

THE GERMANIC DIPHTHONGS \**AI* AND *AU* IN OLD FRISIAN AND  
OLD ENGLISH AND THE ORIGIN OF THE OLD ENGLISH (WEST  
SAXON) DIGRAPH *IE*

DAVID ARMBORST

*York University, Toronto*

The present paper derives from two sources — one indirect, the other direct. The indirect source is the view of the operation and chronology of umlaut in Germanic as propounded, above all, by Professors Antonsen (1961, 1964, 1965, 1972),<sup>1</sup> and van Coetsem (1968, 1970),<sup>1</sup> which derives further, in turn

---

<sup>1</sup> A note on the use of symbols in this article: wherever I have felt the context to demand the distinction, sounds, even reconstructed proto-sounds, have been distinguished through the traditional use of paired slanted lines, square brackets and angular brackets to indicate phonemes, supposed surface phonetic realizations, and corresponding graphs, respectively.

Throughout the article I have endeavoured to make clear my standpoint on any contentious issues in the historical phonology of Old English/Germanic which are involved in the material I am dealing with, for I hope that the article will stimulate discussion on the topic; mistakes which have been made still serve this purpose, misunderstandings do not.

Whereas I am presumptuous enough to deal with phonetic detail (one is doomed to this, I am afraid, when treating umlaut phenomena in Germanic, unless one is to merely list morphonemic alternations in, say, Old English, to document the importance of *i*-umlaut to the phonology of Old English — e.g. Bennett 1969), I am in complete agreement with Pilch (1969—70: 43) that Old English grammars must be rewritten with at least an attempt at a clear separation of diachronic rule operations from synchronic reflections of these operations. It will be noted in this regard that I often refer to the operation of a rule in pre-Old English and the graphemes which stand in Old English as a result of the rule's operation. This is because I firmly believe that "a grammar" of Old English, Old High German etc. is to a great extent the description of a stage of a language resulting from a previously operative set of rules, of any one of which the following may be true:

- a) the rule has been generalized and has ceased to operate (has been lexicalized)
- b) the rule has been generalized and continues to operate (is synchronically recoverable)

in its general framework from the allophonic variant-loss of conditioning factor-phonemicization doctrine of change in phonological systems developed in the American School of Structuralism.<sup>2</sup> The direct source was the question why, whereas both Proto-Germanic diphthongs *\*ai* and *au* are apparently monophthongized to /a:/ in pre-Old Frisian, it is exactly the diphthong of the pair which according to the evidence of other Germanic dialects had a more front realization of the low-vowel first element which monophthongized to /a:/ in pre-Old English, while the one which likely had originally an initial vocalic element that was more retracted displays a front vowel in its place in OE <ea>.

The aforementioned works of Antonsen and van Coetsem agree in reconstructing the origin of Germanic umlaut phenomena through phonetic conditioning in, at least, late Proto-Germanic, and indeed the phenomena are so widespread in accord with the general principle in the various historical dialects that, notwithstanding the lack of express evidence from Gothic.<sup>3</sup> I think their view is a particularly compelling one providing a good working base derived from comparative reconstruction for phonetic detail in Proto-Germanic phonological systems.

In works on the history of Frisian it is made clear that PGmc. *\*ai, au* > OFris. /a:/ except where originally the conditions for *i*-umlaut obtained, where then the result is OFris. /e:/, the same, in graphic rendition at least, as the product resulting apparently from raising of *\*/æ:/* <NWGmc. *\*/a:/* = so-called PGmc. *e*<sup>1</sup>. Thus:<sup>4</sup>

- OFris. *māra* <NWGmc. *\*maira*  
 OFris. *dēla* <NWGmc. *\*dailjan*  
 OFris. *dēd* <NWGmc. *\*da : d-*  
 OFris. *āre* <NWGmc. *\*aura*  
 OFris. *hēra* <NWGmc. *\*haurjan*

c) the rule has not yet been generalized, is still operative and in the process of developing

d) the rule has not been generalized and is still operative, but in an amended form due to rule reordering or restructuring (i.e., other sound changes have begun or already taken place that impinge upon it)

In effect, one is reconstructing the set of rules that account for arriving at the stage which we wish to describe synchronically, but which we may be able to define, due to circumstances in a given case, only in terms of the evolution of a rule which will account satisfactorily only for the synchrony of a successor stage.

<sup>2</sup> Documented in Joos (1966) and given perhaps its best, most concise statement in Twaddell (1938), in works of Herbert Penzl such as "The phonemic split of Germ. *k* in Old English" (1947) and most recently *Lautsystem und Lautwandel in den althochdeutschen Dialekten* (1971: 115 ff. and passim).

<sup>3</sup> Cf. Antonsen (1972: 140) or Götz Wionold (1967).

<sup>4</sup> Sjölin (1969: 19 ff.); Krogmann (1970: 204–205).

With PGmc. *\*ai* there is to be sure the further complication that OFris. <e> is the result even in some cases where it cannot have resulted from the operation of *i*-umlaut — e. g. OFris. *bēn, sēl*; neuter *a*-stem nouns: *sēre, seer* <NWGmc. *saira*; infinitives such as *hēta*, adjectives such as *brēd, hēl*, and doublets such as *klāth, klēth* — a fact which then points to more than one factor having been involved in the development of *\*ai* into Old Frisian: namely, that the nature of the following consonantal element must have been involved in determining the development to either /e:/ or /a:/ where *i*-umlaut was not a factor, with later dialectal mixture (from Low German sources even?) or analogical influences (since the data are not amenable to an absolute formulation of appropriate environments, but are tantalizingly close). This in turn involved a conflict over whether the primary development of PGmc. *\*ai* into Old Frisian was /e:/ with /a:/ only in environments amenable to description as "lowering" environments, or vice versa.<sup>5</sup> (I personally favour the vice versa standpoint and will argue it in the discussion further below.) However, common to all the views is that, when the implicit question at what point in the derivation /e:/ <*\*ai, au*/ — (i) (j) the *i*-umlaut factor was operative is faced and a statement on relative chronology made, it is assumed that *i*-umlaut was operative relatively late. E. g. Heinertz (1912: 320):

Die erste Stufe, schematisch genommen, war wohl *ae* (s. Bülbring I § 106), später wurde wohl daraus ein sehr offenes, einem *a* nahestehendes *æ* ... woraus vor kürzeren Konsonantenverbindungen *ā*, mit demselben *a*-ähnlichen Klang. a) Das lange offene *ā* hatte wohl naturgemäss eine Neigung zu *ā* zu werden und ist auch unbeeinflusst dieser Neigung gefolgt. b) Nur vor erhöhenden Faktoren ist aus dem *ā* ein *e* geworden. Diese Erhöhungsfaktoren waren 1) umlauterzeugendes *i, j* ...

For *ai* Krogmann notes (1970: 205): "Vertretung von germ. *ai* durch *ā* oder *ē*, das bei Umlaut stets erscheint ... *dēla* <*\*dailian* ...", but for *au* he notes: "Vertretung von germ. *au* durch *ā*, das bei Umlaut zu *ē* wurde ... *hēra* <*\*hārian* <*\*haurjan* <*\*haurjanan* ..."

Campbell (1939: 90):

Germ *ai* is monophthongized in OE to *ā* and in OFris to *ē*.<sup>6</sup> The OE development may be due to loss of the second element with compensatory lengthening of the first, or to assimilation of the second element to the first and subsequent contraction with it into a long vowel. The final stage of this process must have been reached after the fronting of WGerm *ā*, or the new *ā* (<*ai*) would have been fronted also. On the other hand, the monophthongization must have been completed before the fronting of Germ *a*, or the first element of the diphthong would have been fronted, and a diphthong with *æ* as its first element could hardly have been monophthongized to *ā*. In Frisian, on the other hand, the monophthongization of Germ *ai* to *ē* may well have been over an intermediate stage *æi*, which was occasioned by the fronting of Germ *a* to *æ*. It can be regarded as certain that *ai* did not become *ā* as in OE, and subsequently

<sup>5</sup> Cf. especially Heinertz (1912) and Campbell (1939: 95–96).



share in the fronting of WGerm  $\bar{a}$ , for the  $\bar{e} < a$  and the  $\bar{e} < ai$  were not identical in OFris. and are still distinguished clearly in many living dialects ...  $\bar{a}$ , the mutation of  $\bar{a}$  ( $< au$ ), was identical with the older  $\bar{a}$  ( $< ai$ ). Its product is still distinguished from that of  $\bar{e}$  ( $< WGerm \bar{a}$ , and the mutations of  $\bar{o}$  and  $\bar{u}$ ) in the dialects of the Saterland and the North Frisian coast.

Campbell's analysis is better than the others' insofar as it accepts that the  $*/\bar{a}:/$  first resulting in pre-Old Frisian from PGmc.  $*ai$  may have been the result of monophthongization from a previous stage of diphthong with  $/\bar{a}e/$  as its first element —  $*/\bar{a}e/$  or  $/\bar{a}i/$  — but it suffers from the same disadvantage as Heinertz's, since Campbell entertains also only the possibility of one initial development of PGmc.  $*ai$  into pre-Old Frisian with subsequent split and so must accept the "lowering" theory to explain OFris.  $\bar{a} < PGmc. *ai$ , a development which, as I have already indicated, I feel is better explained through "raising".

In the case of the OE reflexes of PGmc.  $*ai$  it has likewise been stressed traditionally that the reflex of  $*ai$  through  $i$ -umlaut occupies synchronically a structural position defined in terms of effect of  $i$ -umlaut factors relative to otherwise occurring  $a$ :

OE (WS, Angl., Kent.)  $st\bar{a}n < PGmc. *stainaz$   
vs. OE (WS, Angl.)  $d\bar{a}elan < PGmc. *dailjanan$   
(Kent.)  $d\bar{e}lan$  (with  $*\bar{a} > \bar{e}$ )

OE (WS) in direct morphophonemic alternation —  $h\bar{a}tan$ , (3 pers. sing. pres. indic.)  $h\bar{a}t$ , etc.

as a result of which the synchronic statement was posed with diachronic validity, which then in turn likely furthered a belief that  $i$ -umlaut, rather than being part of a continuous process of phonetic conditioning of vowels deriving from Proto-Germanic and extending into the early stages of the attested dialects, "occurred" relatively late in Anglo-Frisian: "No one now questions the late date of the Kentish and Frisian raising to  $e$  of the long  $\bar{a}$  which resulted from umlaut, for  $i$ -umlaut occurred in the seventh century" (De Camp 1969: 359).

To be sure, Ross, following Luick (1964: 115, § 96; 123, § 122, Anm.), reckons with a differentiated development of PGmc.  $*ai$  into pre-Old English and pre-Old Frisian:

I say then that the double phoneme  $ai/e$  mostly materialised as  $ae$  save where it was later to be mutated (inf.  $*\chi aetan \sim$  3rd sg. pres. ind.  $*\chi aiti\bar{p}$ —OE.  $hatan$ ,  $h\bar{a}tt$ ). (1)  $ae$  naturally gave (2)  $\bar{a}e$  with fronting. At this point there are really only two possible developments—either the diphthong is maintained or it is monophthongised. In the former case this will involve a subconscious tendency to dissimilate the two elements (for  $\bar{a}$  and  $e$  lie very close) and one way of doing this is to change the first element to  $a$ . This process leads to Development I: (2)  $\bar{a}e > (3) ae > \bar{a}$ . The other possibility, monophthongization, may be effected by assimilation—e.g. by making both

elements  $\bar{a}$ —hence Development II: (2)  $\bar{a}e > (3) \bar{a}$ . It is to this Development II no doubt that 'PGmc.  $ai > OFris. e$ ' is chiefly due, 'PGmc.  $ai > OFris. a$ ' being due to Development I (as in Old English), though there are doubtless intricacies of detail; cf. for instance, OFris.  $\bar{a}th$ ,  $\bar{e}th$ —OE.  $\bar{a}\bar{p}$ , Gothic  $ai\bar{p}$  (Ross 1951: 54).

By proposing that the general development of PGmc.  $*ai$  was  $*/\bar{a}e/$  through  $a$ -fronting common to both pre-Old English and pre-Old Frisian he achieves a common initial point of development for OFris.  $/e:/$  and OE  $/a:/$ , yet the remark about "intricacies of detail" with reference to the double development  $/e:/ \sim /a:/$  in Old Frisian will, I think, prove to be too facile, since one must at least attempt to account for the fact that the OFris.  $/e:/$  reflex of PGmc.  $*ai$  is the one which also always occurs as the reflex where PGmc.  $*ai$  was followed by an  $i$ -umlaut factor. In addition, his wish to establish, in agreement with Luick, a common starting point of  $*/\bar{a}e/$  for the diverse developments in Old English and Old Frisian through fronting of  $*/a/$  to  $/\bar{a}e/$  makes for awkwardness in motivating the Old English monophthongization to  $/a:/$ , as should be evident from the above quoted passage and as Campbell notes (1939: 90, footnote 3).

Antonsen and van Coetsem demonstrate convincingly the diphenematic nature of the PGmc. diphthong  $*/eu/$  — its reflexes in the later dialects are exactly explainable on the basis of development as two (short) vowel phonemes in direct sequence ( $/e/ + /u/$ ) (Antonsen 1972, 1967:8; van Coetsem 1968: 520 ff.). Now if this is true, it is a powerful argument that the diphthongs  $*/ai/$  and  $/au/$  ( $au$  in direct ablaut relationship with  $eu!$ ) were also diphenematic in nature (van Coetsem 1968: 521 ff.). But the proof must come finally from putting the theory to the test — how well does it explain the facts which obtain in the later dialects, since, as Fowler (1963:323) has remarked, "in prehistory there can be no proof, only the better hypothesis".

The application of this view of the diphenematic nature of Proto-Germanic diphthongs and of an early onset of the phonetic conditioning of vowels of stem syllables known as umlaut has indeed already been made by Professor Antonsen to the pre-history of Old English vowels (Antonsen 1967) and it will be obvious that, whereas my analysis differs in details, it derives in its essential assumptions from that work.

First,  $*ai$ : the PGmc. diphthong  $/ai/$  had two surface phonetic realizations deriving essentially from the rule which specified the front vowel of the Proto-Germanic underlying short vowel system as either *plus* or *minus*-high depending upon the umlaut condition prevailing; thus:

$[a\bar{e}]$  — e. g.  $*saero$  (OE  $s\bar{a}r$ )  
 $[aI]$  — e. g.  $*xaiti\bar{p}$  (OE  $h\bar{a}tt$ )

The frequency of occurrence of OE  $/a:/ < PGmc. */ai/$  is thus due to the preponderance of back and low vowels as thematic vowels or in inflectional



endings of Proto-Germanic and Northwest Germanic ( $\bar{a}$ ,  $\bar{o}$ ,  $a$ ) whereas  $/\text{æ}:/$  <PGmc.  $*/\text{ai}/$  is limited to environments: /  $\_\$  (i) (j). Further, it is important to notice that the monophthongization of pre-OE  $*/\text{æe}/$  (with lowering of  $-i$  to  $-e$ , as of  $-*u$  to  $-o$  in *io*, *eo*; cf. further below) to OE  $/\text{æ}:/$  is ultimately due to the first element having been fronted  $*/\text{a}/ > / \text{æ} /$  through operation of the umlaut factor; that is to say, the rules: 1) which umlaut  $/\text{a}/$  to  $/\text{æ}/$  2) further raise  $/\text{æ}/$  to  $/e/$  and 3) monophthongize pre-OE  $*/\text{æe}/$  to  $/\text{æ}:/$  must be crucially ordered as:

- 1)  $a > \text{æ} / \_\$  (i) (j)
- 2)  $\text{æe} > / \text{æ}:/$   $\text{ae} > / \text{a}:/$
- 3)  $\text{æ} > \text{e}$

otherwise, e. g. NWGmc.  $*\text{dailjan} > *d\text{æiljan} > *deiljan$ , OE  $*d\text{ēlan}$  instead of WS  $d\text{ælan}$ . Antonsen's presentation (1967: 9–10) does not make the exact chronology clear. Campbell would agree presumably, since he stresses that monophthongization precedes the (more general) fronting of  $a > \text{æ}$  in non-Kentish Old English (Campbell 1959: 52, § 132). Of course, the other order with  $/\text{æ}/ > / \text{e}/$  before monophthongization of  $*/\text{æe}/$  is exactly the order which explains  $*/\text{æe}/ > *[\text{æe}] > / \text{e}:/$  < $e$ > in Kentish OE as in Old Frisian.

Thus, the set of rules relating to the development of PGmc.  $*/\text{ai}/$  and  $/\text{au}/$  into Old English dialects and their crucial ordering is as follows (first, the basic rules are involved, then their ordering in the various dialects):

1) *i*-umlaut<sup>6</sup>

$$[+\text{bck}] \rightarrow [-\text{bck}] \left/ \begin{array}{l} \left[ \begin{array}{c} \text{V} \\ - \end{array} \right] (\text{x}) \left[ \begin{array}{c} -\text{ens} \\ -\text{bck} \\ +\text{high} \end{array} \right] \\ \left[ \begin{array}{c} - \\ - \end{array} \right] \end{array} \right.$$

CONDITION: X contains no segment which is [+vocalic]

2) lowering of second element of diphthong

$$[+\text{high}] \rightarrow [-\text{high}] \left/ \begin{array}{l} \text{V } \emptyset \left[ \begin{array}{c} \text{V} \\ - \end{array} \right] \\ \left[ \begin{array}{c} - \\ - \end{array} \right] \end{array} \right.$$

( $\emptyset$ =no syllabic juncture)

<sup>6</sup> I believe that an *i*-umlaut rule was still operative until into the Old English period itself, just as into the early stages of other attested dialects with phonetic (and later, partially, morphological) conditioning (cf. Robert King (1969: 92 ff.); Karl Heinz Wagner (1969: 227 ff.); and Roger Lass (1959: 81, footnote 3; 85, footnote 7 and passim) on the recoverability of back vowels from morphonemic alternations in Old English and from cases of phonological conditioning such as *čen* [<  $*\text{cenaz}$ ] versus *cene* [<  $*\text{koni}$ ] like *corn* [<  $*\text{korna}$ ]). Surely it was operative longer than the theoretical framework of taxonomic phonemics would permit, but however that may be, it must be recognized that the period in which the rules enumerated below operated initially was the pre-Old English period, and no one can deny that *i*-umlaut operated in the pre-Old English period (cf. my remarks on synchrony and diachrony in footnote 1).

3) monophthongization

$$\text{SD} \quad \begin{array}{cc} \text{V} & \text{V} \\ 1 & 2 \end{array} \quad \begin{array}{l} 1 = \left[ \begin{array}{c} \text{V} \\ -\text{high} \end{array} \right] \\ 2 = \left[ \begin{array}{c} \text{V} \\ -\text{high} \\ -\text{low} \end{array} \right] \end{array}$$

SC 1 2  $\rightarrow$  1+length  
(i.e.  $[\text{æe}] > [\text{æ}:/[\text{æe}] > [\text{a}]$ )

4) further raising

$$[+\text{low}] \rightarrow [-\text{low}] \left/ \begin{array}{l} \left[ \begin{array}{c} \text{V} \\ - \end{array} \right] (\text{X}) \left[ \begin{array}{c} -\text{ens} \\ -\text{bck} \\ +\text{high} \end{array} \right] \\ \left[ \begin{array}{c} - \\ - \end{array} \right] \end{array} \right.$$

(i.e.  $[\text{æ}] > [\text{e}]/-(i) (j)$ )

5) "Anglo-Frisian" fronting

$$[+\text{bck}] \rightarrow [-\text{bck}] \left/ \begin{array}{l} \left[ \begin{array}{c} \text{V} \\ - \\ +\text{low} \\ -\text{rd} \end{array} \right] \\ \left[ \begin{array}{c} - \\ - \end{array} \right] \end{array} \right.$$

Rule ordering:

Dialect type I (West Saxon OE) —

- 1)  $\text{æi}/\text{aε}$
- 2)  $\text{æe}/\text{aε}$
- 3)  $\bar{\text{æ}}/\bar{\text{a}}$
- 4)  $\text{æ} > \text{e}$
- 5)  $\text{a} > \text{æ}$

Dialect type II (Kentish OE, Frisian) —

- 1)  $\text{æi}/\text{aε}$
- 2)  $\text{æe}/\text{aε}$
- 4)  $\text{εε}/\text{aε}$
- 3)  $\bar{\text{e}}/\bar{\text{a}}$
- 5)  $\text{a} > \text{æ}$

Dialect type III (Anglian OE) —

- 1)  $\text{æi}/\text{aε}$
- 2)  $\text{æe}/\text{aε}$
- 3)  $\bar{\text{æ}}/\bar{\text{a}}$
- 4)  $\text{æ} > \text{e}$
- 5)  $\text{a} > \text{æ}$

In addition, one needs to note the following: 1) Rule no. 5 must be appropriately constrained to account for the cases of retention of  $/\text{a}/$  as described in the handbooks as retraction of  $\text{æ}$  to  $\text{a}$  in open syllable when followed by back vowel, etc. In West Saxon, and to some extent in Anglian and Kentish, the fronting product  $\text{æ}$  is followed by backing, in West Saxon to a position



of approximately [o] — i.e., so-called “breaking” of  $a > ea$ .<sup>7</sup> 2) Anglian OE dialects share with Kentish OE and Frisian an early rule raising \*/æ:/ > /ɛ:/; otherwise they share the rule ordering for fronting and raising of non-back low vowels with West Saxon. Thus it is exactly the chronology of the “further raising” rule ( $æ > e$  / \_ (i) (j)) relative to the monophthongization rule which defines the difference between WS, Angl.  $\bar{æ}$  and Kent.  $\bar{e}$  < PGmc. \**ai*. The Kentish, Anglian shared innovation of \* $\bar{æ}$  >  $\bar{e}$  is certainly the earlier of the two (De Camp 1969: 362; Campbell 1959: 52, § 131). 3) The view that <e> for PGmc. \*/ai/ before *i, j* derives from a development \*/æ:/ > \*/ɛ:/ > [ɛ:] is consonant with the fact that this <e> is kept phonologically distinct from <e> < PGmc.  $\bar{æ}$  ( $\bar{e}^1$ ) in Frisian dialects (Campbell 1939: 100–101), so that /ɛ:/ > /e:/ is a secondary development. (Cf. in this regard Kt. OE <æ> alongside <e> < PGmc. \*/ai/ under *i*-umlaut conditions, which is normally explained as due to the confusion of <e> ~ <æ> among the lax short vowels (Brunner 1965: 75); the variation in the long vowel system then even spills over into the designation for the reflex of PGmc. \* $\bar{æ}$  ( $\bar{e}^1$ ) upon the further development \*/ɛ:/ > /e:/ (Brunner 1955: 4\*, § 62, Anm. 2). 4) It is further interesting that the previously mentioned double reflex of PGmc. \*/ai/ in Old Frisian is paralleled in Anglian OE — Vesp. Ps. *læred, læred; aledde, alædde* etc. (Brunner 1965: 75, § 97, Anm. 1). The parallelism seems faulted by the fact that the cases in Old Frisian are reflexes of PGmc. \*/ai/ before other than *i* or *j*, whereas the Anglian forms reflect cases of \*/ai/ exactly under *i*-umlaut conditions. The parallelism however consists in: a) the fact that both are cases of raised versus non-raised stem vowels, b) both are reflexes of a Proto-Germanic diphthong \*/ai/, and c) both represent so-to-speak intrusion of consonantal influence on an original pattern of  $\underline{V}-V$  influence (direction of influence indicated by the arrow) in the sense of van Coetsem’s previously cited article on umlaut and consonantal influence in Germanic. The whole presentation I have given above bespeaks my belief with Heinertz (1912) and against Campbell (1939) that the cases in Old Frisian of <e> versus <a> as reflexes of PGmc. \*/ai/ before other than *i* or *j* reflect a raising environment in terms of the consonantal factor following the stem vowel; I think the evidence clearly reflects this tendency. In other words, in terms of my analysis, the realization of \*/ai/ as \*/æ/ was reversed by the onset of the consonantal influence (according to Heinertz): dentals, *d, t, l, n, r, s* and in final position under primary word stress, thus resulting in coalescence with \*/æ/. (It must be noted, however, that there are enough exceptions to Heinertz’ formulation of the “raising” environments, which he duly attempts to account for, to point to the fact that this was a rule which was not fully

<sup>7</sup> Thus in essential agreement with the monophthongal interpretation of Old English “short digraphs” deriving from Stockwell and Barritt (1951).

generalized before it was lost from the grammar with subsequent lexicalization<sup>8</sup>). In the case of the <e> ~ <æ> variation as a reflex of PGmc. \*/ai/ under *i*-umlaut conditions in Anglian OE texts, one can imagine that there were cases of \*/æ/ which did not monophthongize in the environment before  $\left[ \begin{array}{l} -\text{grave} \\ +\text{coronal} \end{array} \right]$  consonants and thus became \*/ɛ/ upon the further raising of (umlaut) /æ/ > /ɛ/ in Anglian dialects of pre-Old English, with \*/ɛ/ thus yielding /e:/.<sup>9</sup> 5) Finally, it is to be noted that there is an argument against my supposition of a change of PGmc. \*/ai/ to pre-OE \*/æ:/ through monophthongization from \*/æ/: namely, that whereas palatalization of velar consonants in Old English and Frisian occurs before \*/æ/ < \*/a/ through *i*-umlaut or “Anglo-Frisian” fronting, it supposedly does not occur before \*/æ:/ < PGmc. \*/ai/, just as it does not either before \*/y/, /y:/, /ø/, and /œ:/ (doubtless another reason for assuming traditionally that PGmc. \*/ai/ > pre-OE \*/a:/ with *i*-umlaut to /æ:/ in appropriate environments). Interestingly enough, neither Campbell nor Brunner in their Old English grammars cite examples for non-palatalized velar before /æ:/ < PGmc. \*/ai/, and Luick cites only *cæg* and *gēlan, gālan*, both of which are not at all so certain in their etymology. Other cases such as *gæred, gæls, gæglisc, ælgære, gæten* are derived forms and still paired in Old English with forms with  $\bar{a}$ : *gāra, gāl, gāgol, gār, gāt*, a situation which notoriously leads to levelling in favour of the velar obstruent. Admittedly, it is less than satisfactory to say in effect that the evidence available does not disprove your thesis, but at least it means that my analysis must be accepted or rejected with reference to other factors than OE/Fris. palatalization of velars.

It remains yet to expand the rules relating to the development of PGmc. \*/ai/ to include \*/au/ — if they are correct, they should, and must, adequately account for this development as well.

The Old Frisian reflexes /a:/ and /e:/ are easily accounted for by way of \*/au/ > \*/oa/ > \*/aa/, OFris. /a:/ and \*/au/ > \*/æy/ > \*/ey/ > \*/ɛɛ/ > OFris. /ɛ:/ under *i*-umlaut conditions, thus coalescing with /ɛ:/ < LPGmc. \*/æ/. This time it is the Old English reflexes which are more complicated. NWGmc. \*/aU/ [ao] coalesce in *ao* due to the pre-OE rule lowering [+high] second element of diphthongs to [–high]. The fronting of \*/a/ > /æ/ results in \*/æo/, with unrounding of the second element [æa] (Luick § 119), with subsequent velar umlaut (backing of /æ/ > /o/) /oa/, <ea>.

It is usually supposed that so-called velar umlaut of \*/æ/ (<pre-OE

<sup>8</sup> Cf. list of van Helten’s lexicological studies in Heinertz (1912: 317).

<sup>9</sup> Cf. tensing and diphthongization of (e), (e:) before *n* and *d* in Frisian (Sjölin 1969: 24) and preservation in Middle Dutch of *ei* (< PGmc. \**ai* under *i*-umlaut conditions) before *d, l, n* (*heidijn, deilen, ghemeine, cleine, steinijn*); Adolphe van Loey (1970: 259).



\*/a/) did not operate in West Saxon, since it had only a notæ in the environments in question when the retracting effect known as velar umlaut was operative, yet if retraction of stressed syllabics was a relatively late phenomenon as some evidence seems to suggest (i.e., spellings with æ instead of ea in the oldest glosses (Brunner 1965:84, §109, Ann. 2), the fact that the \*i, e, and æ in question generally caused palatalization of preceding velar stop before their retraction), it is indeed possible that cases such as WS *slean* (<pre-OE \*slahan) etc. do represent velar umlaut of \*/æ/ in hiatus with directly following vowel (in spite of Luick and Brunner 1965: § 108.3), thus changing the formulation of the rule for "breaking" to:  $r, l+c, h+\left\{\begin{array}{c} e \\ \# \end{array}\right\}$ .

To propose that the case of \*[æɔ]>[əɔ]>[əa] was thus, under the given circumstances, the regular development in West Saxon seems to me preferable to claiming that \*/a/ in the doubly retracting environment of a+velar consonant+back vowel was first fronted to æ, then "broken" (retracted) to /ə/. The history of conditioning of vowels in root syllable in Germanic points to the primacy of the "vowel+C<sub>1</sub>+back vowel" formulation for preservation of /a/ in West Saxon, with fronting to /æ/ in closed syllable (including vowel — close juncture — vowel) and subsequent retraction of /æ/ either with intrusion of consonantal influence ("breaking") or under the backing influence of -a, -o, -u operative on front vowels ("velar umlaut"). It is then this <ea> (<<æa>) which yields the designation for a retracted /æ/.

To understand the WS designation for the *i*-umlaut of <ca>, I think, we must consider first the likely origin of the *ie* spelling, and for this we must return to the \*iu/eu/eo diphthong of Northwest Germanic. This diphthong, subjected to the previously cited rules in the three dialects, yields:

Dialect I (WS):

- 1) Iy/εu/εɔ
- 2) Iœ/εɔ
- 3) — — — — —
- 4) — — — — —
- 5) — — — — —

(Note that at stage 3 the diphthongs do not meet the structural description of the monophthongization rule; with subsequent unrounding of œ, [Iɛ] <ie> — *ceosan, cicsð*.)

Concerning non-WS <io> <eo>, see further below.

The PGmc. diphthong \*au~ao, subjected to the rules in question, yields:

Dialect types II and III (Kent. and Angl. OE, Frisian):

- 1) æy/au/aɔ
- 2) æœ/aɔ
- 3) — — — — —

4) œe/aɔ

5) œœ/æɔ

(With unrounding of the second element, \*[εε]>/ε:/ and /æa/; with "velar umlaut", [æa], <ea>. Note that rule order 4,3 — Kent. OE, Fris. — gives the same result.)

Dialect type I (WS):

1) æy/au/aɔ

2) æœ/aɔ

3) — — — — —

4) œe/aɔ

5) œœ/æɔ

At this point, the unrounding rule should have applied, yielding \*/ε:/~ /æa/. Since it didn't, there is obviously some development which has intervened, and I believe that it was a restructuring based on the underlying forms reconstructed for the diphthongs in the phonological system of the dialect of West Saxon at this stage.

First we need to consider the underlying forms which would be reconstructed in terms of the phonological system of the vowels at each stage of derivation for the diphthongs:<sup>10</sup>

*/eu/	*/ai/	*/au/
1) Iy/εu/εɔ	æI/æε	æy/aɔ

Underlying forms are unchanged; umlaut rule specifies surface phonetic realizations.

2) Iœ/εɔ	æε/æε	æœ/aɔ
----------	-------	-------

The underlying forms which are entered into the phonological component of subsequent grammars are: /εɔ/ — /æε/ — /aɔ/ — i.e., the second element of the diphthongs, following the lowering rule, is lexicalized. Surface occurrences of *i*, *æ*, and *œ* are defined by the still operative *i*-umlaut rule.

3) Iœ/εɔ	ǣ/ā	æœ/aɔ
----------	------	-------

The diphthong /ai/ is lost.

4) and 5)

Iœ/εɔ	œœ/aɔ
-------	-------

There would still be no further change in underlying forms, with /ε/ simply a function of the *i*-umlaut rule expanded to include the "further raising" of æ>ε, except that exactly in West Saxon there were more numerous cases of

<sup>10</sup> For the sake of simplicity I will give the forms of the diphthongs as they enter the P-rule component (namely, after segment structure rules have specified lexically redundant features for the segments in question). To break them down into true underlying representations with attendant segment structure rules would in no way affect the present argument and would only lengthen the presentation.



æ under *i*-umlaut conditions which, for whatever reason, were not further raised (Brunner 1965: §96.3), meaning that occurrences of [ɛ] under *i*-umlaut conditions were lexicalized. If there were still cases of morphonemic variations such as (later attested) *etan*, *itest*, *iteð*, which demanded retention of an *e* > *i* raising operation yet in the formulation of the *i*-umlaut rule, this new /ɛ/ of /æ/ could have been subsequently resubmitted to the operation of *i*-umlaut. Then the question is of course why was this case of [ɛ] under *i*-umlaut conditions resubmitted as /ɛ/ to the raising operation, whereas other cases of [ɛ] under *i*-umlaut conditions were simply lexicalized. Consider the form of the diphthongs in which they were submitted to the P-rule component of a grammar of West Saxon Old English at stages 4,5: /ɛɔ/; /ɛɔ ~ aɔ/. In the first case raising through *i*-umlaut operated on both elements of the diphthong. When /aɔ/ (~ /aɔ/) was then submitted for operation of *i*-umlaut, it may have been extended to the first element also as in the /ɛɔ/ diphthong. This, I think, accounts for the representation of \*/au/ under *i*-umlaut conditions as WS <ie>.

The next, and last question, which remains to be answered is why WS <ie> stands in environments where non-WS dialects have <io>. It is to be supposed that non-WS <io> indicated a retracted variety of [I], and it is to be noted that WS <ie> (where not <PGmc. \*/eu/) stands in the same sort of environments in West Saxon as in non-West Saxon dialects — namely, as the representation of NGWmc. \*/a/ or /i/ which had stood in pre-Old English in both retracting and *i*-umlaut conditions, thus standing in morphonemic alternations with <ea> (retracted [æ]) and <eo> (retracted [ɛ]), respectively. In the case of the <ie> for PGmc. \*/eu/ under *i*-umlaut conditions one can refer to the (original or still valid) diphthongal quality to explain the orthography, but in the previous cases, if <ie> stands for [I] developed through the operation of *i*-umlaut before later pre-OE retraction of [æ] and [ɛ] in the same environments, why the designation <ie> and not <i>? And if <ie> did stand for a retracted variety of [I], why the diacritic *e*, whereas *e* and *æ* were paired with -*o* and -*a* respectively to give <eo> and <ea>? The answer, I think, lies in the direction of Prof. Antonsen's (1967: 6-7) remarks on the common origin of spelling innovations. The OE "long diphthongs", whether or not they had already been monophthongized, obviously offered the graphic combinations <eo>, <ea>, <io>, <ie>; therefore we must seek the value of the <ie> digraph in its previously suggested origin, the PGmc. diphthong \*/cu/ under *i*-umlaut conditions. At the Iæ/ɛɔ stage in the development of this diphthong with the underlying /ɛɔ/ representation, the retracting rule was added to the grammar resulting in Iæ/ɛ>ɔ. Since [I] would not be derived from /ɛ>/ through the normal operation of the *i*-umlaut rule, a grammar would have to be constructed which would operate with the restriction of special ordering of *i*-umlaut and retraction in that order, whereas this ordering is

not demanded otherwise by surface phonetic forms of Old English. An initial reordering of the two rules relative to each other — i.e. retraction, then *i*-umlaut — results in /ɛɔ/ > I>ɔ/ɛ>ɔ, which reduces complexity in the phonological component of the grammar to the extent that the two rules need not be constrained to a definite order (i.e., either /I/ is retracted before underlying /ɔ/, or else /ɛ>/ is raised through *i*-umlaut to I>) and that the central (or back) spread vowels /ɛ>/, /æ>/ are balanced by inclusion of the member /I>/.

It will not have escaped notice that I have failed to account for <ie> as the reflex of pre-OE \*/a/ which is first subjected to *i*-umlaut (with "further raising") and then to retraction ("breaking"). If this reflex followed the pattern resulting in e.g. *georn* ~ *giernan*, *weorpan* ~ *wierpð*, the result should be <ea> ~ <eo> — e.g. *eald* ~ \**eoldra*, *earm* ~ \**eormðu*, yet <eo> occurs in such cases neither in West Saxon (*ieldra*, *iermðu*) nor in non-West Saxon (Kent. *eldra*, Kent. Angl. *ermðu*), although OE /ɛ/ < NWGmc. \*/a/ through the operation of *i*-umlaut is subjected to retraction through velar umlaut where the *i* was replaced with a back vowel in the suffixal or inflectional syllable (Brunner 1965: 86, § 110, Anm. 2). Yet, I feel that something valuable has been accomplished in spite of this shortcoming. In summary, I have attempted to isolate the origin of the WS digraph <ie> in the \*/eu/ diphthong from Proto-Germanic and account (on the basis of diachronic analysis) for its likely extension from a reflex of this diphthong to the indication of (expressed in synchronic terms) the "i-umlaut of <eo>", especially in light of the WS <ie>/non-WS <io> equation. I have also attempted to account for WS <ie> (again, expressed in synchronic terms) as "the *i*-umlaut of <ea>", where <PGmc. \*/au/. I am at a loss to account for WS <ie> where it is "the *i*-umlaut" of <ea> < PGmc. \*/a without recourse to an ad-hoc rule formulation further raising these cases of \*/ɛ/ to [I] before retraction through "breaking"<sup>11</sup>. This problem may indeed be an indication of our lack of knowledge of the parameters defining the distinction of "long" versus "short" in the OE vowel system<sup>12</sup> (here, namely, what is the relationship between OE <i> NWGmc. \*/i, <ie> < NWGmc. \*/eu, <ie> < NWGmc. \*/a, and non-WS <e> < NWGmc. \*/a and <e> < NWGmc. \*/ē and <e> < NWGmc. \*/au). However, I am still convinced that

<sup>11</sup> Antonsen (1967: 12-13): "When [a] → [æ]<sup>2</sup> when not followed by low vowels and [a] → [e]<sup>2</sup>, in the Anglian dialects [e]<sup>1</sup> before velar consonants and in clusters fell together with [e]<sup>2</sup>. In West Saxon, however, this [e]<sup>1</sup> also took part in the shift, undergoing a raising (the general tendency of the entire shift was one of raising and fronting). Although [e]<sup>1</sup> was an allophone of the low phoneme /a/ in Northwest Germanic, from the structural point of view it was a mid neutral vowel. When the raising occurred, this mid vowel became a high vowel". Thus he achieves in effect a further raising by one degree to a high mid [i] for the *i*-umlaut reflex of "broken" *ea*.

<sup>12</sup> Cf. editor's note to Professor Antonsen's "On the origin of Old English digraph spellings" (1967: 16-17); Stockwell (1962).



Professor Antonsen is correct in seeking the origin of the Old English "short digraphs" in phonetic values deriving from the (original) diphthongs. Hockett's analysis (1969:128) of the fashioning of the "short digraphs" on the basis of a principle: lip position and height of the first element, retracted tongue position of the first, is valid only because he specifically excludes the WS digraph <ie> (his analysis is based on a Mercian text, the Vespasian Psalter and Hymns), nor can one understand the replacement of <iu> (early variant for [I] in retracting environments) with <io> except in terms of the development in the original diphthong, especially if one believes <iu> ~ <io> to represent not a "breaking diphthong" but a retracted [I].

Most importantly, I have attempted to demonstrate that the view of *i*-umlaut phenomena as an operative rule antedating specifically Anglo-Frisian sound-changes encounters no more problems than the view that they were later, and indeed solves a few at least with reference to the development of the long vowel system and Proto-Germanic diphthongs into Old English.

## REFERENCES

- Antonsen, E. H. 1961. "Germanic umlaut anew". *Language* 37. 215—230.  
 Antonsen, E. H. 1964. "Zum Umlaut im Deutschen". *Beiträge zur Geschichte der deutschen Sprache und Literatur* 86. 117—196.  
 Antonsen, E. H. 1965. "On defining stages in prehistoric Germanic". *Language* 41. 19—36.  
 Antonsen, E. H. 1967. "On the origin of Old English digraph spellings". *Studies in linguistics* 19. 5—17.  
 Antonsen, E. H. 1972. "The Proto-Germanic syllabics (vowels)". In van Coetsem, F. and H. L. Kufner. (eds). 1972. 117—140.  
 Bennett, H. 1969. "Manifestations of *i*-umlaut in Old English". *Linguistics* 50. 5—26.  
 Campbell, A. 1939. "Some Old Frisian sound changes". *Transactions of the philological society*. 78—107.  
 Campbell, A. 1959. *Old English grammar*. Oxford: Clarendon Press.  
 van Coetsem, F. 1968. "A syntagmatic structure in development, 'umlaut' and 'consonantal influence' in Germanic". *Lingua* 21. 494—525.  
 van Coetsem, F. 1970. "Zur Entwicklung der germanischen Grundsprache". In Schmitt, L. E. (ed.). 1970. 1—93.  
 van Coetsem, F. and H. L. Kufner. (eds). 1972. *Toward a grammar of Proto-Germanic*. Tübingen: Niemeyer.  
 DeCamp, D. 1969. "The genesis of the Old English dialects — a new hypothesis". In Lass, R. (ed.). 1969. 355—368 (reprinted from *Language* 34 (1958). 232—244).  
 Fowler, M. 1963. "Indo-European [bh] > English [v]". *Word* 19. 322—327.  
 Heinertz, N. O. 1912. "Friesisches: zur Entwicklung des urgerm. *ai* im Friesischen". *Indogermanische Forschungen* 30. 311—338.  
 Hockett, Ch. F. 1969. "The stressed syllabics of Old English". In Lass, R. (ed.). 1969. 108—132.  
 Joos, M. (ed.). 1966. *Readings in linguistics*. Vol. 1: *The development of descriptive linguistics in America, 1925—1956*. Chicago: The University of Chicago Press.

- King, R. 1969. *Historical linguistics and generative grammar*. Englewood Cliffs, N. J.: Prentice-Hall.  
 Krogmann, W. 1970. "Altfriesisch". In Schmitt, L. E. (ed.). 1970. 190—210.  
 Lass, R. 1959. "Palatals and umlaut in Old English". *Acta Linguistica Hafniensia* 13. 75—98.  
 Lass, R. (ed.). 1969. *Approaches to English historical linguistics: an anthology*. New York: Holt, Rinehart and Winston.  
 van Looy, A. 1970. "Altniederländisch und Mittelniederländisch". In Schmitt, L. E. (ed.). 1970. 253—287.  
 Luick, K. 1964. *Historische Grammatik der englischen Sprache*. Vol. 1. Oxford: Blackwell (rep. of edition of 1914—40, Berlin: Tauchnitz).  
 Penzl, H. 1947. "The phonemic split of Germanic *k* in Old English". *Language* 23. 34—42 (reprinted in Lass 1969: 97—107).  
 Penzl, H. 1971. *Lautsystem und Lautwandel in den althochdeutschen Dialekten*. München: Huber.  
 Pilch, H. 1969—70. "The phonemic interpretation of Old English spelling evidence". *Acta Linguistica Hafniensia* 12. 29—43.  
 Ross, A. S. C. 1951. "Old English *æ* ~ *a*". *English studies* 32. 49—56.  
 Schmitt, L. E. (ed.). 1970. *Kurzer Grundriss der germanischen Philologie bis 1500*. Vol. 1: *Sprachgeschichte*. Berlin: Walter de Gruyter.  
 Sjölin, B. 1969. *Einführung in das Friesische*. Stuttgart: Metzler.  
 Stockwell, R. P. 1962. "On the utility of an overall pattern in historical English phonology". *Proceedings of the ninth international congress of linguistics*. 663—671 (reprinted in Lass 1969: 88—96).  
 Stockwell, R. P. and C. W. Barritt. 1951. "Some Old English graphemic-phonemic correspondences — *æ*, *ea*, and *a*". *Studies in linguistics: occasional papers* 4.  
 Twaddell, W. F. 1938. "A note on Old High German umlaut". *Monatshefte für den deutschen Unterricht* 30. 177—181 (reprinted in Joos 1966: 85—87).  
 Wagner, K. H. 1969. *Generative grammatical studies in the Old English language*. Heidelberg: Julius Groos Verlag.  
 Wienold, G. 1967. "On umlaut in Gothic". *Orbis* 16. 185—196.