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's~~ vC's 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 $\breve{\breve{a}}$ 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] $\underset{\circ}{m}$ $\underset{\circ}{n}$ $\underset{\circ}{l}$ $\underset{\circ}{r}$ 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, $e \sim \overset{\circ}{a} \sim \emptyset \sim \emptyset$ in the 1st through 4th classes, and $e \sim \overset{\circ}{a} \sim \bar{e} \sim e$ in the 5th (cf. 1972:200). He further notes (p. 202) that the series are in complementary distribu-

tion, the former series occurring before [+ sonorant] segments and the latter before [- sonorant] , 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 :

R1 : *e* becomes (1) $\mathring{a}$ in II
(2) ø before [+ sonorant] in III and IV
(3) $\bar{e}$ in III

VC assumes that *e* and $\mathring{a}$, and *e* and $\bar{e}$ differ only by the features [back] and [long], 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 system was at this stage triangular or quadrangular ..., and whether the feature distinguishing between *e* and $\mathring{a}$ was [back] or [low]" (p. 201; cf. 1970:44). This hesitation is unnecessary in a discussion 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 complicate 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 R1 as R1',

R1' : *e* becomes (1')$\mathring{a}$ in II
(2')$\bar{e}$ before [- sonorant] in III
(3')ø before [+ sonorant] in III and IV

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

R2 : *e* becomes (1) $\mathring{a}$ in II
(2) $\bar{e}$ before nonchecked (i.e. morpheme-final) [+ consonant] in III
(3) ø before [+ sonorant] 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 $\underset{\circ}{R} > uR$ (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 $\underset{\circ}{R} > uR$, 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 phonetic problem, he assumes that the phonemic merger of [uR] from the syllabic allophones of pre-Gmc. /R/ with [uR] 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 alternation series and their respective environments (cf. pp. 203-4) :

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

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

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

(d) $e \sim \overset{\circ}{a} \sim \bar{e} \sim e$ 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) $\overset{\circ}{a}$ 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 **bēud-* and **bēnd-*) 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') *o̊* in II
(2') *ē* before nonchecked [+ consonant] in III
(3') Ø before glides, i.e. [+ sonorant, - consonant], in III and IV
(4') *u* before resonants, i.e. [+ sonorant, + consonant], in III and IV

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

once 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'') *o̊* in II
(2'') *ē* before nonchecked consonants in III
(3'') {Ø before vocalic, *u* before consonantal} sonorants in III and IV

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

	III	IV
Ø ≀	*grØip-*	*grØip-*
Ø ≀	*bØud-*	*bØud-*
u ≀	*xulp-*	*xulp-*
u		*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 fundamental 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 Morphemänderungen* (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 allophone 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 automatic 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 ablaut rule.

Institut f. Englische Philologie
Universität Graz

James Kilbury

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 discussing 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) isunordered with respect to (2) and (3); within R1' the subrules are unordered, although (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 dogmatically, 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 possible formulations that he does not mention. In this case the objection 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 alternation $\emptyset \sim u$ 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 $e \sim \mathring{a} \sim \emptyset \sim \emptyset$ or $e \sim \mathring{a}$ $\bar{e} \sim e$, but the former are nonautomatic alternations since the occurrence of *gēb-* or *geb-* in place of nonoccurring **gb-* is dictated by grammar. Consequently, the description of these alternations properly 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 ficticious, 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 usefullness 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 morphophonemics together as 'mechanics' (1948:185; cf. 1940:55) and a division that classes "automatic morphophonemic facts with phonology, 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 $\emptyset \sim u$ 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 ∼ -s ∼ -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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