STRUCTURE AND RESTRUCTURING IN PROTO-GERMANIC VERBAL ABLAUT

0. Introduction

The aim of this paper is to reconsider certain details of the description and periodization of Proto-Germanic (PGmc.) verbal ablaut as presented by van Coetsem (vC) 1972[1]. It will be argued that a different picture of ablaut can be gained by distinguishing between automatic and nonautomatic alternation of stem vowels *within* a given grammatical category. Certain aspects of vC'rule formulation will also be examined.

Clarity over the criteria for arriving at a given synchronic analysis of a grammatical system is a prerequisite for determining that such a system has undergone restructuring. Since restructuring is a basic concern of periodization and historical description in general, the fundamental methodological criteria of synchronic analysis also lie at the root of diachronic analysis. Therefore, the diachronic description of PGmc. verbal ablaut and its periodization are inextricably linked with the synchronic definition and analysis of its different stages.

1. Definitions

In vC 1956 and subsequent publications[2] a distinction has been made between the *e*-group of strong verbs (corresponding to the traditional classes I-V) on the one hand, and the *a*-group (classes VI and VII) on the other[3]. For the present discussion it is sufficient to examine vC's treatment of the *e*-group.

Special attention is given to periodization. An *e-a*-period is defined, which extends from the merger of pre-Gmc. $\breve{a}$ and $\breve{o}$ as $\breve{\bar{a}}$ until the disruption of the length correlation when $\breve{a}$ and $\bar{o}$ developed; the only $\bar{e}$ of the period is reflected by Gmc. $\bar{e}^1$. Within this period vC 1972:200 distinguishes between an early and a late stage, the latter marked by (a) the development of syllabic resonants[4] $m̥$ $n̥$ $l̥$ $r̥$ to *u* plus nonsyllabic resonant and (b) the extension of $\bar{e}$ in preterit plural from the 5th to the 4th series (cf. Gothic *gebum, nemum,* but *skulum*).

2. Early *e-a*-period

For the early stage of the *e-a*-period vC postulates only two alternation series in the *e*-group, $e \sim \overset{o}{a} \sim \emptyset \sim \emptyset$ in the 1st through 4th classes, and $e \sim \overset{o}{a} \sim \bar{e} \sim e$ in the 5th (cf. 1972:200). He further notes (p. 202) that the series are in complementary distribu-

tion, the former series occurring before $\left[+\text{ sonorant}\right]$ segments and
the latter before $\left[-\text{ sonorant}\right]$, i.e. obstruents. Syllabic and
nonsyllabic variants of the sonorants (/i u m n r l/) are not
distinguished "since these are predictable and derivable from the
same underlying representations or base forms" (pp. 201-2; cf. pp.
179ff). If we use Roman numerals to abbreviate the principal parts
of the verbs (I: present, II: preterit singular indicative, III:
other preterit, IV: passive participle), we can paraphrase vC's
formulation (p. 203) for the *e*-group in the early stage as follows :

RI :   *e* becomes (1) $\overset{o}{a}$ in II

                       (2) $\emptyset$ before $\left[+\text{ sonorant}\right]$ in III and IV

                       (3) $\bar{e}$ in III

VC assumes that *e* and $\overset{o}{a}$, and *e* and $\bar{e}$ differ only by the features
$\left[\text{back}\right]$ and $\left[\text{long}\right]$, respectively, so that, as he states it, the
above rule involves changes of only a single feature. But before
arriving at this analysis vC remarks that the feature analysis "is
complicated by the fact that it is uncertain whether the vowel sys-
tem was at this stage triangular or quadrangular ..., and whether
the feature distinguishing between *e* and $\overset{o}{a}$ was $\left[\text{back}\right]$ or $\left[\text{low}\right]$"
(p. 201; cf. 1970:44). This hesitation is unnecessary in a discus-
sion of the ablaut system of the early stage. Whatever the actual
phonetic features of the vowels may have been, the pattern clearly
argues for a *phonological* system that is rectangular. The analysis
in terms of a triangular system is not necessary until umlaut,
which comes later[5]. Premature introduction of the triangular system
in the description would result in a pseudo-restructuring of the
ablaut pattern since nondistinctive phonetic information would com-
plicate the morphological rule.

3. Late *e-a*-period

     The late stage is marked in part by the extension of $\bar{e}$ to the
4th class, as in Gothic *nemum*. If we restate Rl as Rl',

Rl' :   *e* becomes (1')$\overset{o}{a}$ in II

                       (2')$\bar{e}$ before $\left[-\text{ sonorant}\right]$ in III

                       (3')$\emptyset$ before $\left[+\text{ sonorant}\right]$ in III and IV

then the extension simply[6] results in a change to R2 :

R2 :   *e* becomes (1) $\overset{o}{a}$ in II

                       (2) $\bar{e}$ before nonchecked (i.e. morpheme-final)

                                       $\left[+\text{ consonant}\right]$ in III

                       (3) $\emptyset$ before $\left[+\text{ sonorant}\right]$ in III and IV

This means that $\bar{e}$ occurs not just before (nonchecked) obstruents
in III but now also before nonchecked consonants in general, so
that the parallelism between the e- and a-groups is strengthened
(cf. vC 1972:201).

But vC claims that the breakdown of the syllabic resonants $\underset{o}{R}$ >
uR (a) *preceded* the extension of $\bar{e}$ (p. 200) and (b) produced new
alternation series within the e-group. We may first consider the
problem of periodization. VC notes that "the preterit-presents of
series 4 have u and not $\bar{e}$" (p. 200), which clearly suggests that
the preterit-presents became a separate system before the extension
of $\bar{e}$ in the e-group. But this fact has no bearing on the relative
chronology of $\underset{o}{R}$ > uR, as vC appears to claim (P. 200). Internal
considerations allow us to place the resonant breakdown before,
between, or even after the two stages (integration of the preterit-
presents as a separate system followed by $\bar{e}$-extension) that forms
like *skulum* suggest.

While vC still implicitly regards the variation of syllabic
and nonsyllabic i, u of the 1st and 2nd classes as a low-level pho-
netic problem, he assumes that the phonemic merger of $\left[uR\right]$ from the
syllabic allophones of pre-Gmc. /R/ with $\left[uR\right]$ from pre-Gmc. /u+R/
immediately led to a restructuring of the e-group in the late stage.
With inclusion of the $\bar{e}$-extension this gives the following alterna-
tion series and their respective environments (cf. pp. 203-4) :

(a) $e \sim \overset{o}{a} \sim \emptyset \sim \emptyset$ before glides, i.e. $\begin{bmatrix} + \text{ sonorant} \\ - \text{ consonant} \end{bmatrix}$

(b) $e \sim \overset{o}{a} \sim u \sim u$ before checked resonants,
i.e. $\begin{bmatrix} + \text{ sonorant} \\ + \text{ consonant} \end{bmatrix} \begin{bmatrix} + \text{ consonant} \end{bmatrix}$

(c) $e \sim \overset{o}{a} \sim \bar{e} \sim u$ before nonchecked resonants,
i.e. $\begin{bmatrix} + \text{ sonorant} \\ + \text{ consonant} \end{bmatrix}$

(d) $e \sim \overset{o}{a} \sim \bar{e} \sim e$ before (nonchecked) obstruents,
i.e. $\begin{bmatrix} - \text{ sonorant} \end{bmatrix}$

VC characterizes the ablaut of the late stage with a rule (pp. 204-
5) that may be paraphrased as follows :

R3 : e becomes (1) $\overset{o}{a}$ in II

(2) $\emptyset$ before glides in III and IV

(3) u before checked resonants in III and IV
and before nonchecked resonants in IV

(4) $\bar{e}$ in III

If we accept the formulation of R3, then the rule indeed shows what vC calls a "growing complexity" (p. 204) with respect to R1. But as in the case of R1 and R1' above, it is interesting to reconsider the formulation[7]. Notice that within R3 the subrules (1), (2), and (3) are unordered with respect to each other, and (1) with respect to (4), while (2) and (3) must precede (4) and are in a bleeding relation with respect to the latter; thus we correctly generate *bud-* and *bund-* (rather than $^*b\bar{e}ud-$ and $^*b\bar{e}nd-$) at the price of ordering and a rather complicated statement of (3), while the statement of (4) requires no phonological environment. By juggling all these factors a bit (with consequences that no "simplicity metric" has yet been able to evaluate) we can arrive at a formulation R3', which sacrifices a small increase in the complexity of (4) in exchange for a considerable reduction of complexity in (3) plus a single ordering constraint :

R3' :   *e* becomes (1') $\overset{o}{a}$ in II

(2') $\bar{e}$ before nonchecked $\begin{bmatrix} + \text{ consonant} \end{bmatrix}$ in III

(3') $\emptyset$ before glides, i.e. $\begin{bmatrix} + \text{ sonorant} \\ - \text{ consonant} \end{bmatrix}$,

in III and IV

(4') *u* before resonants, i.e. $\begin{bmatrix} + \text{ sonorant} \\ + \text{ consonant} \end{bmatrix}$,

in III and IV

The only ordering constraint is that (2') precedes (4'), which gives *nēm-* (rather than $^*num-$) in III.

But one R3' is so formulated, the striking parallelism of subrules (3') and (4') invite another reformulation in which the latter are collapsed :

R3'' :   *e* becomes (1'') $\overset{o}{a}$ in II

(2'') $\bar{e}$ before nonchecked consonants in III

(3'') $\begin{cases} \emptyset \text{ before vocalic} \\ u \text{ before consonantal} \end{cases}$ sonorants in III and IV

The last formulation shows that the late ablaut system of the *e*-group had developed an automatic[8] alternation $\emptyset \sim u$ that intersected[9] the alternations of the early stage :

	III	IV
$\emptyset$ ↿ $\emptyset$	*grØip-*	*grØip-*
↿ u	*bØud-*	*bØud-*
↿ u	*xulp-*	*xulp-*
		num-

Formulation R3'' is clearly preferable to R3, although both rules--
and the corresponding view of ablaut in the late stage--share the
assumption that the automatic alternation $\emptyset \sim u$ should be described
together with the grammatically conditioned ablaut alternations.
If we instead handle the alternation $\emptyset \sim u$ along with problems of
(autonomous) phonology[10], then we eliminate the need for R3, R3',
and R3''; R2 adequately characterizes the late stage, and the only
restructuring of the *e*-group within the *e-a*-period is brought about
by the extension of $\bar{e}$[11].

Therefore, the analysis as represented in R3 obscures the basic
ablaut pattern by grouping automatic and nonautomatic morphophonemic
alternations together. This problem, of course, raises the fundamen-
tal question as to the place of morphophonemics within grammar and,
in particular, its relation to morphology and phonology (cf. vC
1972:176). The solution proposed here basically follows the early
distinction made by Trubetzkoy 1934:20 between *freie Morphemänderung-*
en (alternations proper) and *kombinatorische Morphemänderungen*
("hervorgerufen... durch die äussere Lautstellung des Morphems und
durch seine Berührung mit anderen Morphemen").

4. Post *e-a*-period and after

Umlaut, appearing at the end of the *e-a*-period, presents a
terminus ad quem for the breakdown of the syllabic resonants since
forms like O.H.G. *ginoman* show an umlauted stem vowel (cf. vC 1970:
72). But no restructuring results as long as [o] remains an allo-
phone of /u/, and rules R3, R3', R3'' therefore represent no stage
at all in PGmc. ablaut[12].

A basic restructuring of ablaut comes with the dissolution of
PGmc. and the phonemicization of /o/, however, because $u \sim o$ is
soon levelled out in declension and thus becomes grammatically
conditioned in conjugation. Since $\emptyset \sim u$ must be ordered before
$u \sim o$ in a description, $\emptyset \sim u$ can no longer be considered auto-
matic and must be presented as part of the grammatical pattern of
the verbs.

It still may be possible to keep R2 intact (ordered before rules
for $\emptyset \sim u$ and $u \sim o$) as long as the alternation $u \sim o$ is conditioned
by a following *a* in the strong verbs, as in O.S. *budun : gibodan*[13].
But the restructuring represented in R3'' cannot be avoided in the
face of unstressed vowel reduction, as in M.H.G. *bugen : gebogen*,
or reshaping of the participial ending, as in O.I. *skotenn*, since
both $\emptyset \sim u$ and $u \sim o$ must then be incorporated into the main ab-
laut rule.

Institut f. Englische Philologie   James Kilbury
Universität Graz

NOTES

1. I wish to thank Professor van Coetsem for reading and making valuable
   criticisms of drafts of this paper, which grew out of ideas presented
   by me in his courses, and for the time he has spent with me discus-
   sing this problem.

2. See vC 1970 and 1972 for bibliography. While the relevant part of
   vC's theory is sketched here, the reader will have to consult the
   original works to find the justification of individual steps.

3. The preterit-present verbs form a separate group and will not be
   discussed here.

4. The term 'resonant' is used throughout this paper to denote nasals
   and liquids, i.e. $\begin{bmatrix} +\text{sonorant} \\ +\text{consonant} \end{bmatrix}$; 'sonorant' is used to include glides
   as well as resonants.

5. See the discussion by Tops in *Orbis* 22:138-50(1973).

6. The relative complexity of R1 and R1' is difficult to assess.
   Within R1 subrule (2) precedes (3) while (1) is unordered with res-
   pect to (2) and (3); within R1' the subrules are unordered, al-
   though (2') must specify a phonological environment. Persons who
   prefer the standard notation of generative phonology will find it
   easy to reformulate the informally stated rules given here.

7. The reader should realize that the objections made here amount to
   more than quibbling with transformationalist notation. Van Coetsem
   certainly is the last linguist who would present his views dog-
   matically, but the scientific and mathematical appearance of R3 as
   he states it may cause the reader to fail to ask why vC has chosen
   this particular formulation rather than one of several other pos-
   sible formulations that he does not mention. In this case the ob-
   jection is important since vC's formulation as paraphrased in R3
   fails to reveal the objective relationship that is captured by R3''.
   The latter rule, in turn, may fail to show relationships that would
   emerge if the ablaut system were to be viewed from still another
   perspective. No rule formulation is advocated here as being correct
   in an absolute sense.

8. According to Hockett 1958:279 automatic alternation involves the
   phonologically conditioned replacement of a base form "under specific
   conditions where, otherwise, there would be an arrangement of phonemes
   contrary to the phonemic pattern of the language". Thus, the alter-
   nation $\emptyset \sim u$ is shown to be automatic not by R3'' but by the fact
   that it reflects a general constraint on phonological distribution.
   One must note the alternative development of R to Ru as in Gothic
   fruma versus O.S. *formo* (cf. vC 1970:69ff), but such doublets are
   rare and hardly suffice to establish the restructuring of ablaut
   that vC proposes for the late e-a-period.
      It also is possible to speak of alternations $\emptyset \sim \bar{e}$ in III and
   $\emptyset \sim e$ in IV as intersecting the alternation $e \sim \check{a} \sim \emptyset \sim \emptyset$ or $e \sim \overset{o}{a}$
   $\bar{e} \sim e$, but the former are nonautomatic alternations since the occur-
   rence of $g\bar{e}b$- or geb- in place of nonoccurring *gb- is dictated by
   grammar. Consequently, the description of these alternations proper-
   ly belongs together with the rest of the verbal morphology.

9. The picture of mutually intersecting alternations given here involves
   questions about the morphological analysis of the strong verb stems
   and the morphological status of the alternations $\emptyset \sim u$, $\emptyset \sim \bar{e}$, and
   $\emptyset \sim e$. If the stems are viewed as consisting of a single morpheme,
   then the alternations are purely fictitious, while the alternations
   represent distinct morphemes if the stem is considered complex.
   Both views lead to serious difficulties, and both result from an
   overly rigid understanding of the morpheme which destroys its use-
   fullness as a linguistic tool. The position taken here is that
   stong verb stems clearly consist of two morphological elements,

although it is neither desirable nor possible to pass judgment on
the status (-emic or -etic) of the latter.

10. Hockett discusses a grouping of phonetics, phonemics, and morpho-
phonemics together as 'mechanics' (1948:185; cf. 1940:55) and a
division that classes "automatic morphophonemic facts with phono-
logy, non-automatic with tactics" (1954:§2.11). Halle 1959:22-3
argues that a separation of phonetics and phonology can complicate
morphophonemics.

11. Of course, the alternation ∅∿u must be handled *somewhere* in a
description. But the logic that leads us to eliminate it from the
discussion of PGmc. ablaut is essentially the same as our reasoning
when we describe the plural formation of English nouns within a
general discussion of English morphology : irregular endings like
-*ən* of *oxen* alternate with the regular plural ending, and nouns like
house voice the stem-final spirant in the plural, but the automatic
alternation -*əz* ∿ -*c* ∿ -*z* seen in the regular plural ending is also
found in possessive forms, 3sp verb forms, and unstressed forms of
has and *is*, and it therefore is discussed in a separate part of the
description.

12. The reasoning used above also allows us to assume basic forms with
e in I (e.g. *steig-*, *bend-*) for all verbs of the *e*-class throughout
the PGmc. period.

13. A single umlaut rule would also account for O.S. *biotan : biutu*, etc.

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