BEADE, Pedro, 1934-
GOTHIC PHONOLOGY: A GENERATIVE APPROACH.

Cornell University, Ph.D., 1971
Language and Literature, linguistics

University Microfilms, A XEROX Company, Ann Arbor, Michigan

PLEASE NOTE:

The negative microfilm copy of this dissertation was prepared and inspected by the school granting the degree. We are using this film without further inspection or change. If there are any questions about the film content, please write directly to the school.

UNIVERSITY MICROFILMS
GOTHIC PHONOLOGY

A GENERATIVE APPROACH

A Thesis

Presented to the Faculty of the Graduate School of Cornell University for the Degree of Doctor of Philosophy

by

Pedro Beade

September, 1971
BIOGRAPHICAL SKETCH

The author was born in Havana, Cuba in 1934 and graduated from Columbus School in that city in 1952. He emigrated to the United States in 1957 and served in the U.S. Army in Germany in 1958 – 59. He received a B.A. in English and German from the University of Missouri in 1964 and an M.A. in Linguistics from Harvard University in 1966. After two years as an instructor at the University of Vermont he pursued doctoral studies in general and Germanic linguistics at Cornell University from 1968 to 1971, where he was also a teaching fellow for one year. He attended the Goethe University in Frankfurt, Germany in the summer of 1970 and is a member of Phi Beta Kappa, the Canadian Linguistic Society, the Linguistic Society of America, and the European Linguistic Society. He has been appointed Assistant Professor of Linguistics at York University, Toronto, Canada.
ACKNOWLEDGMENTS

The candidate wishes to express his appreciation and thanks to Professor Frans Van Coetsem, whose constant supervision and encouragement made this dissertation possible. Thanks are also due to Professor Mario Saltarelli, in whose seminars the author's views on Gothic phonology began to develop. Professors John Bowers and Charles Elliott also contributed with their advice and very useful criticisms. Discussions with John Austin, David Cram, Alan Lacy, Carl Schaefer and Guy Tops led to many improvements and to the elimination of several errors. Special mention must be made of the computational work on Gothic phonology carried out by Professor Randall Jones during the past two years, which facilitated our task enormously, especially in the selection of phonological environments and actual attested examples for the formulation of the rules. Cornell University must also be thanked for its financial support and for its excellent academic environment and library facilities.
INTRODUCTION

As a language which is no longer spoken and of which we have a very limited corpus, Gothic presents us with many difficulties that perhaps will never be resolved to the satisfaction of every investigator. In spite of the enormous amount of work that has been carried out on Gothic phonology for over a century, and of the many contributions made by the advance of linguistic science during this time to the elucidation of its phonemic and morphemic structure, many controversies remain concerning Gothic grammar.

The generative grammarians of the transformational school have just begun to direct their attention to Gothic in the past few years and already some interesting results are in evidence. The present study is another effort along these lines. Its theoretical framework is basically that of Chomsky and Halle (1968) but with a few minor differences. For example, although we accept their proposed revision of the feature 'vocalic' (1968:353-4) so that now — among other things — one may refer to consonants, vowels and obstruents using only one feature for each, we feel that their proposal is nothing more than a very useful revision or redefinition of the old feature and we have therefore retained the name 'vocalic' instead of the new one 'syllabic'.

A complete grammar of Gothic is probably an impossibility, and even a thorough, reasonable hypothesis about its grammar highly unlikely unless a lot more material is found than is now
available — the recent discovery of another fragment of the Bible in the Speyer cathedral is very encouraging in this respect. Particularly vexing are the questions of morpheme structure conditions and of derivational morphology. With respect to the former one can never be sure whether the absence of a certain cluster or sequence is the result of a phonological constraint or of insufficient data. With respect to the latter the problems are even greater, since even in working with a contemporary language many theoretical points remain to be settled as to what constitutes a productive derivation, what a semi-productive one and what an individual, non-derivable lexical item (cf. Dik 1967 on this problem). For these reasons we have not tried to go into these two topics in depth in the present study, although references to them and tentative proposals about them are made occasionally throughout the text.  

This study, however, is an attempt to cover more of the grammar, more systematically and in more depth and detail than has been covered in any of the modern treatments of the subject — structuralist or generative — in the recent past, with the expectation that the hypotheses presented here, which surely will and should be challenged, will contribute to the clarification of the central problems of Gothic phonology and morphology. The dissertation consists of four chapters. In the first two the general phonological structure of the language is examined. Chapter I covers the consonants, chapter II the vowels and glides, with discussion of the orthographic, historical and com-

1 — Morpheme structure conditions have been written for Gothic by Paul A. Sinal in his 1971 Cornell dissertation.
parative evidence available and an evaluation of some of the views that have already been presented about their interpretation. Chapter III is devoted to the central problems of verbal inflection, chapter IV to those of nominal inflection. In these last two chapters a lot of data is examined which has been left untouched by contemporary linguists. Perhaps the proposals presented there will lead to a more thorough and detailed discussion of Gothic and Germanic morphology. We are still a long way from a complete grammar of Gothic, but hopefully the present effort will constitute a step in that direction.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>iv</td>
</tr>
<tr>
<td><strong>I  CONSONANTAL SEGMENTS</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 The stops</td>
<td>1</td>
</tr>
<tr>
<td>1.2 The spirants</td>
<td>5</td>
</tr>
<tr>
<td>1.3 Liquids and nasals</td>
<td>7</td>
</tr>
<tr>
<td>1.4 Double consonants</td>
<td>9</td>
</tr>
<tr>
<td>1.5 Assimilation</td>
<td>17</td>
</tr>
<tr>
<td>1.6 Dissimilation</td>
<td>19</td>
</tr>
<tr>
<td><strong>II  VOWELS AND GLIDES</strong></td>
<td>21</td>
</tr>
<tr>
<td>2.1 Length</td>
<td>21</td>
</tr>
<tr>
<td>2.2 Sievers' Law and other related matters</td>
<td>25</td>
</tr>
<tr>
<td>2.3 Breaking</td>
<td>29</td>
</tr>
<tr>
<td>2.4 Some historical considerations</td>
<td>30</td>
</tr>
<tr>
<td>2.5 The rules</td>
<td>33</td>
</tr>
<tr>
<td>2.5.1 Lengthening</td>
<td>33</td>
</tr>
<tr>
<td>2.5.2 Stress and glides</td>
<td>35</td>
</tr>
<tr>
<td>2.5.3 Shortening and lowering</td>
<td>37</td>
</tr>
<tr>
<td>2.5.4 Compensatory lengthening and glide insertion</td>
<td>44</td>
</tr>
<tr>
<td>2.6 Systematic phonemic matrix of Gothic</td>
<td>46</td>
</tr>
<tr>
<td><strong>III  VERBAL INFLECTION</strong></td>
<td>47</td>
</tr>
<tr>
<td>3.1 General remarks</td>
<td>47</td>
</tr>
<tr>
<td>3.2 Present indicative</td>
<td>47</td>
</tr>
<tr>
<td>3.3 Preterit indicative</td>
<td>52</td>
</tr>
<tr>
<td>3.4 Present optative</td>
<td>59</td>
</tr>
<tr>
<td>3.5 Past optative</td>
<td>62</td>
</tr>
<tr>
<td>3.6 Imperative</td>
<td>65</td>
</tr>
<tr>
<td>3.7 Passive indicative</td>
<td>67</td>
</tr>
<tr>
<td>Section</td>
<td>Title</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>3.8</td>
<td>Passive optative</td>
</tr>
<tr>
<td>3.9</td>
<td>Present participle</td>
</tr>
<tr>
<td>3.10</td>
<td>Past participle</td>
</tr>
<tr>
<td>3.11</td>
<td>Infinitive</td>
</tr>
<tr>
<td>3.12</td>
<td>Strong verbs</td>
</tr>
<tr>
<td>3.12.1</td>
<td>General</td>
</tr>
<tr>
<td>3.12.2</td>
<td>Reduplicating verbs</td>
</tr>
<tr>
<td>3.12.3</td>
<td>Ablauting verbs</td>
</tr>
<tr>
<td>IV</td>
<td>NOMINAL INFLECTION</td>
</tr>
<tr>
<td>4.1</td>
<td>General</td>
</tr>
<tr>
<td>4.2</td>
<td>Historical</td>
</tr>
<tr>
<td>4.3</td>
<td>The generality of case forms</td>
</tr>
<tr>
<td>4.4</td>
<td>A possible analysis using the nominative form as lexical entry</td>
</tr>
<tr>
<td>4.5</td>
<td>The strict suffix and diacritic feature approach</td>
</tr>
<tr>
<td>4.6</td>
<td>The adjective</td>
</tr>
<tr>
<td>4.7</td>
<td>A general solution for nouns and adjectives</td>
</tr>
<tr>
<td>4.8</td>
<td>Conclusion</td>
</tr>
<tr>
<td></td>
<td>BIBLIOGRAPHY</td>
</tr>
</tbody>
</table>
CHAPTER I
CONSONANTAL SEGMENTS

1.1 The stops. The expected series of voiceless stops, ð, ð, and k, is found in Gothic and there aren't any major problems concerning the status of the segments involved. All historical, orthographic and comparative evidence seems to verify the existence of these very common voiceless non-continuants in the language as the descendants of both the Indo-European voiced series b, d and g and the voiceless p, t and k in certain environments. Also present is the segment which we shall transcribe using the customary symbol q and which almost certainly represented a voiceless labiovelar stop. Although a case could be made for its interpretation as the sequence kw (cf. Moulton:1948:83:fn.28), a sequence that may very well have been the origin of all Indo-European labiovelars, we shall interpret it as one segment for the usual reasons (see, for example, Voyles:1968:721-2) namely its phonotactic behavior as a unit in processes of reduplication, ablaut and dissimulation, as well as the orthographic evidence, i.e. Wulfila's use of one symbol for it. The latter does not constitute proof by itself, but taken together with the other grammatical criteria it makes for a very good piece of supporting evidence.

The voiced stops are much more problematic and Gothic-spelling does not offer a clear or complete picture of what their phonetic value was. The most accepted view is that the Indo-European series
of voiced aspirated stops \(bh\), \(dh\), \(gh\) and \(gh^h\) underwent a context-free change to the voiced spirants \(\beta\), \(\dot{e}\), \(\epsilon\) and \(\epsilon^w\) (cf., for example, Boer:1924;120–l and Streitberg:1963;116–23) and that later in the individual dialects (but perhaps already in late Proto-Germanic) these voiced continuants began to shift to voiced obstruents in certain environments, i.e. after nasals, word initially, and when geminated.

The shift away from the highly marked Indo-European series of voiced aspirated stops is not unnatural and even less so would be the one away from the early Proto-Germanic situation where \(\beta\), \(\dot{e}\), \(\epsilon\) and \(\epsilon^w\) were the only voiced consonantal phonemes. The possibility always exists that the shift was just from I.E. \(bh\), \(dh\), \(gh\), \(gh^h\) to Proto-Germanic \(g\), \(\dot{d}\), \(\epsilon\), \(\epsilon^w\) by simple loss of aspiration and that the spirantization process was a case of low-level rule addition in a late Proto-Germanic grammar, a rule which was retained with different degrees of generality in the individual dialects. But this is an issue whose definitive solution is not foreseeable in the near future.

Assuming then that general spirantization came first we must accept that a rule like:

\[
(i) \quad \left[ \begin{array}{c} + \text{consonantal} \end{array} \right] \quad \rightarrow \left[ \begin{array}{c} - \text{continuant} \end{array} \right] / \left\{ \begin{array}{c} \# \quad \downarrow \\
\dot{c} \quad \downarrow \\
N \quad \downarrow \end{array} \right. 
\]

must have been added to a late, common Germanic grammar and that this
rule or its effects survived in the historical languages. But even if this change is historically factual it would not be surprising if it brought about a restructuring, so that voiced stops (now always found in initial position, for example) became the underlying segments and rule (i) was replaced in Gothic by:

\[
(1) \quad \begin{cases} 
+ \text{consonantal} \\
+ \text{voice} 
\end{cases} \rightarrow \begin{cases} 
+ \text{continuant} \\
\end{cases} / \quad v_-
\]

Rule (1) would be the simplest and most economical way of accounting for a voiced-stop, voiced-continuant alternation in that language. In word-final position the voiced continuants appear to become devoiced. Thus from well-known alternations of accusative singular versus dative singular forms like klaif : klaiba 'bread' and stop : stada 'place'.

---

1 - It is quite possible that this rule was even more general and that the process of occlusion took place after liquids as well as nasals — possibly in any cluster of which the voiced spirants had been a part. At first glance the rule does not appear to be very universal from the point of view of other known languages of the world today. But from the point of view of Germanic this tensing process is remarkably similar to the High German shift, especially with respect to the environments in which it takes place. A very interesting speculation would be to consider that in both cases the first change was a general one and the later, context-sensitive one a laxing process; that is, that the Indo-European voiced aspirated stops lost their aspiration everywhere and were later laxed to continuants in post-vocalic position; and that the early High German shift was also a general one from p,t,k to their corresponding affricates, which were then laxed to spirants after vowels. The later innovation in Old High German would have been the replacement of affricates by stops once more, which could have begun in the southern area with kh to k and then spread ever more generally in a northerly direction. This would reconcile the traditional view that the High German shift began in the south (which is supported by the facts of manuscript evidence) with the proposal (cf. King:1969:92) that borrowed rules should become more general.
we deduce that postvocalic b and d were continuants and that they were devoiced before word boundary, where g could intervene — in the nominative singular their forms are blaifs and stabbs. After consonants, however, they do not seem to lose their voice according to the orthographic evidence, as can be seen in nominatives like dumbs 'dumb' and waurd 'word'. This seems to indicate that final devoicing is not general as in Modern German and Dutch, but restricted to spirants.

Gothic manuscripts do not give evidence of a similar behavior for the velar g and one finds nominatives like dags 'day' and wiga 'way, journey' without a special symbol to show devoicing in that environment. The evidence is therefore insufficient to determine the value of g in any environment and for the sake of simplicity only we shall assume that its behavior is parallel to that of the other voiced consonants, so that it is unmarked for continuance in the environment after '− vocalic' (which includes word boundary) and is assigned the feature 'continuant' in the environment after '+ vocalic' by rule (1) as stated. But if it should ever be demonstrated that g was a stop in all positions, for example, it would be a very simple matter to adapt rule (1) to the facts by adding the specification '− anterior' to the input.

The history of the Indo-European voiced labiovelar stop is very obscure in Proto-Germanic and the most thorough attempt at its clarification can be found in Seebold (1967). If this sound ever existed as a unit in the parent language and was not a sequence of gh plus w to begin with, it lost its status in prehistoric Germanic times
and appears as either $g$, $w$ or $gw$ in Gothic and the other dialects. Whatever rules determined the changes undergone by $gw^h$ in Proto-Germanic — and the conclusions of Seebold's scholarly study constitute nothing more than a very reasonable hypothesis — there seem to be no reasons for assuming that they were retained in any of the historical languages, since their results could always merge with existing phonemes or sequences thereof and restructuring with subsequent elimination of the rules would have yielded much simpler grammars. Thus the initial segment of the Gothic verb warmjan 'warm, cherish' (not attested in the infinitive but in forms like the preterit warmidedun) is very likely the reflex of I.E. $gw^h$. So is the $gw$ sequence (apparently its normal development after a nasal) in items like the verb sigwen 'sing'. We shall therefore follow Wulfila's orthographic practice and the analysis of many scholars (e.g. Mosse:1956:69) and not posit an underlying voiced labiovelar segment for Gothic.

1.2 The spirants. Besides the spirants found on the phonetic level as variants of the voiced stops we find in Gothic the segments $f$, $b$, $x$, $x^w$, $s$ and $g$. The first four, which did not exist in Indo-European, are the result of Grimm's Law, a shift of the original voiceless stops to their corresponding spirants in some environments in Germanic. The value of the segments $x$ and $x^w$, which we shall spell with the symbols $h$ and $hw$ for convenience in our Gothic examples, is open to question. That they were voiceless, non-anterior continuants is generally accepted but there is no evidence that they were really velars. Mosse (1956:42-3), for example, considered it 'probable'
that h was pronounced something like [h] in initial, prevocalic position, as in the verb haban 'have'; but that it was a velar in other environments, such as before consonants, e.g. hlaifs 'loaf', ahtau 'eight'. Since there is no conclusive evidence of allophonic variation for these phonemes in Gothic, we shall assume that as the reflexes of I.E. k and kʷ, Gothic h and hw are still velars by a general change that had altered the manner but not the place of articulation of the Indo-European voiceless stops in Germanic. It is quite probable, however, that allophonic variations did exist in Gothic, and Mose's proposed distributional statement makes sense, both phonetically and in view of later Germanic developments. The segment hw will be interpreted here as a labiovelar, again using orthographic evidence (Mul-fila's use of one symbol for it but h plus w in compounds like the verb pairhwasan 'remain') and morphological (membership of saihwan 'see, observe' in the fifth class of strong verbs where the pattern consists of one consonant following the vowel) as the criteria, although these facts cannot be interpreted as conclusive proof of the exact value of hw.

The grapheme 'thorn', which we render as ð, is interpreted here as a coronal spirant, being the reflex of I.E. ð by Grimm's Law.

The segment s is a continuation of the Indo-European phoneme of the same value. Its voiced counterpart ṣ, although apparently absent from the parent language, arose mainly through the operation of Verner's Law in Germanic, a rule that seems to have brought about a restructuring in the Gothic lexicon although it was no longer operative in the language. The final devoicing of spirants discussed in the
preceding section also affected as can be seen in the alternation between the nominative singular of the neuter noun rigis 'darkness' (where the suffix is ϕ) and its genitive singular rigizis (with -is suffix). The fact that there are apparent exceptions to this rule (besides four attestations of the above noun as rigiś there are four of it as rigiz; and the noun aiz 'copper' is attested only once, with final as given here) probably indicates (morpho)phonemic spellings on the part of the scribes. We therefore propose the following specification of voicelessness for final spirants, which should affect all such segments, be they as or the continuant, postvocalic allophones of b, d and g. We follow Voyles (1968:728) in stating the environment as '- voice' to include both word boundary and voiceless consonants, before which spirants are also voiceless:

\[
\begin{align*}
(2) \quad & \left[ \begin{array}{c} + \text{continuant} \\ - \text{sonorant} \end{array} \right] \rightarrow \left[ \begin{array}{c} - \text{voice} \\ / \end{array} \right] \quad / \quad \left[ \begin{array}{c} - \text{voice} \end{array} \right]
\end{align*}
\]

1.3 Liquids and nasals. Although their exact phonetic value is again unknown, the status of l and r, m and n as underlying segments of Gothic is beyond dispute. With respect to their possible syllabic value it is interesting to note that whereas in Indo-European the environment apparently determined their syllabicity or non-syllabicity automatically, along with that of the segments i/ι and u/w, this regular alternation had clearly broken down in Proto-Germanic and we normally find a sequence of the vowel u plus liquid or nasal where only the sonorant consonant with syllabic value should have
been present before. Thus we find Gothic fulls 'full', for example, from Indo-European *plnos. Liquids and nasals therefore seem to have given up their syllabic function in early Germanic. There are many cases, however, where new clusters have come about (often through the Germanic loss of short, final vowels) where it is reasonable to assume that the liquids and nasals constituted syllabic peaks, e.g. fuqls 'bird, fowl'; akrs 'field'. There is no actual evidence, however, for this phonetic phenomenon in Gothic and we shall therefore refrain from stating any rule to that effect, although it is quite likely that it existed in the grammar of the language (cf. Voyles:1968:731-2).

Although the very universal rule of assimilation of nasals to a following consonant must have been more general in prehistoric times giving us items like hunda 'hundred' from I.E. *hantā, the Gothic data show many cases (e.g. of the sequence mt in the genitive andamantais 'reception') where the rule does not seem to be in operation. Only before velars (where the manuscripts show g for the velar nasal, following the Greek orthographic practice) do we find this assimilation consistently indicated, as in briggan 'bring, lead'. Basing the decision on this evidence we then propose the following automatic specification of place of articulation for Gothic nasals when followed by a velar:

(3) [+ nasal] \rightarrow \left[ \begin{array}{c} + \text{anterior} \\ + \text{back} \\ + \text{high} \end{array} \right] / - \left[ \begin{array}{c} + \text{conson} \\ - \text{anterior} \\ + \text{back} \\ + \text{high} \end{array} \right]
1.4 **Double consonants.** Pairs of identical consonants are very common in Gothic lexical items and inflectional endings, in particular the sequences **ll**, **rr**, **mm** and **nn**. There seem to be no practical or theoretical reasons for not treating them as sequences of two segments, especially since many of them came about historically through assimilation (*e.g.* **n** to **l** after **l** in the already quoted example of **fulls** from *"p̪l̪nos*). And although a case could perhaps be made for calling them 'tense' or 'long' on the basis of parallelism with the vowels, the procedure of entering them as two segments will be adopted here.

The restricted nature of the data again precludes the making of very general statements about sequences of two consonants. Beside the widespread occurrence and distribution of double liquids and nasals, one finds that the obstruents are not so well represented. The sequence **pp**, for example, is not attested at all, and neither is **rg**, except where this graphemic sequence should stand for **ng**. (Its value in the sequence **pgw** will be discussed below.) But one cannot be sure that these are bona fide restrictions and not accidental gaps in the corpus. The sequence **dd** is only attested once and in the accusative form **badiau**, a transliteration of a foreign name spelled with the same sequence of stops in Greek. The cluster of two dental voiceless stops is very common, however, in words like **atta** 'father', and **kk** is also found often in a few lexical items like **scattabaga** 'fig tree'. The cluster **bb** is attested many times but only in words of foreign origin like **abba** 'father' and **sabbato** 'Sabbath'. Among the spirants one finds that **bb** and **ss** are common in items like **aipppau** 'or', **mippan** 'between' (where the sequences come about at formative boundaries) and
misso 'each other'. But ff is only found twice, in the items aiffaba 'open thyself', a foreign borrowing, and the preterit affalht 'concealed from', where it comes about at the boundary between af 'from' and filban 'hide, bury'.

Another interesting phenomenon involving the use of two identical graphemes, followed by j or w, is the question of Holtzmann's Law. In spite of much research on the matter no scholarly consensus on its origin has been reached and the pronunciation of its reflexes (ddj and ggw) in Gothic remains a matter of speculation. The most accepted fact is that the Indo-European glides i and w were geminated in intervocalic position after a short vowel. This did not occur in all cases, however, only in certain lexical items, and another conditioning factor is therefore assumed (e.g. accent in the case of some early investigators, a laryngeal in the case of Lehmann:1952:36-46). But none of these explanations — including Kurylowicz's recent proposal of looking for its origin in certain strong verbs, which is attractive since it does not rely on unknown entities — have met with universal acceptance. In West Germanic the first element of this geminated semi-vowel tended to form a diphthong with the preceding vowel, but in Gothic and Old Icelandic it apparently became a stop. In the latter *-ww- and *-ji- appear as ggw- and ggj- respectively. In Gothic, on the other hand, we find ggw- for *-ww- as in trigwam 'alliance' (cf. Old Icelandic tryggvar 'trusts') but ddj- for *-ji- as in twaddje 'of two' (Icelandic tveggja).

2 - Recent inquiries into the problem can be found in Lindeman (1964) and Kurylowicz (1967).
It is not the purpose of this discussion to join the controversy about the prehistoric origins of this phenomenon, but since it appears to be a living process in Gothic, as can be seen in the inflectional paradigm of the masculine form of the numeral 'two':

N  twai
A  twans
G  twaddje
D  twaim

where the genitive form has to be accounted for, the following assumptions and observations seem to be in order. (1) It will be assumed that the graphemic sequences reflect the Gothic situation accurately, that is, that -gyg- and -ddj- represent a tense or double velar stop before w and a tense or double coronal stop before j. (2) It also seems quite probable that the original conditioning factor, whatever it may have been, was no longer present in the historical languages, and that what we find in them is a minor rule restricted to the lexical items marked to be affected by it. (3) In view of its greater antiquity and phonetic naturalness, it would not be surprising if the Gothic phenomenon reflected the original situation better than Icelandic. After a Proto-Germanic gemination rule, which we give here for purposes of illustration only (using X to indicate the unknown conditioning factor as:

\[(ii) \quad 3 \Rightarrow 33 / X ^{[- \text{conson}]} \quad \begin{array}{cccc}
1 & 2 & 3 & 4
\end{array} \]
another rule could have been added to a pre-Gothonordic grammar affecting the first member of the new geminated cluster and turning it into a stop. If we accept the Gothic stops as being more accurate reflexes of the earlier ones the new rule would have been simple indeed:

$$\begin{align*}
(iii) & \quad \left[ \begin{array}{c}
- \text{consonantal} \\
+ \text{sonorant}
\end{array} \right] \rightarrow \left[ \begin{array}{c}
+ \text{consonantal} \\
- \text{sonorant}
\end{array} \right] / \left[ \begin{array}{c}
- \\
- \text{voc}
\end{array} \right] \\
& \quad \quad \left[ \begin{array}{c}
- \text{cons} \\
- \text{voc}
\end{array} \right]
\end{align*}$$

where the change of two features would have yielded the homorganic consonants that one finds in the East-Germanic data. If this view is correct then the situation in Old Icelandic would have been a later innovation.\(^3\) (4) If the second assumption that the conditioning factor that triggered the original gemination was no longer present in Gothic — is correct, it would then be highly unlikely that the grammar of this language would retain a sequence of rules like (ii) and (iii). We propose then the following minor rule as the more likely candidate to account for the Gothic situation on the synchronic level:

\[3 - \text{The possibility also exists that the original rule turned the first of the two glides into a velar stop and that Gothic then simplified the rule into something like (iii). With respecto to rule (ii) it could also be speculated that perhaps the glide-gemination rule was general in Proto-Germanic but that West-Germanic later eliminated it.}\]
(4) \( \emptyset \rightarrow [\begin{array}{c}
+ \text{conson} \\
- \text{sonorant} \\
\alpha \text{vocalic} \\
\alpha \text{voice} \\
\gamma \text{contin} \\
\gamma \text{back} \\
\ldots
\end{array} \] \rightarrow [\begin{array}{c}
+ \text{conson} \\
- \text{sonorant} \\
\alpha \text{vocalic} \\
\alpha \text{voice} \\
\gamma \text{contin} \\
\delta \text{back} \\
\ldots
\end{array} \] / V \rightarrow [\begin{array}{c}
- \text{conson} \\
+ \text{sonorant} \\
\alpha \text{vocalic} \\
\alpha \text{voice} \\
\gamma \text{contin} \\
\delta \text{back} \\
\ldots
\end{array} \]

This rule will apply only to lexical items marked 'Plus Rule (4)' and should be ordered after the glide rule that will be discussed in the following chapter.

Before leaving this section two processes having to do with the simplification of double consonants should be discussed. The first has to do with the deletion of the -a of the nominative singular when another s precedes. Thus we find the nominative singular daga 'day', nominative plural dagas, where we can see the suffixes -a and -as being added to the stem dag-. On the other hand compare the adjective laus 'empty', whose nominative plural masculine form lausai (with adjectival suffix -ai) shows that the -s is part of the stem, yet there is no doubling of the s in the quoted nominative singular masculine form. Voyles (1968:729) has tried to state this rule in strictly phonological terms. Comparing the nominative singular daga and the genitive singular dagis with the nominative singular hals 'neck' and its genitive singular halsis (which is unfortunately a ghost form although it is probably a valid reconstruction and example) and observing that the final sequence ss is nevertheless
possible: in the nominative singular of the noun gagiss 'conversation', he concludes that final \(\text{ss}\) becomes \(\text{s}\) only if a consonant precedes it. The attested dative singular of this noun, however, is gagissal, which seems to indicate that the geminate \(\text{s}\) is part of the stem. Since its nominative singular ending should also be \(-\text{g}\), we have indeed a reduction here too. What seems to be happening in all these examples is simply that the \(-\text{s}\) of the nominative singular is dropped when an \(\text{s}\) precedes it in the nominal stem. Stated in morphological terms the rule becomes very simple:

\[(5) \quad \text{s} \rightarrow \emptyset / \text{s} + \_\]

Another problem concerning the deletion of \(-\text{g}\) should also be mentioned at this point, since it also involves the nominative singular formative. Unfortunately, the scarcity of data does not allow here for as clear-cut a solution as the preceding. Some nouns whose stems end in \(\text{r}\) do not add the \(-\text{s}\) of the nominative singular, e.g. wair 'man', stiuur 'steer, calf'. Others, however, do: akrs 'field', hons 'adulterer'. Mossé's statement about the problem is too general (1956:74): the final \(\text{s}\) is dropped after consonantal \(\text{r}\). This explains why akrs, where he assumed the \(\text{r}\) to be syllabic, retains the spirant, but it leaves exceptions like hons. Braune's solution (1956:51,59) is more interesting and specific but still problematic, since it is based on the short value of the immediately preceding vowel and he often based this criterion on uncertain etymologies. His proposal, which could be restated as:
seems to be the most efficient. In akrs not a short vowel but a consonant precedes. The phonetic value of the ai in wair is generally considered to be short e, the o in hors is almost certainly long, and so forth. Braune also felt that the adjective gaur 'sad' behaves according to rule, since a long syllable precedes the r (assuming that the two vowels constitute a diphthong in this case, which is not certain), but then had trouble accounting for stiur, where the two vowels presumably represent a diphthong as well. It is our feeling that the problem is more complex than this and that we are very probably dealing with different layers of derivation, as Mosad seems to have implied by making his statement almost in diachronic rather than synchronic terms. But the amount and nature of the evidence available is simply not sufficient for an authoritative and definitive solution to this problem. Braune's proposal, as modified and stated in the form of rule (6) so that the conditioning factor is the shortness of the vowel (rather than the syllable) accounts for the data more elegantly than any other known solution. Except for gaur which may very well be an exception due to its derived nature or some other unknown reason and will have to be marked in the lexicon as exempt from the application of the rule — (6) will treat all the other examples discussed as regular, including stiur and many other nominals which form a very basic part of the Germanic vocabulary, such as brokar 'brother', anbar 'other' and unsur 'our'. Rules (5) and (6) could easily be collapsed.
A final case of consonant simplification involved the reduction of geminates before another consonant. This phenomenon is problematic in that there are some forms in free variation which could indicate either that the rule was optional or, more likely, that it was a phonetic phenomenon which the scribes did not bother to indicate in every instance. The rule is most consistently seen in its application to **manna** 'man'. In the paradigm of **manna** 'man' we find the following forms:

<table>
<thead>
<tr>
<th></th>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>manna</td>
<td>mans</td>
</tr>
<tr>
<td>A</td>
<td>mannan</td>
<td>mans</td>
</tr>
<tr>
<td>G</td>
<td>mans</td>
<td>manne</td>
</tr>
<tr>
<td>D</td>
<td>mann</td>
<td>mannam</td>
</tr>
</tbody>
</table>

with regular deletion of one of the nasals before s. To four attestations of **kant** 'you know', second person singular indicative of the verb **kunnan**, there is one in the form **kannt**.

Other examples are with **ll**, where simplification usually does not take place. The nominative singular of the adjective 'full' is always attested (four times) as **fulls**. The many verbs based on the stem **fulln**—'become full' show the sequence **lln** more often than not, but there are competing forms. Thus the third person plural preterit of **us-fullnan** 'become full, come to pass, be fulfilled' is attested three times as **usfullnodedun** and three times as **usfulnodenedun**, all six instances in the Gospel of Luke. In spite of these variant forms and since sequences of double consonants preceding another consonant
are not found in Gothic we will state the rule in its most general form:

\[(7) \quad \begin{array}{ccc}
\& \& \\
1 & 2 & 3
\end{array} \quad \phi \quad 3\]

The rule is of course corrigeble should further evidence indicate that it should be restricted to nasals, liquids or any members of these natural classes. (Compare Voyles:1968:729 who limits his rule to \(n\).)

1.5 Assimilation. Gothic manuscripts show two minor cases of consonantal assimilation across word boundary. In final position the grapheme \(h\) is assimilated to a following \(p\) with great regularity, as in jabbe 'and if' (from jah and pe). Less regularly one finds final \(h\) assimilated to other consonants like \(k\) (as in the case of the interrogative particle nubh 'then' plus kann 'you know' yielding nukkannt 'do you know then?' in I Corinthians 7,16) and \(n\) (in the case of jannin 'and not' and jah ni both occurring in Luke 7,32).

The phenomenon evidently reflects a fact of pronunciation that was either optional or not recorded consistently. In its most general form the rule could be stated as:

---

4 - In the few cases like us-standan 'stand up, rise', where the sequence comes about at word boundary, the manuscripts do not normally show the application of the rule. But notice the form ustandib in Mark 10,34.
That the rule applies only at word boundary can be seen in the fact that words like ahma 'soul' are consistently written without assimilation. The possibility that the rule is restricted to certain particles as Wright has suggested (1954:78) cannot be discarded, but this may be just a reflection of the fact that final h is most commonly found in these lexical items. For a statement of the rule similar to the above compare Voyles (1968:728).

On the other hand, the consistent assimilation to a following r across word boundary found in compounds like ur-reisan 'arise' seems to be restricted to the preposition which otherwise appears independently as ur, meaning 'out of, from'. Whether the underlying spirant in this preposition is s or r is an open question. However, since Gothic had abandoned the rule of Verner's Law (cf. King:1969:48-51) and since the voiceless spirant would be the unmarked member of the pair (cf. Schane:1968:715) it will be assumed here that s is the underlying segment. Although the change from s to r would be easier to specify by one feature, voice, than the one of r to s — and the assimilation rule very likely came about at an earlier
Germanic period when the structure of the lexical item was in fact us (at least at some point in its derivation) — this low-level rule can still be stated for Gothic without reference to voice in the input, since the restructuring of the lexicon from final s to a would have been general — if indeed any restructuring was needed, for Ver- ner's Law was very likely a low-level rule to begin with, voicing under- lying voiceless or unmarked spirants. The rule can furthermore be restricted to apply after u or better still, within the word, the con- vention adopted here for simplicity by leaving out any word boundary symbols, since there are no other sequences of sr or ur to which the rule could apply. The rule can be stated as:

\[
(9) \begin{array}{c}
\begin{bmatrix} + \text{strident} \\ + \text{coronal} \end{bmatrix} \rightarrow \begin{bmatrix} + \text{sonorant} \\ \alpha \text{features} \end{bmatrix} / - \begin{bmatrix} + \text{sonorant} \\ + \text{consonant} \\ - \text{nasal} \\ \alpha \text{features} \end{bmatrix}
\end{array}
\]

1.6 Dissimilation. The Gothic phenomenon of dissimilation known as Thurneysen's Law has been discussed so much that it is often used as an example of this type of process in general phonological dis- cussions. It mostly affects the spirants in nouns with suffixes in

5 - Chomsky and Halle (1968:351-2) use it as an example for the use of variables as feature coefficients and give the rule as:

\[
\begin{bmatrix} - \text{sonorant} \\ + \text{continuant} \end{bmatrix} \rightarrow [\alpha \text{voice}] / \begin{bmatrix} + \text{conson} \\ - \alpha \text{voice} \end{bmatrix} \begin{bmatrix} + \text{vocalic} \\ - \text{conson} \\ - \text{stress} \end{bmatrix}
\]
-is, -ipä, -ufni and -obus, so that in the noun riqis 'darkness' we find an underlying g (finally devoiced but obvious in the dative singular riqima) because of the voiceless value of the preceding q. The dative of agis 'fear' is agisa, however, with a voiceless spirant because of the voiced g preceding it. One also finds aubida 'desert' with voiced d after the voiceless b but mildiba 'mildness', with the same suffix but containing a voiceless dental this time. Parallel cases of dissimilation can also be seen in fraistubni 'temptation' versus waldufnja 'force' (accusative) and in wratodus 'journey' versus gabairstubu 'pleasures' (dative). The trouble with this rule is that it is by no means general. Compare, for example, nouns like gamaudi 'piety' and haubida 'heads', and preterits like habaidedun 'they had', where no dissimilation is in evidence. Even in the few cases with the suffixes listed above, where the rule is fairly general, exceptions are not hard to find: diupiba 'depth', hauhipa 'height, honor', with voiceless consonants in the suffix following voiceless consonants in the stem. In our view, what we are dealing with here is a pre-Gothic rule which had left traces of its operation in older nouns like agis and riqis (interestingly enough also attested as riqiz; twice, for example, in Matthew 6,23) and aubida but which was no longer in operation in the language of the manuscripts, leaving (probably later) derived nouns like diupiba unaffected. There seems to be no reason to include a rule for Thurneysen's Law, with its limited scope and numerous exceptions, in a synchronic grammar of Gothic.
CHAPTER II

VOWELS AND GLIDES

2.1 Length. A good case for vowel length in Gothic has recently been made once more by Vennemann (1970, 1971) after a period of several years during which the view that length was not distinctive in the language gained more and more adherence. Although the great majority of scholars working on Gothic during the last two decades, especially in the United States, are what one might call 'structuralists', the view has not been limited to this school. Fursel (1968), for example, accepted it in his generative sketch of the Gothic vowel system.

That Wulfila and the Gothic scribes did not mark length consistently has long been a well-known fact, but this is by no means a rare phenomenon. In the manuscripts of the early Germanic languages it is quite common for certain phonological features not to be recorded (cf. Kyes:1967 on Old Low Franconian), especially prosodic ones like stress and length.

1 - The appearance of Vennemann's work — especially the 1971 article in Lg., a more complete version of his paper of 1970 — has shortened this chapter considerably. His arguments in favor of considering length as distinctive in Gothic are convincingly presented and need not be discussed here in as much detail as originally planned. Some repetition is nevertheless unavoidable and necessary. The long overdue criticism of structuralist views on Gothic vocalism — another of the main points intended for this chapter — has also been undertaken by Vennemann, even if somewhat unfairly and/or mistakenly at times, and this has further simplified our task. There remain, nevertheless, some basic disagreements which will be stressed in what follows.

21
The whole problem of short and long vowels is tied to the interpretation of the value of the digraphs ei, ai, au and iu. The first of these renders both etymological i: and ei, as in Gothic swein 'swine' (Latin suinus 'porcine'), Gothic steiga 'I ascend' (Greek στιξω 'I go'). Since Gothic ei was also used consistently to render Greek names with ξι and this sequence was supposed to be pronounced as a high front monophthong in that language in the 4th century, and since etymologically short ξ also became i in Pre-Gothic, it was not difficult to conclude that the graph ei always represented a high, front, simple vowel in Gothic. Compare, for example, Braune (1956:12-3, 22-3) who interprets Gothic ei as long i: and the graph i as its short counterpart in that language.

The other three graphemic sequences of two vowels are more problematic. The value of the combination iu is still unsettled to-day and we have no conclusive evidence to decide between a monophthongal and a diphthongal value. Jones (1958b) and Hamp (1958) have argued in favor of the monophthongal interpretation, but Vennemann's position favoring their analysis but admitting uncertainty is the only possible one in view of the evidence. Again by the normal development of Indo-European short e to Germanic short i, the sequence iu represents historical eu, as in Greek Λυκός 'white', Gothic liuhab 'light'. We will interpret it phonologically as the sequence of i plus u, as history and Gothic morphology seem to require, and suspend judgment on its phonetic realization, of which we have no evidence.

The view that ai and au represented monophthongs, at least in
some cases, dates back to the nineteenth century. This value can be seen clearly in the rendition of foreign names, where Gothic ai is used to transcribe Greek and Latin e as in Paitrus for Petrus. The reduplicating syllable, which contained short e in Indo-European is also rendered by ai in Gothic. This use of ai to represent a front mid monophthong could have been borrowed from the Greek spelling practice of the time of Wulfila. One also finds au used to transcribe a foreign mid back monophthong as in Saudauma 'Sodom', while Greek and Latin au are never spelled in Gothic with au but with aw, as in the name Pawlus 'Paul'. There can be no doubt then that ai and au were used to indicate monophthongs. The question is whether they indicated monophthongs in all instances, as in the case of strong verbs like biugan 'bend', preterit baug 'I bent', where a bisegmental interpretation would yield a very simple analysis reflecting the ablaut alternation of i with a. We will argue that in cases like this (where the Gothic digraphs reflect older diphthongs) we are dealing with two vocalic segments on the systematic-phonemic level and that if there indeed was a general monophthongization rule in Gothic, this was a late phonological rule (cf. Vennemann:1971:112, 114) whose existence, which is far from proved, would have had only phonetic consequences. We will also subscribe to the traditional view that ai and au represented monophthongs in cases like the reduplicating syllable and foreign Biblical names and also examine in more detail below some of the problematic cases like inflectional endings.

2 - Detailed histories of the theories about the value of these graphemes can be found in Bennett (1949) and (1967a).

3 - This view is basically in agreement with those of Wurzel (1968) and Vennemann (1971).
The idea that Gothic showed no internal evidence for phonemic length and that the language may have distinguished vowels instead by means of qualitative differences is an old one (cf. Bennett:1967a:8). But it was Marchand in his 1955 dissertation and article who made a strong case for height as distinctive, so that ei and i were interpreted as being distinguished by the greater height instead of length of the former; the same would be true of the graph e versus ai and o versus au. His interpretation of the graphemes (1955a:137) was the following, where approximate values are given in parentheses:

<table>
<thead>
<tr>
<th>Front</th>
<th>Central</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close</td>
<td>ei (i)</td>
<td>a (u)</td>
</tr>
<tr>
<td>Open</td>
<td>i (I)</td>
<td></td>
</tr>
<tr>
<td>Mid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close</td>
<td>e (e)</td>
<td>e (o)</td>
</tr>
<tr>
<td>Open</td>
<td>ai (I)</td>
<td>au (ɔ)</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>a (a)</td>
</tr>
</tbody>
</table>

This arrangement was one of the factors which motivated linguists to try to fill in the high-back 'case vide' with another monophthongal phonemic unit for which iu, the only remaining diphthong, was the logical candidate. It is interesting to note, however, that Marchand has apparently never accepted this extension of his views as can be seen in his 1970 publication, where he repeats the above chart and
simply neglects to mention iu. In the sections that follow we will re-
view the relevant phonological phenomena on which our interpretation
of the data is based.

2.2 'Sievers' Law' and other related matters. The whole question of
vowel length in Gothic is very importantly dependent on the interpret-
ation of the -ei-/ji- alternation found in some inflectional endings.
Compare the second and third persons singular, present indicative (for
complete paradigms see chapter III, section 3.2) of the verbs nasjan
'save' and sokjan 'seek', which are respectively:

nasji
sokji

nasjan
sokjan

Verbs like nasjan (in which we expect etymologically a short vowel in
the root) show the -ji- alternant. Verbs with an expected long vowel
(like sokjan), with a short vowel followed by two consonants, or with
two syllables in the stem, show the -ei- alternant, the graphemic
sequence which is supposed to represent long i:

This alternation is supposed to be a reflex of Sievers' Law, a
phonological phenomenon which was much more general in Indo-European
(see, for example, Edgerton:1934,1943,1962 and Lehmann:1952, 1955 for
discussion). In the parent language all resonants (i, u, l, m, n, r)
appear to have been unmarked for syllabicity, with the environment
determining the value of the features consonantal and vocalic. In
syllabic environments (that is, between nonvocalic elements: C - C,
# - C and C - #) the resonants were syllabic; otherwise they were
consonantal. There was furthermore a third, long allophone (normal-
ly represented as iy, uw, ll, mm, etc.) in certain environments which
could be summarized as follows:

\[
\begin{array}{c}
\{C\} \\
\{V\} C - V \\
\#
\end{array}
\]

and which would bear some resemblance to the few, much more limited
contexts in which we find the long or tense Gothic -ei-. If this an-
alysis of Indo-European is correct — and no claims about the proto-
language are being made in this study — the process there was very
general and automatic. With ordered rules and assuming that + sonorant
covers all and only the desired segments (liquids, nasals and high
short vowels), it could be stated very simply as:

\[
\{+ \text{sonorant}\} \{+ \text{sonorant}\} / \{C\} C - V \\
\#
\]

(iv) \([+ \text{sonorant}] \\
\{[+ \text{vocalic}] \\
[- \text{vocalic}] / V
\]

The notation \(V\) in the environment of the third rule of the schema is
to be read 'either before or after vowel'. (In a formal Indo-European
phonology other possibilities must of course be considered, such as
treating the above as unordered redundancy rules, reexamining the first
subrule to determine whether another feature such as length or tense-
ness might not be more appropriate, or investigating the possibility
of introducing the second element of the 'long allophone' as a hiatus-
breaking glide, for example.) The points to be made, however, are (1)
that if Gothic alternations like *nasjis/sokeis are in effect a reflex
of the Indo-European situation, it is a much more limited one, res-
stricted only to the high front, non-consonantal segment, and (2) that
in Gothic phonology one must consider not only the survival of the
Indo-European rule predicting the third or long allophone ('Sievers' Law')
but also that of the others which predict the syllabicity-
glide status of the short high vowels. Any undue complexity of the
latter should be evaluated and motivated historically.

It is a clear and well-known fact that the complementary dis-
tribution postulated for the Indo-European resonants had been dis-
rupted in Proto-Germanic. The liquids and nasals, for example, had
given up their pure syllabic function and developed a vocalic segment
\( \underline{u} \) in that environment, so that we find Germanic roots like *hund-
'100' developing from I.E. *kmtöm (this example also showing assim-
ilation of the nasal to the following consonant). New sequences that
would not have been expected in the parent language also became com-
mon in Germanic, such as initial clusters like the one in Gothic
wraiżo 'curved, crooked', a lexical item of uncertain etymology. It
seems, therefore, that it isn't even possible any more to predict the
syllabic values of \( w/\underline{u} \), \( i/\underline{j} \) in all cases and that one is justified
in considering \( w \) and \( \underline{j} \) as underlying segments in Gothic phonology.
Attempts to predict every instance of these glides from underlying \( u \)
and ą, as in Wurzel (1968:14–20), lead to unnecessary complexity in the rules and to many exceptions thereto. We will propose below (section 2.5.2) that in spite of the disruptions and of the appearance of new segments, the great majority of the occurrences of Gothic w and ą are still predictable by means of a very simple rule.

A problem that led Marchand (1955a:101–2) to the rejection of Sievers' Law as evidence for Yong vowels in Gothic is that neither the application of the rule nor the exceptions to it are as regular as some (e.g. Vennemann:1971:106–10) suggest. For example, the genitive of the neuter noun andbahtī 'service' is attested both as andbahtēis and as andbahtjīs and there are many other examples of exceptions to the application of the rule. Marchand has cogently argued that although the regular cases of the application of Sievers' Law prove that there were long vowels in Pre-Gothic, it does not prove that they were still long in the language of Wulfila and the scribes. The answer to this argument is that the exceptions also do not prove that length had disappeared in Gothic and that the greater regularity of the rule vis-à-vis the exceptions — even as late as the time of the scribes — as well as other evidence that will be discussed below add weight to the long vowel interpretation. But Marchand's position is by no means as irrational as Vennemann would have us believe. 4 Neither is Marchand's analysis by any means irreconcilable with generative theory. The fact that rules can still

4 — Obviously Vennemann wasn't familiar with Marchand's thesis and didn't understand his arguments, for it is hard to believe that he quotes him out of context and confuses his arguments on purpose.
operate in a language after the conditioning factors have disappeared or changed radically (for example, the operation in Verner's Law in Germanic long after the accent had been fixed on the root) has long been recognized and can be handled in several ways, e.g. by the use of diacritic features.

2.3 Breaking. Another good piece of evidence for distinguishing long and short vowels comes from the process of short-vowel lowering known as 'breaking'. This can be seen clearly in cases of stressed i and u being lowered (i.e. spelled ai and au respectively) before h, hw and r. The phenomenon applies not only to individual lexical items like sauhts 'disease' (cf. Old High German suht) and loan words like paupurrai 'purple', also attested as paupaurai (cf. Latin purpura); but it can also be seen in operation in Gothic verbal inflection. Compare, for example, the principal parts of two strong verbs of the third class, where the normal vowel alternation is i - a - u - u. The verb hilpan 'help' shows the normal pattern, but the verb 'become' shows the operation of breaking before r:

<table>
<thead>
<tr>
<th>hilpan</th>
<th>halp</th>
<th>hilpum</th>
<th>hilpans</th>
</tr>
</thead>
<tbody>
<tr>
<td>wairpan</td>
<td>warp</td>
<td>waurbum</td>
<td>waurbans</td>
</tr>
</tbody>
</table>

On the other hand, words with originally long vowel do not show breaking, e.g. skeira 'clear', skura 'shower'. It seems, therefore, that in a generative grammar of Gothic one has to account for the lowering of short vowels. In a static, structuralist description of the language one could perhaps state that what we find in Gothic is
an alternation reflecting an older stage of the language. But in a specific, generative treatment of the language, the evidence cannot be ignored. Furthermore — as Vennemann has repeatedly pointed out in his 1970 and 1971 papers — the position that rejects length distinctions in the Gothic vowel system would require unnecessary complications and assume unnatural processes both in the diachronic development and in the synchronic grammar of Gothic. Although the rule has a few exceptions which could be marked as such in the lexicon — and Vennemann’s explanation of why the well-known case of *hiri* 'come!' does not show breaking, assuming that it is more of an interjection than a bona fide lexical item, might very well be correct — we see no better solution than to include the rule and base it on vowel length or tenseness.

2.4 Some historical considerations. The most general vocalic changes between Indo-European and Proto-Germanic are those of short *o* to short *a*, so that one finds, for example, Latin *hostis* 'enemy' but Gothic *gasts* 'guest, foreigner'; and of long *aː* to long *oː*, as in Latin *frater* 'brother' but Gothic *brobar*. Although its development in Proto-Germanic is complicated and influenced by factors such as umlaut, with different reflexes in the different Germanic dialects, Indo-European short *a* became Gothic short *i* with a great degree of regularity. The one notable exception is the apparent short *a* (spelled *ai*) found in the reduplicating syllable of Gothic verbs, which would continue an Indo-European vowel of similar length and quality. Assuming that this

---

5. These changes affected the vowels in diphthongal combinations as well, so that one finds, for example, *I.E. eu* → Gothic *iu*.
e is predictable by rule in that environment — and Bennett’s (1967b) suggestion along those lines seems to be a more positive and natural way of doing it than Vennemann’s (1971:124–6) use of an exception feature — one would have a change from a probable Indo-European system consisting of five short vowels and five long ones to a Gothic system with 6:

```
i    u    i:    u:
e:    o:    a
```

A new long a: arose in Germanic, however, from a general change at that stage which consisted of the loss of a nasal before a velar spirant with compensatory lengthening of the preceding vowel. Although this rule does not seem to be necessary in a grammar of Gothic to derive lexical items without paradigmatic alternations like baho ‘clay’ and peihan ‘thrive’ (the latter, in effect, a verb which patterns as a member of the first strong class, where one would expect long à: or ë: in the underlying representation, cf. 3.12), the retention of this rule in the language would be useful in the synchronic generation of items with alternations, such as verbs like briggan ‘bring’ with preterit brahta. We will therefore propose the

---

6 - An interesting possibility at this point would be to interpret the short e of Gothic as phonemic, an analysis that would yield a rectangular vowel system:

```
i    u    i:    u:
e:    o:    a
```

inclusion of this rule in a phonology of Gothic but also include as in the systematic-phonemic inventory of the language, a segment which, as Vennemann has pointed out (1971:103-4), was also familiar to the Goths from many foreign words. The vocalic inventory would then be the following:

\[
\begin{array}{c|c|c|c}
\text{i} & \text{u} & \text{i:} & \text{u:} \\
\text{e} & \text{o} & \text{a} & \text{a:}
\end{array}
\]

Two problems remain to be considered. Is one really justified in excluding short e and o from the underlying representations of Gothic lexical and grammatical formatives? Is one really justified in including e: and o:?

The two questions are very difficult to answer and perhaps only hypothetical answers are possible. One may tentatively agree with Vennemann (1971:110-1, fn. 35) that the number of systematic phonemes is no guide to simplicity since there is no place in a grammar where inventories are listed and not argue from that basis, a procedure which may in effect become very artificial and circular. But if the addition of short e to the above inventory does not increase the complexity of the system, doesn't it simplify the grammar by

---

7 - Although Vennemann seems to be motivated by such a desire for economy when he argues against the analysis of short e and o as underlying segments and although the very promising concept of markedness may nullify his argument and more than justify the structuralists' search for a 'balanced system'.
eliminating the need for special rules or exception features to generate the vowel of the reduplicating syllable? This alone seems like a good argument for the inclusion of short _e_ as an underlying segment. There are, furthermore, many cases where the graphemes _ai_ and _au_ are used (e.g. the endings of the present optative — cf. 3.4 — of all verbs, the stem vowel and endings of the weak verbs of the third class — cf. 3.2 and 3.3) and where we have and probably will never have any proof of their actual value, but where it is just as reasonable (if not more so) to assume that they stand for underlying short, mid monophthongs instead of long _ë_ and _œ_; That is why the answers to these questions must be hypothetical. In our hypothesis about Gothic phonology we will try to justify the view that if we assume that Wulfila used the graphemes _ai_ and _au_ only for underlying _ai_ and _au_ and for short _e_ and _o_ (instead of assuming also _ë_ and _œ_) a much more reasonable and simple picture of his spelling practice and of Gothic phonology emerges in which — as an added bonus and whatever its theoretical significance may be — we get a much more 'balanced' (i.e. 'less marked') system of five short vowels and their corresponding long ones.

2.5 The Rules.

2.5.1 Lengthening. As was pointed out in section 2.2 the phenomenon that we may call Sievers' Law is highly restricted in Gothic. It affects the segment _i_ only when it is preceded by a 'long' root and followed by _i_ and nothing more than the spirants _p_ or _q_, that is, in the environment which one could abbreviate as:

\[
\text{LONG STEM - } i \begin{cases} a \\ p \end{cases} \#
\]
and where LONG STEM stands for a lexical formative containing two or more vowels (whether in one syllable or more), a long vowel followed by a consonant, or two consonants immediately preceding the i segment. In the examples mentioned previously, the verb sokjan 'seek', with a stem that we would enter in the lexicon as so:ki-, meets the specification when we add to it the suffixes -is and -ip of the second and third persons singular, present indicative, respectively, and we find the forms sokeis and sokeip. On the other hand, the short stem nasi- 'save' does not and we find nasjis and nasjip.

One also finds that in the second person singular imperative, for which we will propose a grammatical formative -i in the following chapter (section 3.6), a long i: is always present, regardless of whether the stem preceding it is long or short, as in nasei 'save!' and sokei 'seek!'. We will then propose that the Gothic rule be:

(10) \( i \rightarrow [\ ^{+} \text{long}] / <\text{LONG STEM}> _ i <\{s\} > \# \)

With the specification that the rule, which was probably a remnant of the much older Sievers' Law and had become narrowed in its application to only one sonorant segment in those few environments, had become further restricted in that its application had become optional (especially in nouns). Thus stated, with its environment completely

---

8 - Unfortunately, with our restricted corpus and no informant available one cannot be more specific than this. Perhaps this 'optionality' did not arise until the time of the scribes, two centuries after Wulfila, or was an indication that the rule had disappeared in their 6th century dialect. But Vennemann's hard and fast rule to exclude all neuter nouns (1971:110) seems unwarranted in view of the evidence.
specified, the rule becomes general in its application, and 'exceptions' such as the n-stem nouns, for example, are simply excluded by the fact that they do not meet the structural description of the rule. It seems then, that Vennemann's readjustment rule (1971:110) and his special rule for imperatives (1971:110:fn. 34) are not needed.

One may reasonably wonder what happens phonetically to the sequence ɨːi generated by this rule, since the orthography only shows a long i: spelled ei. Although it would also be reasonable to answer that this is an unknown fact or assume that the vowels simply merge by a general convention or guess that they were pronounced as iːy, etc., it so happens that there is independent need in Gothic for a rule that deletes any vowel after a long vowel to explain why verbs like salbon have present forms like salbos 'you anoint', from salbo:- plus -is (cf. section 3.2 below). This rule:

\[
\begin{array}{l}
V \quad V \Rightarrow 1 \; \emptyset \\
\begin{cases}
+ \text{long} \\
- \text{stress}
\end{cases} \\
1 \\
2
\end{array}
\]

(11)

could also operate on the output of rule (10) explaining why no trace of the short i remains.

2.5.2 Stress and glides. One of the most interesting problems of Gothic phonology has to do with the status and generation of the glides w and j. It was already argued in section 2.2 that there are grounds for
considering these to be underlying segments in some cases like initial position, where troublesome Gothic pairs like juk 'yoke' versus iup 'upwards' (troublesome only if we try to predict all glides by rule) begin to lose their mystery if we assume that they have i- and i- respectively in their underlying representations. Other problematic cases like -triu 'tree', dative triwa, but waurstw 'work', dative waurstwa also lose their exceptional status if we assume that the rule only generates glides from underlying vowels in Gothic (not the other way around) and that the structure of lexical items like 'tree' and 'work' have final u and w respectively. Wa-stem adjectives all seem to have underlying w in Gothic, so that words like lasiws 'weak' are possible. Although the evidence does not allow any strong claims as to what the phonetic value of these 'glides' was, it is quite reasonable to assume that they were spirants.

In order to state a general and meaningful rule for glides, however, its interaction with the stress rule must be considered. Granting that very little is known about Gothic stress — the best treatment of the matter being Bennett's (1970) — the following general rule will be tentatively offered:

\[
(12) \quad V \rightarrow [1 \text{ stress}] / \# [-\text{vocalic}]_0 ^3
\]

to assign primary stress to the first vowel of the word, e.g. iup

---

9 — Alternately and probably more correctly one could say that w and i are marked as 'vocalic' but that i and u are unspecified for syllabicity in the lexicon.
but juk. Being a phonological rule, (12) will operate after morphophonemic processes like reduplication and compounding, assigning primary stress to the reduplicating syllable, for example, and cyclically reducing the primary stress to secondary in the original root of the reduplicating verb or the second member of compounds.

Having assigned primary and secondary stress to the first real vowel of the root (cf. items like strong verbs of class II where we find biudan 'bid, offer' and never *bjudan) we are in a position to state the rule generating glides from underlying i and u, a rule which is overwhelming in its simplicity:

\[
\begin{align*}
&\begin{bmatrix}
+ \text{vocal} \\
+ \text{high} \\
- \text{stress}
\end{bmatrix} \\
\rightarrow \begin{bmatrix}
- \text{vocalic} \\
- \text{vocal}
\end{bmatrix} / - \begin{bmatrix}
+ \text{vocal}
\end{bmatrix} (\begin{bmatrix}
- \text{vocal}
\end{bmatrix})
\end{align*}
\]

where including (\begin{bmatrix}
- \text{vocal}
\end{bmatrix}) in the specification of the rule insures that the rule operates from right to left by the disjunctive ordering convention for parentheses (see Chomsky and Halle:1968:61-4) so that if a consonant or word boundary actually follows, the rule will scan the environment VC or V# first, correctly generating the glides in the nominative and dative forms, for example, of nouns like hawi 'hay':

\[
\begin{align*}
haui + \emptyset & \rightarrow hawi \\
haui + a & \rightarrow hauja
\end{align*}
\]

2.5.3 Shortening and lowering. It has long been observed that there
are alternations between long ø: and ai, long ø: and au in Gothic.
Lexical items like the noun *sebs 'seed' and the verb saian 'sow',
which are clearly related in form and meaning, reflect this altern-
ation. Compare also the forms of the verb stojan 'judge' (with long
ø:) and its preterit stauida. In both cases it is clear that we are
dealing with monophthongs, since otherwise the form should be *sajan
in one case and *stauida in the other. (Notice also the noun stauna,
meaning 'judge' if masculine but 'judgment' if feminine, where no
glide is found either.) This alternation can be captured by a rule
like the following:

\[
(14) \begin{bmatrix}
+ \text{vocal} \\
+ \text{long} \\
\text{1 stress}
\end{bmatrix} \rightarrow \begin{bmatrix}
- \text{long} \\
- \begin{bmatrix}
+ \text{vocalic}
\end{bmatrix}
\end{bmatrix}
\]

The vowel has to be specified as having primary stress because in
unstressed position rule (11) applies deleting the second vowel
and under secondary stress (14) does not apply either, as can be
seen in reduplicated preterits like waiwoun 'they blew'. The lex-
ical formatives of verbs like saian and stojan can now be entered
in the lexicon as se: - and sto:i- respectively, and the nouns
sebs and stauna will have the same monophthongs in their underlying
representations. As for the infinitive (and present) versus the
preterit forms stojan versus stauida notice how the rules apply in
the order given. To the infinitive sto:i + an (13) applies first
generating the glide j and leaving no + vocalic segment after the
as to which (14) could apply. One therefore finds stojan. In the
preterit, on the other hand, where (13) does not apply to the un-
derlying form stoji + da, the segment i remains vocalic, triggering
(14) whose output is the expected form with au.

Although we do not consider this question to be of great prac-
tical importance, we have stated the rule in terms of shortening
rather than lowering because, among other things, it would imply
complete consistency on the part of Wulfila in the monophthongal use
of ai and au, and it would also eliminate the need for the segments
εi and ηi at all levels, a savings we would rather effect in our
grammar until more convincing evidence for their need is presented.
It can of course be argued that this rule would be typically Gothic
and 'unparalleled in other Germanic languages' (Vennemann:1971:119:
fn.43). To this one can only reply that the rule seems to be typical-
ly Gothic, no matter whether the process is one of lowering or of
shortening, and that if there were no rules that were typically Goth-
ic there would be no such language. Furthermore, it is even quite
possible that the whole argument is vacuous and that what we have in
Gothic vowels is a tense/lax opposition with long and short, high and
low, as redundant values thereof (or vice versa) and that the rule is
correctly stated either way, depending only on what hierarchy one as-
signs to the features.

At this point the general breaking rule (cf. 2.3 above), which
lowers stressed high short vowels before h, hw and r should be in-
troduced, before we discuss two other isolated phenomena of lowering:
It would of course be desirable to find a simple feature specification to state the environment in which this lowering takes place (such as + back, + continuant, - vocalic if the r were velar, for example), but under the circumstances we have stated the rule using the symbols for the three segments.

Two lowering rules will now be stated that affect individual vowels and that will hopefully clarify some problems of Gothic etymology and morphology. Perhaps because of their non-general nature — although since they effect a lowering of short vowels they could possibly be combined with (15) — these rules have never been agreed upon by investigators in the past, but Sehrt (1956) arrives at conclusions quite similar to the ones about to be presented. The first rule lowers stressed short u to o before a vowel:

\[(16) \quad [+\text{high}] \rightarrow [-\text{high}] / [+\text{vocalic}]\]

This rule, which applies, as numbered, after (14) explains the shape of lexical items like the verbs bauan 'dwell', trauan 'trust' and
bæuan 'rub', which show the graphs au where the other Germanic
dialects have a long uː. Compare, for example, bæuan with Old En-
glish and Old High German bwan, Old Icelandic búa. We may now enter
these items with a long uː in the Gothic lexicon and synchronic deriv-
ations like the following will take place:

bus + an

Shortening by (14): bu + an
Lowering by (16): bo + an
Gothic spelling: bæuan

It is quite possible, of course, that at some point, since this rule
does not seem to govern any alternations, Gothic may have restructured
the lexical items involved, by-passing rule (14) and eliminating (16)
entirely from its grammar. But this must remain an open question and
the rule has been presented here because of its possible synchronic
and diachronic validity.

The second rule 'lowers' (and/or retracts) unstressed short e
to a before a high vowel and deletes it before a non-high one;
and here is a case where the assumption of an underlying short mid
vocalic segment seems to be appropriate. The rule can be stated as:

(17) e →
[- stress] ∈ \{ a / - [+ vocalic] \\
\quad + high \} \\
\quad + vocalic \} \\
\quad - high \} \\
and its operation can be seen in the inflection of weak verbs of
the third class (cf. sections 3.2 and 3.3 in the following chapter). Verbs of this class, like haban 'have' and bahan 'be silent', appear to be related to older verbs with long e: in the stem, such as habere and tacere of the second Latin conjugation, and show forms of the following type in the present and preterit indicative:

<table>
<thead>
<tr>
<th></th>
<th>PRES</th>
<th></th>
<th>PRET</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO</td>
<td>1 haba</td>
<td></td>
<td>habaida</td>
</tr>
<tr>
<td></td>
<td>2 habais</td>
<td></td>
<td>habaides</td>
</tr>
<tr>
<td></td>
<td>3 habaip</td>
<td></td>
<td>habaida</td>
</tr>
<tr>
<td>DUAL</td>
<td>1 habos</td>
<td></td>
<td>habaidedu</td>
</tr>
<tr>
<td></td>
<td>2 habats</td>
<td></td>
<td>habaidedu</td>
</tr>
<tr>
<td>PL</td>
<td>1 habam</td>
<td></td>
<td>habaidedum</td>
</tr>
<tr>
<td></td>
<td>2 habaip</td>
<td></td>
<td>habaidedup</td>
</tr>
<tr>
<td></td>
<td>3 haband</td>
<td></td>
<td>habaidedun</td>
</tr>
</tbody>
</table>

It will be argued in the next chapter, where complete conjugations can be found, that the present indicative endings of Gothic verbs are best interpreted as -e, -is, -ib, -ois, -ats, -am, -ip and -and; and that the preterit endings of weak verbs are -da, -dais, -ds, -daedu, etc. The problem is to determine what the ai before the dental suffix of the preterit stands for and what happens to it before the suffixes of the present indicative. It is a well known fact that Indo-European long e and o were both reduced to short e in final position in Germanic, but the development of these
segments in unstressed but non-final position is not as clear and does not seem to be as parallel. This can be seen by comparing third class weak verbs like *haban* with those second class verbs like *salbon* 'anoint', which show long e: clearly throughout their paradigms (e.g. infinitive *salbon*, present *salbo* 'I anoint', preterit *salboda* 'I anointed'). Also revealing is the fact that the third class of weak verbs tended to disappear as such, falling together with either class I or class II in the other dialects, and only Old High German is conservative in this respect, retaining long e: clearly in forms like *haben*, *habes*, *habet*, etc.

We will propose the following historical hypothesis to account for the Gothic data: (1) That original long e: was lax ed to short e in unstressed, non-final position. (2) That this short e is what Wulfila -- being once more consistent in his use of ai for monophthongs -- expressed as surfacing in preterit forms like *habaida*. (3) That in the present forms rule (17) affected the underlying segment yielding:

\[
\begin{align*}
\text{habe} + \text{a} & \rightarrow \text{hab}^\phi + \text{a} \quad \text{spelled } \text{haba} \\
\text{habe} + \text{is} & \rightarrow \text{haba} + \text{is} \quad \text{spelled } \text{habais} \\
\text{habe} + \text{i}b & \rightarrow \text{haba} + \text{i}b \quad \text{spelled } \text{habaib}
\end{align*}
\]

and so forth. It should also be stressed that this solution does not in any way imply that the pronunciation of the above endings was diphthongal. If in fact there was a monophthongization rule in Gothic, it would have applied to all diphthongal sequences including the above present endings that come about as the result of rule (17).
It could of course be argued that Gothic was more like Old High German and that the sequence ai in preterits of third class weak verbs stood for a long, open mid vowel — as one would assume Vennemann would do — or that the suffixes of the preterit were -ida, etc., instead of -da — as Sehrt (1956:6) proposes. But until more convincing evidence is brought forth we will maintain our faith in the consistency of Wulfila's spelling and in the simplicity of our analysis, where the change of e to a and Φ seems to be more natural than a similar change from a long vowel.

2.5.4 Compensatory lengthening and glide insertion. In section 2.4 the rule that deletes nasals before a velar aspirant with lengthening of the preceding vowel was discussed. This rule can simply be stated as:

\[(+\text{vocalic}) (+\text{nasal}) \rightarrow (+\text{vocalic}) \emptyset / \_h \]

\[1 \quad 2 \quad 1 \quad 2\]

and although this low level rule is an old one, going back to Proto-Germanic where nasalization of the vowel was probably involved, the specification of the preterits of verbs like briggan 'bring' makes it very likely that it was retained in Gothic and we are therefore including it in our synchronic phonology.

One last rule, which appears to be optional, at least in the spelling practice of the scribes, involves the introduction of a hiatus-breaking glide in certain environments. The fact that com-
peting forms are attested, with and without the glide, probably im-
plies simply that it was a very low-level rule which the scribes did
not bother to indicate consistently in the manuscripts. The rule:

\[
\emptyset \rightarrow j \mid [+\text{vocalic}] + [+\text{vocalic}]
\mid [+\text{stress}]
\]

explains the forms like the third person singular of the verb saian
'sow', which is attested as saijib only, and of the present partic-
iple of the same verb, found both with the spelling saiands and
saijands. The \( j \) in the plural forms of the verb 'be' (e.g. 'we are',
attested usually as sijum but also eleven times as sium) will also
be introduced in this manner. The rule has been stated as inserting
a glide directly, but should theoretical considerations show that it
is more economical to introduce \( i \) and have the glide rule mark it as
'– vocalic', then (19) could be modified accordingly and ordered to
precede rule (13).
2.6 Fully specified systematic phonemic matrix of Gothic:

|      | p | t | k | b | d | g | f | p | x | s | m | n | l | r | i | e | a | o | u | i | e | a | o | u | w | y |
| Vocalic | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Conson. | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Sonorant | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Voice | - | - | + | + | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Contin. | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Anterior | + | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Coronal | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Nasal | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Long | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Back | - | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| High | - | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Round | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Strid. | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
CHAPTER III

VERBAL INFLECTION

3.1 General remarks. In order to illustrate and justify some of the generalizations made about Gothic phonology in the preceding chapters we shall now discuss some of the central morphological processes of the language, treating verbal inflection in this chapter and nominal inflection in chapter IV. Although the aim is not a thorough coverage of all forms, we shall try to analyze the major inflectional categories in detail in order to show how some of the previous conclusions were arrived at, illustrate how our phonological rules work, and at the same time propose some new rules and theories which will hopefully help to clarify and explain the morphological behavior of Gothic nouns and verbs.

3.2 The present indicative. As is well known, due to the limited nature of the corpus no Gothic verb is attested in all its forms. There are enough forms available, however, to give us a clear picture of the verbal paradigms, and like most grammars and handbooks we have taken the liberty of giving examples of the complete conjugations of individual verbs for the sake of clarity in our discussion. The model verbs that we have chosen as illustrations are the usual, well attested ones used in most grammars for this purpose. They are the strong verb niman 'take, receive'; and the weak verbs nasjan 'save' (representing the short-stem verbs of what has traditionally been called class I); sokjan 'seek, desire' (representing the long-stem verbs of
class I); salbon 'anoint' (class II); haban 'have' (class III); and fullnan 'become full' (class IV). For the sake of uniformity we have listed them all in the same order, giving first the forms of the first three persons of the singular for each verb (first through third), then the two persons of the dual (first and second), finally the three of the plural (first through third person again) as is customary. The following list should then illustrate the present tense forms of our six model verbs:

<table>
<thead>
<tr>
<th>STR</th>
<th>Ia</th>
<th>Ib</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG 1</td>
<td>nima</td>
<td>nasja</td>
</tr>
<tr>
<td></td>
<td>2 nimos</td>
<td>nasjis</td>
</tr>
<tr>
<td></td>
<td>3 nimić</td>
<td>nasjić</td>
</tr>
<tr>
<td>DL 1</td>
<td>nimos</td>
<td>nasjos</td>
</tr>
<tr>
<td></td>
<td>2 nimats</td>
<td>nasjats</td>
</tr>
<tr>
<td>PL 1</td>
<td>nimam</td>
<td>nasjam</td>
</tr>
<tr>
<td></td>
<td>2 nimić</td>
<td>nasjić</td>
</tr>
<tr>
<td></td>
<td>3 nimand</td>
<td>nasjand</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG 1</td>
<td>salbo</td>
<td>haba</td>
</tr>
<tr>
<td></td>
<td>2 salbos</td>
<td>habais</td>
</tr>
<tr>
<td></td>
<td>3 salboğ</td>
<td>habaić</td>
</tr>
<tr>
<td>DL 1</td>
<td>salbos</td>
<td>habos</td>
</tr>
<tr>
<td></td>
<td>2 salsots</td>
<td>habats</td>
</tr>
<tr>
<td>PL 1</td>
<td>salbos</td>
<td>habam</td>
</tr>
<tr>
<td></td>
<td>2 salboğ</td>
<td>habaić</td>
</tr>
<tr>
<td></td>
<td>3 salbond</td>
<td>haband</td>
</tr>
</tbody>
</table>
As can readily be seen, the traditional classification has been established for both synchronic and diachronic reasons. The distinction between strong and weak verbs is not very obvious in the present since the endings for this tense are very general, but it will become clear when we discuss the preterit forms below. One obvious characteristic of the strong verbs, however, is their structure, which consists of a lexical formative ending in a consonant (e.g. *nim-*) to which the present-tense suffixes are directly attached. The special status of the weak verbs of class IV is also not readily apparent in the present tense forms, although their structure and meaning reveal their historical connection with the Indo-European verbs with the *-ne-ae-* (singular) and *-ne-ae-* (dual and plural) formatives and the inchoative and inceptive verbs of Greek and Latin.

The distinction between the two types of weak verbs of class I (which we have called Ia and Ib) has already been discussed in chapter II, sections 2.5.1 and 2.5.2, in connection with the behavior of vowels and glides, and rules (10) and (13) have been proposed to account for their differences. The rules, which, as was pointed out, were remnants of the sonorant rules of Indo-European, had become optional to a great degree and were probably in the process of disappearing in Gothic; they predict the different forms of the second person (both singular and plural) and of the third person singular in the two types of verbs of class I and eliminate the need for any kind of formal distinction between them in the lexicon and for any readjustment or otherwise special rules to account for their behavior. We would enter them simply as *nasi-* and *so:ki-* in the lexicon of our
grammar, suffix the same grammatical formatives -ip and -is to them, and let the two rules (lengthening and glide) generate the correct forms. Slightly more problematic are the weak verbs of classes II and III.

In our treatment of the vowels in chapter II we also had to discuss the weak verbs of class III. To recapitulate for the sake of clarity at this point we will briefly repeat that rules (11) and (17) as proposed there were intended primarily as a solution to the here-tofore unexplained behavior of these particular classes of verbs. We postulated a pre-Gothic process that reduced Indo-European long e: to Germanic short e (spelled ai in Gothic) in unstressed but non-final position. In view of the Gothic evidence we then concluded that this rule, which must have been a Germanic innovation and an active part of an older grammar, had affected a restructuring in the Gothic lexicon and had been given up, with the result that verbs like haban are now members of the Gothic lexicon in the shape of habe- (with short instead of long final e). Rule (17) then lowers short e to short a before high vowels (thus habe + is → habais in the second person singular present) and deletes it before the low vowel (e.g. habe + a → haba in the first singular present) and so on without exception throughout the conjugation of haban and other verbs of its class, noting again that whether habais in the above example was pronounced with a final diphthong or with a monophthong is a matter beyond empirical verification and irrelevant at this level, since the monophthongization of the vocalic sequences ai and an could have been effected by a late rule in the grammar of Gothic.
With these rules and lexical formatives of the type *haba*- we are now able to generate regularly all the correct present forms (and all other forms as well as will be shown below) of class III weak verbs using the same suffixes (*-a, -is, -ip* for the singular; *-o:s, -ats* for the dual; *-am, -ip, -and* for the plural) of all the verbs, both weak and strong, discussed so far.

This leaves us only with the verbs of class II to account for, which show a slight difference in their endings due to the absence of the vowels (*a* and *i*) found in the suffixes of all the others. The idea of a short vowel being deleted after a long one is, however, not unreasonable phonologically, and for this we postulated rule (11) for Gothic. The irregularities of the second class then disappear and we are able to use the same set of suffixes for the present forms of all verbs without exception. Thus, setting up *salbo: -* as the base form we would get *salbo: + a* → *salbo: i* in the first person singular present *salbo: + is* → *salbo: ia* in the second, and so forth in all the forms of these verbs. Although the evidence here points only to the sequence of *o: plus a or i*, we have treated the rule as general, deleting any vowel after a long one, since we are not aware of any contrary evidence and it seems to apply to the sequence of long *i:* plus *i* brought about by the application of rule (10). Rule (11) looks suspiciously like a morpheme structure condition of the language, operating here across formative boundary and effecting a deletion when the sequence comes about by affixation. It would therefore appear to be of the type of NS condition which Stanley (1967:402) describes as functioning as a phonological rule as well. It is only in the latter
form that we are considering it here. If our proposed rule (II) is valid we may enter our model verb as salbo;— in the lexicon and use the same present tense suffixes:

\[
\begin{array}{ccc}
\text{SG} & \text{DL} & \text{PL} \\
-e & -ons & -en \\
-is & -ats & -ip \\
-ip & & -and
\end{array}
\]

that are common to all the verbs of the language, regardless of class membership.

3.3 The preterit indicative. In the past-tense forms of the Gothic verbs we find a less unified picture than in the present. Here the distinction between strong and weak verbs is evident and although we will treat the apophonic and/or reduplicating aspects of the strong verb separately in section 3.12 we will briefly discuss here their similarities and differences with the weak as seen in their suffixes.

A look at the model verbs will be useful here too:

<table>
<thead>
<tr>
<th>STR</th>
<th>Ia</th>
<th>Ib</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG 1 nam</td>
<td>nasida</td>
<td>sokida</td>
</tr>
<tr>
<td>2 namt</td>
<td>nasides</td>
<td>sokides</td>
</tr>
<tr>
<td>3 nam</td>
<td>nasida</td>
<td>sokida</td>
</tr>
<tr>
<td>DL 1 nemu</td>
<td>nasidedu</td>
<td>sokidedu</td>
</tr>
<tr>
<td>2 nemuts</td>
<td>nasideduts</td>
<td>sokideduts</td>
</tr>
<tr>
<td>PL 1 nemum</td>
<td>nasidedum</td>
<td>sokidedum</td>
</tr>
<tr>
<td>2 nemup</td>
<td>nasidedump</td>
<td>sokidedump</td>
</tr>
<tr>
<td>3 nemum</td>
<td>nasidedum</td>
<td>sokidedum</td>
</tr>
<tr>
<td>II</td>
<td>III</td>
<td>IV</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>SG 1</td>
<td>salboda</td>
<td>habaida</td>
</tr>
<tr>
<td>2 salbodes</td>
<td>habaides</td>
<td>fullnodes</td>
</tr>
<tr>
<td>3 salboda</td>
<td>habaida</td>
<td>fullnoda</td>
</tr>
<tr>
<td>DL 1</td>
<td>salbodedu</td>
<td>habaidedu</td>
</tr>
<tr>
<td>2 salbodeduts</td>
<td>habaidedu</td>
<td>fullnodeduts</td>
</tr>
<tr>
<td>PL 1</td>
<td>salbodedum</td>
<td>habaidedum</td>
</tr>
<tr>
<td>2 salbodedup</td>
<td>habaidedup</td>
<td>fullnodedup</td>
</tr>
<tr>
<td>3 salbodedum</td>
<td>habaidedum</td>
<td>fullnodedum</td>
</tr>
</tbody>
</table>

The unity of the weak verbs is immediately apparent, with their structure of root plus vowel plus dental suffix, the vowel being, as previously stated, part of the lexical entry, so that the rules of affixation can be made general, without distinction of class.¹ The characteristic vocalism of the strong verb nisan, with its distinction of singular versus dual and plural is also obvious. So are the differences between the endings of nisan and those of the weak verbs. But if we look at the final segments of the dual and plural forms we can see some similarities between the weak and the strong verbs. Making a cut after the final d of the weak suffixes we are left with the endings -u, -utz, -um, -up and -un which are common to weak and strong verbs alike. It seems that for the preterit we have a very redundant situation where two signals were used for all verbs. Calling these signals Past 1 and Past 2, we may represent the situation in the following manners:

¹ - For discussion of the minor problems presented by the vowel of class IV see section 3.3.1 below.
Preterit = Stem + Past 1 + Past 2

where Past 2 = (a) -s for the first and third persons singular of the strong verb.

-s for the first and third persons singular of the weak verb.

(b) -t and -es respectively for the second person singular.

(c) -u and -uts for the two dual forms of all verbs.

(d) -um, -ub and -um for the three plural forms of all verbs.

while Past 1 = (a) Ablaut and/or reduplication for the strong verbs.

(b) The dental formatives for the weak:

-d- for all three present forms.

-deid- for all dual and plural forms.

Although it is quite probable that speakers were not aware of this double-signal situation and that the endings of the weak verbs were more easily analyzed and memorized as -da, -des, -deidum, etc. (as they surely were in the later Germanic languages, where this class — with only one clear-cut suffixal formative to indicate the past — became more general and productive than the strong verbs with their combination of root inflection plus suffixation) we will nevertheless use it in our presentation since it allows us to state the rules for past inflection in a more general and systematic way.
For Past 1 we could say more formally that: Past 1 → Dental Suffixes /v + _/. Otherwise Past 1 will remain to trigger (automatically as we shall see in section 3.12) the ablaut and reduplication rules.

The origin of the dental preterit is still one of the most debated problems of Germanic linguistics and a bibliography of the topic would constitute a book-length project.2 One of the problems is that of reconciling the Gothic forms in -desd- with those found in the North- and West-Germanic dialects. It is interesting to note that Prokosch (1938:197-9), for example, accepts the view that the Gothic forms go back to the Indo-European root *dhe:- 'do' but considers this to be a Gothic innovation peculiar to the dialect. But whatever its origin and subsequent development, we are faced in Gothic with a fairly straightforward situation where the formatives:

<table>
<thead>
<tr>
<th>Past 1</th>
<th>Past 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>-d-</td>
<td>-a</td>
</tr>
<tr>
<td>-d-</td>
<td>-ess</td>
</tr>
<tr>
<td>-d-</td>
<td>-a</td>
</tr>
<tr>
<td>-desd-</td>
<td>-u</td>
</tr>
<tr>
<td>-desd-</td>
<td>-ats</td>
</tr>
<tr>
<td>-desd-</td>
<td>-um</td>
</tr>
<tr>
<td>-desd-</td>
<td>-up</td>
</tr>
<tr>
<td>-desd-</td>
<td>-um</td>
</tr>
</tbody>
</table>

2 - The reader is referred to Prokosch (1938:193-9), Bech (1963:37-41), Mest (1951) and Van Coetsem (1970a:77-9) for bibliography and discussion. A 'Forschungsbericht' is now being prepared by Guy A. Tops of Cornell University as a doctoral dissertation which should be the first complete coverage of the subject.
may be added to the stems. If in effect the root *dhei-* is the origin of the Gothic forms with -e₁-, this could explain the retention of this vowel in inflectional endings where one would expect it to be unstressed and thereby reduced. Being independent roots in origin, the Gothic dental suffixes could form 'quasi-compounds' (Bennett: 1970: 466-7) with the stem, thus receiving secondary stress and remaining unaffected by the loss of length. We will therefore consider the weak preterit formatives as having secondary stress on the -e₁-, thus treating them as perfectly regular in their vocalic structure and not as exceptions to the earlier vowel-reduction rules. Otherwise one could consider them as innovations introduced after the vowel reduction had ceased to operate in an earlier grammar.

3.3.1 Some exceptions. In terms of exceptions to the generality of weak-preterit inflection several types of verbs must be considered. The first type consists of a few verbs of class I like brukjan 'use' whose preterit is bruhta, with -t- instead of -d- and without any trace of its -j/i- vocalic element. There seems to be no question that these verbs, few in number but of frequent occurrence, are indeed exceptional and to be marked as such in the lexicon. The same is true of briggan 'bring', a verb which combines this type of dental suffixation with vocalic change in its preterit brahta. Briggan should then be marked in the lexicon as undergoing -t- suffixation and the ablaut rule which changes i to a (see section 3.12 below). The spirantization of the consonant before t, which gives us the h in brahta, would be brought about by a rule that was probably more general in Proto-Germanic (applying to labials and velars before s
or t) but which seems to be limited to a few verbs in Gothic, since otherwise we find the sequence velar stop plus s or t in forms like skalka 'servant'. The rule for Proto-Germanic has been stated by Van Coetsem (1970:10) using the feature 'coronal' to specify labials and velars:

\[(20) \ [\text{- continuant}] \rightarrow [\text{+\' continuant}] / [\text{- coron}] \{s, t\} \]

Except for restricting it to the verbs in question (which would be a restriction in the lexicon and not in the rule itself) and eliminating the s (since it is no longer necessary to specify it in Gothic) from the environment, there seem to be no reasons for further modifying the rule for Gothic.

Exceptional treatment by means of special rules would also have to be accorded to verbs with unique characteristics like gaggan 'go' and its suppletive preterit idda.

The weak verbs of class IV, fullan in our examples, present us with another deviation from our general rule of adding the suffixes to the stem, which one would expect it to be fullan- judging from the present, where one finds fullana, fullnis, etc. In the preterit, however, one finds the vowel -qi-, as in fullnoda.

It has been observed that these verbs — which in later Germanic tended to disappear as a class — go back to Indo-European models having -na- in the singular present, -na- in the plural (Prokosch: 1938:156-7, Boer:1924:264-5) as in Greek dámnami and dámnamen. In
Latin, on the other hand, the long vowel was extended throughout the paradigm in verbs like *consternare*. Van der Leyen (1908:59,62) comments that, in view of the historical situation, one should expect Gothic to have -ō₁- in the present as well.

The -ō₁- of the preterit is therefore a historical retention and its disappearance in the other tenses looks like an innovation. That the vowel should be kept between ₒ n and ₒ is phonologically not surprising, since it acts as a syllabic element to break up the cluster and to bring these verbs into line with all the other weak ones, which have a vowel before the dental stop of the suffix. We are therefore placed in an ambiguous position in describing these verbs. We must either insert the vowel by means of a rule in the past forms, which appears too cumbersome and historically unmotivated; or we must delete it in all other forms, which again appears cumbersome in view of what appears to be a very simple alternation of ₒ₁ and ₒ. Much more satisfying intuitively would be to be able to include this information in the lexical entries of these verbs, so that the entries would look something like **fulln(ₒ) - ( / - ₒ)**.

This solution, which shall be adopted here, seems more neutral and less complicated than having phonological rules to add or subtract the vowel in different environments. This type of lexical notation also seems to express the fact that the vowel segment is historically part of the lexical item and not truly epenthetic. It also makes members of class IV parallel to all other weak verbs by having a stem that ends in a vowel.

Whether this situation was typically Gothic or more general in
Proto-Germanic will probably never be known. But that it is an awk-
ward situation can be seen by the fact that this class of verbs ten-
ded to disappear as such. Compare, for example, their transfer to
the second class in Old Icelandic, not to forget the older leveling
in Latin as well. It appears that in Gothic some verbs like maurnan
'mourn', which should have belonged to class IV historically, have
been relieved of their membership therein and lexicalized as members
of class III.³

3.4 The present optative. Historically, the ending of the first per-
son singular optative has been very difficult to account for, especi-
ally the final -u, which Prokosch (1938:216), for example, consider-
ed an enclitic. Very probably the suffix is a Gothic or Germanic in-
novation which cannot be traced directly to Indo-European, but whe-
ther his proposal is historically correct or not, Jones' view that
the whole ending -au stands for a monophthong (1958:34) and is thus
very close to the Icelandic ending -a appears extremely sensible. The
-au- of the other forms constitutes no problem since, no matter how
it may have been pronounced, it could still be a normal develop-
ment of Indo-European -oi- (as in Greek phér-oi-q, phér-oi, etc.) by the
Germanic development of short o to short a. The complete Gothic
paradigm would look like this:

³ This verb, however, does not have inchoative meaning and may
never have been a member of class IV.
<table>
<thead>
<tr>
<th>STR</th>
<th>Ia</th>
<th>Ib</th>
</tr>
</thead>
<tbody>
<tr>
<td>SU</td>
<td>1 nimau</td>
<td>nasjau</td>
</tr>
<tr>
<td></td>
<td>2 nimais</td>
<td>nasjais</td>
</tr>
<tr>
<td></td>
<td>3 nimaí</td>
<td>nasjai</td>
</tr>
<tr>
<td>DL</td>
<td>1 nimaiwa</td>
<td>nasjaiwa</td>
</tr>
<tr>
<td></td>
<td>2 nimaitis</td>
<td>nasjaitis</td>
</tr>
<tr>
<td>PL</td>
<td>1 nimaima</td>
<td>nasjaíma</td>
</tr>
<tr>
<td></td>
<td>2 nimai̇p</td>
<td>nasjaíp</td>
</tr>
<tr>
<td></td>
<td>3 nimaína</td>
<td>nasjaína</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO</td>
<td>1 salbo</td>
<td>habau</td>
</tr>
<tr>
<td></td>
<td>2 salbos</td>
<td>habais</td>
</tr>
<tr>
<td></td>
<td>3 salbo</td>
<td>habai</td>
</tr>
<tr>
<td>DL</td>
<td>1 salbowa</td>
<td>habaiwa</td>
</tr>
<tr>
<td></td>
<td>2 salbots</td>
<td>habaitis</td>
</tr>
<tr>
<td>PL</td>
<td>1 salboma</td>
<td>habaima</td>
</tr>
<tr>
<td></td>
<td>2 salbòp</td>
<td>habai̇p</td>
</tr>
<tr>
<td></td>
<td>3 salbôna</td>
<td>habaina</td>
</tr>
</tbody>
</table>

Keeping in mind once more that at the phonological level it is not really crucial to our analysis whether we consider ai and au to be the autonomous phonemes /ai/ or /e/, /au/ or /o/ respectively, one minor consideration in view of the evidence leads us to support the monophthongal interpretation of the present optative formatives in...
the lexicon. This is the behavior of the weak verbs of class II. It would be much simpler to assume that our rule (11) (page 35) applies only once, deleting the vowel following the final one of the stem salbo:-. We therefore propose that the optative present of all verbs be formed on the basis of the following suffixes:

<table>
<thead>
<tr>
<th>SO</th>
<th>DL</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-o</td>
<td>-eua</td>
</tr>
<tr>
<td>2</td>
<td>-es</td>
<td>-ets</td>
</tr>
<tr>
<td>3</td>
<td>-e</td>
<td></td>
</tr>
</tbody>
</table>

One interesting speculation that arises from this interpretation is that if in effect Wulfila's digraphs stood for nothing more than short mid monophthongs at this deep a level, then perhaps this reflects an ancestry of monophthongs in Indo-European as well, possibly long o: or long e: shortened but not lowered in unstressed position. In this case all resemblance to earlier optatives would be lost and the Indo-European subjunctive would emerge as a more likely source for these Gothic forms. This of course still leaves the problem of the first person singular unexplained, but not more unexplained than the more traditional optative-origin theory and a 'reason' for its deviance from the normal historical development becomes available. This reason would be the elimination of homonymy (found in Greek, for example, where the ending of both was long o:) between the first person singular present indicative and the first person singular present subjunctive. For the indicative we would get the normal change of -o: (→ -o?) + -a, yielding the regular nīma, for
example; but for the subjunctive we would get -o: → -u, yielding the form spelled nizau. This would differentiate all indicative forms from the subjunctive forms in all verbs except those of the second class weak.

3.5 The past optative. The endings of these forms parallel those of the present fairly closely, except that the processes of preterit formation take place (ablaut in the strong verbs, suffixation in the weak ones) and that long i: (spelled ai as usual) seems to be the sign of the tense. This i: seems to be shortened before word boundary, as in the third person singular, and before vowel, where it also undergoes the application of the glide rule, as in the first singular:

<table>
<thead>
<tr>
<th>STR</th>
<th>Ia</th>
<th>Ib</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG 1</td>
<td>nesjaun</td>
<td>nasidedjau</td>
</tr>
<tr>
<td></td>
<td>nesedes</td>
<td>nasidedeis</td>
</tr>
<tr>
<td></td>
<td>nesidi</td>
<td>nasidedi</td>
</tr>
<tr>
<td>NL 1</td>
<td>nesdeia</td>
<td>nasidedeia</td>
</tr>
<tr>
<td></td>
<td>nesedeits</td>
<td>nasidedeits</td>
</tr>
<tr>
<td>PL 1</td>
<td>nesdeima</td>
<td>nasidedeima</td>
</tr>
<tr>
<td></td>
<td>nesdeip</td>
<td>nasidedeip</td>
</tr>
<tr>
<td></td>
<td>nesdeina</td>
<td>nasidedeina</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td>---</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>SG 1</td>
<td>salbodedjau</td>
<td>habaidedjau</td>
</tr>
<tr>
<td>2</td>
<td>salbodelis</td>
<td>habaidedlis</td>
</tr>
<tr>
<td>3</td>
<td>salbodeli</td>
<td>habaideli</td>
</tr>
<tr>
<td>DL 1</td>
<td>salbodelsiwa</td>
<td>habaidedsiwa</td>
</tr>
<tr>
<td>2</td>
<td>salbodelisits</td>
<td>habaidedsiits</td>
</tr>
<tr>
<td>PL 1</td>
<td>salbodelsiima</td>
<td>habaidedsiima</td>
</tr>
<tr>
<td>2</td>
<td>salbodelsiip</td>
<td>habaidedsiip</td>
</tr>
<tr>
<td>3</td>
<td>salbodelsiina</td>
<td>habaidedsiina</td>
</tr>
</tbody>
</table>

One can distinguish here again the Past 1 formative (in this case -deid- throughout the paradigm of the weak verbs and e: vocalism throughout the paradigm of nima, that is, Past 1 does not distinguish between singular and plural as it does in the indicative) and the Past 2 formative, which is the same for all verbs.

There is very little evidence of the historical antecedents for the past optative and we have no new, concrete proposals to make. No definite proof exists that Indo-European optative forms are their actual source (see Streitberg 1963: 344-6, for example, for discussion) but the presence of long and short i seems to point in that direction. The origin of i: could have been an earlier long high front vowel or it could have been a combination of short e plus i. Interesting possibilities would be to consider earlier contrasts of present optative -ai- (reduced to short e) versus past optative -ai- or of present optative -ai- versus past optative -ai- as regular alternation patterns. We could even extend the -a- of the pres-
ent optative (like in a way we must the -iː- of the past) to the first person singular, where it would be deleted before -o in perfect accordance with our o rule (number 17, page 41) and thus achieving some degree of parallelism between the present and the past forms of the optative. But we are not convinced at this point that the synchronic grammar of Gothic requires this abstraction, although the idea is possibly worthy of further consideration.

Synchronically we could by the same reasoning also include long iː in all Past 2 formatives of the optative, shortening it before vowel and in final position (for the first and third singular forms respectively and perhaps trying to combine this with our rule 17) but at present we see no greater economy in this and propose the following endings to be added as Past 2 of the optative to all verbs:

<table>
<thead>
<tr>
<th></th>
<th>SG</th>
<th>DL</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-io</td>
<td>-iːna</td>
<td>-iːma</td>
</tr>
<tr>
<td>2</td>
<td>-iːsa</td>
<td>-iːtsa</td>
<td>-iːp</td>
</tr>
<tr>
<td>3</td>
<td>-i</td>
<td></td>
<td>-iːna</td>
</tr>
</tbody>
</table>

It should perhaps be noted that our lexical entries and general rules will account for all the surface shapes as usual. The long oː of the stem of the fourth weak class will appear before the dental preterit; the short i of the first class will be vocalic before consonant; the glide rule will affect short i and u between vowels; and the short e (spelled ai) of the third weak class will be neither lowered nor deleted before the consonant of the past suffix. It is also noteworthy that in the first person singular of the second weak class we now
find an ending in short o (spelled au) which was missing in the present optative salbo due to deletion after long vowel.

3.6 The imperative. The forms of this mood present some problems, one of which — the ending of the second person singular of weak class I — has already been mentioned in chapter II, section 2.5.1, in connection with the question of lengthening and glides. Only the second person forms (singular and plural) seem to have direct, clear antecedents in earlier, related languages. In Krahe (1967:130–1, 142), for example, they are traced to *-e and *-ete, as in Greek phere and phere-te, which, by normal phonological changes (loss of final unstressed short vowel, Grimm’s Law, and raising of short e to i) developed into the Gothic forms like nim and nimip. A look at the model paradigms will again make references to Gothic forms clearer:

<table>
<thead>
<tr>
<th>STR</th>
<th>Ia</th>
<th>Ib</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG 2</td>
<td>nim</td>
<td>nasei</td>
</tr>
<tr>
<td>3</td>
<td>nimadau</td>
<td>nasjadau</td>
</tr>
<tr>
<td>DL 2</td>
<td>nimats</td>
<td>nasjats</td>
</tr>
<tr>
<td>PL 1</td>
<td>nimam</td>
<td>nasjam</td>
</tr>
<tr>
<td>2</td>
<td>nimip</td>
<td>nasjip</td>
</tr>
<tr>
<td>3</td>
<td>nimandau</td>
<td>nasjandau</td>
</tr>
</tbody>
</table>
Obviously, this historical reasoning for the forms of the second person helps to explain the second plural ending of all verbs (where the lengthening and glide rules work as expected, generating nasjib but sokeip) and most second person singulars, but clearly fails in the second singular of verbs like nasjan, where the final i should have either disappeared, leaving *nasi, or triggered the glide rule, yielding *nasji. The suffix -i is evidently present, but causes lengthening instead of the sequence *-ji, which is apparently never present in word-final position in Gothic. We have then proposed that rule (10) be so stated as to operate before word boundary, thus accounting for the lack of glide or of reduction in imperatives like nasei.

But unfortunately it is not possible to make the second person singular suffix completely general. This imperative form of the strong verbs consists of the 'pure stem' (Prokosch:1938:215) and we have been forced to specify the affix as -j for these verbs and the fourth class weak ones, -i for the others. The second person plural is general and presents no problem historically. One may consider it to be -ip for
all verbs.

The history of the other imperative forms is slightly less clear than that of the second persons, but in a grammar of Gothic they present no real problem. We can consider them to be:

- 3rd Sing. → -ado
- Dual → -ats
- 1st Plural → -am
- 3rd Plural → -ando

The final shape of all forms would be strictly according to the general rules proposed so far.

3.7 The passive indicative. Gothic is the only Germanic language to show a clear process of inflection for the passive voice. As Prokosch (1938:219) points out, the second and third persons singular and the third plural show their origin in the regular medio-passive endings (*-sai, *-tai, *-ntai) of Indo-European, through Verner's Law and loss of final short i; but with some changes like analogy taking place:

<table>
<thead>
<tr>
<th>STR</th>
<th>Ia</th>
<th>Ib</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG 1</td>
<td>nisaha</td>
<td>nasjaha</td>
</tr>
<tr>
<td>2</td>
<td>nisasa</td>
<td>nasjasa</td>
</tr>
<tr>
<td>3</td>
<td>nisada</td>
<td>nasjada</td>
</tr>
<tr>
<td>PL 1–3</td>
<td>nisanda</td>
<td>nasjanda</td>
</tr>
</tbody>
</table>
The third person singular suffix, for example, seems to have been extended to the first singular, and that of the third plural to all the plural forms, which are the same for the three persons. For the grammar of Gothic we may assume the grammatical formatives to be:

1st and 3rd person singular → -ada
2nd person singular → -aza
1st - 3rd persons plural → -anda

for all verbs. The initial a of the suffix is deleted by rule (11) after the long vowel of the stem of class II, and rule (17) would also delete the short a of the stem of verbs of class III. There are no dual forms and the verbs of class IV, due to their intransitive nature, show no passivization.

3.8 The passive optative. The same type of leveling that is present in the passive indicative can be seen in these forms:

<table>
<thead>
<tr>
<th>STR</th>
<th>Ia</th>
<th>Ib</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>nimaidau</td>
<td>nasjaidau</td>
</tr>
<tr>
<td>2</td>
<td>nimaizau</td>
<td>nasjaizau</td>
</tr>
<tr>
<td>3</td>
<td>nimaidau</td>
<td>nasjaidau</td>
</tr>
</tbody>
</table>
PL 1–3 nimaindau

II

III

IV

SO 1 salbodau
2 salbosau
3 salbodau

PL 1–3 salbondau

habaidau

habaizau

habaidau

habaizau

The first and third persons of the singular share the same suffix and so do the three of the plural. The ending of the suffix is now *au*, which we assume to be short *o* as in the first singular active optative. The suffixes begin with *ai*, which we again take to be short *e* as in the present optative. Our rules will carry out the necessary deletions on verbs of classes II and III as usual. There are again no dual forms and no passives for verbs of class IV. The formatives we propose are then the following:

1st and 3rd singular → -edo
2nd singular → -eto
1st - 3rd plural → -endo

to be added to the usual stems.

3.9 The present participle. These atemporal forms, which are also inflected for gender and case, following basically the pattern of weak nouns and adjectives, are formed by the addition of *-and-* to the lexical formative of the verb. To this suffix (clearly the descendant of Pre-Germanic *-on-t*) the nominal endings are then added. Using the
customary weak nominative singular masculine forms as examples we find:

<table>
<thead>
<tr>
<th>STR</th>
<th>Ia</th>
<th>Ib</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>niamans</td>
<td>nasjans</td>
<td>sokjans</td>
<td>salbons</td>
<td>habans</td>
<td>fullnans</td>
</tr>
</tbody>
</table>

where the vocalic deletions in the weak classes II and III are, as usual, according to rule.

3.10 **The past participle.** Like in all past forms we find here a distinction between strong and weak verbs:

<table>
<thead>
<tr>
<th>STR</th>
<th>Ia</th>
<th>Ib</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>mumans</td>
<td>nasips</td>
<td>sokips</td>
<td>salbops</td>
<td>habips</td>
<td>—</td>
</tr>
</tbody>
</table>

The former show the expected ablaut in the root and -n- as a suffix.
The latter only show a dental suffix -p-. Both, being adjectival, receive in addition the endings of the nominal inflection, which in our examples is again the -s of the nominative singular masculine.

We must therefore take the strong/weak distinction into consideration and enter -n- and -p- as the grammatical formatives of the past participle for strong and weak verbs respectively. Probably due to the perfective and passive meaning associated with the past participle no such forms of the weak verbs of class IV are attested.

3.11 **The infinitive.** These forms, with which we complete our survey of verbal suffixation, present no problem. They are already familiar from the citations of examples throughout the discussion:
With the proposed lexical formatives \textit{nim-}, \textit{nasi-}, \textit{so:ki-}, \textit{salbo-}, \textit{habe-} and \textit{fulln} (\textit{q}) - ; and adopting \textit{-an} as the grammatical formative; we find that the general rules specify the correct shape of the infinitives of all verbs, regardless of class.

3.12 Strong verbs.

3.12.1 General Remarks. The phenomena of vowel alternation and/or re-duplication that accompany affixation in the strong verbs have been one of the most studied and debated topics in Germanic linguistics. Nevertheless, many theoretical problems remain unsolved.

One of the basic characteristics of these verbs is that their stems normally end in a consonant (\textit{nim-}) or in a plain vowel (\textit{se-})\textsuperscript{4}. This distinguishes them clearly from the weak verbs, whose stems always end in a consonant followed by a vocalic segment (\textit{nasi-}, \textit{so:ki-}, \textit{habe-}, etc.) and the general ablaut or reduplication rules can therefore be based on this information. We will then assume that the Gothic strong verbs — as a class — are not to be treated as in any way exceptional or irregular and that the rules for vowel alternation and/or reduplication will automatically apply to them wherever the symbol

\textsuperscript{4} — That is, they have structures of the type \#(c\textsuperscript{3}) V (c\textsuperscript{2}) - . The only exceptions are a few verbs of class VI like \textit{hafjan} 'raise' which have \textit{i} in their basic (present) forms but preterits like \textit{hof}, and which should be marked 'Dental Suffix' in the lexicon. A rule feature is also required for them to effect the deletion of the \textit{i} of the stem in word-final position.
Past I is present instead of the dental suffix.

Three basic types of strong verbs must be distinguished. The first type undergoes vowel alternation only. Another type shows vowel alternation and reduplication at the same time. The third type has reduplication only. Examples using the traditional four principal parts and the classification into seven series will make our discussion clearer. For simplicity in our chart and discussion we have used PAST A to indicate the past singular indicative and PAST B for the past plural indicative and both numbers of the past optative:

<table>
<thead>
<tr>
<th>INFINITIVE</th>
<th>PAST A</th>
<th>PAST B</th>
<th>PAST PART</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>greipan</td>
<td>graip</td>
<td>gripum</td>
</tr>
<tr>
<td>II</td>
<td>biugan</td>
<td>baug</td>
<td>bugum</td>
</tr>
<tr>
<td>III</td>
<td>bindan</td>
<td>band</td>
<td>bundum</td>
</tr>
<tr>
<td>IV</td>
<td>niman</td>
<td>nam</td>
<td>nemum</td>
</tr>
<tr>
<td>V</td>
<td>giban</td>
<td>gaf</td>
<td>gebum</td>
</tr>
<tr>
<td>VI</td>
<td>alahan</td>
<td>sloh</td>
<td>slohum</td>
</tr>
<tr>
<td>VII (a)</td>
<td>lestan</td>
<td>lailot</td>
<td>lailotum</td>
</tr>
<tr>
<td>(b)</td>
<td>saian</td>
<td>saiso</td>
<td>saisoum</td>
</tr>
<tr>
<td>(c)</td>
<td>haldan</td>
<td>haihald</td>
<td>haihaldum</td>
</tr>
</tbody>
</table>

The first six series illustrate the different types of alternations found in the verbs with ablaut only. Series VII shows examples of reduplicating verbs, further illustrating those that (a) show ablaut alternation of the type e: - o: (b) show ablaut of the type e - o: and (c) show reduplication only.
3.12.2 Reduplicating verbs. Whether a strong verb undergoes reduplication or not is also predictable from its morpheme structure. Members of class VII will always have a stem with (1) long eː or long oː — e.g. letan 'let', hwowan 'boast' (2) a followed by two consonants — e.g. haldan 'hold' or (3) a followed by a high vowel — e.g. aukan 'add', skaidan 'divide'. Therefore, no special markings are needed to categorize them in the lexicon.

The difference between subseries (a) and (b) is purely a phonetic matter, the reduction of stressed long vowel before another vowel as specified by our rule (14)(page 38), which was given and discussed in section 2.5.3 above. All we need for these two types of verbs is a general ablaut rule that affects the change eː → oː in all past forms, a morphological rule that will apply before the general phonological one that reduces long eː to short e. Since both the vowel of series VII and the short a of series VI alternate with oː we can combine both changes in one ablaut rule like the following:

(Ablaut Rule 1)

\[
\begin{array}{c}
\text{[+ vocalic]} \\
\text{[- high ]} \\
\end{array} \rightarrow \begin{array}{c}
\text{[+ back]} \\
\text{[+ long]} \\
\end{array} \rightarrow _{G_1} \text{PAST}
\]
In the rule we have specified that only one consonant may follow the vowel to exclude verbs like *baldan* of subseries VII (c).\(^5\) That series VI and VII should show a similar alternation is not surprising, since they both are members of the Proto-Germanic \(a\) group described by Van Coetsem (1956, 1963), the rest of the ablauting verbs (series I through V) being descendants of the earlier \(e\) group, after the normal phonological development of Germanic short \(e\) becoming Gothic short \(i\).

The reduplication rule will apply automatically to all verbs whose stems end in any of the following configurations:

\[
\begin{array}{c}
\{ \text{c} \} \\
\{ \text{c} \} \\
\{ \text{v} \}
\end{array}
\]

\[
\text{a} \quad \{ \text{c} \} \\
\{ \text{c} \}
\]

\(^5\) There is certainly one exception to this rule, the reduplicating verb *alepan* 'sleep', which has a preterit *saislep*, and should be marked 'Ablaut Rule'. Another apparent exception is the class VI verb *standan* 'stand', whose vowel undergoes ablaut in spite of being followed by two consonants in the present and has a preterit *stood*, without the nasal of the present. The status of this verb, the only Germanic relic of a more widespread class in Indo-European is truly unique, and the verb should be given a rule feature for the insertion of \(-n-\) in the present, as has been suggested by Van Coetsem (1970b:15). This would reflect its unique nature while at the same time giving it the lexical form *stad-* which captures its regularity with respect to the ablaut rule.
and can be stated as follows:

(Replication rule)

\$ \rightarrow \langle C \rangle_1 \langle O \rangle_2 \bullet / - \# \langle C \rangle_1 \langle O \rangle_2

It introduces the reduplicating vowel \( a \) (spelled \( ai \) as usual) and repeats the initial consonant of the verb if any, plus a possible following obstruent (that is, a segment that is 'sonorant'). The rule generates the preterits:

- sakam 'add' \( \rightarrow \) aiauk
- saian 'cow' \( \rightarrow \) saisoi
- leitan 'let' \( \rightarrow \) lailot
- akaidan 'divide' \( \rightarrow \) akaiskaip
- gretan 'weep' \( \rightarrow \) gaigrot
- alepan 'sleep' \( \rightarrow \) saislep
- hwopan 'boast' \( \rightarrow \) hwaikwop
- haldan 'hold' \( \rightarrow \) haihald

correctly by means of only one rule. Notice that in \( \text{hwopan} \) the symbols \( hw \) stand for the single labiovelar segment by our adopted spelling convention and not for a sequence of spirant plus sonorant. Compare the similar but more complicated solutions in Wurzel (1968:29-30) and Vennemann (1971:126).

3.12.3 The ablauting verbs. For the remaining strong verbs (series I through V or the Proto-Germanic \( o \) group) the old ablaut rules must
have been very simple at a very early period:

(iv) \[ e \rightarrow \begin{cases} \varepsilon & / \text{PAST A} \\ \emptyset & / \begin{cases} \text{PAST B} \\ \text{PAST PART.} \end{cases} \end{cases} \]

But by the time of the historical Germanic languages we find that this simple alternation had broken down. Instrumental in this change must have been the process of dissonorization (see Van Coetsem 1963: 268-70, 1970b:23-32 for discussion) whereby the syllabic liquids and nasals lost their vocalic quality and developed an actual segment \( u \) before them (thus pre-Germanic, syllabic \( l, r, m, n \) became \( ul, ur, um, un \) respectively). This rule must have been an addition to the grammar of Proto-Germanic and must have contributed also to the disruption of Sievers' Law. It could be stated as follows:

(v) \[ \emptyset \begin{cases} + \text{cons} \\ + \text{vocal} \end{cases} \rightarrow \begin{cases} + \text{vocal} \\ + \text{back} \\ + \text{high} \end{cases} \begin{cases} \emptyset \\ - \text{long} \end{cases} \]

The appearance of \( e \) in the past plural of the fifth and (probably later) of the fourth series was another development that must have disrupted the original simplicity of ablaut. How old this development
is and why it took place will probably never be known, but it is quite reasonable to assume that there were mutual influences at work between this systematization of Proto-Germanic *e – e* in the fourth and fifth series, and the *a*-group systematization of *a – a* in the sixth, where the two oppositions amounted to a simple one of length. (See, for example, Van Coetsem 1963:278–81 and 1970a:85–7 for discussion). The extension of *e* to the preterit plural of the fourth class appears at first glance like a reasonable analogical development, a case of rule simplification. Where before the introduction of *e* would have been restricted to the environment before an obstruent — and it is reasonable to assume that the *e* developed first in series V where there was no sonorant to produce a regular syllabic *u* — the rule would then be generalized in Proto-Germanic to apply before any single consonant. But in reality the new rule would involve the use of more symbols.

From:

\[(vi) \quad e \rightarrow [+ \text{ long}] / \quad [- \text{ sonorant}]\]

the rule would have had to change to:

\[(vii) \quad e \rightarrow [+ \text{ long}] / \quad [+ \text{ consonantal}]\]

a more complicated situation where it must be specified that one and only one consonant must follow in order to keep the rule from applying to series III.
Problems such as this one, and also the fact that there were already in Gothic some verbs that did not abide by the general rules — brikan 'break', for example, behaved like a verb of class IV in spite of having an obstruent instead of a sonorant following the vowel — should serve as warnings against treating the Gothic verbal ablaut as if it were very general and conservative. The treatments of Motsch (1967) and Wurzel (1968) are examples of such an approach. It seems that the historical Germanic languages had moved considerably in a direction away from the simple and general ablaut alternations and toward a more modern situation in which speakers must have treated strong verbs as individual lexical items whose vocalism had to be memorized, just as they must memorize them today in learning a modern Germanic language, either as natives or not. If there are general rules involved, they very probably are today — and were in Gothic days — a matter of patterns based on similarity of vowel coloration and not on ordered rules based on morpheme structure. Thus Gothic niman and brikan would be learned as obeying a certain rule that generates a and u in past forms regardless of root structure.

The presence of short i in the past participle of series V is another interesting phenomenon, since it is only this form that forces us to distinguish between the fifth series and the fourth, whose past participial forms show u before sonorant. This i did not spread to the fourth series (as the u of the past plural presumably did) and if anything, the opposite seems to have taken place in the above mentioned example of brikan. This, however, is not surprising, since the u was a much more common sign of ablaut than i, being the result
of the zero grade of both the diphthong _iu_ of series II and of the
desororization of liquids and nasals in series III and IV. Furthermore,
since the extension of _i_ to class IV would not bring about any
more rule simplification than the extension of _e_ did, its limitation
to series V is in accordance with the logic of simplicity.

As to the source or origin of this _i_ one may speculate that perhaps
there never was a zero grade for past-participial forms of the
verbs of the fifth series. It is difficult to imagine unattested
forms like *gibans for gibans (cf. Van Coetsem:1963:275) without any
syllabic element to break up the resulting clusters. No rule is actu-
ally needed to generate the _i_ in these verb forms, since it is the
same vowel found in the base form, and perhaps the rule for the zero
grade of the past participle always was — or very early became —
simply:

(vii) \( i \rightarrow \emptyset / \_ [\ + \text{sonorant}] \text{ PAST PART} \)

leaving the verbs of the fifth series unaffected with forms like
gibans. On the other hand, once vowels themselves (rather than _∅_)
began to be considered the sign of these forms and to be generated
as such by the rules, the spread of _u_ to the fifth series (e.g. verbs
like brikan) would be a reasonable analogy, since the trend would be
in the direction of a simpler rule like:

(viii) \( i \rightarrow u / \text{ PAST PART} \).

without any mention of phonological environment.
The first three series seem to reflect the simple, early alternation best. Assuming with Wursel (1968:26-9) that the infinitive forms of series I and II have the segmental sequences ii and in respectively in their underlying representations, we then find the simple alternation i - a - i' - i' corresponding — by the normal development of I.E. o to Gothic i and of I.E. o to Gothic a — to the early o - o - i' - i' pattern of the parent language.

There are many possibilities for the specification of the ablaut alternations. Most economically the rules could be ordered in the manner of Hotsch (1967:129), Wursel (1968:28) and Vennemann (1971: 113-6), but this type of solution is psychologically very unsatisfying, since it seems to imply that speakers seldom generated an individual past form of an individual verb directly, and instead had to take several possible forms and the morpheme structure of several verbs into consideration as part of the operation of uttering a simple past like man 'I took'. Ordered rules would indeed be the most efficient and economical procedure in the doubtful event that a speaker were called upon to generate all possible ablaut forms of the language (e.g. to fill in a chart like that of our modal verbs on page 72), but it goes against the simplicity that must have been involved in producing the correct shape of any given verb fairly automatically in any of its individual past forms. The rules that will be proposed here will then be stated in such a way that they apply to the vowel found in the present or infinitive forms (apparently the most economical procedure), generate the past singular, past plural and past participle forms independent of each other, and take into consideration as little of
the morpheme structure of the verb as possible.

Another theoretical question that comes up is whether we can or should generate the u in past-plural and past-participial forms of series III and IV directly, or whether we should assume that zero is still the output of the ablaut rules and that the desonorization rule (v) is still in operation in Gothic. There are reasons for favoring each of the two solutions but we have found no conclusive evidence to force a decision. For example, since the generation of zeroes for series I and II seems sensible and desirable, it would be convenient to extend this rule to series III and IV for more generality. On the other hand, since the facts of Gothic inflection already force us to generate the vowel a directly in series IV and V, and since the desonorization rule does not seem to be operative anywhere else in the grammar, it seems rather ad hoc and uneconomical to generate zeroes for verbs like bindan and niman and then introduce the desonorization rule (restricted to the past form of strong verbs) to change the ø to a short u. The former solution seems more natural and we will therefore follow Wurzel in generating the u directly for verbs of series III and IV.

For the past singular the rule would be very simple, lowering i to a in any phonological environment:

(Ablaut Rule 2a)

$$\begin{align*}
\begin{bmatrix} + \text{ high} \end{bmatrix} & \Rightarrow \begin{bmatrix} - \text{ high} \end{bmatrix} / \text{PAST A} \\
\begin{bmatrix} - \text{ back} \end{bmatrix} & \Rightarrow \begin{bmatrix} + \text{ back} \end{bmatrix}
\end{align*}$$

For the past plural we propose generating ø before vowel, u before
two consonants, and otherwise (i.e. before one consonant):

(Ablaut Rule 2b)

\[
\begin{align*}
\begin{cases}
\emptyset & / - [\text{+ vocal}] \\
\begin{cases}
\begin{cases}
\text{[+ high]} & / - [\text{+ conson}]_2 \\
\text{[+ back]} & / - [\text{+ conson}]_2 \\
\text{[+ long]} & \\
\text{[- high]} &
\end{cases}
\end{cases}
\end{cases}
\end{align*}
\]

For the past participle the rule would again be fairly simple, generating \( \emptyset \) before vowel and \( u \) before sonorant consonant. Before obstruents the rule would not apply, leaving the \( i \) unchanged for the correct forms of verbs of the fifth series:

(Ablaut Rule 2c)

\[
\begin{align*}
\begin{cases}
\text{[+ high]} & \rightarrow \begin{cases}
\emptyset & / - [\text{+ vocal}] \\
\text{[+ back]} & / - [\text{+ conson}] \\
\text{[+ sonor]} &
\end{cases}
\end{cases}
\end{align*}
\]

The three rules can be expressed by means of one schema:

(Ablaut Rule 2)
Further abbreviation is possible, for example, by collapsing the zero rules of the past plural and past participle.

3.12.3.1 Excursus. Maximum simplicity could be reached, furthermore, if we were to give up our distinct categories of past plural versus past participle, order our rules, generate \( \emptyset \) instead of \( u \), and introduce the desonorization rule after the ablaut rule. We would then be able to state the \( \mathfrak{i} \) ablaut as:

\[
\begin{aligned}
\text{a} & \quad / \quad \text{PAST A} \\
\mathfrak{i} & \quad / \quad C_1 \quad \text{PAST B} \\
\emptyset & \quad / \quad \text{PAST}
\end{aligned}
\]

This very simple rule, however, would have to be followed by a
desonorization rule like the one discussed on page 76 (rule v) but restricted to apply only between a consonant and a sonorant in the environment of the past plural and the past participle of the strong verbs. Perhaps this is the best solution. The repetition and greater specificity of the rules proposed earlier, however, seem to point to the newer state of affairs introduced by the innovations of desonorization and introduction of e₁ and which was to be carried further in the direction of pure vocalic contrasts in the later Germanic languages.

Such as state of affairs in Gothic — where i-ablauting verbs would be treated as irregular and as expressing their tense by certain patterns of vowel alternation based more on memory than on structure — could, one may speculate, be expressed by means of four 'horizontal rules' like the following (where the numbers are for reference and do not imply ordering):

<table>
<thead>
<tr>
<th></th>
<th>PAST A</th>
<th>PAST B</th>
<th>PAST PART</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>2</td>
<td>&quot;</td>
<td>u</td>
<td>u</td>
</tr>
<tr>
<td>3</td>
<td>&quot;</td>
<td>e₁</td>
<td>u</td>
</tr>
<tr>
<td>4</td>
<td>&quot;</td>
<td>e₁</td>
<td>i</td>
</tr>
</tbody>
</table>

Verbs would then be marked as 'Ablaut Rule 3', for example, in the case of niman and brikan, and this would help to explain the ease with which many verbs switched classes in the historical Germanic dialects, since only the change of one (rule) feature in a lexical item would be involved instead of a change in the general
3.12.3.2 No matter how simple or how redundant the most general rules may be, however, they will fail to generate the correct forms of some verbs (e.g. past participle of brikan) and these will have to be marked appropriately in the lexicon. Other verbs not mentioned so far also appear to be irregular. These are the old aorist presents that deviate from the general ablaut pattern in having u or uː in the present and infinitive forms. Thus trudan 'tread' has an attested past participle trudans and is therefore usually listed as belonging to the fourth series. The verb ga-lukan 'shut', apparently with long uː, has its other three principal parts like a verb of the second series: -lauk, -lukum, -lukans. These verbs need not be considered irregular, however. If we enter them as trud- and luk- respectively, our rules for i ablaut, which have been stated so as to apply to high vowels in general, will apply to u as well as to i (vacuously in cases like the

6 - The possibilities for speculation are endless. What if indeed the phonetic quality of the vowel had become the determining factor and monophthongization had taken place so that, as some have suggested, in had become something like [u], ai something like [e] and au something like [o]? A completely new picture for series I and II would emerge, where the ablaut alternations would be:

(I) i: e  i  i  
(II) u: o  u  u

thus increasing the number of horizontal rules, but not necessarily by two, since, in terms of features, one rule:

\[
(\text{x}1) \quad \begin{bmatrix} + \text{high} \end{bmatrix} \rightarrow \begin{bmatrix} - \text{high} \end{bmatrix} \quad \begin{bmatrix} - \text{long} \end{bmatrix} \quad \begin{bmatrix} - \text{long} \end{bmatrix}
\]

would specify the alternation in both series.
past participle of trudan) generating the correct forms.
CHAPTER IV

NOMINAL INFLECTION

4.1 General. In its nominal inflection Gothic presents us with a very interesting mixture of conservatism and innovation. Gone are the clear distinctions between classes that must have existed in the parent language and the regular ablaut alternations that appear to have affected the thematic vowel of the stem in Proto-Germanic. Yet the thematic element and subdivision into classes are still present to a certain extent, and the degree of leveling found in the paradigms of the later Germanic languages had by no means been reached. The problem in an analysis of Gothic nominal inflection is to capture its transitional status in a reasonable way. With so many questions still unanswered about the interpretation of the data this task is doubly difficult and any solution necessarily speculative. To simplify the discussion of the problems involved, the rest of this section 4.1 is devoted to the presentation of examples, which are given in the usual spelling and arranged according to the classes distinguished by most traditional grammars. All forms are listed in the same order. The nominative, accusative, genitive and dative forms of the singular are followed by the same four forms of the plural for each noun.
4.1.1 Strong or vocalic declensions, A - STEMS. All nouns of this class are either masculine or neuter. Models are the masculine daga 'day' and the neuter waurd 'word' for the pure a stems; the short-stem masculine harjis 'army', the long-stem masculine hairdeis 'shepherd' and the neuter kuni 'race' for the ja stems; the masculine pius 'servant' and the neuter kniu 'knee' for the wa stems:

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Nt</th>
<th></th>
<th>M</th>
<th>Nt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG N dags</td>
<td>PL dagos</td>
<td>SG waurd</td>
<td>PL waurda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A dag</td>
<td>dagans</td>
<td>waurd</td>
<td>waurda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G dagis</td>
<td>dage</td>
<td>waurdis</td>
<td>waurde</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D daga</td>
<td>dagam</td>
<td>waurda</td>
<td>waurdam</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SG N harjis</td>
<td>hairdeis</td>
<td>kuni</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A hari</td>
<td>hairdi</td>
<td>kuni</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G harjis</td>
<td>hairdeis</td>
<td>kunjis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D harja</td>
<td>hairdja</td>
<td>kunja</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL N harjos</td>
<td>hairdjos</td>
<td>kunja</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A harjans</td>
<td>hairdjans</td>
<td>kunja</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G harje</td>
<td>hairdje</td>
<td>kunja</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D harjam</td>
<td>hairdjam</td>
<td>kunjam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>Nt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SG N pius</td>
<td>PL piwos</td>
<td>SG kniu</td>
<td>kniwa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A piu</td>
<td>piwans</td>
<td>kniu</td>
<td>kniwa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G piwis</td>
<td>piwe</td>
<td>kniwiis</td>
<td>kniwe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D piwa</td>
<td>piwam</td>
<td>kniwa</td>
<td>kniwiwa</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.1.2 Strong or vocalic declensions, O - STEMS. All nouns are feminine. The models are giba 'gift', a pure O: stem; bandi 'band' and mawi 'maiden, long jo: stems; and wrakja 'persecution', a short jo: stem:

<table>
<thead>
<tr>
<th>SG N</th>
<th>PL</th>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>giba</td>
<td>gibos</td>
<td>wrakja</td>
<td>wrakjos</td>
</tr>
<tr>
<td>A giba</td>
<td>gibos</td>
<td>wrakja</td>
<td>wrakjos</td>
</tr>
<tr>
<td>O gibos</td>
<td>gibo</td>
<td>wrakjos</td>
<td>wrakjo</td>
</tr>
<tr>
<td>D gibai</td>
<td>gibos</td>
<td>wrakjai</td>
<td>wrakjom</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SG N</th>
<th>PL</th>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>bandi</td>
<td>bandjos</td>
<td>mawi</td>
<td>maujos</td>
</tr>
<tr>
<td>A bandja</td>
<td>bandjos</td>
<td>mauja</td>
<td>maujos</td>
</tr>
<tr>
<td>O bandjos</td>
<td>bandjo</td>
<td>maujos</td>
<td>maujo</td>
</tr>
<tr>
<td>D bandjai</td>
<td>bandjom</td>
<td>maujai</td>
<td>maujom</td>
</tr>
</tbody>
</table>

4.1.3 Strong or vocalic declensions, I - STEMS. Examples are the masculine gasts 'guest' and the feminine ansts 'favor'. There are no neuters:

<table>
<thead>
<tr>
<th>SG N</th>
<th>PL</th>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>gasts</td>
<td>gasteis</td>
<td>ansts</td>
<td>ansteis</td>
</tr>
<tr>
<td>A gast</td>
<td>gastins</td>
<td>anst</td>
<td>anstins</td>
</tr>
<tr>
<td>O gasti</td>
<td>gaste</td>
<td>anstais</td>
<td>anste</td>
</tr>
<tr>
<td>D gasta</td>
<td>gastim</td>
<td>anstai</td>
<td>anstim</td>
</tr>
</tbody>
</table>

4.1.4 Strong or vocalic declensions, U - STEMS. Include all three genders, but no neuter plurals are attested. The models are sumus 'son' for the masculines, bandus 'hand' for the feminines, and faihu 'cattle, property' for the neuters:
4.1.5 Weak declension, N - STEMS. This class includes nouns of all
genders, including two types of feminines. The models are the mas-
culine hana 'cock', the feminines tuggo 'tongue' and managei 'mul-
titude', and the neuter hairto 'heart':

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>F</th>
<th>F</th>
<th>Nt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG</td>
<td>N hana</td>
<td>tuggo</td>
<td>managei</td>
<td>hairto</td>
</tr>
<tr>
<td>A</td>
<td>hanan</td>
<td>tuggon</td>
<td>managein</td>
<td>hairto</td>
</tr>
<tr>
<td>G</td>
<td>hanins</td>
<td>tuggons</td>
<td>manageins</td>
<td>hairtins</td>
</tr>
<tr>
<td>D</td>
<td>hanin</td>
<td>tuggon</td>
<td>managein</td>
<td>hairtin</td>
</tr>
<tr>
<td>PL</td>
<td>N hanana</td>
<td>tuggons</td>
<td>manageins</td>
<td>hairtona</td>
</tr>
<tr>
<td>A</td>
<td>hanana</td>
<td>tuggons</td>
<td>manageins</td>
<td>hairtona</td>
</tr>
<tr>
<td>G</td>
<td>hanane</td>
<td>tuggono</td>
<td>manageino</td>
<td>haitane</td>
</tr>
<tr>
<td>D</td>
<td>hanam</td>
<td>tuggom</td>
<td>manageim</td>
<td>haitam</td>
</tr>
</tbody>
</table>
4.1.6 Minor declensions. Here are included the members of several classes that were probably more numerous in earlier stages of Indo-European, but which were very few and restricted in Gothic. Noteworthy is also the fact that in the adjectival system (see section 4.6 below) the language had eliminated these classes completely. Our models are *brobar* 'brother' for the *r* stems, which also include feminines like *swistar* 'sister', declined in the same manner; *frijonds* 'friend' for the *nd* stems, old derivatives of present participles; and then the so-called 'root stems' represented by *baurga* 'city' for the few feminines of this type; by *manna* 'man', which is a unique masculine, very close to the *n* stems of this gender, and which shows alternate forms of the nominative and accusative plural; and by *fon* 'fire' a neuter also reminiscent of the *n* declension and of which no plural forms exist:

<table>
<thead>
<tr>
<th>Gender</th>
<th>SG N</th>
<th>A</th>
<th>G</th>
<th>D</th>
<th>PL N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>brobar</td>
<td>frijond</td>
<td>frijondis</td>
<td>frijond</td>
<td>broprjus</td>
</tr>
<tr>
<td>-r-</td>
<td>baurge</td>
<td>baurge</td>
<td>baurge</td>
<td>baurge</td>
<td>baurge</td>
</tr>
<tr>
<td>-nd-</td>
<td>manna</td>
<td>mannan</td>
<td>mans</td>
<td>man</td>
<td>mans, mannans</td>
</tr>
<tr>
<td>F</td>
<td>fon</td>
<td>fon</td>
<td>fonins</td>
<td>femins</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Table showing the different cases and genders for the given declensions.
Most of these forms could be 'derived' from Indo-European by means of well known historical rules. Thus the general change of o to a explains why we now have an a class of nouns where the parent language had an o class (the stem vowel being most evident in the accusative and dative plural forms, e.g. dagas, dagam in the examples). The loss of most short vowels in the unaccented inflectional endings explains why we have dagas where the parent language had a nominative singular in *-os (cf. Greek philos). Again the loss of final short vowel plus the change of e to i accounts for the genitive singular of the same noun from a probable Indo-European *-eso. The dative singular formative -a of dagas is also the expected development of Indo-European *-e; by the general rule stating that both the long mid vowels e: and o: of the parent language were reduced and lowered to short a in final position.¹ This rule also accounts for the short -a of the nominative singular giba of the o: class. This latter class, to give another example, is also clearly the descendant of the earlier a: class, by the general change of Indo-European a: to Germanic o:. Systematic statements of these diachronic phenomena are made in most of the standard handbooks (e.g. Boer:1924:172-206, Prokosch:1938:231-59, Streitberg:1963:192-215, Kieckers:1928:105-34, Jellinek:1926:101-21) and particularly concise ones for Gothic are to be found.

¹ - The ending *-e is the Indo-European form given by Krahe (1967:77) but like so many of the reconstructions it is highly speculative. The dative case endings are particularly difficult to determine since it is possible that they may be the descendants of either datives, locatives or instrumentals (cf. Prokosch:1938:230, 234-5). This is one of the problems involved in deriving Gothic inflectional endings from earlier forms.
in Mossé (1956:83-6, 90-100), Wright (1954:39-45, 84-103) and Krahe (1967:75-95). The interesting problem consists of determining whether all these rules are to be considered as still being part of the grammar of Gothic. The evidence, which will be examined in the next section, seems to indicate that they are not.

4.2 Historical. One of the goals of this study has been to try to place Gothic historically, to see to what extent it maintained earlier Germanic and Indo-European forms and rules and to what extent it had abandoned them and introduced new ones. For this the nominal inflection is particularly useful. As was mentioned in the preceding section, most of the stems and affixes of the paradigms can be derived from older forms by means of ordered rules. But not all of them can be. The most striking exception is the long e used in most classes as the sign of the genitive plural, which has no clear Indo-European ancestry and which would require a more abstract underlying form (possibly -ae as suggested by Prokosch:1938:240) and special rules if we were to try to generate it, a form with long vowel in final position, by means of rules that recapitulate (in this case unclear) historical developments. Needless to say, if we are to keep historical rules, we may not enter this suffix simply as -e in the lexicon unless we mark it as an exception to the rules of final vowel weakening, which would otherwise reduce it to short -a.

Another case in point which militates against the historical approach to Gothic nominal morphology is the problem of the weak or n

2 - See Bech (1969b) and Lehmann (1967) on this problem.
class of nouns. This very interesting declension, which was to become very productive in the later Germanic dialects and whose extension to the adjectival inflection was already a Gothic (and therefore Proto-Germanic) innovation, is very difficult to account for historically. If the nominative singular -a of the masculines is a normal development of Indo-European *-esn / -osn (both of which would yield -a by normal loss of final n and vowel reduction), other forms are not the expected output of historical rules, like the nominative singulars of the feminines and neuters, which are troublesome in their retention of long vowel in final position.

It is our contention, therefore, that although many historical developments are fairly transparent in the nominal paradigms and although earlier forms and historical rules are useful in explaining many of the Gothic inflections and alternations, their generative power is doubtful at best, since their inclusion in a grammar would introduce a great amount of complexity throughout in terms of highly abstract forms, rules and exceptions to them. It is highly unlikely that such a grammar would constitute a reasonable model of a native speaker’s knowledge of his language and would be nothing more than what King (1969:104) has called an exercise in linguistic ‘virtuosity’ on the part of the writer. We will then proceed on the assumption — as was done with the verbal inflection where history was not so evident — that most of the historical changes had been carried out in earlier grammars, bringing about restructuring in the Gothic lexicon, which is then treated as fairly concrete and simple, albeit somewhat arbitrary, but probably no more arbitrary than the earlier,
reconstructed one to which historical forms and processes would lead us in the case of the nominal paradigms.

4.3 The generality of case forms.

4.3.1 In the hope of finding the simplest possible grammar of Gothic, a very thorough study of all the nominal case endings has been conducted, trying to find general forms of the suffixes that would — with perhaps some rules combining them with the vowel of the stem — serve for all nouns of all classes, as is the case, for example, with the generalized -um dative plural formative of Old English and the -om (or -um) dative plural formative of Old Icelandic. Two of the most promising base forms for the stems are the dative plural and the accusative plural, in which the thematic vowel plus -m and -ns respectively are found with a great degree of regularity. (The minor classes are always a stumbling block to any kind of general treatment, of course, but this is no major problem since they can and should be treated as genuine exceptions and marked as such in the lexicon.) The lexical formatives could then be set up to include the stem vowel (to be deleted or changed in certain environments) and add -m and -ns to them to form the dative and accusative plural, e.g. daga + m, gibo: + m, daga + ns, gibo: + ns. The loss of the n after the long vowel in the accusative plural gibos seems to be a phenomenon going back to Indo-European times (Prokosch:1938:239). The same type of entry would then be used for all nouns, i.e. gasti-, sunu-, hanan-, etc. In hanan- and all the weak nouns a minor rule could delete the final n of the stem in final position (before zero in the nominative singular) and before nasals (dative and accusative
plural suffixes).

4.3.2 For neuter nouns, which seem to behave as a class, the accusative plural is -a, and there seems to be true generality in nouns of this gender regardless of stem class, a generality that goes back very far in history. Their nominative and accusative are always the same and in the singular they have -∅ for both cases, in the plural -a for both as well.

4.3.3 The rule for the nominative singular would be fairly general: -∅ for neuters as just mentioned and for all stems ending in originally long vowels or non-stop consonants (n, r, s), -a otherwise, that is, after stems ending in originally short vowels or in stop consonants. A later rule would have to delete short stem-vowels — except u — and reduce o to a in the nominative singular. This generality goes as far as to include all the minor declensions (except perhaps that of the manna type — a truly exceptional situation where leveling in the direction of the n declension seems to have taken place).

But there are two very interesting problems which have been discussed already in chapter II and which involve the ja and jo: stems.

The first has to do with the alternation seen in the forms harjis (short-stem nouns) but hairdeis (long-stem nouns). The deletion of the thematic vowel a is according to rule and so is the length of i: in hairdeis by Sievers' Law after long stem. The question is to determine where the second i segment of harjis comes from. One possibility is that analogy has taken place, an analogy based perhaps on the harjis / hairdeis alternation of the genitive singular, where it
is regular, since the second \( i \) is probably the result of ablaut and affixation. Analogies of this type are difficult to express in terms of rules, since they usually lead to more complexity rather than to simplification as one would expect. Thus we could change our rules for the grammatical formatives so that they introduce \(-i\) as the nominative singular of this type of noun, but this increases complexity and is intuitively and historically unsatisfying. More sensible in this approach would be to enter the lexical formatives of these nouns as \( \text{baria-} \) and extend the rules for the thematic vowel in such a way that \( a \) will be changed to \( i \) in the nominative singular. Perhaps what we have here is simply a change that has in effect brought about more complexity to the grammar and that calling it analogy is confusing the issue. But its effect in bringing the surface form into line with others in the language is hard to ignore and it would be desirable to be able to state this in terms of grammar simplification.

The second problem has to do with the deletion of \( a \) before zero in nouns like \( \text{kuni, kniu} \) and \( \text{bandi} \), but not in others like \( \text{wrakja} \). The loss of the short \( a \) in final position seems to be general, as can be seen in both the nominative and the accusative singular of all the neuter nouns of that class. In the \( o \) class, however, we find the long vowel reduced regularly to short \( a \) before zero in the nominative and accusative singular of nouns like \( \text{giba} \) and \( \text{wrakja} \), but deleted in the nominative of \( \text{bandi} \) and \( \text{mawi} \). This complete loss of the vowel occurs regularly after long stems — the stem of \( \text{mawi} \) originally having been long, i.e. \( \text{\text{"magu-\}} \), as a derivative from the ancestor of \( \text{magus} \), the Gothic word for 'boy'. The rule can therefore be written in these
terms, assuming either that words like mawi retain the velar in their underlying representation (to be deleted by a general phonological rule)\(^3\) or that it has disappeared but leaving behind the feature '+' long' or '+' deletion rule' in the stem. The rule (whose final form will be given in section 4.7.6) would have to be something like:

\[
\begin{align*}
\varepsilon & \rightarrow \emptyset / \iota \rightarrow \emptyset \\
\text{Nominative}
\end{align*}
\]

This fairly restricted rule is possibly the remnant of a much older and more general one like:

\[
\begin{align*}
\nu & \rightarrow \emptyset / \nu : \rightarrow \emptyset \\
\text{Vowel}
\end{align*}
\]

that operated at a time when Sievers' Law was more general, lengthening resonants before any single vowel after long environments and when "-m was still the suffix of the accusative singular; and with subsequent shortening of the long i in final position. But a more accepted view (e.g. Prokosch:1938:244-5, Boer:1924:185-7) describes it primarily as a matter of vowel gradation.

4.3.4 The nominative plural is fairly complex. To begin with, one must take individual declensions into consideration since -ius (the result of an earlier ablaut form of u in the nouns of this stem class) is restricted to the u (and also to the r) stems. Otherwise

\[\text{This is in effect the solution that will be proposed in section 4.7 below.}\]
we get -a for consonantal stems, long vowel plus -a for vocalic stems
— besides the -a suffix already mentioned for the neuters and which
could be introduced by means of a general rule for nouns of this gen-
der. In a completely general treatment the long vowels of the vocalic
stems would have to be generated by rules restricted to noun classes,
since some go against the synchronic rules of the language, e.g. the
o: in dages, from underlying daga-, although historically it could be
interpreted as the normal long grade of a general o / o: ablaut alter-
nation. It is not at all clear how these rules would have to be stated
or what the nominative plural formative would have to be for vocalic
stems. One possibility would be to enter the formative as:

- s         or as      - Vi: s

and to have ad hoc rules like:

\[
\begin{array}{c}
I \begin{cases} a \\ \emptyset \end{cases} \quad \rightarrow \quad I \begin{cases} o: \end{cases} \\
II \begin{cases} i \\ 1 \end{cases} \quad \rightarrow \quad II \begin{cases} i: \\
2 \end{cases}
\end{array}
\]

\(\emptyset / - s\)

to generate the correct vowels of the a and i stems. Conceivably
one could even include the u and r stems in this process and state
that u plus long vowel becomes iu.

An alternative would be to consider the formative to be -is
(from earlier *-es, cf. Prokosch 1938:236-7) and to have similar
rules based on a + is, i + is and possibly u + is. A third possibil-
ity would be to enter the formative as - Vi: s, where the a would in-
dicate a repetition of the stem vowel, and to write the rules on the basis of $a \times a \times o$, $i \times i \times i$. In either of the last two solutions the $i \times i$ sequence would have to be excluded (by ordering or by the use of diacritic features) from undergoing the glide-formation rule. The $o$ stems present no problem to any of these three possible solutions since lengthening by the first one would be vacuous; and the short vowel of the suffix of the other two proposals could be deleted automatically by our rule (11)'which deletes a vowel immediately following a long one.

4.3.5 The accusative singular is general enough. Historically simply *$a$, it was lost by general reduction rule along with the preceding thematic vowel if short and not $u$ (therefore dag, gast, sunu) or its reduction if long (thus giba from *gibo:m). It may be treated as $a$ synchronically.

4.3.6 The genitive singular has different historical sources as can be seen, for example, in dagis (probably from earlier *dhogheso) but sunaus (possibly from an earlier form like *suncus), with $u$ / ou ablaut. For the different classes we find:

- *$a$ for $e$ stems
- *$a$s for $i$ stem feminines
- *$a$s for all other vowel stems and nd stems
- *$a$ elsewhere (other consonantal stems)

The $o$ stems could be considered along with the other non-high-vowel stems since rule (11) would delete the vowel of the suffix automatically after the long final $o$ of the stem.

4.3.7 In the dative singulars, with all their possible sources in
Indo-European datives, ablatives and locatives, we find a situation somewhat similar to the genitives, to the point where Prokosch (1938:235) believes that there may have been a transfer of these forms to the dative in the i and a stems. The formatives are:

\[-\text{m} \text{ for u stems}\]
\[-\text{a} \text{ for } o:\text{ stems and } i:\text{stem feminines}\]
\[-\underline{\text{e}} \text{ for other vocalic stems}\]
\[-\underline{\text{f}} \text{ elsewhere (consonantal stems)}\]

All thematic vowels would have to be deleted before these suffixes.

4.3.8 For the genitive plural, probably from a fairly general, Germanic suffix \[-\underline{\text{e}}\text{m} / -\text{om}\] , one would have to set up special forms for the u stems, where the suffix is \(-\text{ius}\); and for the n stems, where we find \(-\text{os}\). Otherwise we may have \(-\text{e}\) (with deletion of one preceding short vowel). We could also consider it to be \(-\text{e}\) in the o: declension, where the long stem vowel, not being deleted, would create the right environment for rule (11) to delete the vowel of the suffix instead. This seems to be more general, since we already need the rule for independent reasons, than the alternate possibility of considering the formative to be a special case of zero for the long-vowel stems.

4.3.9 It seems, therefore, that there is a great amount of variation involved in the case endings, and that having to consider noun classes and the proper formatives that go with them, along with abstract stems with thematic vowels that have to be deleted or combined with the suffixes in all cases, would lead to more complexity than is desirable in
a psychologically reasonable phonology of Gothic.

Particularly problematic is the question of the thematic vowel and where to delete it. For example, for *daga* we could set up *daga-* as the lexical entry and the inflectional endings as:

<table>
<thead>
<tr>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>-a:a</td>
</tr>
<tr>
<td>-i</td>
<td>-as</td>
</tr>
<tr>
<td>-is</td>
<td>-e:</td>
</tr>
<tr>
<td>-a</td>
<td>-a</td>
</tr>
</tbody>
</table>

We would then need a rule deleting the thematic vowel before, let us say 'nasal'. But notice that general and simple as this rule would be it is not a general phonological rule of the language and it would still have to be restricted to this particular a of the stem of nouns of this class. With other classes of nouns the rule would differ. In the u class, if we take *sumu-* as the stem and:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>-e</td>
<td>-ius</td>
</tr>
<tr>
<td>-i</td>
<td>-as</td>
</tr>
<tr>
<td>-um</td>
<td>-aw</td>
</tr>
<tr>
<td>-su</td>
<td>-a</td>
</tr>
</tbody>
</table>

as the endings, the deletion of u would have to take place before vowel, which again is not a general phenomenon, since u before vowel

---

4 - The possibility of introducing the vowel has also been experimented with, e.g., inserting a by means of rules in the accusative and dative plural of a stems, but u in these cases of the u stems as well as the nom.sg. and acc. sg. But this procedure is not more natural and seems to be counter-historical.
is perfectly natural in the language, where it becomes a glide. In the n or weak class, if we assume that the nominative singular ending is -∅ and that the other endings begin with the n, no deletion would be required, but a rule would be needed to change the final a of masculines like hana and the final o of neuters like hairto (but not of feminines like tuggo) to i in the genitive and dative singular. Notice furthermore — and this looks like valid evidence that the nominal suffixes of Gothic have a certain independence from the stem vowel — that these very same weak endings (e.g. -a, -an, -ina, -in, etc. for the masculine) are added to adjectives (see section 4.6 below) directly and there the vowels of the endings and their alternation in the case of masculines and neuters are not part of the stem. In view of these facts and of the great degree of arbitrariness (features in terms of the lexicon of the grammar, memory in terms of a speaker of the language) that has to be assumed for the nouns no matter what approach one takes, we will proceed to discuss three possible solutions that have been experimented with in our research. The first two are treated in sections 4.4 and 4.5 respectively. But after examining the adjectival inflection in more detail in section 4.6, we will propose a more general solution in section 4.7, a solution which appears to define the historical status of the thematic vowel in Gothic better and which seems to express the similarities and differences between the nouns and adjectives in a general way.

4.4 A possible analysis using the nominative form as lexical entry.
A very interesting possibility — but one which we do not completely
endorse at this time, not only because of its unclear theoretical implications but because of the dichotomy that it would establish between the Gothic nouns and adjectives — would be to consider that in learning an inflected language speakers would most often receive nominative singular forms as the tokens of lexical items and that they would tend to learn or memorize them in that shape. This would seem to imply more complexity and reliance on memorization but this is not necessarily the case. It could simplify the grammar as well, since there would be no need to learn (or list in a grammar) the nominative singular formatives separately and insert them from the lexicon if they are already present as part of the lexical item, and in most cases this would be equivalent to memorizing a diacritic feature. For example, instead of internalizing a u-stem noun as:

\[
\text{sun}- \\
+ \text{Masculine} \\
+ U \text{ Stem}
\]

plus eight formatives to attach to it on the basis of those features, the speaker could memorize:

\[
\text{sun} + u\text{s} \\
+ \text{Masculine}
\]

with an ending, but with a feature less — which probably amounts to the same thing — plus only seven suffixes this time with which to replace the original one. Knowing \( h\text{an} + a \) (+ Masculine) and \( g\text{ib} + a \) (+ Feminine), to give two more examples, would give the speaker all
the information needed to pick the right suffixes in either case. It would not replace a feature in all cases, however. It would in \textit{dag} + s (+ Masculine) versus \underline{anst} + s (+ Feminine), for example, but not in \underline{dag} + s (+ Masculine) versus \underline{gast} + s (+ Masculine), since they are both of the same gender and also share the -\textit{s} ending.

It is interesting to note, however, that the nominative and accusative singular of \underline{i}-stem masculines fell together with the corresponding cases of the singular of \underline{a}-stem masculines by normal phonological development, and that this fortuitous similarity of \underline{dags} with \underline{gasts} is usually considered to be the cause of their genitive and dative singular forms having also fallen together by analogy operating on these endings of the \underline{i} stem masculines like \underline{gasts}. This type of analogy seems to show how important surface phonological shape is in historical processes. Like so many types of incomplete analogies — in the plural nouns like \underline{gasts} still follow their original declension — this one creates a situation in which there appears to be more complexity than before by creating a new hybrid class of nouns that have to be marked. But if we assume that information based on actual phonological shape is less costly in a grammar than information based on abstract features, then simplification may have taken place in the \underline{i} declension. Whereas before all nouns of this type would probably have had to be marked as belonging to this class (+ I Stem) for the right suffixes to be chosen, now \underline{anst}s-type feminines are unique in being the only major-class nouns of that gender with that basic nominative shape and their suffixes could be selected automatically on that
Masculines of this declension would then be the only ones to require a marking like '+ Feminine Plural'. Notice furthermore that whereas a-declension masculines like *dags* and i-declension feminines like *ansts* are very numerous in Gothic, the i-declension masculines like *gasts* are fewer in number.

If we were to accept the proposal that actual nominatives, as the basic or unmarked forms, are the natural lexical entries of Gothic nouns, the grammar of the language could be simplified considerably. Many of the idiosyncratic forms of Gothic nouns are found only in this case and number (e.g. *harjis, mawi, etc.*) and using these as their basic forms would eliminate the need to generate them by means of special formatives, lexical features or specific rules. One could then use the following lexical entries for our model nouns:

<table>
<thead>
<tr>
<th>dags+ø</th>
<th>hari+is</th>
<th>kuni+ø</th>
<th>kniu+ø</th>
<th>bandi+ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Masc</td>
<td>+ Masc</td>
<td>+ Neut</td>
<td>+ Neut</td>
<td>+ Fem</td>
</tr>
<tr>
<td>wurd+ø</td>
<td>hirdi+s</td>
<td>pliu+s</td>
<td>gib+s</td>
<td>mawi+ø</td>
</tr>
<tr>
<td>+ Neut</td>
<td>+ Masc</td>
<td>+ Masc</td>
<td>+ Fem</td>
<td>+ Fem</td>
</tr>
<tr>
<td>wraki+s</td>
<td>sun+us</td>
<td>han+s</td>
<td>hirt+s</td>
<td>burg+s</td>
</tr>
<tr>
<td>+ Fem</td>
<td>+ Masc</td>
<td>+ Masc</td>
<td>+ Neut</td>
<td>+ Fem, + C</td>
</tr>
<tr>
<td>gast+s</td>
<td>hand+us</td>
<td>tung+ø</td>
<td>brob+ar</td>
<td>man+s</td>
</tr>
<tr>
<td>+ Masc</td>
<td>+ Fem</td>
<td>+ Fem</td>
<td>+ Masc</td>
<td>+ Masc</td>
</tr>
<tr>
<td>+ Fem Plur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5 - It is clear that minor-class nouns like *baurs* would also fit that description but there seems to be no way of escaping the fact that these are truly exceptions and will have to be marked accordingly.
4.4.1 For the a stems, that is, -a masculines and -∅ neuters, one could then use the following endings:

<table>
<thead>
<tr>
<th>Case</th>
<th>Gender</th>
<th>Ending</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG A</td>
<td>-∅</td>
<td>PL N -o:s / Masc</td>
</tr>
<tr>
<td>G</td>
<td>-is</td>
<td>-a / Neut</td>
</tr>
<tr>
<td>D</td>
<td>-a</td>
<td>A -ans / Masc</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-a / Neut</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G -o:s</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D -o:m</td>
</tr>
</tbody>
</table>

The phonological rules of the language would apply to all of them generating the correct form, e.g. long i is vowel of hairdeis and lowering of i to ai, glides of harjies, kunjies and kniwis, etc.

4.4.2 For the o: stems, that is, feminines in -a or -∅ according to this analysis, the suffixes could be:

<table>
<thead>
<tr>
<th>Case</th>
<th>Gender</th>
<th>Ending</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG A</td>
<td>-a</td>
<td>A -o:s</td>
</tr>
<tr>
<td>G</td>
<td>-o:s</td>
<td>G -o:</td>
</tr>
<tr>
<td>D</td>
<td>-ai</td>
<td>D -o:m</td>
</tr>
</tbody>
</table>

6 - Notice that this approach also implies that the thematic vowel is not part of the stem.
where again the general rules would produce the glides of bandja, njuja, etc.

4.4.3 For the -i stems or -e feminines one could assume the grammatical formatives:

<table>
<thead>
<tr>
<th>PL N</th>
<th>-i:s</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG A</td>
<td>-φ</td>
</tr>
<tr>
<td>G</td>
<td>-ais</td>
</tr>
<tr>
<td>D</td>
<td>-ai</td>
</tr>
<tr>
<td>A</td>
<td>-ins</td>
</tr>
<tr>
<td>G</td>
<td>-e:</td>
</tr>
<tr>
<td>D</td>
<td>-im</td>
</tr>
</tbody>
</table>

4.4.4 For the -u(s) nouns one could use:

<table>
<thead>
<tr>
<th>PL N</th>
<th>-ius</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG A</td>
<td>-u</td>
</tr>
<tr>
<td>G</td>
<td>-aus</td>
</tr>
<tr>
<td>D</td>
<td>-au</td>
</tr>
<tr>
<td>A</td>
<td>-uns</td>
</tr>
<tr>
<td>G</td>
<td>-iue:</td>
</tr>
<tr>
<td>D</td>
<td>-um</td>
</tr>
</tbody>
</table>

where we assume the plural forms work for the three genders as in the singular, although no neuter plurals exist.

4.4.5 For the weak or n declension, that is, masculines in -a, feminines in -o: or -i:, neuters in -o:, one could posit the following endings:

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>F</th>
<th>P</th>
<th>Nt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG A</td>
<td>-an</td>
<td>-o:n</td>
<td>-i:n</td>
<td>-o:</td>
</tr>
<tr>
<td>G</td>
<td>-ins</td>
<td>-o:ms</td>
<td>-i:ns</td>
<td>-ins</td>
</tr>
<tr>
<td>D</td>
<td>-in</td>
<td>-o:n</td>
<td>-i:n</td>
<td>-in</td>
</tr>
</tbody>
</table>
4.4.6 For the r stems, that is, in this view any noun (masculine or feminine) with base forms in -ar:

<table>
<thead>
<tr>
<th></th>
<th>PL N</th>
<th>P</th>
<th>F</th>
<th>Ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL N</td>
<td>-ans</td>
<td>-ons</td>
<td>-ins</td>
<td>-ona</td>
</tr>
<tr>
<td>A</td>
<td>-ans</td>
<td>-ons</td>
<td>-ins</td>
<td>-ona</td>
</tr>
<tr>
<td>G</td>
<td>-ans:</td>
<td>-ons:</td>
<td>-ins:</td>
<td>-ona:</td>
</tr>
<tr>
<td>D</td>
<td>-am</td>
<td>-ams</td>
<td>-im</td>
<td>-am</td>
</tr>
</tbody>
</table>

4.4.7 For the -nds class we find:

<table>
<thead>
<tr>
<th></th>
<th>PL N</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL N</td>
<td>-rins</td>
<td></td>
</tr>
<tr>
<td>SG A</td>
<td>-ar</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>-runs</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>-rs</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>-re:</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>-r</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>-rum</td>
<td></td>
</tr>
</tbody>
</table>

We would have to assign the feature "+ Consonant" to this class since some masculine nouns like reika 'ruler', of which traces are extant and which originally should have been declined like consonant-stem feminines like baurga, have been transferred to this class (having genitive singular in -is and dative plural in -am). The endings just proposed would then be selected in terms of the features "+ Masculine" and "+ Consonant".
4.4.8 For consonantal feminines like baurgs we would have:

<table>
<thead>
<tr>
<th>PL</th>
<th>N</th>
<th>-s</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG A</td>
<td>-f</td>
<td>A</td>
</tr>
<tr>
<td>C</td>
<td>-s</td>
<td>C</td>
</tr>
<tr>
<td>D</td>
<td>-f</td>
<td>D</td>
</tr>
</tbody>
</table>

The feature ' + C' which they share with the previous group shows that in a sense they belong to the same class, the only different suffixes (genitive singular and dative plural) being selected on the basis of gender, and of course their suffixes could be combined in entries in the lexicon.

4.4.9 The unique manna does not seem to require any special feature and for it we find mann-a in the nominative and the suffixes:

<table>
<thead>
<tr>
<th>PL</th>
<th>N</th>
<th>-s or -ans</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG A</td>
<td>-an</td>
<td>A</td>
</tr>
<tr>
<td>C</td>
<td>-s</td>
<td>C</td>
</tr>
<tr>
<td>D</td>
<td>-f</td>
<td>D</td>
</tr>
</tbody>
</table>

4.4.10 The deviant neuter fo:n+ə, of which only singular forms are extant, presents no problem. Its unique status can be specified either by a rule feature that will trigger a special change of o: to u before a following i in its suffixes:

| SG A | -f |
| C | -ins |
| D | -in |
or by entering it as $f^\text{o}n$, with suffixes:

SG A $\rightarrow$ -$\text{o}n$

G $\rightarrow$ -$\text{mins}$

D $\rightarrow$ -$\text{min}$

in which case no special rule or feature would be required.

4.5 The strict suffix and diacritic-feature approach. The following analysis has also been considered: (a) That most nouns should be marked with a special feature in the lexicon, but that masculines and neuters of the a class and the feminines of the o: class be considered the basic, unmarked class to capture the parallel that exists between them and the most common type of adjectival inflection (see section 4.6 below). The endings for them could be selected on the basis of gender (which will be marked in all nouns) exclusively. The lexical entries for them would be:

\[
\begin{array}{cccc}
dag- & hari- & hirdi- & biu- \\
+ Masc & + Masc & + Masc & + Masc \\

+ Ht & + Ht \\

+ Fem & + Fem & + Fem & + Fem \\
\end{array}
\]

and their formatives could be entered as:
\( <i>a \quad / \quad \text{Short Stem i} > \quad \text{Masco} \)

- **N SG**  \( \rightarrow \) 
  \[ \left\{ \begin{array}{l}
  / \quad \text{Neuter} \\
  \text{Long Stem i Fem} \\
  a \\
  a / \quad \text{Fem} \\
  \text{is} \\
  a<i> / \quad \text{Fem} \\
  a / \quad \text{Neut} \\
  \text{os} / \quad \text{Fem} \\
  \text{ans} \\
  \text{os} / \quad \text{Fem} \\
  \text{osm} / \quad \text{Fem} \\
  \text{am} \\
\end{array} \right. \]

(b) That the \( i \) stems be marked with a feature such as '+' in lexical entries like:
and that their grammatical formatives be:

- **sta**  -  **gas**
  - Fea
  - **I**
  - **I** Plural

- **SO N** → **s**
  - **A**
  - **G**
  - **D**

- **PL N** → **ius**
  - **A**
  - **G**
  - **D**

(e) That the **u** stems be marked ' + U' and that their entries be:

- **sun**  -  **hand**  -  **fit**
  - **Masc**
  - **Fea**
  - **U**

- **SO N** → **u / U**

- **PL N** → **ius**

- **A**
  - **G**
  - **D**

(d) That all weak nouns be assigned a feature ' + Weak', along with their gender as usual, and that feminines of the type **magala** have their gender entered as ' + Fea I' to insure the proper choice of suffix. Their lexical entries would then be:
| han- | tung- | manag- | hirt- |
| + Maso | + Fem | + Fem I | + Mt |
| + Weak | + Weak | + Weak | + Weak |

Their corresponding suffixes to be:

SG N - -a -o -i -o

and so forth as in 4.4.4.

(a) That the r stems be marked '+ R' and with the usual gender, with base forms like bro:ib- and endings like the following:

SG N + -ar PL N + -tius
A -ar A -runs
G -rs G -re:
D -r D -rum

(f) That stems like friond- and burg- be assigned a feature '+ C' and be marked appropriately for gender, so that their suffixes may be selected as:

SG N + -s PL N + -s
A + -$ A + -s
G -<d-s / <Fem> G + -s
D + -$ D + \{ -am / Fem -im

(g) That the unique manna and fon be given a feature such as 'nas-al' ('+ N'), with stems like mann- and f- and suffixes like the
following, chosen according to their marked gender:

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG N</td>
<td>-a</td>
<td>-ea</td>
</tr>
<tr>
<td>A</td>
<td>-en</td>
<td>-e:n</td>
</tr>
<tr>
<td>G</td>
<td>-e</td>
<td>-e:n</td>
</tr>
<tr>
<td>D</td>
<td>-f</td>
<td>-f:n</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL N</td>
<td>-s, -ans</td>
<td>-s, -ans</td>
</tr>
<tr>
<td>A</td>
<td>-s, -ans</td>
<td>-s, -ans</td>
</tr>
<tr>
<td>G</td>
<td>-e:</td>
<td>-e:</td>
</tr>
<tr>
<td>D</td>
<td>-en</td>
<td>-en</td>
</tr>
</tbody>
</table>

4.5.1 Perhaps this approach, which like the previous one avoids rules and depends on diacritic features and lists of suffixes, may appear to be too uneconomical and repetitive. But it could be assumed, for example, that the entries for the grammatical formatives should be given only once in the dictionary of the grammar and in an ordered form for greater economy, so that the entry for the nominative singular might look something like:
But this type of entry does not look psychologically realistic. It looks more like the entry for a linguist's grammar than for a speaker's grammar. Granting that psycholinguistic research is needed to settle this question, it seems reasonable to assume that speakers of a language do not deal primarily with case and number in the abstract when communicating, but with lexical items that they must use or interpret quickly and in isolation from all others of the language. It is in this sense that redundant and isolated lists of suffixes, to be scanned by speakers on the basis of information available to them (through memorization) in individual stems, seems to us to reflect better the simplicity, repetitiveness and redundancy involved in the learning and use of natural languages.

4.5.2 Unquestionably, however, the two approaches discussed so far
have failed to capture some true generalities of which native speakers must have been aware — the invariability of m as the final segment of the dative plural, for example. These generalities could be expressed by means of 'redundancy rules' that would allow us to have segments unspecified in the lexicon. Thus a statement of the following sort:

\[
\begin{align*}
\text{m} & \quad / \quad \text{PL D} \\
\text{g} & \quad / \quad \text{PL G} \\
+ \text{segment} & \quad \rightarrow \quad - \text{segment} \\
& \quad / \quad \text{Nt SG} \{ \text{N} \} \\
& \quad / \quad \text{Nt PL} \{ \text{P} \} \\
& \quad / \quad \{ \text{SG G} \} \\
& \quad / \quad \{ \text{PL N} \} \\
& \quad / \quad \{ \text{PL A} \}
\end{align*}
\]

would predict that the final segment of the dative plural is m, allowing us to leave it unspecified in this formative for all classes — perhaps specified only with the feature '+ segment' — while the rule fills in the rest of the distinctive features in that column of its matrix. The same could be done with the g of most genitive plurals, but not, of course, in g stems and the weak nouns, which would have to be entered with all the features of g. The (last if more than one) segment of the nominative and accusative of neutrals could also be left unspecified, allowing our rule to predict φ for the singular and fill in all the features for a in the plural. Otherwise our rule would predict m as the last segment of the nominative.
and accusative plurals and of genitive singulars. It seems that this could be the best way to capture the generalities that were obvious from the beginning of this study of Gothic noun inflection. But before presenting our general proposal for nominal inflection, the adjectival endings should be examined in some detail and compared to those of the nouns.

4.6 The adjective.

4.6.1 The Gothic adjective provides us with some useful parallels and contrasts with the noun. Although in Indo-European nouns and adjectives were probably inflected in exactly the same way, there were already some basic differences between the adjectival and the nominal paradigms in the historical languages. The former had introduced a great degree of innovation in Germanic, not only in terms of the weak declension of adjectives, a phenomenon whereby any adjective standing after the definite article would take the weak endings (i.e. exactly those of the nouns like hana, tuggo and hairto), but also in terms of the borrowing of endings from the pronouns. These pronominal endings are always underlined in our sample declensions. Also, being originally different in nature from the nouns, that is, agreeing with them in gender and number instead of being the basic carriers of this information, the adjectives were inflected for all three genders, both numbers and all eight cases, and it does not seem possible to adopt

---

7 - If one were to allow the rules deleting n after the long vowel of the o: stems and after nd one could then enter all accusative plurals as [+ segment][+ segment] and predict the features of ns in all declensions.
any of these forms as basic. There seems to exist in the adjectival
deleension a fairly clear-cut distinction between the stem and the
endings, and the latter lend themselves very readily to general state-
ments. The great majority of Gothic adjectives are declined like
blindz 'blind', originally an a stem adjective, which in its 'strong'
form is declined (except for the pronominal endings) very much like
the nouns dagz (a-stem masculine), waurd (a-stem neuter) and gibz
(o-stem feminine):

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Nt</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sg N</td>
<td>blindz</td>
<td>blind, blindzata</td>
<td>blinda</td>
</tr>
<tr>
<td>A</td>
<td>blindana</td>
<td>blind, blindzata</td>
<td>blinda</td>
</tr>
<tr>
<td>G</td>
<td>blindis</td>
<td>blindis</td>
<td>blindaisos</td>
</tr>
<tr>
<td>D</td>
<td>blindamna</td>
<td>blindamna</td>
<td>blindai</td>
</tr>
<tr>
<td>Pl N</td>
<td>blindai</td>
<td>blinda</td>
<td>blindos</td>
</tr>
<tr>
<td>A</td>
<td>blindans</td>
<td>blinda</td>
<td>blindos</td>
</tr>
<tr>
<td>G</td>
<td>blindazos</td>
<td>blindazos</td>
<td>blindazos</td>
</tr>
<tr>
<td>D</td>
<td>blindain</td>
<td>blindain</td>
<td>blindain</td>
</tr>
</tbody>
</table>

In their weak or post-determiner form they are declined exactly
like the weak nouns, except that in the feminines only the o:
form as in tugzso is used — which is the reason why in the preced-
ing section we assigned the extra feature 'I' to feminine nouns of
the managai type:
<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Mt</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG N</td>
<td>blinda</td>
<td>blindo</td>
<td>blindo</td>
</tr>
<tr>
<td>A</td>
<td>blindan</td>
<td>blindo</td>
<td>blindon</td>
</tr>
<tr>
<td>G</td>
<td>blindins</td>
<td>blindins</td>
<td>blindons</td>
</tr>
<tr>
<td>D</td>
<td>blindin</td>
<td>blindin</td>
<td>blindon</td>
</tr>
<tr>
<td>PL N</td>
<td>blindans</td>
<td>blindona</td>
<td>blindons</td>
</tr>
<tr>
<td>A</td>
<td>blindans</td>
<td>blindona</td>
<td>blindons</td>
</tr>
<tr>
<td>G</td>
<td>blindane</td>
<td>blindane</td>
<td>blindono</td>
</tr>
<tr>
<td>D</td>
<td>blindam</td>
<td>blindam</td>
<td>blindom</td>
</tr>
</tbody>
</table>

It is to be assumed that the syntactic environment of the surface structure will automatically assign the feature '+ Weak' to the adjectival stems, on which basis the weak endings will be selected.

There are also ja-stem adjectives that show the following strong inflection:

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Mt</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG N</td>
<td>midjis</td>
<td>midi, midjata</td>
<td>midja</td>
</tr>
<tr>
<td>A</td>
<td>midjana</td>
<td>midi, midjata</td>
<td>midja</td>
</tr>
<tr>
<td>G</td>
<td>midjis</td>
<td>midjis</td>
<td>midjaizos</td>
</tr>
<tr>
<td>D</td>
<td>midjama</td>
<td>midjama</td>
<td>midjai</td>
</tr>
<tr>
<td>PL N</td>
<td>midjai</td>
<td>midja</td>
<td>midjos</td>
</tr>
<tr>
<td>A</td>
<td>midjans</td>
<td>midja</td>
<td>midjos</td>
</tr>
<tr>
<td>G</td>
<td>midjaize</td>
<td>midjaize</td>
<td>midjaizo</td>
</tr>
<tr>
<td>D</td>
<td>midjaisa</td>
<td>midjaisa</td>
<td>midjaia</td>
</tr>
</tbody>
</table>
where the adjective midjies 'middle' shows forms similar to those of ja-stem nouns like harjies and wrakja. In long-stem adjectives like the one for 'wild' we find the following nominative singular forms, corresponding to those of the nouns hairdeis and bandi:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
<td>F</td>
</tr>
<tr>
<td>Sg M</td>
<td>wilpeis</td>
<td>wilpi, wilpjata</td>
</tr>
</tbody>
</table>

But all their other forms seem to be identical with those of all other adjectives, e.g.:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
<td>F</td>
</tr>
<tr>
<td>Sg A</td>
<td>wilpjana</td>
<td>wilpi, wilpjata</td>
</tr>
<tr>
<td>D</td>
<td>wilpjama</td>
<td>wilpjama</td>
</tr>
</tbody>
</table>

e tc., where we do not give genitive singular examples because they are not attested, and where we find ḫ (from underlying ḫ in our view) always present before the suffix or zero.

4.6.2 Interesting are the few wa stems like trigwos 'true' and lasiwos 'weak', attested in the nominative singular only, where the w is not vocalic; and the attested nominative plurals qiwaé 'alive' and fawuë 'few'. These have already been discussed in chapter II where we adduced them as evidence that they should be interpreted as having an underlying segment w.

4.6.3 There are also some Gothic adjectives belonging to the original ḫ stems (cf. the nouns giasts and ansta) which show this origin clearly in their nominative singular forms, as in those of the lexical item for 'clean':
But in the accusative singular and all other attested forms these adjectives show the underlying high front vocalic segment followed by the same endings as all other adjectives in their strong declension:

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Nt</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>3O A</td>
<td>brainjana</td>
<td>brain</td>
<td>brainja</td>
</tr>
<tr>
<td>PL N</td>
<td>brainjai</td>
<td>brainja</td>
<td>brainjos</td>
</tr>
</tbody>
</table>

4.6.4 Some u-stem adjectives like **hardus** 'hard' are found as well, and again these show their stem vowel clearly in nominative singular forms like those of the nouns of the same class:

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Nt</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>3O N</td>
<td>hardus</td>
<td>hardu, hardjata</td>
<td>hardus</td>
</tr>
</tbody>
</table>

In all other cases and numbers they once more share all the common adjectival endings, except that before them (as is also the case in the alternate, pronominal neuter form **hardjata** above) we find not the expected _w or _ but _j. Thus their accusative singular forms are:

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Nt</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>3O A</td>
<td>hardjana</td>
<td>hardu, hardjata</td>
<td>hardja</td>
</tr>
</tbody>
</table>

4.6.5 Returning to the weak inflection, where — as was seen in the examples of **blinds** — the endings are attached directly to the root
of a stems, we find that the suffixes themselves are the ones common to all adjectives, regardless of whether they are ja stems, i stems or u stems, so that we find, for example, the following nominative singular forms:

<table>
<thead>
<tr>
<th>M</th>
<th>Mt</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>wilpja</td>
<td>wilpjo</td>
<td>wilpjo</td>
</tr>
<tr>
<td>hairna</td>
<td>hairajo</td>
<td>hairajo</td>
</tr>
<tr>
<td>hardja</td>
<td>hardjo</td>
<td>hardjo</td>
</tr>
</tbody>
</table>

4.6.6 It appears, therefore, that a great degree of leveling has taken place in the Gothic adjective, a leveling that includes the elimination of the minor stem classes found in nouns, the systematic borrowing of pronominal suffixes (implying a leveling also in that direction) and the introduction of a couple of very simple alternations (probably analogical) like the one of u with i in the u-stem adjectives. It seems that the adjective has reached that stage of generalized inflection that was sought without much success in the noun paradigms, and that if one accepts some very simple rules in the grammar that take into consideration the thematic vowel, one can set up lexical and grammatical formatives from which all the surface forms of the nouns and adjectives can be generated in a very systematic way without the need of diacritic, lexical features for the latter.

4.7 A general solution for nouns and adjectives.

The following proposal will represent a compromise between the
view that would combine the thematic vowel with the endings in all cases (a solution that may have worked in an earlier stage of the language but that is no longer the most appropriate one for Gothic, as can be seen in the independent status of the adjectival suffixes, especially the weak endings) and the view presented in section 4.5, which assumes total independent status for the suffixes and no thematic vowel at all in the stem. Our final proposal will then include some thematic vowels in the lexical entries, sets of endings more general than those arrived at in section 4.5, and a set of rules to affect the thematic vowels. Diacritic features will be required only for non-regular nouns like those of the minor or consonantal declensions.

4.7.1 In order to present our rules in the order in which they should apply, the i- and u-stem nouns and adjectives will be discussed first. The entries for our model nouns and adjectives will be ansti-, sumu-, handu-, braini- and hardu-. The grammatical formatives for the nouns of these two classes will be the same for both in the singular:

<table>
<thead>
<tr>
<th>N</th>
<th>A</th>
<th>G</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>-e</td>
<td>-f</td>
<td>-a</td>
<td>-f</td>
</tr>
</tbody>
</table>

8 - We will assume that, except for the weak class, the nominative and accusative singular of neuter nouns is -∅ and that their nominative and accusative plural are in -a. We will also treat pasts as irregular since it takes singular endings of the a stems and plural endings of the i stems.
but different for the i- and u-stems in the plural. A selection will
be made in the lexicon on the basis of the thematic vowel of the stem:

<table>
<thead>
<tr>
<th></th>
<th>i</th>
<th></th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>-is</td>
<td></td>
<td>-ius</td>
</tr>
<tr>
<td>A</td>
<td>-ns</td>
<td></td>
<td>-ns</td>
</tr>
<tr>
<td>G</td>
<td>-s:</td>
<td></td>
<td>-ius:</td>
</tr>
<tr>
<td>D</td>
<td>-m</td>
<td></td>
<td>-m</td>
</tr>
</tbody>
</table>

Notice the generality that one is now able to achieve by having -ns and -m, for example, as the grammatical formatives for the accusative
and dative plural of most nouns. The nominative singular suffixes of
adjectives will be the same as those of the nouns. But the adjectives
will of course have their own set of generalized strong endings for
all other cases and numbers. We will repeat these suffixes here for
the sake of easier reference:

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th></th>
<th>Mt</th>
<th></th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG A</td>
<td>-ana</td>
<td></td>
<td>-father, -ata</td>
<td></td>
<td>-a</td>
</tr>
<tr>
<td>G</td>
<td>-is</td>
<td></td>
<td>-is</td>
<td></td>
<td>-os:</td>
</tr>
<tr>
<td>D</td>
<td>-amma</td>
<td></td>
<td>-amma</td>
<td></td>
<td>-e</td>
</tr>
<tr>
<td>PL N</td>
<td>-e</td>
<td></td>
<td>-a</td>
<td></td>
<td>-os:</td>
</tr>
<tr>
<td>A</td>
<td>-ans</td>
<td></td>
<td>-a</td>
<td></td>
<td>-os:</td>
</tr>
<tr>
<td>G</td>
<td>-ese:</td>
<td></td>
<td>-ese:</td>
<td></td>
<td>-ese:</td>
</tr>
<tr>
<td>D</td>
<td>-em</td>
<td></td>
<td>-em</td>
<td></td>
<td>-em</td>
</tr>
</tbody>
</table>

We will offer the following hypothesis for the genitive and dative
singular of the i- and u-stem nouns (i.e. anstais, anstai, sunaus,
sunau, etc.); that regardless of their historical origin as ablaut grades of the thematic vowels i and u, these endings were reinterpreted synchronically as monophthongs, the output of the following rule:

\[(\text{N1}) \begin{cases} + \text{vocalic} \\ + \text{high} \end{cases} \rightarrow [\text{- high}] / \ldots \begin{cases} \text{SG C} \\ \text{SG D} \end{cases}\]

which lowers the thematic vowels i and u to o and o respectively in the genitive and dative singular. This proposal, of course, accepts the interpretation that the graphemes ai and au represent monophthongs in these two case forms and assumes that Gothic speakers reinterpreted the suffixes on that basis. Note that these rules are not general phonological rules of the language. They are to be considered morphological rules, based on non-phonological information in most cases, and they apply before the general phonological rules of the language come into operation. They have been numbered (N1) etc., to indicate their status.

The following rule can now apply to carry out the necessary changes on the thematic vowel of the i-stem nouns and adjectives:

\[(\text{N2}) \begin{cases} \text{i} \rightarrow \emptyset / \end{cases} \begin{cases} \text{[\text{- nasal}]} & \ldots \text{Nouns} \\ \text{[\text{- vocal}]} & \ldots \text{Adjs} \end{cases}\]

deleting the i in the nominative singular of adjectives to yield brains, etc., and in all cases of the nouns where it is still present

---

9 - The possibility exists that, like the w in w-stem adjectives, the thematic vowel could have been restructured as a glide j. Its deletion in the nominative singular of adjectives would then take place in a more natural phonetic environment: C _ C ǂ. We have retained i, however, to make (N2) more general, covering both nouns and adjectives.
after the application of (N1), except before the nasals of the ac-
usative and dative plural, yielding ansts, anst, etc., but anstins,
anstim.

For u stems the following rule would effect the necessary chan-
ges:

\[
(N3) \quad u \rightarrow \begin{cases} 
\emptyset & / - \{+ \text{vocalic}\} \ldots \text{Nouns} \\
\ i & / - \{+ \text{vocalic}\} \ldots \text{Adjs.}
\end{cases}
\]

It will delete the thematic segment for nouns in the nominative and
genitive plural and change it to i (later a glide by the general pho-
nomological rule) in all forms of the adjective except the nominative
singular. Note again that although these rules are stateable partly
in phonetic terms they do not constitute phonological rules in the
usual sense. The change of u to i in adjectives carried out by (N3),
for example, probably reflects not a true phonological process, but
an analogical one which brought u-stem adjectives into line with
the i stems.

4.7.2 For a-stem nouns we will also keep the thematic vowel as part
of the lexical entry (dasa-, wunda-, harla-, etc.) and postulate the
following suffixes:

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Mt</th>
</tr>
</thead>
<tbody>
<tr>
<td>3G N</td>
<td>-a</td>
<td>-f</td>
</tr>
<tr>
<td></td>
<td>-f</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>-f</td>
<td>-f</td>
</tr>
<tr>
<td></td>
<td>-a</td>
<td>-a</td>
</tr>
<tr>
<td></td>
<td>-a</td>
<td>-a</td>
</tr>
</tbody>
</table>
\[
\begin{array}{c|c}
\text{PL N} & -os: s \\
A & -os \\
G & -es \\
D & -em \\
\end{array}
\]

\[
\begin{array}{c|c}
\text{SG N} & -a \\
A & -a \\
G & -e \\
D & -em \\
\end{array}
\]

Rule (N4) will then delete the thematic vowel in all cases except the accusative and dative plural, after changing it to i in the genitive singular (always, e.g. dagis but nominative dage) and in the nominative singular when an i precedes (e.g. harjis, hairdeis):

\[
(N4)\quad a \rightarrow \begin{cases} 
i / <i> & + s \\
\emptyset / [-\text{nasal}] & \end{cases} <\text{SG N}>
\]

The rule partly recapitulates the old ablaut alternation found in the genitive singular and incorporates what in all probability was an analogical process in the change of a to i in the nominative singular of ja stems.

4.7.3 For the feminine nouns with o: stems (gibo:-, bandio:-, etc.) we propose the following suffixes, any of which are again general:

\[
\begin{array}{c|c}
\text{SG N} & -a \\
A & -a \\
G & -e \\
D & -em \\
\end{array} \quad \begin{array}{c|c}
\text{PL N} & -os: s \\
A & -os: s \\
G & -es \\
D & -em \\
\end{array}
\]

and the following very simple deletion rule:
This hypothesis for $o$ stems implies that the language had achieved some degree of generality in its suffixes. For example, the genitive formatives $-a$ and $-e$: are the same as those for the $a$-stem masculines and neuters, the plural vowel $-e$: being deleted by rule (11) after the long vowel $o$: of the stem. The nominatives and accusatives would also have the same suffixes ($-a$, $-a$, $-0is$, $-0is$) as the general ones for the adjectives, in which no thematic vowel will be needed in the lexicon. Adjectives will simply have entries like $blind-$, with nominative singular suffixes identical to those of the nouns (except for the optional $-ata$ of the neuters) and the usual adjectival strong endings will be attached to them. On the other hand, $ja$-stem adjectives like midjie and wilpsies will have lexical formatives like $midja-$ and wilbia- and will be affected by rule (N4). The $wa$-stem adjectives like lasiwa 'weak' could also be entered as $lasiwa-$ in the lexicon, but lasiwa- would be the more correct (i.e. simpler) entry, since inclusion of the thematic vowel $a$ would only lead to its deletion by rule (N4).

4.7.4 For weak nouns we will enter $ban-$, $tung-$, $manag-$, $hirt-$ and the endings will be the same for both nouns and adjectives:

<table>
<thead>
<tr>
<th>SG N</th>
<th>F</th>
<th>P (+I)</th>
<th>Nt</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>-o:</td>
<td>-i:</td>
<td>-o:</td>
</tr>
<tr>
<td>-an</td>
<td>-o:in</td>
<td>-i:n</td>
<td>-o:</td>
</tr>
<tr>
<td>-an</td>
<td>-o:ns</td>
<td>-i:ns</td>
<td>-ins</td>
</tr>
<tr>
<td>-in</td>
<td>-o:in</td>
<td>-i:n</td>
<td>-in</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>F (+I)</td>
</tr>
<tr>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>--------</td>
</tr>
<tr>
<td>PL</td>
<td>-ans</td>
<td>-ons</td>
<td>-ins</td>
</tr>
<tr>
<td>A</td>
<td>-ans</td>
<td>-ons</td>
<td>-ins</td>
</tr>
<tr>
<td>G</td>
<td>-ans</td>
<td>-ons</td>
<td>-ins</td>
</tr>
<tr>
<td>D</td>
<td>-am</td>
<td>-om</td>
<td>-im</td>
</tr>
</tbody>
</table>

It is interesting to note that in this approach (except for nouns like *manag*—, which would require a ' +I' marking) no diacritic features are needed for weak nouns, since their structure could be used for the selection of suffixes. They would be the only nouns without a thematic vowel. The adjectives will also select the suffixes automatically in the appropriate syntactic environment. Adjectives like *midia*— will have the *a* deleted by rule (N4). For the weak declension a 'redundancy rule' similar to the one discussed in section 4.5.2 (page 117) could perhaps be used to capture the predictability of some segments like the *m* of the dative plural.11

---

10 — The present participle of verbs would also require the ' +I' feature, since their masculine forms are declined like *hana*, their neuter forms like *hairto*, and their feminine forms like *managei* but never like *tuggo*.

11 — An alternative solution, which we have not adopted because it appeared to be more complicated at the time of writing, should at least be mentioned. It would involve dividing the weak suffixes into two parts. The first part would consist of something like vowel plus nasal and could be considered part of the noun stems, to which only the second part (−a, −ö, etc.) would be added. But the whole suffix would be attached to the adjectival stems. The possibility that speakers (like linguists) had more than one analysis at their disposal should also be considered.
4.7.5 The nouns belonging to the minor declensions will have to be marked with diacritic features, as already suggested in section 4.5, to indicate their idiosyncratic selection of endings from other classes and dative plurals consisting of vowel plus the more general -m. There are no minor declension adjectives to worry about. Our lexical entries for these nouns will be brobar-, friond-, mann-, burg- and fon-. Two minor rules are needed to effect the deletion of a in the genitive and dative singular and all plural forms of r stems like brobar, and to change o: to u: (we assume the latter is long) in neuters like fon. These nouns would be marked as ' + MN 6' and ' + MN 7' respectively (where we have adopted M to mean 'minor') and the rules will apply to them only:

(MN6) a → φ / _ \{  
  G
  D
  PL
\}

(MN7) u: → [+ high] / _ \{  
  G
  D
  PL?
\}

4.7.6 The rule which deletes the -a of the nominative singular of feminine nouns and adjectives like bandi 'band', mawi 'maid', and wilbi 'wild' can be stated as:

(NB) a → φ / LONG STEM i + _ SO N
In rule (N8) LONG STEM is the same environment used in the formulation of Sievers' Law (rule 10, chapter II). It should be noted that (N8) applies, as numbered, after the other morphological rules, since if the deletion of the thematic vowel had not taken place, all stems would qualify as long. Notice, furthermore, that whereas nouns like bandi meet the specifications for long stems (short vowel followed by two consonants in this case), others like mawi do not do so on the surface. The latter is related — probably derived from — the masculine noun magus 'boy, servant'. If one includes the following rule in the phonology of Gothic:

\[(21) \quad g w \rightarrow \emptyset 2 / [\text{- consonantal}] \_ \_ \]

the relationship between the two nouns is captured phonologically and the long value of mawi can be explained. The synchronic derivation of the two nouns would be:

\[
\begin{align*}
\text{M} & \quad \text{F} \\
\text{magu} + s & \quad \text{magu} + i o: + a \\
& \quad \text{magu} + i + a \quad \text{by (N5)} \\
& \quad \text{magu} + i \quad \text{by (N8)} \\
& \quad \text{magw} + i \quad \text{by (13)} \\
& \quad \text{maw} + i \quad \text{by (21)} \\
\hline
\text{magus} & \quad \text{mawi}
\end{align*}
\]

12 - It is conceivable, however, that (21), which is undoubtedly an old rule, had been abandoned in Gothic, but that a marking '+ LONG STEM' had been retained in nouns like mawi. In the approach suggested in section 4.4 rules like (N8) and (21) would be unnecessary, since the nominative form of mawi would be the lexical entry.
4.8 Conclusion.

With this hypothesis about inflection in nouns and adjectives we conclude our analysis of the principal problems of Gothic phonology and morphology. Some of our proposals are highly speculative — for example, the choice of rules and formatives for the weak verbs of the third class and for the nominal inflection discussed in the preceding pages. It is very unlikely that our conclusions will meet with universal acceptance in all their details, but we feel that our analysis is the simplest and most complete treatment of the data so far, though much work remains to be done on the language and on linguistic theory. This study will have served its purpose if it leads to further discussion and clarification of the issues.
BIBLIOGRAPHY


Beeler, M.S. 1966. Proto-Germanic i and e: one phoneme or two? Lg. 42.473-4.


——. 1959. The phonemic status of Gothic w, h, q. Lg. 35.427-32.


——. 1967b. Some phonological effects of pre-Gothic juncture. Lg. 43.661-5.

——. 1968. The operation and relative chronology of Verner’s Law. Lg. 44.2.9-23.


134


Jellinek, Max H. 1893. Gotisch w. ZDA 36.266-78.


—. 1958a. Gothic au in inflectional syllables. Lg. 34.33-9.

—. 1958b. Gothic iu. Lg. 34.353-8.


Kyes, Robert L. 1967. The evidence for i-umlaut in Old Low Franconian. Lg. 43.666-73.


——. 1951. The genesis of the stem vowel u (o) in the Germanic r-stems. JEGP 50.522-8.


——. 1956b. Internal reconstruction of phonemic split. Lg. 32.245-53.


Moulton, William G. 1948. The phonemes of Gothic. Lg. 24. 76-86.

1954. The stops and spirants of early Germanic. Lg. 30. 1-42.

Must, Gustav. 1951. The origin of the Germanic dental preterit. Lg. 27. 121-35.


Schane, Sanford A. 1968. On the non-uniqueness of phonological representations. Lg. 44. 709-16.


Van Coetsem, Frans. 1949. Le renforcement des semivoyelles intervocales en germanique (j/i>gotique dëdë, etc.) Leuvense Bijdragen 39. 41-78.


Volten, H. V. 1944. The order of the Pre-Germanic consonant changes. JEGP 43.42-8.


1971. The phonology of Gothic vowels. Lg. 47.90-132.


1968. Gothic and Germanic. Lg. 44.720-46.


