasal deletion and vowel lengthening.

1.2.2 Reduplication

\( \not\rightarrow \)

1.2.3 Thurneysen's Law

\( \rightarrow \) (24) 2.2.1 Consonantal devoicing.

1.2.4 Yarner's Law

\( \rightarrow \) (25) 2.1.1 Consonantal change in A and V stems.

(26) 2.2.1 Consonantal devoicing.

1.2.5 /n/-insertion in St V

\( \rightarrow \) (27) 2.2.2 Distribution of voiced stop and continuant consonants.

1.2.6 /s/-insertion in V

\( \rightarrow \) (28) 2.2.3 Geminate-consonant simplification.

1.2.7 V suffixes Vbl2 /a/ and derivative suffixes /s/ realized as /s/
1.2.8 /Vh/ (Vbl2 and Vbl3 mor-
phemes) realized as /h,

1.2.9 /S/ (Sbl3 morpheme) delete

1.2.10 #/-deletion

2.1.1 Like-vowel contraction

2.1.2 Vowel deletion

2.1.3 Breaking

2.1.4 /I, u, j, w/-
alternation

2.1.5 Monophthongization of
/ai, au/ to /ei, o/.

2.1.6 Vowel lowering.

2.2.1 Consontantal
devolving

2.2.2 Distribution of voiced stop and continuant consonants

(30) 2.2.3 Geminate-consonant simplification.

(31) 2.2.3 Geminate-consonant simplification.

(32) 1.1.10 Word-stress rule.

(33) 2.1.2 Vowel deletion.

(34) 2.2.1 Consontantal devolving.

2.2.3 Geminate-consonant simplification

(35) 2.1.7 Glide insertion.

(36) 2.1.4 /I, u, j, w/- alternation.

(37) 1.1.10 Word-stress rule (i.e., part 1 of
2.1.4 must precede).

(38) 2.1.2 Vowel deletion.

(39) 2.1.5 Monophthongization of /ai, au/ to /
/ei, o/.

(40) 2.1.6 Vowel lowering.

(31) 2.2.4 Consontant-cluster simplification.

(32) 2.2.5 /h/-assimilation

(33) 2.2.6 /h/-deletion

(34) 2.2.7 Nasal assimilation

(35) 2.2.8 Nasal deletion and vowel lengthening

(36) 2.2.9 /n/-deletion

(37) 2.2.10 /s/-to/-r rule

2.2.3 Geminate-consonant simplification

Illustrative examples of the above orderings are:

1. lPPI
t/ihum/ 'threw' (1.1.1) → phum (2.1.3)
   → /phum/ /balhum/.

2. yPPI/dt /nauw/ 'haste' (1.1.1) → nauw
   (2.1.5) → /nauw/ /nauw/.

3. yPPI/brin-d-a/ 'brought' (1.1.1) → brang
d (2.2.8) → brahtva (ev) → /brahtva/.

4. mPPlm /br1-1-1/ 'three' ( = stem + Sbl1 + Sbl3) by
   l.1.3 → br1-1-1 (2.1.1) → pr1z (ev) → /pr1z/ /proiz/.

5. yPPI/bug-d-a/ 'bought' (1.1.1) → bug-d-a
   (2.1.1) → buhtva (ev) → /buhtva/ /bauta/.

6. yPPISub (after the application of 1.1.1 ablaut)/ne-mi-
   le-ti/ 'take' ( = stem + Vbl9 + Vbl10) by 1.1.6 →
   /ne-mi10/ (2.1.4) → /ne-mi10/ /ne-mi10/.

7. mPPIph /m1u-1-1/ 'mend' ( = stem + Sbl4 + Sbl26) by
   1.1.8 → mnu-1 (2.1.4) → mnu vs. the Acng /mnu-1.0/-
to which 1.1.8 does not apply. But by 2.1.4 and ev →
   /mnu1a/ /ma1a/.

8. DTPI Hn or /tardia-
   uma/ 'hard' (1.1.9) → harddia
   (2.1.4) → /harddia/ /hardia/... If the order were 2.1.4-
   1.1.9, the form *hardia/ would occur.

9. Rule 1.1.1 Ablaut is formulated in terms of stressed and
   unstressed vowels: yPPISub /br1-p-i-a/ 'see' ( =
   stem + Vbl9 + Vbl3) by 1.1.10 → griwp-i-a (1.1.1),
applying only to the stressed /i/ → gipil-s
(ev) → //gripil\ // gripin.

10. Rule 1.1.7 /oi/ (3b24 and 3b26 nomphones) to /a/ is formulated in terms of stressed and unstressed vowels: NePiNh /word-i/ 'words' (= stem + Sb24) by 1.1.10 → word-i (1.1.7) → //words// waurda vs. the NePiNh of the Art /b-i/ by 1.1.7 → //bouta// to which 1.1.7 does not apply because the /oi/ is stressed.

11. 3gPePatInd /hēs-/ ordered' (1.1.10) → hēs (1.2.2) → //hēsein// hēsein. If the order were 1.2.1-1.1.10, the form //hēsein// would result.

12. Rule 1.2.3 Thurneyse's Law is formulated in terms of stressed and unstressed vowels. Hence the rule does not apply to the stem of a N like /hōzh-i/ hōzhel 'height' to produce *hōzh-i//hōzhel* since the stem vowel /ō/ has been stressed by 1.1.10.

13. Rule 2.1.2 Vowel deletion is formulated in terms of stressed and unstressed vowels: NePiNh of the demonstrative /sa-uh/ (1.1.10) → sa-uh (2.1.2b) → //shah// vs. the NePiNh /pata-uh/ (1.1.10) → pata-uh (2.1.2b) → //patah//, not //patah//.

14. Rule 2.1.3 Breaking is formulated in terms of stressed and unstressed vowels. The compound A/fidur#dog-a/ 'four-day' is stressed cyclically by 1.1.10 as fidur#dog-a (1.1.10) and appears finally as /fiddaur#dog-a/ by 2.1.3 → not *fiddaur#dog-a//fiddaur#dog-a, because it is unstressed. On the other hand, /u/ before /f/ in a form like 3gPiPatInd /wortum/ 'became' is by 1.1.10 as wortum and since the /u/ is stressed is realised by 2.1.3 as //wortum// wortum.

15. Rule 2.1.4 (part 2) /a/, u, j, w/-alternation is formulated in terms of stressed and unstressed vowels: the Inf /tihwan//drag/ (1.1.10) → //tihwan//, not *//tihwan// by 2.1.4(2) because the /i/ is stressed. On the other hand, the stressed /u/ sequence in the NePiNh /sun-1-u-/*'some' is realised by 2.1.4(2) as //ju/ → sunga.

16. Rule 2.1.5 Monophthongisation of /ai, au/ to /Bi, Bo/ is formulated in terms of stressed and unstressed vowels. Thus a diphthong like //a// (from /aI/) can occur only under stress in a form like /baib/ 'both', but never unstressed.

17. Rule 2.1.7 Glide Insertion is formulated in terms of stressed and unstressed vowels: 3gPePatInd /se-i-d/ 'now' (1.1.10 and ev) → sehid (2.1.7) → abśiIj (ev) → //abśiIj// abśiIj. But 2.1.7 does not apply to unstressed vowels e.g., the Dīṣān of the relative Pān is //bīšīI// bīšīI, not //bīšīI// *bīšīI.}

18. Rule 2.1.8 /u/-to-/o/ rule is formulated in terms of stressed and unstressed vowels. It can apply to the unstressed /u/ in such as 'song' to produce sunjaq, but not to the stressed /u/ to produce *sunjuq.

19. 3gPePatInd /bug-i-d-a/ 'bought' (ev) → buga (1.2.1) → buha (1.2.3) → buha (ev) → //būha// būha. If the order were 1.2.1-1.2.1, the form */būha// *būha would occur.

20. 3gPePatInd /bug-i-d-a/ 'bought' (ev) → buga (1.2.1) → buha (1.2.3) → buha (ev) → //būha// būha. If the order were 1.2.1-1.2.1, the form */būha// *būha would occur.

21. /gls-Str/ 'tax' (= stem + deriviative suffix 49) //glsat// //glsat//.

22. /werk-str/ 'work' (= stem + deriviative suffix 50) //wursat// //wursat//.

23. 3gPePatInd /pant-1-a/ 'thought' (ev) → pantxa (1.2.1) → pantxa (2.1.3) → //pantxa//.

24. NeSe /rikW-a/ 'darkness' (1.2.3) → /rikW-s/ //rikW//. If the order were 2.2.1 does not apply.

25. 3gPePatInd /parf-s-d/ 'needed' (1.2.4) → parfsa (1.2.1) → parfsa (ev) → //parfsa//. If the order were 1.2.1-1.2.4, then the nonoccurring */parfsa// would result.

26. 3gPePatInd /B1h/ 'have' (1.2.4) → 2.1.4 ev → B1h (2.1.1) → //B1h// B1h.

27. PeInf /stādān/ 'stand' (1.2.4) → stādan (1.2.5) → //stādan//. If the order were 2.2.2-1.2.5, then the nonoccurring */stādan// would result.

28. /brum-t/ 'burning' (= stem + deriviative suffix 52) by 1.2.6 → brunst (2.2.3) → //brunst//. If the order were 2.2.3-1.2.6, then two forms would occur, */brunst// and optionally the nonoccurring */brunst/.

29. /abśat-t-za/ 'apostasy' (= prefix + stem + deriviative suffix 52 = Sb31) by 1.2.1 → abśat-stas (1.2.7) → abśat-stas (2.2.1 and 2.2.3), applying in that order: //abśat-stas//.
13. &SpPtn /kunp-d-a/ 'knew, could' (1.2.3) \rightarrow kunpa (2.2.2) \rightarrow /kunp\/. If the order were 2.2.3-1.2.4, then two forms would occur, /kunp/ and optionally the nonoccurring *-/kunp/.

14. #Iddja#u#h# 'and who?' (1.2.10) \rightarrow #Iddja#uh# (1.1.10) \rightarrow #Iddja#uh# (ev) \rightarrow /Iddjua//. If the order were 1.1.10-2.1.2, the derivation would be #Iddjau#uh# (1.1.10) \rightarrow #Iddja#uh# (ev) \rightarrow *-/Iddja uh/.

15. NnSpPh /h\#u/h/ 'and who?' to which 1.2.10 applies optionally \rightarrow both /h\#o/uh/ and /h#o/uh/ to both of which 2.1.2 applies \rightarrow both /h\#o/uh/ and /h#o/uh/.

16. NnSpMn /h#a#u/h/ 'and who?' (1.2.10) \rightarrow /h#a/uh/ to which 2.2.1 now cannot apply to produce */h#a/uh/.

17. NnPPh /bri-1-1-2/ 'three' (* stem + Shk + Shk) by 2.1.1 \rightarrow prijs (ev) \rightarrow /prijs// pr\js. If the order were 2.1.7-2.1.1, then the derivation would be /pri-
1-1-2/ (2.1.7) \rightarrow prijjs (ev) \rightarrow */prijjs//
*prijs to which 2.1.1 could not apply.

18. Latin urceus /urkeus/ 'jug' (2.1.3) \rightarrow or\xus (2.1.4) \rightarrow Go. //or\xus// aur\xus.

19. Second-person PnAPl /j-z-w-ls/ 'you' (* Pn14 + Pn20 + Pn13) by 2.1.4(1) \rightarrow iawis (1.1.10) \rightarrow iawis (ev) \rightarrow /iawis//. If the order were 1.1.10-2.1.4(1), then the form would be stressed as */iawis/.

20. GnSp /bad-1-0-2/ 'fetter' (* stem + Shk + Shk + Shk) by 2.1.4 \rightarrow bandjors to which 2.1.2 cannot apply, but eventually \rightarrow */bandjors//. If the order were 2.1.2-2.1.4, then 2.1.2 would apply to /bad-1-
0-2/ to produce eventually */bandjors//.

21. GnSp /mau-1-0-2/ 'maidens' (* stem + Shk + Shk + Shk) by 2.1.4(2) \rightarrow mawjojs (2.1.5) \rightarrow mawjojs (ev) \rightarrow */mawjojs// mawjojs. If the order were 2.1.5-
2.1.4(2), then the nonoccurring */mawjojs// 
mawjojs would result.

22. PnInf /stojan/ 'judge' (2.1.4) \rightarrow /stojan/ to which 2.1.6 cannot apply because the /j/ is nonvocallic. But 1SpPtn /stojan/ to which 2.1.6 cannot apply is by 2.1.6 stojijs (ev) \rightarrow */stojijs//. If the order were 2.1.6-2.1.4, then the PnInf //stojan// *stojan would result.

23. 1SpPtn /se-1-3/ 'saw' (2.1.6) \rightarrow stojijs (2.1.7) \rightarrow stojijs (ev) \rightarrow //stojijs// stojijs. If the order were 2.1.7-2.1.6, then the form */se-1-3// *stojijs would
Footnotes to Chapter 2

1Moulton (1972:160-70) cites examples of these SPo's.

2We consider here only native Go. and completely assimilated loans such as our <Jug>. There are of course non-Go. words beginning with /s/ attested in our corpus, e.g., proper names like Zacharias.

3The only recent exceptions are to our knowledge Beck (1973) and Wurtel (1975).

4The one apparent exception to this, uhtling 'opportunity', of which Feist (1979:151) says 'Bildung dunkel,' is either an orthographic error for uthling (which also occurs) or is stressed uhtling.

5According to Hegg (1950), such vowels are to be found in Old Norse.

6To our knowledge, one of the most complete listings of Go. derivative suffixes is in Buckalew (1964).

7The VB6 morpheme /N/ also probably occurs in the word arm-st. 'aids-giving'.

8The /n/ is possibly suffix 40 below. Another possibility is suffix 48. The /a/ is realized as /æ/ by rule 1.2.3, Thurneyse's Law.

9As part of our formalism we assume that after the application of the morphological rules, any remaining optional M's are automatically deleted; hence #flag<i-d-a>(M)|(M)|M## ⇒ #flag-1-φ-a##.

10The notation #<##<I##< rule Bel means that the word does not contain a lexical or stem morpheme, but rather is generated in its entirety by the morphological rules. In the case of Bel, these forms are #<I (Bel) + /m/ (Bel) skim, #<I (Bel) + /m/ 'you are', and #<I (Bel) + /a/ (Bel) skim, #<I (Wel) + /i/ 'is'. The notation #<##<#<##<#<##<## of Be6 is similar except that the inserted morpheme occurs word-finally.

11The SB17 morpheme may be considered to be either /I/ or /l/. If the latter, then it does not undergo this rule.

12Instead of [vocalic] as in 1.1.1.

13One of several possible formalizations of this rule is in Vennemann (1971:123).
Chapter III

Germanic and Northwest Germanic

1. Introduction

In a systematic and exhaustive reconstruction of the grammar of Germanic based on the material in the preceding chapter, it would be necessary to consider such aspects as the underlying segments of Gothic, the morphemic rules, the phonological rules, and to compare these with the corresponding segments of the grammars from the other early Ger. languages. Then, based on these comparisons and on various assumptions on the nature of language change, one could form hypotheses as to what the corresponding parts of the grammar of Germanic might have been. To consider for a moment only the phonological rules, each one as it appears in Gothic incorporates three possibilities for Germanic:

(1) The rule may be a total innovation of Gothic and not have been present in any form in Germanic. (2) It may have been inherited from Germanic without change. (3) It may have been inherited from Germanic with some sort of modification.

An example of possibility 1 is very probably the rule of vowel lowering (2,1.6) since the other Ger. languages do not evidence such a rule. Of. Go. Baukeln /bókän/ "dwell" vs. ON bukan, OE bocan, GMD bukān, OE bocan, OF bocan. Instances of 2 may well be the rule of word stress (1.1.10), the rule of consonantal change in A and Y stems (1.2.1), and reduplication (1.2.2). And examples of 3 are probably the Go. version of Verner's Law (1.2.4) and consonantal devoicing (2.2.1). The former seems to be in the process of gradually contracting its domain and dying out in Gothic. The corresponding rule of Verner's Law in the other early Ger. languages applies to many more forms. On the other hand, the rule of consonantal devoicing may well have been expanding its domain in Gothic. It applies to both A- and Y-stems and continuants in the other early Ger. languages and quite possibly began by applying to only some continuant consonants in Germanic, say to /b/ and /d/.

In this chapter we shall attempt a reconstruction of certain parts of the grammar of Germanic. Although our reconstruction cannot be exhaustive in that only some of the rules of Gothic can be considered, it will hopefully be systematic in that Ger. versions of these rules will be posited and their subsequent changes into the NWGer. languages will be plotted. In surveying the literature we have selected for consideration what seem to be three of the major problems in the reconstruction of Germanic. These are the problem of un laut, that of the so-called /eː/ and /eː/, and finally the problem of the reduplicating "St V".

Before proceeding to our reconstructing, we should perhaps make a few remarks of a methodological nature. First, we can assume that the first major split in the Ger. speech community was between Northwest Germanic on the one hand and East Germanic (as represented by Gothic) on the other. Bennett (1959:341) describes the situation in these terms:

A. The Goths, together with such kindred peoples as the Vandals, Burgundians, and Rugians, emigrated from the Proto-Germanic homeland in the course of the last two or three centuries B.C. and established colonies along the southeast shorelands of the Baltic, the Goths occupying the district about the lower Vistula. This move, separated the Goths from the North and West Germanic peoples by about four hundred miles... In brief, the North and West Germanic peoples were still relatively contiguous up to the middle of the 5th century, but by this time the Goths were far away, living in settlements extending at least from the Crimea to the Atlantic.

Accordingly, when in the following we posit changes from Germanic into the attested Ger. languages, we shall see some which are peculiar only to Gothic and others which all the older NWGer. languages — namely Old Norse, Old English, Old Saxon, Old Frisian, and Old High German — have in common.

We shall also assume that incipient phonological changes have the following characteristics which have been observed in empirical investigations of such change in progress. Hooper (1976:104) notes, "At first a rule is always variable; the rule may or may not apply in any given situation." And Labov, in one of the most detailed accounts of language change in progress, states the following (1972:223, 231, and 320):

B. It is important to note that in the course of language evolution, changes do not go to completion, and variable rules have become invariant.

There is a good empirical basis from the study of linguistic change to see most rules as tending to apply maximally — to be generalized to all environments and to go to completion in a given environment...and to be reordered to apply to the maximum number of cases.

As the linguistic feature develops within the original group of speakers, it becomes generalized in several
senses. Over the course of time (three or four decades) a wider range of conditioned subclasses may be involved, and more extreme (less favored) environments. Furthermore, the structural symmetry of the system leads to generalization to other vowels or consonants, or members of the same natural class...

In sections 2 and 3 of this chapter we shall have occasion to see these facets of phonological change manifested in early Germanic.

2. The Problems of Unlaut and /æ]/

2.1. Preliminary

The IE vowel system from which that of Germanic ultimately developed is generally considered to have been this:

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Note</th>
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<tbody>
<tr>
<td>i, e</td>
<td>i, e</td>
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<tr>
<td>o, u</td>
<td>o, u</td>
</tr>
<tr>
<td>a</td>
<td>a</td>
</tr>
</tbody>
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and diphthongs with the structure

- /æ/ [æ] = long [ɔ] = high 
- /e/ [e] = long [ə] = high

That is, /ai, ei, oi, au, eu, ou/ and /ai, ei, o, au, eu, ou/.

(For our purposes we can ignore the possibility of an IE schwa /ə/, which appears in Germanic and all other Western IE languages as /æ/.)

Among the OMC changes in this system, the following are generally assumed:

D.1. The Introduction of OMC stress (as reflected in the Go. phonological rule 1.1.10 in chapter 2. Hereafter when referring to stress, we shall mean OMC stress.)

2. Vonh → Vin (as reflected in the Go. phonological rule 2.2.8).
3. IE syllabic /i, e, û, û, ū/ → OMC. /ai, um, um, ur/.
4. IE /æ/ → OMC. /a/ everywhere (i.e., in both stressed and unstressed positions).
5. IE /æ, e/ → OMC. /or/ everywhere.
6. The unstressed long diphthongs, except possibly those beginning with /æ, /e/ (and /æ, /e/), are shortened and fall together with the short diphthongs, i.e. /ai/ — /e/, etc. (We shall consider the stressed long diphthongs directly.)

The last four of these changes are not reflected in any of the phonological rules of Gothic. They began as optional rules which when completed and obligatory were manifested only in the inventory of underlying segments of the language. Regarding change 5, the IE diphthongs /æ/ and /æ/ are generally considered to appear in Gothic in the ending of the DTag of Ph 1-class N (e.g., anatels/ anatels/ 'favor') and that of the DTag of Mn u-class N (sunUV /sunUV/ 'son'). The corresponding endings in the early NWGmc. languages are /i/ and /iu/ as in anatels and sunUV. The usual explanation given for this is that these endings were ablaut elements inherited into Germanic as i-class DTag /æ/ → /i/ and u-class DTag /æ/ → /i/ /iu/. The NWGmc. endings are from the /æ/ grade /æ/ → /i/ /i/ and /æ/ → /i/ /i/. And the Go. endings derive from /æ/ grade /æ/ and /æ/ /æ/. If this account is correct, then the IE diphthongs /æ/ and /æ/ → /i/ /i/ in unstressed position — did not terminate in Germanic like /æ/ and /æ/. If the latter had been the case, then the Go. reflexes would have been *anatels/*anatels/ (from /anatels/) and *sunUV (from /sunUV/).

2.2. The Problem of Unlaut

The only obvious trace of unlaut in Gothic is the phonological rule of breaking (2.1.3) in chapter 2, which for convenience of reference we repeat here:

E. 2.1.3. Breaking

1. First, /e, o/ are realized as /i, u/ if stressed or if unstressed and posttonic — i.e., after the main stressed vowel within the word.

2. Second, stressed /i, u/ are realized as /e, o/ if immediately followed — with no intervening morpheme boundary — by /a, h, r, r/. Further, stressed /i, u/ is realized as /e, o/ if followed by /t, r, r/.

In reconstructing the OMC version of 2.1.3, one must first consider the earliest attested NWGmc. version of the rule. This seems to have been the following:
The Problem of Ulaut

applying if the following vowel was /u/ or /i/ Hence OS biru
or /i/ from West Gmc. *beru* vs. early OE beru. And in
Old Saxon the environment — [nasal] — [consonant] in F2
had begun to lose optionally the prevocal [consonant], as
forms like the Inf niman ‘take’ occur alongside the mater
form maken.

Still another kind of expansion which rule F2 evinces in
the various NWGmc. dialects is best illustrated if F is
formalized as follows:

F*, NWGmc. Breaking (parts 1 and 2)

(a) /-vocalic - [high] / in the environments specified
under F above, in particular before:

- high
- low
- long

(b) /-vocalic - [high]

(The feature -back was probably being deleted from
the rule by this time.)

The expansion at issue here may be formalized by substituting
high for -high in F*. That is, rule F* not only
raises /a/ to /i/, but now begins — doubtless at first
optionally — to lower /i/ to /e/ and /o/ if followed by
a high vowel. This expansion is carried out only
sporadically in the attested NWGmc. languages, as opposed
to the change of /e/ to /i/ which rule F2 effected first and
which was carried through to completion. Forms illustrative
of this phenomenon are OHG querc ‘alive’ vs. OE cwe;
OHG weaw and shift ‘ship’, the Pat Fr of lst-class SF’s
with /i/ not /a/, as in Fran ‘ridden’, not *Yfran, OHG foli ‘full’ vs. OE full ‘full’, OHG wol ‘wolf’ vs. OE wolf,
and OHG furten ‘fear’ as well as forten. These alternat-
ions indicate that the rule F* had begun to extend its
environment optionally and to varying degrees in the
various NWGmc. languages.

Now the Gmc. proto-language may well have had an in-
cipient ulaut rule. If we consider the fate of IS /e/ to
all the Gmc. languages as well as those environments with
the Go. breaking rule under E and the NWGmc. rule under F
have in common, the Gmc. rule may have looked something
like this:

Later versions of rule F as they are generally mani-
fest in the various NWGmc. languages exhibit expanded
domains. Part 1b lost the proviso that C, could not be /h,
/h/, /s/ so forms like /afirii/ ‘after’ begin to occur instead
of /after/. And in some NWGmc. languages like Old Saxon,
part 2 of F lost the proviso —back and the rule began
The Problem of Umlaut

G. Go. Umlaut

\[ /a/ \rightarrow /AJ/ \quad /h/ \rightarrow /r/ \]

b. [-stress] X [-stress] a. \( C_1 / l(i)/ \)

\[ \quad b. \quad C_2##, \text{where} \quad C_2 \text{cannot be} \quad /h, h^\# r/. \]

That is, (a) both stressed and unstressed /a/ is raised to /AJ/ if immediately followed by /l/. This realizes the IE diphthong /ai/ as /AJl/ = /lAj/. And (b), unstressed /a/ in posttonic position is raised to /AJ/ if (ba) followed by any number of consonants and /l/ or /l/i, or (bb) if followed by at least one consonant (except for /h, h^\#, r/) in word-final position.

According to the principles enunciated under B above, we can assume that G was at first optional. When part (a) became obligatory, this led to a restructuring of the inventory of underlying segments in that /ai/ now appeared everywhere as /AJ/. Hence there was no need for a phonological rule /a/ \( \rightarrow /AJ/ \), and part (a) was accordingly dropped from rule G.

Rule G must have occurred rather late in the common Gmc. period.\(^4\) For the time part (b) began its expansion, the Gmc. proto-language had already begun its initial bifurcation into East and NW Gmc. And part (b) extended its domain in somewhat different ways in these two branches. We have already seen under (b) above how the NWGmc. languages tended to form their versions of the rule on extensions of environment (ba).

But in East Gmc. — as represented by Gothic — environment (bb) of G was extended in the following way:

\[ \text{Ovb.} \quad [-\text{stress}] X [-\text{stress}] C_2## \]

where \( C_2 \) cannot be /h, h^\#, r/, becomes through deletion of the proviso “\( C_2## \)” the following:

\[ \text{Ovb.} \quad [-\text{stress}] X [-\text{stress}] \]

And probably at about the same time the original environment with its restrictive conditioning /h, h^\#, r/ was transferred to stressed vowels, resulting in

\[ \text{Ovb}^* \quad \text{[stress]} \quad C_0, \text{where} \quad C_0 \text{is any segment except} /h, h^\#, r/. \]

The further Go. expansion of Ovb* is difficult to capture in our system of features. However, if we reformulate Ovb* using a feature like “lowering” to describe the effect of /h, h^#, r/ on preceding short high vowels, then Ovb* can be stated as follows:

\[ \text{Ovb}^* \quad \text{[vocalic]} \rightarrow \text{[high]} / [-\text{stress}] \quad \text{Any segment except:} \]

- \text{high}
- \text{low}
- \text{consonant}
- \text{lowering}

That is, /a/ \( \rightarrow /AJ/ \) except before /h, h^\#, r/. Now if in Ovb* the specification [high] is replaced by [high] and [lowering] by [lowering], and if the provison “Any segment except” is struck out, then the rule is generalised. It now not only raises /a/ to /AJ/, but it also lowers /i, u/ to /e, o/ before /h, h^#, r/. The exact shape such a formalisation should take is not at issue here. The point is that a change in a rule from raising /a/ — and /o/ if it had been present — to /AJ/, /u/ except before /h, h^#, r/ to one which also lowers /i, u/ to /e, o/ before /h, h^#, r/ is a plausible type of rule simplification and generalisation.

Perhaps the main reason why the expansion of rule G was fairly regular in Gothic (in the breaking rule 2.1.1) and sporadic in NW Gmc. (in the rules F and F!) is that the Go. version turned out to be a MS rule as opposed to a regular phonological rule in NW Gmc. That is, the conditioning environment in the Go. rule turned out to be the immediately following sequence of consonants. Thus the rule did not apply over morpheme boundaries and there were no paradigms in Gothic which exhibited alternating results from the rule such as baira ‘I carry’ vs. ‘birds you carry’. But in all the NWGmc. languages the conditioning environment /l(i)/ and the affected vocalic segment could be separated by any number of consonants (\( C_0 \)). This meant that there were numerous \( W / W^0 \) paradigms which exhibited alternating results from the rule, e.g. the Pre 1 sg ind /hér-os/ ‘carry’ vs. Pre 2 sg ind /hir-iz/, the NNmc. /fih-ù/ ‘cattle’ vs. GNg. /peh-es/, among many. Under these circumstances it is not surprising that the unlibit rule F in NW Gmc. should have been morphoepontactically — and on occasion lexically — conditioned and as such sporadic in its application.

As the Gmc. short vowel system at the time of the addition of rule G (and the becoming obligatory of environment a), we posit /i, e, a, u/ with /l/ and /e/ in
complementary distribution in the few postonic environments specified in rule 2 (environment b), but contrasting elsewhere. This has not been the view in almost all recent considerations of Germanic. Most of these such as Antonsen (1961:26) posit a much richer vowel system with numerous allophonic variants:

/1/ = /1, u, 1/; /q/ = /u, y, o/;

/ø/ = /ua, ua, e, ë/;

The following rationale for positing all these vowels is given by Antonsen (1961:20, 24-5):

With the refined methods available to us by the structural approach to historical linguistics... it is entirely possible for us to posit approximate phonetic values for the various phonemes in different environments in Proto-Germanic.

There can be no doubt that the unialt allophones arose at a time when the full endings were still present, and there is no reason to assume that the assimilations involved in a-umlaut occurred before those involved in i- or y-umlaut, nor is there any reason to assume that the i-umlaut of /e/ preceded the i-umlaut of /a/. The presence of reflexes of mutation allophones in all [sic] dialects and the absence of any "Rückzugsstufe" demand that we consider the various umlauts to be the result of a single phonetic tendency which was active in the Proto-Germanic period. We have cause to be wary of assertions that umlaut is a common Germanic phenomenon, but not Proto-Germanic, or that mutation arose in the individual dialects.4

To rephrase this account in our terms, Proto-Germanic had subphonemic umlaut rules like the following:

1. /a(i), o(i), u(i)/ → //a(i), o(i), u(i)/ in the appropriate environment, say — C_o /i(i)/ (i-umlaut).

2. /a(i), e(i), i(i)/ → //a(i), o(i), u(i)/ in the appropriate environment, say — C_e /u(i)/.

The vowels produced as allophonic output of these rules then occur in the later attested NWGmc. languages as independent phonemes. This occurs as the result of the loss or reduction of the triggering vowels /i(i)/ and /e(i)/ — which it should be emphasized, occurred separately in the individual languages. With this account of umlaut encounter some difficulties. One of these is that some of the earliest attested Gmc. languages such as Gothic, Old Saxon, and Old High German either evince absolutely no trace of

the type of umlaut under H above (Gothic) or umlaut at only an incipient stage, namely that of short /a/ to /ã/ before C_0 /i(i)/ (Old High German and Old Saxon). In this connection it might be added that Modern Dutch has no umlaut except the remnant of the NWGmc. breaking rule F above; forms like 'sgr schip 'ship' vs. PI scheeps and /-a/- to /-ã/- umlaut in 5G stad 'city' vs. PI steden, 'umlaut of /o(i)/ and /u(i)/ does not occur e.g., groter 'larger', not /groter/ and zusen 'kiss', not /zusen/.

The usual explanation offered to account for the absence of umlaut in the older languages is given by Moulton (1961:506) as follows:

...unsere Erfahrung mit Orthographien in allgemeinen erlaubt uns, eine ganze Feste Regel aufzustellen in einer normalen Orthographie (d.h. abgesehen von gelehnten phonetischen Transkriptionen usw.) werden die Allophone ein und desselben Phonems nie und nimmer. (Emphasis supplied.) JBF erheftlich unterschieden. Der Grund dafür ist leicht zu finden: der normale Sprecher ist sich der Allophone seiner Muttersprache einfach nicht bewusst und was er nicht bewusst hort, schreibt er nicht.

Marchand, in taking basically the same line, remarks (1970:115), "...das Alphabet des Wulfila [verzeichnet] unterphonemische Varianten nicht."

Statements such as these must strike anyone who has concerned himself at all with the text of these languages as utterly absurd. Rather, the textual evidence indicates the opposite to be the case: Namely, that most of the subphonemic distinctions — and virtually all of the frequently occurring ones — are sporadically indicated in some fashion or another in the texts. Scribes will often oscillate between a taxonomically phonemic and a redundantly phonetic orthography. One example of this in Gothic is the use of both gg and gg for /gg/ as in brigean and breganne 'bridge'. (See rule 2.27 in chapter 2.) If the scribe had used only graphic gg for /g/ and for /g/, he would have been writing phonemically. However, the fact that he also (and more frequently) uses the digraph gg for /g/ indicates that he was aware that there was a nasal preceding /k/ (and /g/) different from that in a word like bindan 'tie' (never written /b/djan). He was therefore aware of the for him subphonemic difference of /g/ vs. /g/ and designated it orthographically. Examples of subphonemic writing are even found in Runic inscriptions where forms like sra 'prophecy', gadsi 'guest', and sigia 'challenger' occur instead of dpa, gasti, and sigi.4 Here phonemic b, d, and g have been used instead of the more usual p, t, and k to represent unspelled — and subphonemic — /p̪t̪t̪/.

And there are numerous other instances of subphonemic
orthography attested in the early Omc. languages.

Now if indeed Gothic or any of the other early NWGmc. languages had had unlauteu vowels like /au/ or //awi//, then there almost certainly would have been some sort of sporadic indication of this frequent occurrence in the texts. In Gothic, for example, if the J Sz Sub Pat druel "fall" really were //drul// instead of //druei//, it surely would have been written on occasion as //druei// or the like. The fact that there is not a single graphic hint of unlauteu vowels in several early Omc. languages combined with the fact that Modern Dutch evinces no reflexes of unlauteu /aw/ or /aw/ provides a strong indication that unlauteu rules like those under H simply were not present in Germanic.

The structuralist motivation for assuming unlauteu rules for Germanic is elucidated by Antonsen (1965:25) as follows: "...we should seek to identify the genes which are responsible for this Germanic hereditary disease [i.e., unlauteu] and this we can do. The mutated genes are the unlauteu allophones which must have been present in Proto-Germanic." While we can agree that the "genes" of unlauteu probably existed in Proto-Germanic, they were not present in the form of actually occurring allophones, but rather as a tendency, and quite possibly as rule 3 above. We have already seen how this rule was expansionist in that it tended to extend its domain in varying rates in the various Omc. languages. Further, extension of this rule — or at least of this assimilatory tendency — to include /au/ in its domain, /au/ and /aw/, and partial assimilation of these vowels to the triggering /ui/ (which was retained into all the NWGmc. languages) led to the eventual appearance of /au/ and /aw/ in some, but not all (e.g., Dutch) of these languages. It is also possible that so-called unlauteu arose in other of these languages by extension of the triggering environment from /ui/ to /ui/. In a small 3 of Omc. vowel assimilation probably existed which could have been elaborated upon and extended in the daughter languages, there is absolutely no evidence that the mutated vowels themselves had appeared in Germanic. It is interesting that in attempting to offer a unified explanation of this phenomenon, the extreme empiriology and concomitant superficiality inherent in the structuralist approach make it necessary to posit the actual occurrence of such vowels when the data available indicate that none were in fact present.10

2.3. The Remaining Omc. Vowels

As mentioned in change G under H, the long unlauteu diphthongs — with the possible exception of /as// and /aw/ — fell together with the short ones at a fairly early date. The same also seems to have occurred with the stressed long diphthongs. This, along with the other changes mentioned under H, resulted in the Omc. diphthongs /au/ and /aw/ and for a time /ei/ and /aw/.11

Now the reflexes of the unlauteu diphthongs /ai/ and /au/ appear in all the attested Omc. languages as monophthongs, generally as /ei/ and /au/. In Gothic, as specified by phonological rule 2.1.5 in Chapter 2. The same diphthongs in unlauteu position are realized as /ei/ and /au/ in NW Germanic. E.g., the 2.2 G Prs Ind habla /ba:/ba:/ "have" vs. OMC habla and Du. aitau /at:/at:/ "give" vs. OMC aniu /au:u:/ /au:/ for /au:/ for perhaps /axiu:/ from earlier /axiu:/.

These facts have led some, e.g., Reis (1974), to posit a change of unlauteu /au/ to /ei/ in Germanic and from hence to /ei/ or /au/ in NW Germanic. If this was in fact the case, then — as emphasized in Reis — this results in an almost unheard-of situation for Germanic; namely, an inventory of unlauteu vowels including /ei/, /au/ and /aw/ as such greater than that of the stressed vowels. This would seem possible only if the Omc. rule changing unlauteu /au/ to /ei/ or /au/ is considered to have persisted in that form for just a short time. That is, the rule must have been in late Germanic, probably just prior to the initial split into East and NW Germanic. Then in Gothic the Gmc. rule whereby unlauteu /au/ to /ei/ or /au/ was generalized to apply to stressed /au/ or /au/ as well (to result in rule 2.1.5 in Chapter 2). Hence Gothic did not violate the constraint against having a larger inventory of stressed than of unlauteu vowels. And in NW Germanic a new rule was soon added whereby unstressed /ai/ or /au/ from Germanic became /ei/ or /au/ — i.e., vowels which also can occur under stress. Hence NW Germanic did not violate the constraint either. The other possibility here is that the monophthongalization of /ai/, /au/ and /aw/ must have occurred either fairly late in common Germanic or fairly early in the NW and East Gmc. periods.12

Therefore Germanic — for most of its existence — had the diphthongs /ai/, /au/, /aw/ and /ei/, /au/ in both stressed and unstressed positions. (The rule of Gmc. unlauteu G cannot apply to /ei/ to give /ui/.) So in view of the early Gmc. changes cited under H above and considering the immediately preceding discussion, we may assume that the Gmc. vowel system throughout much of the common Gmc. period was something like this:

1. Short vowels: /a/, /e/, /i/, /u/, /o/.

Long vowels: /ai/, /ei/, /au/, /ow/ (with /aw/ possibly occurring only under stress).
Diphthongs: /ai, au, eu/ and very likely /ei, /iu/.

The sole source of /ai/ is from the sequence /an/ by change 2 under D. A number of sources such as Antonsen (1965:26) posit numerous allophonic unstressed alternations of long vowels: /i:/ = /ii/, /ei:/ = /ei/, /e:/ = /ei/, /e:/ = /e:/, /e:/ = /e:/, /e:/ = /e:/, /e:/ = /e:/, and for the reasons cited in 2.2 above, we do not believe such allophones to have existed in Germanic.

The vowel system under I is reminiscent in some respects of the systems posited for Germanic in earlier, prestructuralist sources. This should not, we believe, be considered evidence against I. The structuralist approach, far from providing the "refined method" lauded by Antonsen, has in fact perpetuated a fundamentally erroneous account of Germanic and of many of its developments. Structuralist methodology therefore cannot be hailed as having provided any particular insights into the nature and development of Germanic, but must rather be recognised for what it is in fact was, an exercise in obfuscation which has beclouded a number of important issues in the field for well over a quarter of a century.

2.4. The Problem of /ei/ and /e:/

A common variant on the long-vowel inventory in I above is found in most of the handbooks and in more recent sources such as Moulton (1961) and Reis (1974). It is this:

I':

\[
\begin{align*}
\text{I':} & \quad \text{u:} \\
\text{e} & \\
\text{I'} & \\
\end{align*}
\]

The system under I' differs from ours under I by first ignoring the few occurrences of /ai/ and second by positing two /ei/ vs. a higher /ei/ and a lower /ei/ (hereafter written /e:/). The reason for this is that in most Go, words like /e:/ are like /ge:/ 'year' which evince /e:/ have NWGmc. correspondents with /ai/, e.g. OHG /air/ (earlier /air/), and OHG /air/. But four Go, words — two inherited from Germanic ( /heir/ 'here' and /feira/ 'area') and two loanwords from NWGmc. cognates with /ai/, e.g. OHG /heer/, /feira/, /kreis/, and /mein/. Soon after the attestation of these NWGmc. languages, the following change occurs:

J. Stressed /ei/ → /e:/ (later /ai, /o/) in certain environments (to be discussed directly).

Hence later OHG forms are hier, fiera, Kriech, and nie.

The traditional account for this has been the following:

K.1. IE /ei/ → Gmc. /ai/ (i.e., /ai/).

2. IE /ei/ → Gmc. /e:/ (i.e., /e:/).

3. Gmc. /e:/ → Go. /e/.

4. Gmc. /e:/ → NWGmc. /e:/.

A simpler and more plausible account of the data would be that IE /ei/ remained in Germanic as did the long diphthongs /e:/, etc. As we have already noted in our discussion of change 2 under D, there is evidence that unstressed /ei/ and /e:/ remained for a time in Gmc. Although stressed /e:/ probably fell together with /e:/ fairly early, there is good evidence that stressed /ei/ remained throughout the Gmc. period.

There are numerous forms such as Go. /heir/ which alternate with other forms like Go. /air/ 'come here' and which thereby evince a plausible type of IE ablaut which indicates a source having /ei/; IE /keir/ → Go. /heir/ and IE /air/ → Go. /air/. Further, a number of NWGmc. forms occur which have no attested Go. correspondents, but which also evince ablaut alternations with other forms indicating their origin in IE /ei/; e.g. OHG stil 'stairway' (earlier /stei/: from IE *steilā, the same root also occurring in different ablaut grades in the lst-class Stl /stilāna; stalin, etc., from IE *steilā, stōlī, etc.). Likewise NWGmc. æhlef 'crooked' (earlier /æsli/: from IE /æsli/: vs. OE /æslī/ (from /æsli/ from IE /æsli/: vs. OE æslī/ 'glorious' (from Gmc. /æslī/ from IE /æslī/). Additional examples of this kind are cited in van Coetsem (1956:125).

In view of this evidence, a simpler and more straightforward account than K would be this:

K'.1. IE /ei/ remains in Germanic (i.e., no rule).

2. IE /ei/ remains in Germanic (i.e., no rule).

3. Gmc. /e:/ remains in Gothic (i.e., no rule).

4. Gmc. /e:/ → NWGmc. /e:/ (perhaps via /æ:/).

5. Gmc. /e:/ → Go. and NWGmc. /e:/ (through two separate changes).

That is, the IE long diphthongs only gradually fell together with the short ones in Germanic, the /ei/ — and perhaps /e:/, which need not concern us further here —
being retained throughout the Gmc. period. Retention of
only some of the IE long diphthongs is by the way not un-
precedented; in Greek, for example, all the IE long di-
phthongs were lost except those ending in the nonback vowel
/\/. (See on this Davis, 1942:90-1.) Similarly in Germanic,
all IE long diphthongs became short except those beginning
with a nonback vowel — namely /ei/ and /eu/ — the
single long diphthong to have both segments in nonback
vowels, /ei/, remaining longest.

Regarding change K's (/ei/ → /e\/) into Gothic, it is
interesting that the only two native Gmc. forms in
Gothic, /heir/ and /feir/, are automatically derived by
our rules in chapter 2. Thus Gmc. /feir/ by the Go.
breaking rule 2.1.3\(\) → /feir/, which then by the Go.
rule of like-vowel contraction (2.1.3) → /feir/. Like-
wise Gmc. /hei\(\)/ by breaking 2.1.3 → /heir/ and by
like-vowel contraction 2.1.3 → /heir/.

Regarding change K's into NW Germanic, it was preceded
by K's, a more precise formulation of which being this:
K's. Stressed /ei/ → /e\/ (perhaps by way of /ei/),
unless followed by /y/.

Thus Gmc. /jeir/ 'year' is NWGmc. /jair/, while a form like
Gmc. /heir/ 'here' remains. It is of course quite natural for
/ei/ to be retained before a high vowel. Rule K's does
not affect unstressed /ei/ — many of these being from Gmc.
/ei/ — in forms like the 2 sg Pros /nem/ /<take>/, not
*neman/.

After the application of rule K's and of NWGmc. K's by
which /ei/ became /e\/, there came to be three main
classes of words in NW Germanic evincing /ei/ in stressed
position. One of these consisted of borrowings like early
Gmc. /meis/ 'take' (later Králach) from earlier /kreis/ and /breis/ (later brief). All these words are loans from late Latin forms
with /ei/ — /nem\(\)/, /teis/ and /breis/ 'athematic' for morphologic reasons, namely the fact that the Pros tenses are
formed without the intervention of an intermediary morpheme (the

"athematic vowel") between the stem and the inflectional
ending. For example, the Gmc. 2 sg Ind /ges-x/ /'go-',
stem — the reflex of the Go. Vbl I morpheme — differs morph-
ologically from the corresponding form of other St V's like
Gmc. /nem-1-a/ /'take'/ (stem — the reflex of the Go. Vbl I
— the reflex of Go. Vbl I). In addition, the 1 sg Ind Pros of
such verbs is formed with /</ (the reflex of the Go. Bau
morpheme), /ge\-m/ /'I go'/.

There seem to have been three such verbs in Germanic,
/duo/ /'do-', /go/ /'go-', and /etae/ /possibly /'sta-',
'stand'. They have had a precarious existence throughout
the history of the Gmc. languages in that they have tested
either to be replaced by other verbs or to be assimilated
into the morphology of regular St V's. In Gothic, /do-/
was replaced by /tau\(\)/ and the Pros tense forms of /ego/ and
/etae/, probably because of their MS #C2/# (unusual for St V's),
were replaced by the suppletive stems /gan/ and /stand/.
(In Old Gothic an athematic form gen 'age' is
attested.) Exactly the same thing happened in Old Norse
except that /do/ was replaced by /gr\(\)/.

In West Germanic, Old English replaced /etae/ with
/stand/ while retaining /do/ and /ge\-/. And Old Saxon and
Old High German retained all three. But even those lan-
guages retaining the stems /do/, /ge\-/, and /eta/, have
throughout their attested histories tended to assimilate
these forms into the morphology of the other St V's. One
instance of this is the fact that the Gmc. reflex of the
Go. rule 2B which puts /#/ onto the stem in the 1 sg
Pros Ind of athematic V's as opposed to other St V's sometimes
does not apply. Thus in Old English 1 sg Pros Ind /done
and /gone/ occur, and in Old High German both /tan/ and
/tan/, /gan/ and /gant/, and stem and /sta/. Another manifesta-
tion of this tendency is the fact that morphological rules
inserting athematic vowels between stem and ending which
apply to St V's tend to apply optionally to athematic V's as
well. One of these is the reflex of the Go. rule 2B which
inserts /#/ between the stem and ending of the 1 and
3 Pros Ind of St V's. Thus in Old Frisian Old High German
the 3 sg form /dwest/ 'does' from /do\(-1\)-<s> /-est/ (with the Vbl I
morpheme) occurs alongside dunt from /do\(-1\)-<s> /-ant/ (without it). In
Old Saxon there is a tendency to add /-est/ with the thematic /-est/ alone,
side /-ant/ without it, and in Old Frisian /ge\-est/ /'</' gast/
with /<s>/ /-ant/ without it.

Now there is no reason to believe that this optional
application of St V morphology to the athematic V's did not
occur even during the earliest Gmc. times. If so, there
must have occurred already in Germanic alternations such
as the 2 sg Pros Ind /gan\-n-/ and /ge\-a-/ /'I go-', the 3 sg Pros Ind
/ge\-n- and /ge\-l-/ /'he goes-', etc. And if we apply to these forms
our NWWmc. rules K's (/ei/ → /e\/) unless followed by /y/
and K's (/ei/ → /e\/), we arrive at alternating forms
The Problem

Two theories have been proposed 1. that the seventh class preterites in NWGmc. are from reduplicated formations like those of Gothic 2. that they and the seventh class preterites developed from forms with ablaut grades different from those of first five classes... the strength of the first theory lies in the presence of Gothic reduplicated preterites for seventh class verbs; its weakness lies in the impossibility of suggesting a development in accordance with sound laws from such forms to the preterite forms that occur in NWGmc.

Accordingly, Lehmann opts for the theory originally proposed by Karl Brugmann whereby the NWGmc. past forms have no genetic relationship to the reduplicated forms of Gothic. Instead, the NWGmc. forms derive from ablauting verbs in Germanic which existed side-by-side with the reduplicating ones. These Gmc. ablauting verbs Lehmann derives with some assistance from his laryngeals, from IE ablauting forms. This solution has generally been felt to be unsatisfactory, first because it merely relocates the problem into Proto-Germanic and second because the type of ablaut which must be posited is not found in any of the other IE languages.

In 1956 van Coesak proposed an account according to which seventh-class Gmc. past forms in Germanic originally did in fact form their nonparticipial pasts through reduplication as in Gothic. But then, under the influence of the majority of St V's like class 2/2segan/ 'bend' vs. Pet /seg/ and class 3/berpan/ 'become' vs. Pet /werp/, an /e/-/a/ ablaut alternation was analogously introduced into the seventh class. But according to van Coesak (1956:55), this ablaut was "in ungebekrter Richtung". That is, whereas in the other St V classes the /e/-/a/ alternation marked past vs. present, in the seventh class it marked past vs. present. Thus from the Pet /helt/ 'command' the Pet /heilt/ was formed; from /haldan/ 'hold' the Pet /hald/ was formed, and the Pet /feut/ was formed from the Pet /auken/ 'increase'.

Van Coesak's theory has found wide acceptance, particularly in view of the general dissatisfaction with the other theories that had previously been proposed. However, this acceptance has not been universal. As Bech (1961 esp. 49-54) and Antonsen (1965:52, footnote) have pointed out, positing the diphthong /ai/ as the antecedent of /ei/ in the NWGmc. forms like OE healt, OHG heiz, etc., runs a school of some fairly well substantiated Gmc. phonological changes. One of these is incorporated in our G part (a) above

explanations had been proposed to account for these phenomena. They all tended to take one of two tacks, as summarized by Lehmann (1955:58):

Finally on this subject, the latter rule J given above whereby stressed /ei/ from /ei/ appears as /e/ and the like does not apply to the /ei/ in athematic V's like /geor/ (not *giles/). This means that J was morphologically conditioned from the time of its earliest application. This is not unprecedented. Labor (1972:322) cites an analog example of an incipient phonologial rule in some American English dialects inhibited by morphological factors. This is a rule of consonant-cluster simplification whereby the /t/ in a word like last /last/ is deleted much more often than in a word like passed /pass-t/ because the /t/ in the latter form is an independent morpheme. Since our rule J did not apply to Prs Sub endings like the 3 Sg Prs Sub /hab-es/ 'have' because the /ei/ was unstrusted, the rule also tended not to apply to the Prs Sub forms of athematic V's as well, even though in this case the /ei/ was stressed as in the OHG 3 Sg Prs Sub /geor/ 'go' (possibly from an underlying /geor/ or /geor/ by an OHG rule similar to that of Go. like-vowel contraction 2.1 in chapter 2). And since rule J did not apply to the Sub paradigm of athematic V's, it tended to by-pass all the other forms of the paradigm as well.

Finally, the third class of words with /ei/ in NWGmc. and the one which has received the most attention in the literature consists of the nonparticipial Pet forms of formerly reduplicating V's. It is this class to which we shall direct our attention for the remainder of this chapter.

3. The Reduplicating Verbs in NW Gmc.

The Problem

A satisfactory account of the original status and subsequent development of the so-called seventh class of reduplicating V's in Gmc. has been termed by Prokosch (1939:196) "one of the most difficult problems of Gmc. grammar." The situation is in outline this in Gothic, the past — exclusive of the participle — of such verbs is formed through reduplication (G. rule 1.2.2.) or reduplication with ablaut (rule 1.2.1. part B), e.g. haitan 'command' vs. haitan /haitan/ 'command' vs. haita /haita/ 'laid', /heit/. In the other Gmc. languages — i.e. NW Gmc. — the corresponding nonparticipial past is formed through some sort of mutation of the root vowel, e.g. OE hætan vs. hætt, OHG hæzan vs. hæss (later hæs), OE hætan /haitan/ 'hurt', hæa /hæt/ 'of hæta vs. hæta vs. hæt /heit/; all meaning 'command' or 'call'.

Since the time of Jakob Grimm until the appearance of van Coesak's 1956 monograph on the subject, numerous
whereby IE (and early Gmc.) */e/ appears later as */e/ as in IE */steieg/ to Gmc. */stig/). According to van Coetsen's account, */e/ followed by */i/; */i/ in the next syllable became */i/ and elsewhere developed as */e/ to */e/ as */e/; */a/ and */e/; */e/ in the next syllable, hence the Pat form */helt/ became */helt/ etc. However, all the Pat ruin forms of */net/ had endings with */i/; which makes it remarkable that a form like */hilt/ 'commanded' does not occur occasionally in one of the earlier attested NWGmc. languages. And if one considers the first-class St V's like */stiug/, the only place in the entire Frs paradigm where */i/ occurs in the following syllable is the 2nd and 3rd Sg Frs Ind. */isi/ and */id/ This leaves thirteen other forms of the present system where */i/ do not occur and where one would accordingly expect */steig/—which verb is not attested in any Gmc. language, even as a remnant. Nor is any other St V of class 1 attested in any Gmc. language with the root vowel */e/.

More recently van Coetsen has defended his account of reverse ablaut in more or less transformational terms (1972:207).

...there was already in the [Gmc.] era a period a sort of inversion of */i/ /e/ /a/ from IE */e*/ /i*/ */a*/ to /i*/ /e*/ */a*/ in the reduplication class (in comparison with */e*/ /i*/ */a*/ of the e-group [i.e., the other St V classes, particularly the first two]. This situation may have operated as a trigger to the application of polarity inversion, which as a general phenomenon can be formulated in the simple rule: */emfe*/ /e*/ */a*/ [Chomsky- Hale 1968:153-56, The Sound Pattern of English, Harper & Row, New York] and see [Paul Kiparsky 1965:28 Phonological Change, MIT Dissertation]. This constitutes a tremendously simplifying generalization.19

The obvious reply to all this is that the possibility of a formalization offers no proof of the actual existence of phenomena, either in linguistics or in any other data-oriented study. And in fact the process of reverse ablaut as posited by van Coetsen seems never to have occurred in any Gmc. language. More specifically, when in a few cases St V's have changed their ablaut classes or Gmc. V's have come into view or the St V classes, the principle of reverse ablaut has to our knowledge never been seen to apply. On the contrary, as pointed out in our discussion of the rule of ablaut (1.1.1 in chapter 2), whenever St V's have changed their classes as the result of phonological change, the resultant newly formed present-tense vowel has invariably been considered the basic one and the ablaut rule has applied to this vowel to become the basic vowel of the present. (Go. examples of this phenomenon are given in our discussion of rule 1.1.1.)

And to cite an example mentioned by van Coetsen (1956:99), the OF seventh-class verb falls 'fall' came into the sixth class as falls, fell, fallen after the pattern of verbs like barn, form, formo. The verb did not become reverse ablaut falls. *fall on the reverse pattern of a third-class verb like Pat wael, Pre swelina 'dwell'. Similarly, when in some German dialects the originally Gmc. V fragan, fraga 'ask' became strong, it followed the model of sixth-class verbs like fragan. True 'carry' to become fragen, fraga. It did not follow a reverse-ablaut pattern to become fragen, fraug. *Frag a la Pat set, fraug set 'give'.

3.2. A Solution

In view of the generally unsatisfactory nature of all the previous accounts,20 an alternative explanation is needed. We shall attempt this in the following.

3.2.1. The Gothic Situation

The rule for reduplication in Gothic (rule 1.2.2 in chapter 2) is fairly straightforward. We repeat it here informally for convenience of reference:

L. 1.2.2. Reduplication

St V's of the seventh class (i.e., V's meeting the WS conditions set out in our formulation of 1.2.2) in all Pat forms except the participle reduplicate by prefixing */e/ to the V root. If the root begins with a single consonant—either sonorant or obstruent—that consonant is reduplicated before the prefixed */e/. If the V root begins with a consonant cluster, that cluster is reduplicated before */e/, but without any sonorant consonants which may have occurred in it.

To see examples from the preceding chapter, alien 'friend' vs. alnon */aln/; falter 'command' vs. falhat */falh/; garason 'worry about' vs. garatrap */garatrap/; in which */ai/ is the derivative prefix and the reduplicative syllable */e/ is added directly to the root, frisian 'empt' vs. fearfrais */fearfris/; staldan 'get' vs. staldait */staldait/; staelaid. All V's like garason with the present-tense vowel */ai/ evince */ei*/*/ai*/ ablaut by rule 1.1.1 (part B) except slescan 'sleep', Pat sailes.

We have already given a number of reasons in our discussion of the reduplication rule 1.2.2 in chapter 2 for assuming that the stress rule 1.1.10 stressed the root, not the reduplicative prefix of reduplicative V's. Also as mentioned in our discussion of 1.2.2, there is evidence in that in the immediately Pre-G. — i.e., the Gmc. — period there were reduplicating V's and that the stress was also on the root vowel. To recapitulate this evidence, Faustovsky (1936:308) notes, "Auch im ost. ist der Typus siois-faunum nicht weiterhin in Ordnung." Denn wrg.
The Germanic and Northwest Germanic Situation

([vocalic] → [vocalic] [stress]
/
/# [vocalic], "Note: Verbal derivational prefixes, enclitic particles, or reduplicative prefixes from rule 1 above.

(This is the Go. word-stress rule 1.1.10.)

4. The rule of /es/-to-oi/ ablaut, with the possibility of /es/-to-ei/ ablaut. This rule probably applied only to a subset of those Y's with the root vowel /ei/, /oi/. (This rule is reflected in part B of the Go. ablaut rule 1.1.1.)

Concerning rule 2 in GF, the only early attestations of this are the Go. forms saiMep noted above. While it is of course possible that GMC forms like /feaklip/ "folded", /peaMip/ "loved", /peamip/ "commanded", /behait/ "may have occurred, the only hard evidence available -- namely Go. saiMep -- suggests that by late GMC, or early NWGMC, times Verner's Law had ceased applying to the root-initial consonants of Y's except optionally to a few of them beginning with /b/ followed by a vowel or sonorant consonant. Of course, Verner's Law doubtless did continue to apply in a number of instances to the root-final consonants of Y's, e.g., /bashan/ "hang" vs. /behan/. This, however, need not concern us here.

As we have formulated them, the rules in GF are unordered. An alternative way of formulating the word-stress rule 3 would be to make no mention of the reduplicative prefix, but to assume the order rule 3-rule 1. Then the derivation of a Pat form like /behait/ would be /hai(3) (1) /behai(-t/). Some illustrative output of GMC, or early NWGMC, forms as derived by the rules of GF, given immediately below. We cite only the Pat Inf and Pat Sg forms. The vowel of the Pat Pl is the same as that of the Pat Sg; and that of the Pat Pat is the same as the vowel of the Inf."

GF'. Some output of GF:
1. /aikan/ "assert" vs. /aik/ 2. /alan/ "become old" vs. /alan/ 3. possibly /arau/ "plow" vs. /râu/ 4. /sakan/ "increase" vs. /sak/ 5. /buan/ "dwell" vs. /blian/ 6. /hautan/ "best" vs. /hautan/ 7. /bloian/ "bloom" vs. /blian/ 8. /biotan/ "honor"
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11. In Old High German, these verbs tend to fall into the same two classes as the first two given for Old English. (1) Verbs with the root vowels /i/ in the forms under GF, /j/ (from /e}/ in the forms under GF), or /e}/ (from /ai/), and with the root vowel to /ät/ (later becoming /o}/ and /e}/), e.g., *blosan 'run' (from /bluasan/) vs. *bleo, *skeppian 'cut' vs. *skreoti, *brusan 'call' vs. *brei. (3) As in Old English, there are in addition to these two classes the following remnants of reduplication. As we shall see, the reflex in Old High German is the Old High German root form, *run, *brusan 'call' vs. *brei. In Old English, the root vowel to /ät/ (later becoming /o}/ and /e}/), e.g., *blosan 'run' (from /bluasan/) vs. *bleo, *skeppian 'cut' vs. *skreoti, *brusan 'call' vs. *brei.

The earliest attested NWGmc. reduplicated forms:

1. In Old English, most such verbs form their nonparticipial Past in two ways: the MS of /e}/ (from /ee}/) or /e}/ (from /ee}/) change the root vowel to /ät/ (later becoming /o}/ and /e}/), e.g., *blosan 'run' (from /bluasan/) vs. *bleo, *skeppian 'cut' vs. *skreoti, *brusan 'call' vs. *brei. (3) As in Old English, there are in addition to these two classes the following remnants of reduplication. As we shall see, the reflex in Old High German is the Old High German root form, *run, *brusan 'call' vs. *brei. In Old English, the root vowel to /ät/ (later becoming /o}/ and /e}/), e.g., *blosan 'run' (from /bluasan/) vs. *bleo, *skeppian 'cut' vs. *skreoti, *brusan 'call' vs. *brei.

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III. In Old Saxon, two classes of these verbs appear which correspond to classes 1 and 2 of Old English and Old High German. (1) Verbs with the root vowel /a/ or /æ/ change the root vowel to /a/ (also written e), later becoming /e/. E.g., baldan ‘hold’ vs. hildan ‘hit’ vs. hit or hiti, hildan ‘hit’ vs. hit or hiti. Verbs of this class with the MS of C, + /æ/ or /e/ or /o/ or /æ/ may optionally, apparently from the earliest attested OS times, change the root vowel to short /æ/ instead of long /æ/ or /e/. (2) Verbs with the root vowel /o/ (from NWGmc. /au/ and written o), or /e/ (later /æ/), e.g., blæban ‘blow’ vs. bleban ‘behold’, bræban ‘behold’, kæban ‘call’ vs. keban ‘behold’, one verb with the syllabic nucleus /au/ and the MS still in /e/ is attested, hædan ‘hew’ vs. hædan ‘hew’. Here NWGmc. /au/ and /æ/ were retained instead of becoming /e/ and /æ/ because of the /ow/ of /æ/.

IV. The Old Norse classes 1a and 1b correspond to NWGmc. OS class 1, and ON class 3 corresponds to OS class 3 in that it develops from a remnant of reduplication, namely the /es/-/es/ infix mentioned above. (a) Verbs with the root vowel /a/ (from NWGmc. /æ/ or /e/ or /æ/ written æ), e.g., blæsa ‘blow’ vs. blesa, hætta ‘command’ vs. hetta. One verb of this class has the PS vowel /e/ or /æ/, which may be an instance of the NA ‘catch’ (from /æ/). (b) Verbs with the MS of C, /æ/ or /e/ or /æ/, change the root vowel to /æ/ or /e/. (c) Verbs with the root vowel /au/ or /Æ/ or /e/ with the MS of C, /æ/ or /e/ with Holtzmann’s Law change the root vowel or /æveys/ to /øys/ (from NWGmc. /æ/ and written ø). E.g., blæsan ‘run’ vs. bilæsan ‘run’, bæl ‘live’ vs. Pat. Sg. bæl vs. Pat. PI. bislegan (as a regular ON development from /bælen/). (d) Verbs with the MS of C, /æ/ or /e/ or /æ/ or /e/ or /æ/ may also form the PI PS with /æ/ as in fælgan and hisleg. (e) Verbs with the root vowel /æ/ or /e/ or /æ/ with the MS of C, /æ/ or /e/ with Holtzmann’s Law change the root vowel or /æveys/ to /øys/ (from NWGmc. /æ/ and written ø). E.g., bilæsan ‘run’ vs. bilæslegan, bæl ‘live’ vs. Pat. Sg. bæl vs. Pat. PI. bislegan (as a regular ON development from /bælen/). 

The Germanic and Northwest Germanic Situation. In that, change between two stages of a language may be viewed in terms of at least three relations obtaining.
between an earlier grammar and its output as opposed to a later grammar and its output. Relation 1 in R is that between an earlier output and a later one. Traditional "sound laws" of the kind alluded to by Lehmann such as "Luhn's Law" have usually been formulated in these terms. Relation 2, which has in recent years received some attention, is that between the configuration of an earlier grammar as a whole and that of a later one. In describing change in terms of this kind of relation, one tends to speak of rules of extension, rule expansion, rule reordering, rule simplification, and the like. Finally, relation 3 has as yet received comparatively scant attention in the literature. It has to do with how the output of a grammar at an earlier stage is reanalyzed by speakers at a succeeding stage when they are in the process of constructing the rules of their own grammar. In the following we shall be concerned exclusively with relations of type 2 and 3.

The first of the series of changes in grammar GF, involved a relation of type 2. This was a change in the stress rule 3 of GF. After this change the stress was placed on the reduplicative syllable instead of the root vowel of reduplicating verbs. Mehl (1971:97) gives a remotely similar account: "Im Grund [for the NWGmc. changes at issue here] liegt in den Übergang vom beweglichen zum festen, an die Anfangsilbe des Wortes gebundenen Akzent." (Original italicized.) However, Mehl also notes the Go. stress as having been located on the reduplicative syllable, which was not the case.

This change in the NWGmc. stress rule was to be expected. Already in Old Gothic the reduplicating prefix as opposed to other kinds of the prefixes like /bi-/ or /pa-/ must have been felt to be more closely bound to and in integral part of the V root. This is indicated by the fact that the insertion of particles like /u(h)/ and /p/ occurs freely between prefix like /bi-/ or /pa-/ and the V root, while such particle insertion between the reduplicative prefix and the V root never occurs. E.g., ga-pau-laubadast and ga-pau-su-lau-badast "believe", but never *sai-u-tok* "touched" or *sai-pau-sel* "slept". Since the reduplicative syllable was considered part of the V root, a shift of stress onto that syllable was really a matter of time.

Formally, this change may be accounted for in at least two ways. It may be considered either a reordering in an original sequence of stress rule 3 (minus the proviso about reduplicative syllables) → reduplicative rule 1 to the new sequence, reduplicative rule 1 → reduplicative rule 3. Thus the earlier derivation would be /hald/ "held" (3) → /hald/ (2) → /hald/ and the new derivation /hald/ → /hald/. Or, the change may also be described as a simplification, i.e., an expansion in the domain of the stress rule 3 in that the proviso "Nuts reduplicative prefixes from rule 1 above." was deleted.

After this change, the resulting new grammar GF 5 was as follows:

GF 2. The same as GF, except that the proviso "or reduplicative prefixes from rule 1 above." is deleted from rule 3.

And the output of GF 5 would be this:

GF 5. The same as GF, above except that the Pat forms are stressed on the reduplicative syllable, e.g. l. /kalt/ 2. /galb/ 3. /tehu/ 15. /hval/ 16. /hvalaup/ 22. /sælt/ /sælt/. /sælt:/ or /sælt/ etc.

Many of the subsequent changes in GF 5 must now be viewed in the light of relation 3 in figure R above - that is, in terms of how the forms under GF 5 above were reanalyzed and reinterpreted by succeeding generations of speakers. The principal and immediate effect of this shift in stress was the reinterpretation of the former reduplicating prefix as the onset of the verbal root and the remaining segments as some sort of internal modification of that root. This reanalysis has been posited by others, e.g. by Mehl (1971:99), "Bewegung der Anfangsilbe - Signalierung des Wortanfanges..." and by Bech (1969:19), "Indem die reduplikierende Bildung des Prov. als Infikation aufgefaßt wird, erscheint sie als eine Konjugation durch flektive Mittel in Inneren des Verbalstammes von ähnlicher Art wie die allatende Flexion der nicht reduplikierenden starken Verbalklassen." Under this reanalysis of the forms under GF 5, speakers would now have to deduce the following grammatical rules for the production of these forms:

GF 5. To form the nonparticipial Pat of 7th-class ST V's (i.e., those ST V's meeting the MS conditions set out in footnote 26)

1. Root vowel → /#/ + root vowel

2. For verbs with the MS of #Vowel + C, #Vowel + C, – i.e., verbs whose roots begin with the root vowel and end in a single consonant or consonant cluster.

This rule applies in the derivation of forms 1 to 5 above, whereas for the forms under GF 5, but with the "stress on the reduplicative syllable."
derivation of forms 5 to 28 under GF₂ ( = GF₁²).

2a. Root vowel → /a/.

2b. Copy into the verbal root immediately after the root vowel (/a/ by rule 2a) the morpheme-initial consonant(s)
of the root.

2c. Insert the original Past-tense root vowel into the root after the Past-tense root vowel (/a/ by rule 2a) and immediately after the morpheme-initial consonants (inserted by 2b).

3. Delete sonorant consonants occurring in morpheme-initial consonant clusters after obstruents. Rule 3 applies in the derivation of forms 7, 9, 13, 17, 23, 24, and 25 under GF₂ ( = GF₁²).

4. If the consonants inserted by 2b are /m/ or /n/ → /l/, m, n, r, change the /a/ to /e/. Rule 4 applies, perhaps optionally, in the derivation of forms 22, 24, and 25 under GF₂ ( = GF₁²).

5. The stress rule is as under GF₁, (and without the proviso excluding reduplicative prefixes).

6. The ablaut rule: The original Past-tense vowel /e/ (inserted in Past-tense forms by rule 2c) is changed in some verbs to /o/.

Rules 1, 2a, 2b, and 2c in GF₁ correspond to rules 1 and 2 in GF₂, and GF₁. Rules 3 and 4 in GF₁ are rule 2 in GF₂, and GF₁. Rule 5 in GF₁ is basically rule 3 in GF₂, and GF₁.

An 8 rule in GF₃, rule 2 in GF₂, and GF₁, (the reflex of Verner's Law — which need not concern us any further here) applies in the derivation of a few forms like /jefan/ 'catch' vs. Past /jefang/.

Some examples of derivations by the rules of GF₂ are these: (1) /se/ske/ 'assert' (1) → /se/ske/ (5) → /se/ske/ (11) /greq/ 'grow' (2a) → /greq/ (2b) → /greq/ (2c) → /greq/ (3) → /greq/ (5) → /greq/ (11) /hait/ 'comand' (2a) → /hait/ (2b) → /hait/ (2c) → /hait/ (5) → /hait/ (11) /slep/ 'sleep' (2a) → /slep/ (2b) → /slep/ (2c) → /slep/ (3) → /slep/ (4) → /slep/ (5) → /slep/ (11) /jefan/ 'sow' (2a) → /jefan/ (2b) → /jefan/ (2c) → /jefan/ (3) → /jefan/ (4) → /jefan/ (5) → /jefan/ (11).

The environment of rule 4 was soon generalized by a number of speakers to insert /e/ not just after one initial consonant (C₁), but after the initial consonant cluster (C₂). This type of insertion is indicated by the occurrence of forms like /gj-er-a/, and other gl-er-um groups 'asorized', not 'g-er-um', as cited under M above. For some speakers rule consonant clusters beginning with /a/ and followed by /l/, /m, n, r/, but to clusters beginning with any consonant followed by /l/, /m, n, r/.

The grammar GF₂, with rules 2a and 4, was also ripe for some other changes in that certain of its rules proved to be tenacious while others were ephemeral and soon dropped from the grammar. Two of the tenacious rules were 1 (root vowel → /e/ - root vowel) and 2a (root vowel → /e/). These rules were retained probably because of their similarity in form and function to the WDNC ablaut rules (cf. So. rule 1.1.1 in chapter 2). Two other tenacious
rules in GF² were 2b which inserted the root-initial consonant(s) into the root and rule 4b of /es/-insertion. These rules had analogues in the NWGmc. grammar and thus constituted grammatical processes familiar to NWGmc. speakers. For example, an already existing rule of consonant insertion into a root was that of /u/-insertion for the Pre and Pat Pre of /sta/ 'stand' as in the Ind. /stand/ vs. the Pat /stād/ (cf. the Go, rule 1.2.5 in chapter 2). This could of course also be considered a rule of /n/-deletion. But the point is that there existed in NW Germanic morphemic alternates with and without specific morpheme-internal phonological material, so rules like 2b and 4b which inserted such material would not have seemed unduly bizarre.

On the other hand, rules like 2c and 3 in GF² had no analogues in the grammar of NW Germanic (nor in Gothic). Rule 2c required for the Pat the re-insertion into an unstressed position within the root of the original stressed vowel of the Pre, a vowel which had already been "ablauted" by rules 1 or 2a. And rule 3 deleted sonorant consonants morpheme-initially after obstruents. There are no rules like these in Gothic and were doubtless none in NW Germanic. Hence these rules were exotic in the extreme and gradually dropped from GF³.

By "gradually" we mean that rules 2c and 3 became at first optional so that for a time two kinds of Pat formations like /haimi/ 'coming' with 2c in its derivational history as well as /haim/ without, it occurred. On forms like sera 'sowed' from NWGmc. /ser-a-ti/ indicate that before the final loss of rule 2c, verbs with the MS of ## a - vowel # (i.e., verbs whose roots terminated in the root vowel) were susceptible of reanalysis. Since most of these verbs had /es/ or /ei/ as the root vowel, these vowels tended while rule 2c was still in the grammar to be interpreted as Pat-tense /es/ or i- / = /he/ = Pat Wx ending and /bieblo/ (earlier /bibi/ /bieblo/ 'bloomed' as /bie/ = Pat Wx ending. This unstressed and word-final /es/ or /e/ became /a/ through normal NWGmc. phonological change. This accounts for the development of Go class 3 under Wx above with Pat forms like sera conjugated as Wx V's and also for the occurrence of OE blīfia 'blown' noted in footnotes 30 above. The form /bieblo/ was realized as /bieblo/ by the NWGmc. correspondent of Go, rule 2.2.2 whereby voiced obstruent consonants were realized as continuants after vowels and as stops elsewhere. Hence /bieblo/ = /bieblo/ becomes OE /bīfia/ or perhaps /bīfia/ /written bīfia/.

After these changes, grammar GF² had become the following:

GF². To form the nonparticipial Pat of 7th-class St V's:
1. Root vowel ⇒ /a/ + root vowel
   /for verbs with the MS of ## vowel = C₁ #/
   (The same rule as in GF₁.)
2. The rules under 2 apply to verbs with the MS of ## vowel = C₁ #, where C₁ is not /a/ or /æ/ + /l, m, n, r, y/.
   2a. Root vowel ⇒ /es/. (The same rule as in GF₁.)
   2b. Copy into the verbal root immediately after the root vowel (/es/ by rule 2a) the morpheme-initial consonants of the root. (The same rule as in GF₁.)
   2c. #. (The rule inserting the Pre-tense vowel into the Pat form is being lost or is completely lost.)
   3. #. (The rule deleting sonorant consonants morpheme-initially is being lost or is completely lost.)
4. Insert /ez/ into the root after the initial consonant(s) / for verbs with the MS of ## /es/ + optionally /l, m, n, r, y/ + vowel + C₀ #/
5. The stress rule. (The same rule as in GF₁.)
6. #. (The ablaut rule applying to vowels inserted by rule 2c, which is lost, is also lost.)

In considering the changes in GF² we must turn to some recent work by Shlitan (1973) and by Cooley (1975), who have investigated the role played by so-called "surface phonetic constraints" (hereafter SPC) in phonological change. The following remarks of Shlitan (pp. 85, 95, and 104, respectively) will concern us here:

...SPC's state possible and impossible combinations of phonetic features at the phonetic level...

My claim is that there is a single structure, and that it is the SPC's of a language upon which a native speaker bases his judgment when confronted with a non-native word. The procedure for determining the well-formedness of a given non-native word is quite simple. The word is checked against all the SPC's of a language, and unless it conflicts with any SPC, the word is judged to be possible.

Many phonological rules have the function of recollating a phonetically unperturbed sequence of segments.
created by affixation etc., with what is compatible with SPF's.

The observation that SPF's — or something like them — can trigger phonological changes is not new. Luick, for example, in treating the changes in Eng. consonant clusters caused by the reanalysis of nominal compounds, notes the following (1964:965–6):

Besonders starke Konsonantenübergänge in einer ur-
sprünglichen Kompositaet treten dann auf, wenn
erste Zelle des Kompositums selbst ein Kompositum
war, also in Vergleichen von der Form (a + b) c, und wenn das Gefühl für die Komposition schwand.

Dann wurde der ursprüngliche Nebenton auf b zu voll-
kommener Tonlosigkeit reduziert, war...nur Folge
hätte, da die Vokale dieses Gliedes ausfielen.

Wieder wurde die nun entstehende Konsonantengruppe
reduziert, bis eine geläufige Folge oder nur ein
Konsonant übrigblieb. (Emphasis supplied)

There are numerous instances of such change attested in Germanic. Luick (op. cit.) mentions the development of OE halfrungword ‘half-pennyworth’ as being to ‘half-worth to halfporth to halporth /epsppt/.

A number of English place names exhibit a similar development as Alscot from Alvescot, Ardsley from Barwick-le-eham, and Buccest from Burgwardeiscot. Another such change which occurred independently in a number of Gmc. languages is the development of the word wap. The word was originally /wef-s-/ or /wef-s-/ a derivative morpheme (probably the same as the Gmc. /wep/). In section 2.1 of chapter 2, the /-a/- the inflectional ending, and the root /wep/- from /wep/ was no longer perceived as a derivative suffix, the morpheme boundary between /-e/- and /w/ was lost and the form was reanalyzed as /wef-s-/ or /wep-s-. But there existed in these languages no morphemes with the MS NG /# C _ + vowel + /e/- + /u/- or of /# C _ + vowel + /vowel + /u/- + /u/ /# which constituted an acceptable MS in these languages was to permute the /u/- and the /vowel/ and to make /vowel /u/- a stop. This resulted in Eng. wap and independently Nwsc. wisp with the MS /# C _ + vowel + /vowel + /vowel /# as in words like lip.

What seems to occur in change of this kind is essentially a threefold process. First, a morpheme boundary of some sort, say that between the elements of a compound or between a stem and a derivative morpheme, is lost so that the resultant form is consider nonmorphemic. Second, the new morpheme is subject to the SPF's of the language. Third, this entails either the deletion of segments on their change into an acceptable cluster as Luick puts it, “eine geläufige Folge”. When change occurs under these circumstances, there invariably seems to be a sort of sim-

plicity criterion involved in that the new sequence is formed from the older one by changing the fewest features possible to fit it into the SPF's of the language. Hence in the example of wap given above, the permuted sequence /-e/- was changed to /-u/- and not, say, to /vowel/, although morphemes with the structure /# C _ + vowel + /vowel + /u/- + /u/ /# (fast, etc.) did of course occur in these languages. Fi-

nally, we note parenthetically that the effect of the SPF's on the phonological level is analogous to that of so-called “popular etymology” on the lexical level. In change of this kind, unfamiliar lexical items are replaced by the phonologically closest extant lexical items already present in the language, e.g., in some Eng. dialects sparrow-grass from sparrow, Standard Eng. gooseberry from gross-erry, and Nwsc. Seanhund ‘seal’, i.e., ‘sea-dog’ from earlier Seanhund ‘sea-dog’.

Such SPF's affected a number of changes in Gmc. One of these resulted from the gradual loss of rule 2b. This loss meant that some unusual consonant clusters would be produced, e.g., the Pat of /epsppt/ ‘spit’ (2a) — /epsppt/ (2b) — /epsppt/ to which 2c would not apply to derive */epsppt/. But forms like /epsppt/ are not attested All the attested NWmc. remnants of reduplication given under N above are congruent with the SPF's of their respective languages. Hence OE being ‘commanded’ has the structure /# C _ + vowel + /vowel + /vowel + /u/- or /vowel + /vowel + /vowel + /u/- /#. The closest approximations to /# C _ + vowel + /vowel + /vowel + /u/- or /vowel + /vowel + /vowel + /u/- /# which constituted an acceptable MS in these languages was to permute the /vowel/- and the /vowel/- and to make /vowel /vowel + /vowel + /vowel /# which occurred because there were no Gmc. morphemes with the MS of /# C _ + vowel + /vowel + /vowel + /vowel + /vowel + /vowel + /vowel /#. And indeed no native Gmc. words in Old English with the MS /# C _ + vowel + /vowel + /vowel + /vowel + /vowel + /vowel + /vowel /#.

But the phonologically nearest possible structure was /# C _ + vowel + /vowel + /vowel + /vowel /# as in OE soft ‘air’. Hence the un-

accepted clusters resulting from 2b were engulfed either by being changed to agree with the NWmc. SPF's or by being deleted in their entirety. This latter change meant in effect that rule 2b gradually ceased applying.

At this juncture there were then three rules in the grammar for forming the Pat of these verbs and Gmc. had be-

come the following:
To form the nonparticipial Pat of 7th-class St V's:
1. Root vowel → /a/ + root vowel
   / for verbs with the MS of # vowel + C₁ #.
2. Root vowel → /a/
   / for verbs with the MS of # C₁ + vowel + C₂, # where C₁ is not /a/ or /o/ + /1, m, n, r/. The root-initial cluster C₁ may be optionally inserted into the verb after the root vowel /a/, but the resulting cluster is subject to the SPC's of the language.
3. Insert /er/ (from earlier /e/ after the root-initial consonant (or consonant)
   / for verbs with the MS of # /l + optionally /l, m, n, r/ + vowel + C₂ #.

Rule 1 in GF₅ is the same as rule 1 in GF₅, rule 2 in GF₅ corresponds to rules 2, 2a, and 2b in GF₅, and rule 3 in GF₅ is essentially the same as rule 4 in GF₅. (The stress rule 5 in GF₅ still applies in GF₅, but this rule need no longer concern us here.)

The NMGmc. forms given under M above indicate that the three rules in GF₅ were in effect competing with one another. For example, the OHG OE, and ON forms with the reflex of /er/ indicate that rule 3 tended in time to apply to more verbs than it does in GF₅. The ON version of the rule inserts /er/ not only if the initial consonant cluster begins with /l/ (followed optionally by /l, m, n, r/), but if the cluster begins with any other consonant as well. The ON rule has also extended its domain to apply to a St V meeting the MS conditions of rule 3, but not originally in class 7, namely to the 'hit' (Pat skera), a 6th-class verb.

Through the same process of expanding the original MS conditions, rule 1 in GF₅ expanded its domain to apply to verbs with the MS of # C₁ + vowel + C₂, # — that is, to verbs whose roots begin with consonants, not only those beginning with vowels. This expansion was doubtless facilitated by the fact that the addition of prefixes to verbs was common in Germanic. If the prefix ended in a vowel and the root verb began with a vowel or a sonorant consonant, the vowel of the prefix was often elided, e.g., Go. brōnamn 'rub' from /bl-nun/, Go. first 'ate' from /br-a-et/ by the Go. rule of vowel deletion (§2.1.2 in chapter 2), likewise ON give 'rub' from /ga-nun/. Hence a reduplicating verb like /aljan/ 'become old' could easily be formed from the prefix /al-/ and the verb /aljan/.

The Pat would have originally been /ga-esalp/, then by elision of the prefixed vowel, /gaalp/. Finally, the /e/ in /gaalp/ was no longer interpreted as a prefix, but rather as part of the verb root. Hence the way was free for rule 1 in GF₅ to apply to verb roots beginning with consonants.

In the initial stages of this expansion, rule 1 very probably applied obligatorily to verbs with the MS # vowel + C₁, # and optionally to those with the MS # C₀, vowel + C₂ #. In any event, rule 1 in GF₅ could now produce the following output:

1. /aljan/ 'assert' → /aljak/.
2. /aljan/ 'become old' → Pat /esalp/.
3. /aljan/ 'increase' → /esalk/.
4. /blotan/ 'honor' → Pat /blesot/.
5. /bluan/ 'live' → Pat /bles/.
6. /bluan/ 'command' → Pat /bles/.
7. /lestan/ 'let' → /lestat/.
8. /skraudan/ 'cut' → Pat /skreald/.
9. /staldan/ 'gain' → Pat /staid/.

These Pat forms under GF₅ are all susceptible to change since they are not in accord with the SPC's of NW Germanic. For one thing, the vocalic nuclei of these forms do not occur among the vowels or diphthongs of Germanic (and early NW Germanic) as given under I above. For another, the Pat forms 1, 3, 4, and 8 under GF₅ have either /a/ or /au/ in unstressed position. As indicated in section 2.3 above (see also footnote 13), there must have been by early NMGmc., times a monophthongization of unstressed /ai, au, to /a, o/. Thus Pat forms like /haai/ and /skreald/ cited above were soon realized as /heai/ and /skreald/. Whether this was the result of the NMGmc. SPC or of some sort of "persistent" phonological rule of the language is immaterial. The point is that such change is plausible and inevitable. We may assume then that the affected Pat-tense forms under GF₅ were soon realized as (1) /esalk/ (2) /esalk/ (6) /heai/ and (8) /skreald/.

This makes the inventory of vowel nuclei in the Pat-tense forms under GF₅ to be /a, e, e, o, eu, /u/. Now there is some disagreement in the literature as to just what diphthongs NW Germanic might have had. Because of his views on unstressed noted above, Antonsen (1965:3) posits the most of any source, /ai, ai, ao, au, er, eu/. Some of
the handbooks mentioned in footnote 27 above posit /ai, au,
 eo, eu, iu/. And other of the handbooks (as well as the
 present writer under 1 above) consider the diphthongs in
 late Germanic and early NW Germanic to have been /ai, au,
eu/. We may assume that the new diphthongs /ea, ei, eo,
eu/ in the Pat forms under GP61 were soon realized accord-
ing to the SPC's of NW Germanic, i.e., according to the in-
ventory of long vowels, short vowels, and diphthongs already
in the language (as given under 1 above). We may further
assume that these new diphthongs were transformed to their
phonologically closest counterparts by changing as few fea-
tures as possible. (This type of change is well attested.
In appendix 2 to this chapter we give some instances of
vocalic changes of precisely this type from various NWGmc,
languages.) For our purposes here, it is immaterial whether
early NW Germanic had the large number of diphthongs
posited by Antonsen or, as we deem likely, only /ai, au,
eu/.
If the latter, then the new vocalic nuc. /eo, eu/ in Pat forms like
/bloert/ 'honored' and /beur/ 'lived' would both have been reanalysed most economically as /eu —
/bluert/ and /beur/. Then this /eu/ would have been variously
realised as /eo, eu, iu/ depending on the rules of the
various NWGmc. languages into which it was inherited. (If,
the other hand, the diphthong inventory was as broad as
that envisioned by Antonsen, then /eo/ would have been
reanalysed as /eo/ and /eu/ as /eu/. Then these /eo/ and
/eu/ would have been variously realised as /eo, eu,
iu/, again depending on the rules of the various NWGmc.
languages into which they were inherited.)

This account still leaves the new diphthongs /ea/ as
in /ealy/ 'became old' and /ee/ as in /leest/ 'let' unsim-
lised into the early NWGmc. vowel system under 1. It
seems likely that by this time the early NWGmc. rules given
above, K7 /ei/ → /ai/ unless followed by
/l/ and K5 /ei/ → /ai/, had applied to the vowels
under 1. Under these circumstances /ee/ was interpreted
most economically as /ee/. Similarly, /ee/ was also reana-
lysed as /ee/. This is not implausible if the long vowel
/ee/ is seen similar to a sequence of two short ones,
/ee/. Then the difference between /ee/ and /ee/ ( = /ei/)
in two features, /ei/ differing from /ee/ by low and tense.
(A possible competitor might have been /ei/ → /ei/, which
differs from /ee/ by the same two features. The fact that
the /ei/ in /ee/ was stressed may well have influenced the
choice of /ee/ as its representative. And the fact that
/ee/ was the obvious choice to represent /ee/ may also
have contributed to the choice of /ee/ to represent /ee/.)

After the new vocalic nuc. /ea, ee, eo, eu, iu/ had been
reanalysed in terms of the SPC's of NW Germanic as /ea, ee,
eo, eu, iu/ respectively, and after the expansion of rule 1 in

GP6 to apply to verbs whose roots began with consonants,
the new grammar looked like this:

GP6. To form the nonparticipial Pat of 7th-class St V's:
1. Root vowel of /a, a, a, or a (from /e/)
   /a/ ( /e/ ) / for verbs with the MS of # C0 + vowel
   /eu/ ( /e/ ) / for verbs with the MS of # C0 + vowel
   + C0 #.

   (For rules 1 and 2, the following conditions prevail:
   (1) The root-initial consonant cluster cannot be /a/
or /a/ → /a/, m, n, r/. (2) The root-initial consonant
   cluster may be optionally inserted into the verb after
   the root vowel of the Pat /a, a, eu, u/ but the result-
ing cluster is subject to the SPC's of the language.)

2. Root vowel → /a/
   / for verbs with the MS of # C0 + vowel + C0 #.

   (For rules 1 and 2, the following conditions prevail:
   (1) The root-initial consonant cluster cannot be /a/
or /a/ → /a/, m, n, r/. (2) The root-initial consonant
   cluster may be optionally inserted into the verb after
   the root vowel of the Pat /a, a, eu, u/ but the result-
ing cluster is subject to the SPC's of the language.)

3. Insert /e/, /e/ after the root-initial consonants
   / for verbs with the MS of # /a/ ( + optionally /l,
   m, n, r/) → vowel + C0 #.

The Pat forms produced by GP6 were generally the same
as those of GP5 except the output of rule 1 given under
GP51 above was now this:

GP51. Output of rule 1 in GP6:
1. Pat /eik/ 'asserted' instead of /eik/.
2. Pat /edib/ 'became old' instead of /edib/.
3. Pat /é/ 'increased' instead of /euk/.
4. Pat /bluer/ 'honored' instead of /bluer/.
5. Pat /beir/ 'lives' instead of /beur/.
6. Pat /héirt/ 'commanded' instead of /hèirt/.
7. Pat /léit/ 'let' instead of /léit/.
9. Pat /ståid/ 'gained' instead of /ståid/.

It will be noted that rules 1 and 2 in GP6 could at
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this point apply to the same verbs and were in effect in competition with each other. Note the other non-
reversing St V's all tended to form their Pat tenses on the basis of the MS of the particular verb. This can be clearly seen in the Go. ablaut rule (3.1.1.1, p. 41) in chapter 2, where the verbs undergo various vowel alternations contingent upon the MS of the verbal root — whether or not the root vowel is followed by one and only one consonant, by a soro-
ant consonant, etc. (It is thus not necessary to state the ablaut rule in morphological terms like 1st-class St V, 2nd-class St V, etc.) The Go. reduplication rule (1.2.7) is similar in that its application to particular St V's can also be stated purely in terms of their MS. We can assume that this was also the situation in Germanic and in early NW Germanic.

It was thus quite natural for speakers to sort out the domains of rules 1 and 2 in GoP, in terms of the MS of the verbs involved. Now a MS consisting of a long root vowel or a diphthong followed by more than a single consonant was unusual for Gothic, Germanic, and NW Germanic. In fact, it was impossible at this early stage for any St V and there are consequently none attested with the MS of ##...long vowel C1 C2 ###, e.g., the Pat of /bindan/ 'tie' was /band/, /hundan/ not */banda/, */bondan/, or the like. Since the output of rule 1 in GoP, was a long vowel or a diphthong, it tended for this reason to apply to verbs whose roots ended in not more than a single consonant, i.e., to verbs with the MS of ## C1 C2 ### vowel + CV or GO CV C2 of the same reason and to avoid a structure like ## C1 C2 ###, long vowel or diph-
thong + C1 ###, condition (ii) in GoP, for the insertion of the root-initial consonantal into the root tended to be dropped from rule 1.) Conversely, rule 2 in GoP, which changed the root vowel to short /a/ tended to apply to verbs with the MS complementary to that of rule 1; namely to ## C1 C2 ### or verbs whose roots ended in at least two consonants:

After these readjustments, the grammar GoP, while not completely stabilized, reflects in the main the situation in the attested NWGmc. languages given under M above. As for ML, the OE classes 1 and 2 reflect rules 1 and 2 in GoP. Only a few OE verbs whose roots end in two consonants still form the Pat by rule 1 and the rest by rule 2. Some OE verbs with two root-final con-
sonants form their Pat in a diphthong which arises from /a/ as the result of OS brekking, e.g., fael /feil/ /feild/ 'folded' from /feald/. Otherwise the OE Pat-tense vowels reflect more or less directly those produced by GoP, e.g., beotan 'best' from /beutan/ vs. Pat beotan 'best' (OE class 3) has the remnants of the reduplication condition (ii) of rule 2 and those of /ar/> insertion by rule 3 in GoP. When reduplication occurs, the Pat vowel was probably short /a/ by rule 2, e.g., beot or

heit 'commanded'. Finally, the Pat of verbs with the root vowels /ai/ followed by /w/ may reflect ablaut, e.g., Prs. onevan 'know' from /onevan/ vs. Pat onean from /onean/. 45

M1. The ON classes 1 and 2 also follow rules 1 and 2 in GoP. As in Old English, a few verbs whose roots end in two consonants can still form the Pat by rule 1, e.g., geing 'went' as well as gieng by rule 2. Otherwise, the Pat-tense vowels of these verbs are those prescribed by GoP, e.g., Prs. hoprun 'run' from /hoprun/ vs. Pat bleft from /bleaf/.

MII. Finally, ON class 3 contains the remnants of /er/>-forms derived by an expanded version of rule 3 in GoP, a rule which is in the process of being dropped from the ON grammar.

MIII. The OS classes 1 and 2 are basically like the corresponding classes in Old High German in that they also follow rules 1 and 2 in GoP. As in Old High German and Old English, there are a few OS verbs whose roots end in two consonants but which can still form the Pat by rule 1, e.g., held 'held' from /haeld/ as well as the alternative Pat form held by rule 2. The reduplication provision i and ii of rules 1 and 2 as well as rule 3 in its entirety have been lost from the OS grammar.

MIV. The ON class 1a corresponds to rule 1 in GoP, class 1b to rule 2; class 2 corresponds also to rule 1 in GoP, and class 3 represents an extended version of rule 3 in GoP. The lone ON attestation of a verb with the root vowels /ai/ in the Prs forming its Pat in /ey/ (not the usual /i/ from NWGmc. /e/iy/) is blota 'sacrificie' vs. Pat bleot, not /blot/. This may go back to a NWGmc. form with ablaut /bleot/ (ablaut) — /bleot/ /bleot/ /bleot/ /bleot/, then by rule 1 in GoP, — /bleot/. On the other hand, bleot may represent an ON innovation in that the expected OS Pat /bleot/ from NWGmc. /bleot/ would have had the initial consonant sequence /blet/—, a sequence which seems to have been extremely rare in ON words.

MIV. Finally, the GO class 1 is a reflex of rule 1 in GoP. Class 2 is a reflex of rule 1 in GoP, as it applied to the Prs root vowels /æ/ a, a/. The part of rule 1 applying to /au, o/, /u/ to derive /ow/ as well as rule 3 in its entirety has been lost in Old Prisian. (The NWGmc. MS constraint inhibiting the sequence long vowel + C2 was also lost in Old Prisian through regular phonological change, e.g., haldn 'hold' from earlier /haldn/ where /a/ before /æ/ was lengthened.) The OP and ON Pat forms with /i/ such as ging 'went' probably result from later developments of /eng/ as derived by rule 2 in GoP.

3.3. Concluding Remarks

To sum up the preceding, we have argued that Gothic
and Germanic had reduplicating 7th-class St V's which developed into the NW Germ. *ablating* St V's of grammar GP_{2} above. In Gothic (and Germanic) the stress rule placed the accent on the root of the Pat forms of these verbs. The unstressed reduplicative prefix was thus felt by speakers to be just that, a prefix. But with the shift of the stress onto this prefix in NW Germanic, speakers began to reanalyze the former prefixal vowel as some sort of modification of the root. The subsequent changes in NW Germanic then followed quite naturally and as it were almost automatically. After this shift in stress, the subsequent sequence of developments as represented in GP_{2} to GP_{6} does not necessarily reflect the precise historical chronology of the changes depicted. We have described the stages GP_{2} to GP_{6} in order to show how the reduplicated forms of Pre-Germanic could through reasonable and attested types of change eventually become the ablating forms of NW Germanic. The grammars GP_{2} to GP_{6} are intended to illustrate the types of changes which must have occurred — rule expansion, rule loss, reanalysis, and the effect of the SPO's of NW Germanic.

Appendix 1

The following is a list of the reduplicating verbs of Germanic not given under GP_{6} above. Our enumeration of these verbs is based on Peith (1907:448–57), who reconstructed the Gmc. forms from 7th-class verbs attested in various Gmc. languages. Our enumeration differs slightly from Peith's: We do not include here /preidan/ 'dread' since the Gc verb develops from a reanalysis of a verb formed from the prefix /a/ and the verb /preidan/ ('21 in GP_{6}') to /a/ + /preidan/. We also exclude Peith's forms /buan/ and /gusan/, both meaning 'rub', since they develop from the prefixes /bi/ and /ga/ + the verb /munan/ (28 below). Some of our reconstructions differ from Peith's, e.g. /buan/ which Peith posits as buan, perhaps assuming that the Gc. rule of vowel lowering (22.6 in chapter 2) was Germanic. All reduplicating verbs with /a/ appear in later NW Germanic with /e/. Finally, a verb /apesian/ 'split' not included by Peith should probably be included in our listing.


Appendix 1
Appendix 2

Attested Changes Analogous to those Posited in 3.4.3

The first three changes given below were triggered by the loss of a morpheme boundary. This was followed by the reanalysis of the two resultantly adjacent vocalic segments as a single monomorphemic vocalic nucleus according to the SP's of the particular language involved. These three changes thus constitute attested instances of the type of change posited above whereby GF became GP 3. The fourth case involves the loss of a sequence of segments through the loss of a phonological rule. This change is therefore an attested instance of the type posited above whereby certain segments were lost through the deletion of rule 2c from grammar GF 3.

1. ON flize 'stall' is derived from an earlier compound /feu#hus/ 'animal house'. When the form ceased to be analyzed as a compound and the #/ was dropped, the /u/ between the vowels /eu/ and /u/ was automatically elided, which would have resulted in /feuus/. According to Noreen (1970:156-9), the diphthongal nucleus available in early Old Norse were /au, mi, ia, ia/, le, lo, lo, lu, lu, ly, lo, ia, ia/ /au, mir, u, ur, or, ib, ib, ib/ of the (perhaps exaggeratedly) large number of possibilities, the closest to the vowel nucleus of /feuus/ would seem to have been /u/ by two features, the length and height of the first segment. Hence /feuus/ was interpreted as /fluus/. Then by a phonological rule of Old Norse (cf. Noreen, pp. 81-2, 203, 206), /fu/ → /lo/ if followed by coronal consonants (as seen in the two 2nd-class St V's /kruus/ 'creep' or /kluus/ 'choose'). Hence /fluus/ was finally realized as /floos/ /fluos/.

2. The early OE form /blæst/ 'oath' from /bi/ /blæt/ came to be interpreted monomorphemically and the #/ was dropped. As in Old Norse, the /b/ in Old English was then automatically dropped, the resultant form being /blæt/. According to Siverson (1951:22-7), the diphthongal nucleus in early Old English were /ao, io, io, ia/, the existence of diphthongs with long initial vowels a matter of some dispute which we cannot ignore here. (The early OE diphthong /ao/ was from earlier /au/ and later became /æ/ or /a/, written ea.) The newly formed vowel nucleus in /blæt/ was considered closest to /lo/ in terms of binary features, /læ/ differs from both /lo/ and /læ/ by three each /læ/ # /lo/ by long, low, and round and /læ/ = /læ/ by long, low, and back). But in physiological terms, /læ/ was closer to /lo/ than to /læ/. The /æ/ was doubtless far back and close to /o/, while the /æ/ in /læ/ was probably high and close to /l/. Thus /blæst/ was reanalyzed as /blot/ /blot/ (later best in some areas through regular OE phonological change).

3. The ONG word for 'fire' was in its earliest attestation意义上 in the Vogyse (1178-1153) /fu-ir/. Here /fu/ (the ONG reflex of the OE, derivative suffix 31 /i/ in section 3.2 of chapter 2) is an inflectional suffix added to the oblique cases (i.e., all except the Nm or Ao Sc) of certain neuter nouns such as HnSk lamb 'lamb' vs. GnSk lemb-ir-es. In time the suffix /-ir/ came to be interpreted as part of the root /fu/, which is to say that /fu/ir/ was reanalyzed as monomorphic. At this time the ONG diphthongs were (with some minor dialectal variation) /au, ei, eo, iu/. The form /fu/ir/ was reinterpreted to contain the phonologically closest diphthong, which was of course /iu/, /fuir/. In ONS texts dating from the time of this change, e.g. the Italic, both older /fuir/ and newer /fuir/ occur in free variation. After the reformation to /fuir/, the later developments followed regular phonological change into Modern High German /fuir/ → MiHGH /fuir/ → MhNG Feuer.

4. In early Old High German there was a rule which inserted the same suffix /ir/ mentioned in the immediately preceding example between the root and the inflectional endings of certain neuter nouns in all cases except the Nm or Ao Sc, e.g. HnSk lamb 'lamb', GnSk lemb-ir-es. In later ONG times, this suffix was reinterpreted as a P marker. Thus the rule by which /ir/ was inserted into 5g forms was deleted from the grammar. At this time the GnSk lemb became lamb-ir-es instead of the earlier lemb-ir-es. It should be emphasized that this does not constitute phonological change in the usual sense in that elsewhere the phonological sequence /-ir/ was retained, e.g. in the comparative of adjectives such as altiro 'older', not *altiro. Thus the dropping of the rule of /ir/-insertion for the 5g forms of these neuter nouns occurred at the loss of certain phonological segments. It thus constitutes a change of the same type as that whereby rule 2c was dropped from grammar GF 3, as a result of which forms like *beal/ 'commanded' were produced instead of the earlier *beal-alt.
Footnotes to Chapter 3

1 One change, Holtmann's Law, was formerly thought to be a common Go-Ot innovation. According to this change, \textit{Gmc.} /a/ appears as Go. /a/ and Ot. /e/. These have later been shown to be independent changes as noted by Marchand (1973:87). *The fact that a Proto-Norse inscription (Bluvisa on the Vemland Breastplate of the 9th cent.) and a Finnish loan (Turku Picture, cf. Goth. :sggga) do not show this development of /a/ to /e/ indicates that it [Holtmann's Law] cannot have arisen during a period of Go-Norse unity, but that it is a separate development in Gothic and Norse..."

2 Our version of this rule and the illustrative examples are based on the material in the standard handbooks mentioned in the bibliography and on that in Lloyd (1961) and Reis (1974).

3 This fact has been remarked on frequently in the literature, e.g. Bremmer (1912:130) "Hsg. I lai nur in Ausnahmefallen, sonst einseitiggesohlich, zu s geworden..." Moultan (1961:6) "Norse [1970] furht nicht weniger als 25 solche Doppelungen [i.e., forms with both /a/ and /e/ as well as /a/, /e/ such as wolafa and wolafa 'wolf'] für das Anord. an..." Benedictsson (1967:190). "The schwa lowering of /a/ to /e/ occurs sporadically, though quite distinctly... The corresponding change of /a/ to /e/ is much more [though by no means completely] regular."

4 The philological evidence tends to support this contention: Lehmann (1961:71), "The oldest proper names preserved - a - in stressed syllables, even before vowels which subsequently became - i - and caused change of /i/ to /u/... Tacitus' Germania as compared with Old German... as compared with Old High German, German as compared with OE... Similar examples are Tacitus' Segismundus for later Sigmar and Segismundus for Sigmund..."

5 Of course, sources like Antones (1965:12-3) posit numerous unstressed allophonic variants so that /a/ = /ai, ae, wi, au/ and /a/ = /ai, au, ano, ay/. For essentially the same reasons as those given in section 2.2 of this chapter, we do not consider these allophones to have existed in Germanic.

6 In some environments such as unstressed vowel + C1 the diphthong /ai/ was realised as Go. /a/, e.g. the 3sg pros. throughout /brada/'s bear'.

7 There is philological evidence to support this in that there exist NWWmc. runic inscriptions where graphemic a1 is used instead of the more usual e to represent underscript word-final /e/ (see on this Antones (1975:4). This sporadic use of the etymological spelling a1 for /e/ indicates that the monophthongisation of /ai, a1/ must have occurred during or after the establishment of a writing system -- i.e. in late common Gmc. or early NWWmc. times.

8 This breaking rule must have been slightly different in its earlier version to apply here in that it could apply to unstressed /ei/ if it occurred in a stressed diphthong. (Such diphthongs do not occur in Wulfillian Gothic because of the monophthongisation rule 2.1.5.) But breaking does not apply to /ai/ under similar circumstances, e.g. /lihan/...
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'drag', not *tī(e)han/. However, the breaking rule in any event applies to /i/ in some instances where it does not apply to /a/, for instance before /ttr/.

15 Assuming that there was no morphemic boundary between the /hei/ and the /e/, unlike the case of the Go. verb /hit-r-/ 'come here!' In the latter example, /a/ occurs with various other morphemes, e.g. hi-la 'this' and hi-dar 'hither'. But Go. /hi-/ (Gmc. /hei/) does not occur with any other endings.

16 The NWGmc. /ga/ devolves from IE /gæt/-, while /sta:/ possibly comes from IE /stata/. The NWGmc. vowel alternation occurring in /gæt/→/gæt/, and /gsa/→/gɛ(-)/ was transferred to original /st/ resulting in /sta:/→/stas/, etc. It was also transferred to the entire Prends paradigm resulting in such forms as 1 sg Ind /gæt/, /gæt/, etc.

17 Extensive summaries of previous research are in Feist (1907), Karstien (1921), Flasdeck (1936), Prokosch (1939), and van Coetsen (1960: esp. 47-59).

18 On this see Hirt (1913:4; vol. 2, p. 144).

19 Pullerton (1977:107) also accepts in the main van Coetsen's account and posits an analogical "Seventh-class Pattern Redetermination Rule".

20 Including the most recent one by Bech (1969), who posits an unsanctioned analogical generalization of the infix /-st-/ into all the NWGmc. forms. Among many other difficulties, this explanation encounters problems in accounting for the attested past-tense forms in /e/ (for which see below).

21 Because of rules like 2.1.5 (monophthongisation of /ai, au/) and 2.1.6 (vowel lowering), the Go. MS conditions were somewhat different from those of Germanic. The Go. MS conditions on St V's undergoing the reduplicating rule were that the Prs stem must be of the form C-/-a/C or that the Prs-tense vowel should be a diphthong /or/ /ai, ai, oi, ui/ i.e. any long vowel except /i/. (See the forms cited under 5(9) below and in appendix 1 to this chapter.)

22 Bech (1969) assumes that Verner's Law applied consistently to the morpheme-initial consonant in all V's beginning with /t, p, b, g/. Under our account it does not matter if it did or not. See on this footnote 39 below.

23 A complete listing of the attested reduplicating V's is given in appendix 1 to this chapter. The facts cited with /e/ as in /lettan/ have /a/ in later NW Germanic by change K'4 above.

24 This would constitute an exception to the MS condition posited for the reduplication rule 1 under 5f, in that the stem vowel /a/ is not followed by two morphological segments. Hence this Pr St V was possibly nonreduplicating. If so, it must have been of the 6th class /aran/, /ort/, etc.

25 The root-initial consonants in the reduplicated forms of V's beginning with /b, d, g/ were realized by the Gmc. correspondent of Go. rule 2.2.3 for the distribution of voiced stop and continuant consonants as /b, d, g/. Hence /beu/- was /beu/.

26 The latter form is produced by Verner's Law.

27 These are Campbell (1964) and Sievers (1951) for Old English, Braune (1963) for Old High German, Galler (1910) for Old Saxon, Steller (1928) for Old Frisian, and Kordes (1976) for Old Norse.

28 This is possibly /oe/. According to Sievers (1951:338, §396, App. 1), "Die Quantität des "o" in Prät. ist nicht direkt zu ermitteln."

29 The latter form cited by Flasdeck (1936:264).

30 Because of its apparently bizarre morphology (which we account for below), this particular form has been considered a scribal error, e.g. by Karstien (1921:150): "Sievers...sieht blefia für einen Schreibfehler an, was um so wahrscheinlicher wird, als es das darunter stehende lat. ineu-ija-viä übersetzt der schreiber in gedruckten versuchen gewesen und ist durch das lateinische beeinflußt gewesen. Ja, er hat an der stelle so getraunt, daß er das fia nicht einmal zuende geschrieben hat." Such an error is highly improbable. It seems more likely to us that the form blefia did in fact exist in Old English as the Pat of blīwan and that the scribe was in fact right.

31 The Pat blīfes occurs in Upper Old High German because /a/ before labials appears there as /u/.

32 Braune (1963:289, §34), App. 3) erroneously derives these forms from Blumen 'bloom'. The s in the Omg. forms, however it may have been pronounced, stands for the reflex of Gmc. /h/. The vocalism pleuric instead of *pleuric in these forms is the result either of an Omg phonological rule whereby the diphthong /ou/ cannot un stress and is thus reduced to /u/, or the result of the V having taken on the vocalism of 2nd-class St V's like the Pat Sg house- 'bent' vs. the Pat Pl or Pat Sub bung.
Cited erroneously as *appareat* in Braune (ibid.).

One verb originally in this class, *sveplga* 'sweep', is usually Wx. When St, it follows in the nonparticipial Preth. the 1st-class St V paradigm: *sveplga*, *svepl*, *sveplug*, *sveplpen*.

This is not to say that our description will not incorporate certain of the explanations found in the earlier literature on the subject and we shall of course try to give credit where it is due. But in view of the mass of this literature, we can only echo Karstens's sentiment (1091iia). "Wenn mir bei meiner Arbeit trotz redlichstem bemühens das eine oder die andere ferner liegende behandelung einer teilfrage entzogen ist, so bitte ich um nachsicht." Speaking of giving credit where it is due, diagram 31 has already appeared in Andersen (19331957). The type of change involved is called "abductive".

See the forms cited under GP,'' as well as those in appendix 1. Apparently only three such verbs had a root vowel other than /ei/, /oi/. These were /bu/ 'dwell', /nu/ 'rub', and /ma/ 'turn'.

These endings were, according to Johanneson (1921) 711, /-oi/ for the 1st person and /-ei/ for the 3rd person. Pet 5g Ind, e.g., /talid-oi/ 'I told' and /talid-ee/ 'he told'.

Such sequences did not exist in Gothic either. See C in section 2 of chapter 2.

For this reason Bech's assumption mentioned in footnote 22 above that the Pet of /haltan/ would have been by Verner's law /hagait/ instead of /haimt/ is material. With the loss of rule 2a, a form like /hagait/ might have been produced from /haimt/. But then by the NWDG, SPC's, this would have been automatically realized as /hett/ (phonetically probably /hett/), the same form as would have been derived from /haimt/.

This form was by this time possibly /lastan/ or /lastan/ by the NWDG. rule K'm given earlier. This rule could not apply to the /ei/ in the Pet /leist/ because the /ei/ here was unstressed.

Campbell (1964148-9) remarks on the development of certain OE compounds. "In the second element of such formations, *l > mi* [more likely *mi*] as in unaccented syllables... if the reduction in the semantic force of the second element was early, e.g., *strode ['troy' (< *ech + *mold)],* a development of *mi* > *mi* and hence before *m* with shortening to *y* appears in *folium* 'help', from *ful/* + /taum/..."
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