

[0395]

From Germanic to English and Frisian*

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Our knowledge of the prehistory of the Old English and Old Frisian vowel systems has been acquired by the efforts of some generations of scholars. From the seventies of the last century onwards the now well-known changes have been reconstructed in the investigations of Morsbach, Sweet, Bremer, Siebs, Sievers, Pogatscher, Bülbring, Luick and others. Described very precisely in the authoritative historical grammars they seemed decisive only very recently, to which in no small degree contributed the scrupulous analysis of the records as well as the solid scientific argumentation. However, as *p h o n o l o g i c a l* ideas penetrate into the study of sound-changes several of the old formulas of the shifts show a lack of strictness and obviously lose their aureole of canonicity. Let us begin with Germanic and Inguaeonic \bar{a} before *h, s, f, þ*. How is the fact to be explained that among the West Germanic languages it was precisely in English and in Frisian that the 'nasalized' vowels developed in all four positions? Several representatives of the linguistic geographical school assumed that in the Anglo-Frisian zone there was a 'focus' for the loss of *n, m* in the sequence *anh, ans, amf, anþ*.¹ However, it is easy to see that with such an explanation one question is factually replaced by another: why was this 'focus' present at this particular place, in this particular period?

Or how to understand the split of WGmc. \bar{a} (< Gmc. \bar{e}_1) into 'nasalized' \bar{a} before nasal consonants and front \bar{e} in other positions?² As far back as at the dawn of diachronic phonology it was established that the formation of a phonological distinction, or a so-called phonemization, should be described by the formula $A : B > A_1 : B_1$, where a non-phonemic distinction between A and B passes into a phonemic distinction between A_1 and B_1 (Jakobson, p. 207). But in that case the split of WGmc. \bar{a} could be realized (simultaneously) for only *o n e* of the features: either nasality/nonnasality, or front articulation / back articulation. Also the following is not clear: how did it come to pass that in the place of 'nasalized' \bar{a} , from Gmc. \bar{e}_1 before nasals and in the sequences *anh, ans, amf, anþ* the vowel with medium degree of opening developed, represented in the manuscripts as \bar{o} ? At any rate, the dubious references to a connection between nasality and labiality do not constitute a basis for a working hypothesis.

* Mr. Erik Kooper did me a great honour by undertaking the task to acquaint the readers of *Us Wurk* with the investigations of one of the Soviet Germanists (see *Us Wurk*, 19, 1970, nr. 1-2, pp. 1-16). Since in the course of the last five years I have further elaborated my earlier ideas it will be appropriate first to expound my present opinion on some of the Proto-English and Proto-Frisian sound-changes, and then to dwell especially on those points that have been thrown doubts upon or raised objections to on the part of my esteemed colleague. I avail myself of the opportunity to thank the editors of *Us Wurk*, and especially my esteemed colleague Prof. Dr. W.J. Buma, for enabling me to make my appearance on the pages of the periodical of Frisian philology.

Insurmountable difficulties arise also in describing the development of Gmc. *a* > OE, OFris. *æ*,³ since it is assumed that this development must also have affected Gmc. *ai*, *au* (cp. OE *ǣa* < *au*). The surmise was raised that in Old English Gmc. *ai* > *ā* before *a* > *æ*, or else it would have passed into *ǣi*; whereas Gmc. *au* > *ǣā* even later than *a* > *æ*. On the other hand, in OFris Gmc. *ai* > *ǣ* after *a* > *æ*; whereas Gmc. *au* > *ā* before *a* > *æ* (Campbell, §§ 131-132). On the face of it such a scheme may seem sagacious, but in reality it reflects only the harassing quest for a solution within the bounds of the neogrammatical postulates. It suffices to say that the situation in Frisian contradicts the consistencies of contraction of the Indo-European diphthongs in the order of priority: *ei*, *ai*, *au*, *eu* (Antkowsky). Moreover, none of the details of the scheme received a plausible explanation. The relative chronology of *a* > *æ* in OE and OFris in particular has not been explained. It is difficult to understand why *æ* in Proto-OE * *ǣu*, i.e. beside adjacent *-u* (> *-o*), was not restored as *a* later on, as happened with remaining *æ* under influence of *-u*, *-o* of the following syllable (cp. Smirnitsky, 1946, p. 84). Something should also be said about the restoration of *æ* > *a*. From a phonological point of view this development has been given reasons for as badly as the palatalization of *a* > *æ* preceding it. The plausibility of a reconstruction in the form of a 'zigzag' *a* > *æ* > *a* has since long been doubted, but the sceptic is usually pointed out the subsequent history, with apparent analogous shifts (e.g. OE *æ* > ME *a* > NE *æ*; Luick, § 164, n.). However, it should be acknowledged that such parallels have no conclusive force; they do not explain why palatalization of Gmc. *a* > *æ* should be fixed on English and not on, let us say, German; why it should have taken place in that particular period; and why, finally, the velar influence of unstressed *-u*, *-o* became visible only several centuries after this palatalization. Also unobserved remains the question why the restoration of *ǣ* > *ā* took place much more regularly with the long monophthongs than with the short.

On the face of it the circumstances of breaking of *æ*, *e*, *i* > *ea*, *eo*, *iu* are well explained by the articulatory influences of *h*, *r*, *l*.⁴ But, as known, it is indeed the results of breaking that give rise to spirited discussion.⁵ Leaving alone the phonemic interpretation of digraphs it must be said that in the framework of the 'classical' conception neither the reasons for a remarkable activity of *h*, *r*, *l* in the given period nor the sort of influence they exercised on *æ*, *e*, *i* are sufficiently clear. Indeed, in case the breaking consonants are velar or velarized (Luick, § 143; Wyld, § 102 n. 2; Smirnitsky 1955, § 92 n.), or 'hard' (Ilyish, § 52), how can one explain the original rounded quality of the glide (Campbell, § 139)? The weaknesses and contradictions of prephonological treatments are in much linked with the fact that sound changes are considered without taking into account the whole system of sound units. In what follows, when describing the history of the Old English and, partly, Old Frisian vocalisms I shall try and present every shift, if possible, not only in the context of the system (synchrony) but also in the context of other shifts (diachrony).

1. Prerequisites for a special development.

The determination of a close relationship between the so called Inguaeonic languages can be considered an important result of the 'old school'. It is due to the efforts of the Neogrammarians and their followers as well as the representatives of linguistic geography that we can safely assume the most ancient features of the Old English vocalism to be also common to other Inguaeonic languages. For which reason, when describing the development from Germanic to English and Frisian, a starting stage should be chosen before the first Inguaeonic novelties come to life:

(1) the loss of nasal consonants in the combinations *anh*, *ans*, *amf*, *anþ*, accompanied not only by a quantitative but also by a qualitative change of the preceding vowel (cp. Heeroma, p. 200; Hoekema, pp. 57-59);

(2) Gmc. \bar{e}_1 undergoes a special development before nasal consonants. For long these 'classical' Inguaeonisms were felt to be somehow linked up to one another, as in the documents both *an*, *am* and \bar{e}_1 before nasals were presented by a common \bar{o} : e.g. OE *þōhte* 'he thought', *brōhte* 'he brought' (OHG *dāhta*, *brāhta*) and OE *mōna* 'moon', *nōmon* 'they took' (OHG *māno*, *nāmun*).⁶ But since in prephonological descriptions no reasonable explanation has been suggested as to the origin of these \bar{o} 's, also the links between the two Inguaeonisms remained enigmatic (cp. Sievers-Brunner, § 45.7; Brunner, p. 60; Campbell, § 127). Meanwhile it is at this point that the key to the subsequent development could possibly be found.

As a starting line I choose a Common Germanic state prior to the loss of nasals before *h*, *s*, *f*, *þ* and expansion of \bar{e}_1 to the maximum degree of opening. This means that by the moment in question the I-E \bar{a} , \bar{o} and *a*, *o* had already changed into Gmc \bar{o} , *a*, while I-E *ei* had contracted to Gmc \bar{i} . But the long \bar{a} , \bar{i} , \bar{u} from *an*, *am*, *in*, *im*, *un*, *um* did not appear yet, Gmc \bar{e}_1 remaining the front vowel counterposed to the back \bar{o} . As a result the starting section is obtained:

<i>i</i>	<i>u</i>	\bar{i}	\bar{u}
<i>e</i>		\bar{e}_1	\bar{o}
<i>a</i>		(i)	

In this system, the four short units are opposed to the four long ones, but the relations between them are far from being those of symmetry. Because of the absence of short *o* the 'champ de dispersion' of *u* is moved to more open realizations, while that of *a* is, on the other hand, moved to more close (and back) realizations. The latter fact is also related to the absence of a long counterpart for *a*. It is to the absence of long \bar{a} that the system is particularly indebted for its asymmetry; due to it the long vowels do not at all know the third degree of opening and the 'champs de dispersion' of \bar{e}_1 and \bar{o} are moved to more open realizations.

Thus, one can see that the starting system was far from being balanced, that any opportunity to attain a greater stability would be backed in it, and that an effective

way in this direction lay via the creation of a unit of maximum degree of opening. Generally speaking, had the place of \bar{a} remained vacant for a sufficiently long time, some well-integrated system of eight units could have arisen via a correlative correspondence between a and \bar{o} . However, the facts reconstructed testify to the opposite. Throughout the West Germanic area the place of the \bar{a} -phoneme was soon filled up, and everywhere this was done from the two sources: (1) at the expense of Gmc \bar{e}_1 that expanded to \bar{a} ,⁷ and (2) at the expense of a long vowel resulting from an , am contracted before h , s , f , β .

Up to this point I have discussed things that are universally recognized. But at the next stage no similar opportunity occurs since about the relative chronology of the expansion of \bar{e}_1 and the contraction of an , am contradictory opinions have been given. Some authors are convinced that in all of the West Germanic territory the first step was the shift of Gmc. \bar{e}_1 to the vacant position of \bar{a} , and that only after that also \bar{a} from an , am coalesced with new \bar{a} (cp. Kurylowicz, p. 54), on the other hand there are others assuring that in the West Germanic development the empty place of \bar{a} was first filled through the development of $\bar{a} < an, am$, and that only after this also $\bar{a} < \text{Gmc. } \bar{e}_1$ coalesced with it (Schönfeld, § 17 bis; Vachek, p. 15). Below I intend to demonstrate that factually neither construction is correct for all of the West Germanic territory. On the contrary, each of them correctly describes the occurrences in one of the two West Germanic areas - the Inguaeonic or the non-Inguaeonic area.

The course of my reasoning is as follows. Between the contraction of an , am on the one hand, and the expansion of \bar{e}_1 on the other, there exists no interdependence by which one of the changes may be considered a necessary condition for the other; in principle the contraction of an , am prior to the expansion of \bar{e}_1 as well as a reverse order of occurrences is possible. If that is correct nothing prevents the surmise that in different parts of West Germanic the relative chronologies of the contraction of an , am (as of in , im , un , um) and the expansion of \bar{e}_1 were not identical. Let us now construct, starting from this hypothesis, the models of the phonological development for both cases, and test the facts, predicted in the models, with the forms of the records. Since for the two linguistic areas no more than two models are possible, each of them will be related to one of the two areas.

(1) Suppose the vowels \bar{a} , \bar{i} , \bar{u} (before h) developed before the expansion of $\bar{e}_1 > \bar{a}$:

i	u	\bar{i}	\bar{u}	\bar{i}	\bar{u}
e		\bar{e}_1	\bar{o}		
a				\bar{a}	(ii)

Since the new long vowels developed as the result of the single process of 'loss' of n , m before h ⁸ they couldn't but appear simultaneously, thereby forming the self-contained subsystem \bar{i} : \bar{a} : \bar{u} . The phoneme identification within such a subsystem does not present any difficulties: \bar{i} and \bar{u} are front and back units of minimum degree of opening, and \bar{a} is a unit of maximum degree of opening and

without timbre distinctions. But within the limits of the whole vowel system the question of the nature of the new vowels appears to be more intricate. Since \bar{i} , \bar{a} , \bar{u} had developed from *in*, *im*, *an*, *am*, *un*, *um* through absorption of the nasal they are often regarded as nasalized; but from a phonological point of view there is no ground for this. It is true that at some time old *in*, *an*, *un*, etc. and the new \bar{i} , \bar{a} , \bar{u} must have coexisted, so that the combinative feature of nasality, characteristic for the vowel in *in*, *an*, *un*, etc., got erroneously shifted by the speakers to \bar{i} , \bar{a} , \bar{u} as well. However, from phonemes with relevant nasality something else is wanted - participation in an opposition of a given feature.

In the course of a certain period of time their appertaining to a selfcontained system of three units $\bar{i} : \bar{a} : \bar{u}$ secured a certain autonomy for each of these vowels. None the less they all remained rather 'indirectly' autonomous phonemes,⁹ so that their position in the language was never stable. From the point of view of linguistic 'economy' the problem might be solved either by creating correlations for these phonemes resulting in a better incorporation in the system, or by disposing of them altogether (cp. Martinet, 1955, IV, 14). It can be demonstrated that in case of its formation before the shift $\bar{e}_1 > \bar{a}$ (i.e. in the case under examination), the triplet $\bar{i} : \bar{a} : \bar{u}$ appeared not to be stable at all, so that its elimination becomes more probable. In fact it is, on the one hand, the absence in the subsystem $\bar{i} : \bar{e}_1 : \bar{o} : \bar{u}$ of a unit of maximum degree of opening which makes the creation of a correlation with the phoneme \bar{a} impossible. But on the other hand this very absence must contribute to the fixation of new \bar{a} as a fifth element to $\bar{i} : \bar{e}_1 : \bar{o} : \bar{u}$, since it is in this way that system (i) achieves a greater parallelism between the short and the long vowels (see above, p. 52). Obviously the elimination of \bar{a} also leads to that of other elements of the triplet, i.e. to the coalescence of \bar{i} , \bar{u} with \bar{i} , \bar{u} :

<i>i</i>	<i>u</i>	$\bar{i} (< \bar{i}, \bar{i})$	$\bar{u} (< \bar{u}, \bar{u})$
<i>e</i>	(<i>o</i>)	\bar{e}_1	\bar{o}
<i>a</i>		$\bar{a} (< \bar{a})$	(iii)

(2) Suppose the subsystem $\bar{i} : \bar{a} : \bar{u}$ (before *h*) developed after the expansion $\bar{e}_1 > \bar{a}$:

<i>i</i>	<i>u</i>	\bar{i}	\bar{u}	\bar{i}	\bar{u}
<i>e</i>	(<i>o</i>)	\bar{e}_2	\bar{o}		
<i>a</i>		\bar{a}		\bar{a}	(iv)

Apparently the possibility of a coalescence in such a situation of the two subsystems of long vowels presents greater difficulties. Indeed due to the appearance of \bar{e}_2 and the expansion of \bar{e}_1 in the asymmetrical system (i) from which we started, a more integrated system could develop, at first consisting of nine, later of ten elements (cp. notes 2 and 3). But then also the conditions of the entry of new $\bar{i} : \bar{a} : \bar{u}$ into the system, the conditions of their interaction with $\bar{i} : \bar{e}_2 : \bar{a} : \bar{o} : \bar{u}$, come out different. This time, none of the new phonemes can become an element

of the 'original' long vowels in an equally simple way as in the first case. As a result the triplet $\bar{i} : \bar{a} : \bar{u}$ appears comparatively more stable, which must in itself promote the creation of *c o r r e l a t i v e* counterparts for each of its units.

Thus the starting vowel system could, at the time of the shift to 'West Germanic', develop into either direction. The first results from relative instability of $\bar{i} : \bar{a} : \bar{u}$ before *h*, the second results from their relative stability. But which then of the two lines leads to Inguaeonic? Apparently it is the second line that corresponds to the Inguaeonic development, for here the appearance of $\bar{i} : \bar{a} : \bar{u}$ also before *s, f, þ* becomes more probable (see above, p. 49).¹⁰ Indeed, in a language in which a subsystem of three 'nasalized' vowels does already exist, the appearance of the same units, but just in other positions, must be facilitated by the possibilities of an 'attraction of the system' (cp. Martinet, 1955, VI, 8), through which the existing unit becomes, as it were, a 'focus' by the formation and the inclusion in the system of sounds similar to it.

2. *Shifts in connection with new \bar{a} (< an, am).*

However, it is most likely that only for one of the three vowels developed before *h, s, f, þ* in the Inguaeonic area, the language created an oppositional counterpart, viz. for \bar{a} . This somewhat unexpected inference actually agrees very well with the needs of the existence and of the development of the vowel system on the whole.

In the system $\bar{i} : \bar{e}_2 : \bar{a} : \bar{o} : \bar{u}$ the unit of maximum degree of opening occupies a special position: it does not participate in the correlation of timbre, while the other phonemes do. Since the phoneme \bar{a} has thus only two distinctive features, while the other phonemes are characterized by three, its distinctive possibilities, or 'distinctive potential', are valued to be one unit lower than the distinctive possibilities of the other elements of the systems. And in this sense, it must be admitted, the phoneme \bar{a} is insufficiently incorporated in the system.¹¹ It is not difficult to see then that in the case of the creation of counterparts for all the elements $\bar{i} : \bar{a} : \bar{u}$ this contradiction would not have been solved, whereas with the creation of oppositional relations only for \bar{a} , the phoneme \bar{a} equalized its 'distinctive potential' with the 'potentials' of the other phonemes of the system and now appeared more incorporated than before (cp. Martinet, 1955, IV, 14).

To demonstrate now that the opposition developed on the basis of \bar{a} and \bar{a} was indeed an opposition of nasality, we shall resort to the following reasoning. Suppose that with the entry of the phoneme \bar{a} into the system of vowels an oppositive counterpart is created for it so that nasalized \bar{a}^n (< \bar{a}) stands in opposition to \bar{a}^v (< \bar{a}). And, again, suppose that the appearance of \bar{a}^v in the place of \bar{a} is the result of the replacement of a nonphonemic (positional) distinction by a phonemic one - in accordance with the law of phonemization already known, $A : B > A_1 : B_1$, (see above, p. 49). From these suppositions it follows, firstly, that the development of the parent phoneme \bar{a} means its *split* into two phonemes as a result of which a nasalized \bar{a}^n (B_1) must develop beside nonnasalized \bar{a}^v (A_1). And, secondly, that the

positional condition for such a split of the phoneme \bar{a} was in the absence (A) or the presence (B) of a following nasal consonant.¹²

One may think that in reality the matter stood just so. As far as the position before nasals is concerned it is indeed in this position that the phoneme \bar{a} (Gmc. \bar{e}_1) did not develop as in other positions, as is testified by WS *mōna*, *cwōmon* beside *dāēd*, *bāēron*. As for the appearance of an additional nasalized \bar{a}^n beside \bar{a}^v in the place of \bar{a} , this prediction is also confirmed by the wellknown facts. If such an \bar{a}^n did develop in the language it could not escape coalescence with nasalized \bar{a}^n in the place of \bar{a} that was identical with it. And indeed in the Old English and Old Frisian records the reflexes of Gmc. \bar{e}_1 before nasals and those of Gmc. \bar{a} (< *an*, *am*) are represented by the common form \bar{o} (cp. pp.49, 51). From this it follows that even earlier both sorts of reflexes had coalesced in some way or other.

Thus, with the entry of Gmc. $\bar{i} : \bar{a} : \bar{u}$ into the system of vowels an oppositive counterpart was established only for maximally opened \bar{a} . Hence it was only this phoneme of the three which obtained the status of a nasalized phoneme in the language. As was demonstrated the establishment of an opposition of nasality within the phonemes of maximum degree of opening led to the split of the reflex of Gmc. \bar{e}_1 into two new units, dependent on the absence/presence of nasality. This appeared to be the first step on the way of the Inguaeonic and later Old English and Old Frisian development.

As a result the subsystem of long vowels in diagram (iv) now looks as follows:

$$\begin{array}{ccc}
 (\bar{i}, i >) \bar{i} & & \bar{u} (< \bar{u}, \bar{u}) \\
 \bar{e}_2 & & \bar{o} \\
 \bar{a}^v (< \bar{e}_1) & & \bar{a}^n (< \bar{a}; \bar{e}_1 + n)
 \end{array}$$

Similar shifts took place with the short vowels.¹³ After Gmc. \bar{e}_1 (\bar{a}) had split into \bar{a}^n and \bar{a}^v short *a* was in fact left without a long counterpart. Restoration of the 'equilibrium' could therefore become the aim of the further transformations; the way to achieve this had been indicated by the situation with the long vowels. In course of time the representations of old *a* before *n*, *m*, for which combinative nasality had been characteristic, began to be conceived by the speakers as a short counterpart to long \bar{a}^n , and all other representations of *a* as a short counterpart to long \bar{a}^v . In this way the short phoneme with maximum degree of opening, *a*, also appeared to have been split - into nasalized a^n and nonnasalized a^v :

$$\begin{array}{ccccccc}
 (\bar{i}, i >) \bar{i} & \bar{u} (< \bar{u}, \bar{u}) & i & u & & & \\
 \bar{e}_2 & \bar{o} & e & o & & & \\
 \bar{a}^v (< \bar{e}_1) & \bar{a}^n (< \bar{a}; \bar{e}_1 + n) & a^v (< a) & a^n (< a + n) & & & (v)
 \end{array}$$

The purpose of the shift, as of that with the long vowels, was after all to incorporate new \bar{a} (< *an*, *am*) more completely into the system. However, its realization was all the more successful in that it simultaneously achieved another aim important for the language: as in the subsystem of long vowels all the elements of the quintet $i : e : a : o : u$ had now acquired equal distinctive 'potentials'.

In the course of the split of short *a* a nonphonological distinction was replaced by a phonological one - in exact agreement with the formula of phonemization. None the less the results obtained with the long vowels and with the short are not quite identical: while nasalized \bar{a}^n may be found not only before nasals, but also before *h*, *s*, *f*, *þ*, nasalized a^n is found only before *n*, *m*. In other words, unlike long \bar{a}^n and \bar{a}^v , short a^n and a^v remain, as it were, to be conditioned by their surroundings. Notwithstanding this the working hypothesis about the split of Gmc. *a* into the functionally autonomous units a^n and a^v is confirmed by a verification of the facts it predicts:

1. If, in conformity with our reconstruction, new a^n had been isolated as a short counterpart to \bar{a}^n , then, in the opposition of nasality $a^n : a^v$, it must be declared the marked member, used in a narrower sphere than a^v (cp. Trubetzkoy, p. 235). But it is just what the real facts speak about, since a^n is found only before nasals.

2. If, in conformity with our reconstruction, the split of Gmc. *a* into nasalized a^n and nonnasalized a^v took place before OE *æ* and *α* appeared, then the source for the latter two could only be a^v (see below, § 3). And indeed, in monosyllabic words with Gmc. *a* before nasal consonants (OE *land*, *lond*; *mann*, *monn*) the form *æ* never occurs, although it is the regular form for Gmc. *a* in other positions (OE *dæg*, *cræft*). From which it follows that in circumstances of a quantity correlation of the vowels the opposition $a^n : a^v$ - not secured by syntagmatic relations - was supported only on account of paradigmatic relations, viz. due to the opposition $\bar{a}^n : \bar{a}^v$. Similar indirectly autonomous phonemes have already been met above (see n. 9).

Let us enumerate the first results of the historical-phonological reconstruction. The transposal of Gmc. \bar{e}_1 from a mid-level vowel to one of maximum degree of opening prior to the contraction of Gmc. *an*, *am*, etc. to long vowels before voiceless fricatives, became the prerequisite for the special development of the vowels on the English and Frisian soil. In this way the conditions were created for establishing the isolated opposition of nasality within the vowels of maximum degree of opening, which was just the first impulse in the peculiar transformation of the system from Germanic to English and Frisian. Further, it appeared that in the course of that transformation the Germanic sequences *an*, *am* before *h*, *s*, *f*, *þ*, and Germanic \bar{e}_1 before nasals coalesced in a common form - a nasalized vowel of maximum degree of opening. One might think that this would bring us nearer to an understanding of the oldest Ingvaeonic innovations (see above, p. 51), since the problem has now been reduced to pointing out the circumstances under which the phoneme \bar{a}^n coalesced with the phoneme \bar{o} .¹⁴

3. Shifts in connection with new \bar{a} (< *ai*).

But the development of prehistoric \bar{a}^n into the \bar{o} attested by the records cannot be understood if the group of changes connected with the appearance of new long \bar{a} in the place of Gmc *ai* is not considered.

As known, the contraction of Gmc *ai* in the diverse West Germanic languages could result in \bar{a} as well as \bar{e} , and further *ei* (cp. OE *āc* 'oak', *bān* 'bone', *brād* 'broad', beside OFris., OS *ēk*, *bēn*, *brēd*, OHG *eih*, *bein*, *breit*). In that case, if we want to understand the particularities of the English development, we shall have to answer at least two questions: (1) why did contraction lead to a monophthong here, and (2) why did this monophthong appear to be a phoneme of maximum degree of opening. It goes without saying that with the present state of knowledge of the mechanism of a sound change the answers to these questions will be far from conclusive. None the less, with the help of diachronic phonology some aspects of such a mechanism may be brought to light.

A characteristic feature of the system represented in diagram (v) was the presence of a nasality contrast within the units of maximum degree of opening. Although from a physiological point of view it is at this place of the system that the nasality contrast may be particularly distinct (Martinet, 1955, III, 29), in the framework of linguistic 'economy' an isolated opposition is always insufficiently stable. And consequently the possibility always exists that when the appropriate circumstances appear the language will prefer to get rid of it for the sake of a greater integration of the system elements. We are of the opinion that such favourable circumstances could arise especially with the contraction of Gmc *ai* > \bar{a} , since in that case the language gets the possibility to replace the nasality opposition by an opposition of timbre.¹⁵

In order to demonstrate that with the appearance of \bar{a} (< *ai*) a new opposition was created and that it was indeed an opposition of timbre, we shall resort to the following reasoning. Suppose that with the entry of the phoneme \bar{a} (< *ai*) into the vowel system an oppositive counterpart was created for it, so that the velar¹⁶ phoneme \bar{a} in the place of \bar{a} stands in opposition to nonvelar \bar{a}^v in the place of \bar{a}^v . And suppose that the appearance of new \bar{a}^v in the place of \bar{a}^v is the result of the replacement of a nonphonological (positional) distinction by a phonological distinction - after the formula $A : B > A_1 : B_1$ (see above, p. 49). From these suppositions it follows, firstly, that the development of the parent \bar{a}^v means its split into two units, as a result of which also a velar \bar{a} (B_1) had to develop beside the nonvelar \bar{a}^v (A_1). Secondly, that the positional condition for such a split was the absence (A) or the presence (B) of combinative influences of a velar character, And thirdly, that nasalized \bar{a}^n appears to be entirely isolated in the system.¹⁷

Let us now try to verify the facts predicted. As far as the surroundings are concerned it appears that just with a velar vowel in the following syllable Gmc. \bar{e}_1 (of which hypothetical \bar{a}^v is a reflex; see p. 55) did not develop as in other positions, to which testify WS *māgum* 'relatives (d. pl.)', *wārum* 'agreements (d. pl.)', beside *māeg* 'relative', *wār* 'agreement', etc., and particularly facts from the field of the short vowels (see below). As to the appearance beside nonvelar \bar{a}^v of velar \bar{a} in the place of \bar{a}^v , this prediction is confirmed by the well-known facts too. If such a velar \bar{a} developed in the language it could not escape coalescence with identical velar \bar{a} in the place of \bar{a} (< *ai*). And indeed, in the Old English records the reflexes of Gmc. \bar{e}_1 before velar vowels in the following syllables and the reflexes of Gmc.

ai are represented by the common spelling \bar{a} (cp. WS *slāpan* 'to sleep', *māgum*, *wārum*, beside $\bar{a}c$, $\bar{b}ān$, $\bar{b}rād$).

And finally, about the fortune of nasalized \bar{a}^n . The form \bar{o} in its place, attested for all dialects, can factually be understood if only we assume that after the inclusion of new $\bar{a} < ai$ into the vowel system the phoneme \bar{a}^n appeared entirely isolated. It is under this condition that the phoneme \bar{a}^n just had to lose the feature 'degree of opening' and change into an 'indeterminate nasalized' phoneme (Trubetzkoy, p. 112), and could now, theoretically, coalesce not only with \bar{a} , but also with \bar{o} and even with \bar{u} (on the coalescence of \bar{a}^n with \bar{o} , see p. 59).

From the above said it may be seen that the facts predicted by our suppositions are confirmed, from which the correctness of these suppositions must be concluded. Consequently an oppositive counterpart was established for the phoneme \bar{a} ($< ai$) upon its entry into the vowel system, so that the velar phoneme \bar{a} in the place of *ai* stood in opposition to the nonvelar phoneme \bar{a}^v in the place of \bar{a}^n . And by this we have demonstrated that with the appearance of \bar{a} ($< ai$) a new opposition was actually established and that this was indeed an opposition of timbre (see above, p. 57).

The shifts in the subsystem of the short vowels (see diagram (v)) testify to the same. When the opposition $\bar{a}^n : \bar{a}^v$ was broken also the opposition $a^n : a^v$, based as it was on the opposition with the long vowels, had to disappear. But while the 'indirect autonomy' of short a^n continued resting on a long 'indeterminate nasalized' \bar{a}^n , the short a^v was factually left without a long counterpart. And that is why, with a general correlation of vowel quantity, the spreading of the timbre opposition over the subsystem of short vowels could become an aim of further transformations. In conformity to the formula of phonemization $A : B > A_1 : B_1$, the nonphonological distinction $A : B$ between the allophones of a^v characterized by nondistinctive velarity and those lacking it had to be replaced by the phonological distinction $A_1 : B_1$ between the velar phoneme α and nonvelar \bar{a}^v . And indeed, this conclusion is well confirmed by the situation in the records, where the initial distribution of historical a/\bar{a} (in spelling *a*, \bar{a}), although it was occasionally obscured by further changes, can ultimately be ascribed to the presence/absence of \bar{a} , \bar{o} , \bar{u} in the post-tonic syllable (cp. WS *lappa* 'rag', *sadol* 'saddle', *dagum* 'days (d. pl.)', but *sæt* 'sat', *fæder* 'father', *dæges* 'day's').

It is interesting that the theoretically predicted split of the nonnasalized units of maximum degree of opening (caused by the appearance of \bar{a} from *ai*) was carried through most consistently in the subsystem of short vowels. While with long \bar{a} ($< ai$) coalesced only those back allophones of \bar{a}^v (Gmc. \bar{e}_1) for which also combinative labiality (In my article the reader will often find the term 'rounded', etc., instead of 'labial', etc. - E.S.K.) was characteristic, e.g. *māgas*, *slāpan*, in the 'creation' of short α all the velar allophones of former a^v (Gmc. *a*) took part, e.g. *lappa*, *sadol*, *dagum* (cp. above). The causes of such a distinction are not entirely clear. However, it might presumably be connected with the fact that the 'aims' of the splits with the long and with the short vowels were not identical. The aim of the split of short a^v was the establishment of a new unit - velar α . Velar \bar{a} , on the

other hand, was already present in the language (in the place of *ai*), and the aim of the split of long \bar{a}^v might consist in securing the new opposition between units *a l r e a d y e x t a n t*. That is why in the second case only a *p a r t* of the velar representations appeared to be sufficient - viz. those where the positional velarity is moreover accompanied by positional labialization. Of course what was said does not serve as an example of the 'reason' and 'sense' of the historical transformations in the language. If it can yet illustrate some general-theoretical thesis, then this could perhaps only be that in solving diachronistic problems (unlike synchronistic ones) often appears to be decisive not the distinction between nothing and a unit (cp. absence/presence of a feature), but that between little and much. From which it follows that in diachronistic phonology, to an even greater extent than in synchronistic phonology, it is necessary to resort to common sense (Martinet, 1955, III, 37).

Then, finally, about the historical spellings *a*, *o* in the place of hypothetical a^n , i.e. in the place of Gmc. *a* before nasals (e.g. WS *land*, *lond*; *mann*, *monn*; *nama*, *noma*; see above, p. 56). We are concerned with two groups of facts which have so far not been given any satisfactory explanation. On the one hand, in earlier records we find *a* and *o* side by side, to which may be added that sometimes both forms have the same frequency even in one and the same manuscript. In a later period (9th to 10th century), on the other hand, the forms with *o* become predominant in the dialects of the Angles, whereas the forms with *a* prevail in the dialects of the Saxons. In the light of our hypothesis on the development from Germanic to English we shall attempt to trace as much as possible a new approach to these problems too.

During a certain period of time after the disintegration of the opposition $a^n : a^v$ the indirect autonomy of a^n was supported by a^n 'indeterminate nasalized' \bar{a}^n (see above, pp. 56, and 58).¹⁸ But when, on the eve of the first records, long \bar{a}^n coalesced with \bar{o} short a^n could not retain its autonomy either. On the one hand both \bar{a}^n and a^n were 'indeterminate nasalized' vowels; and this means that on the level of *p a r a d i g - m a t i c* relations they could as easily denasalize in \bar{o} , *o*, as in \bar{a} , *a*. On the other hand \bar{a}^n was a 'directly' autonomous unit, whereas a^n was only an 'indirectly' autonomous unit; and this means that on the level of *s y n t a g m a t i c* relations the realization of these possibilities had to take place in unequal conditions. The fact that there was a contrasting distribution in the case of \bar{a}^n/\bar{a} ,¹⁹ which was absent in the case of a^n/a , might be one of the reasons why $\bar{a}^n > \bar{o}$ everywhere, while a^n did not know such a regularity (whence, by the way, also the 'indifference' of the copyists as to the graphemes *a*, *o*). At the same time the presence of \bar{o} as well as \bar{a} in the position before *n*, *m* (cp. OE *mōna*, *cwōmon* beside *ān*, *stān*) made at first a double choice possible for the long counterpart of the short denasalized vowel in the place of a^n , the distribution of which was inseparable from following *n*, *m*. The spellings *a*, *o* may then reflect the contradiction come to light with the denasalization of a^n .

A different situation comes up in case of later spellings. The successive denasalization of a^n through its coalescence with *o* in the Anglian dialects and with *a*

in the Saxon dialects makes it possible to suppose that, except for the factors described above which both dialects had in common, in the 9th to 10th century there may also have existed certain individual conditions in both areas. E.g., setting the distribution of α in West-Saxon, on the one hand, against that in Mercian and Northumbrian on the other, we notice that in the latter two the phoneme is found more often: here there was no breaking before l , and in Northumbrian not before r either. It is not impossible that because of such distinctions the coalescence of a^n with α was somewhat facilitated in West-Saxon in comparison with the dialects of the Angles. However, these are all only suppositions, and to the solution of the interesting dialectological riddle from here is still a long way (cp. in this connection Martinet, 1955, VI, 24-25).

4. *The appearance of the long and short diphthongoids.*²⁰

Although the development of $an, am > \bar{a}$ and the development of $ai > \bar{a}$ took place in different periods, yet they were both episodes of one and the same broader change, known to all of the Germanic, and even to all of the Indo-European, languages.

We have in mind the so-called contraction of the 'old diphthongs', as a result of which new monophonemic complexes developed in the place of the biphonemic sequences of the type $e + i, a + i, e + u, a + n$, etc. However, the contraction of the diphthongs in $-u$, as distinct from those in $-i$, does not lead to the formation of monophthongs in any of the Old English dialects. The shift from biphonemity to monophonemity is this time not accompanied by the loss of phonetic (articulatory, accoustical) heterogeneity, so that already in the early records the old biphonemic diphthongs au, eu, iu are represented by the monophonemic diphthongoids $\bar{a}a, \bar{e}o, \bar{i}u$ (in writing more often $\bar{e}a, \bar{e}o, \bar{i}o$). In English a new series of shifts is connected with the development of the diphthongs in $-u$.

It should be mentioned that the fate of the Germanic diphthongs has since long drawn the attention of the anglicists. They have tried to explain the historically attested forms, starting from the sound laws by which individual vowel-components of a biphonemic diphthong had to develop, as well as from the assumed consistencies of the interaction of the components (Sweet, § § 445, 459; Luick, § § 96, 119, 122; Sievers-Brunners § 75).²¹ But only a comparatively short time ago one has apparently succeeded to reach a more reliable explanation.

At first it was found that the history of the Indo-European diphthongs in English was a complicated phenomenon, essentially breaking up the former relations between the vowels e, o, a and the sonants i, u ,²² that it was the history of their transformation from sequences of phonemes into new single phonemes, and that, from a phonological point of view, especially the latter fact represents a particular interest inasmuch as it points out the essential remodelling of the whole vowel system (Smirnitsky, 1946, pp. 82-83). Further investigations proved that the problem of the contraction of the old diphthongs in the individual Germanic languages

was every time the problem of how their monophonemic reflexes were included into the already existing systems, and consequently it had to be paradigmatic, and not syntagmatic factors that played a decisive role (Krupatkin, pp. 133-134). And finally these general conclusions were embodied in the scheme according to which the contraction of the Germanic diphthongs in *-u* was accompanied by the transformation of the system of phonological oppositions (Plotkin, pp. 18-20).

This scheme had, of course, its premisses. It has been ascertained that, on the one hand, the new monophonemic complexes did not form their own subsystem beside those of the long and of the short vowels, but joined the subsystem of the long vowels (Smirnitsky, 1946, p. 82; Fourquet, p. 159). And that, on the other hand, within the limits of this subsystem the complexes that have our interest are inserted into the opposition of degree of opening in accordance with the degree of opening of the first part of the original diphthong (Fourquet, p. 153). It remained to determine the character of the participation of the new vowel phonemes in the opposition of timbre between \bar{i} , \bar{e} , $\bar{æ}$ and \bar{u} , \bar{o} , $\bar{ā}$. The answer was as follows: since at every level there appear to be three vowel phonemes –

\bar{i}	$\bar{i}u$	\bar{u}
\bar{e}	$\bar{e}o$	\bar{o}
$\bar{æ}$	$\bar{æ}a$	$\bar{ā}$,

(vi)

the significant feature, by which the new phonemes are opposed to the two outside members of each (horizontal) triplet, may be diphthongoidality, or the gliding from one timbre series (front, nonlabialized) to another (back, labialized).

Thus an important transformation of the system of phonemic oppositions took place after the contraction of the Germanic biphonemic diphthongs in *-u*. Beside the combined opposition of front/back series and labialization, also an opposition of timbre gliding appeared that distinguished the new vowel phonemes - the frontback diphthongoids $\bar{i}u$, $\bar{e}o$, $\bar{æ}a$ - from the monophthongs. In this context also the form $\bar{æ}a$ becomes more understandable, of which the development in the place of Gmc. *au* has always been vividly discussed. The initial front articulation of the diphthongoid $\bar{æ}a$ must be explained not by a resemblance of the developments of the first part of Gmc. *au* and every solitary Gmc. *a* > $\bar{æ}$ (incidentally, this would be most illusive, since the phoneme $\bar{æ}$ appeared with the split of a^v into α , $\bar{æ}$; see above, p. 58). Most probably this articulation results from the very incorporation of $\bar{æ}a$ into the group of front-back phonemes together with the other reflexes of the Germanic diphthongs in *-u*. In other words, the initial articulation of the diphthongoid $\bar{æ}a$ is qualified by the position of this new phoneme in the system. And for the similarity to the development of solitary Gmc. *a*, it appears to be purely external, coincidental.²³

In this context another phenomenon might also be examined, connected with the phonemic status of the diphthongoids. As known, the distinction between $\bar{e}o$ and $\bar{i}u$ (< *eu*, *iu*) is lost in the West-Saxon dialect in the historical period, but remains in all the other dialects. At the same time only the West-Saxon dialect has the phoneme-diphthongoid $\bar{i}e$, developed from $\bar{e}a$, $\bar{i}o$ in a position of *i*-umlaut.

Thus there exist everywhere only *t h r e e* phonemes of timbre gliding, which are distinguished among themselves by the degree of opening. And although the circumstances under which these triplets had been established in every dialect are not entirely clear, their correlativity to the similar distinction with the monophthongs seems sufficiently demonstrated.

And finally it is only in connection with the above transformation of the system of oppositions that the development of the short diphthongoids may be understood. It has been known for a long time that the short diphthongoids *iu*, *eo*, *æa* were a result of such sound changes as diphthongization under influence of palatal consonants, breaking, and velar umlaut. However, neither the aim of their creation, nor the circumstances of their development in the language have been explained convincingly. And this was one of the reasons why even the very fact of the existence of the short phoneme-diphthongoids has not seldom raised doubts. Below the questions will be examined connected with the explanation of breaking.

In the fifties the short diphthongoids, formed in the place of Gmc. *i*, *e*, *a* before *h*, *r*, *l* plus consonant (e.g. WS *earm* 'poor', *eolh* 'elk', *tiohhian* 'to consider'), have been the subject of a vivid phonological discussion. Hereby it was demonstrated that the short diphthongoids *iu*, *eo*, *æa* were independent units, which were distinguished among themselves by the degree of opening and which stood in an opposition of quantity to long *īu*, *ēo*, *āa*. And that it is indeed the gliding articulation, or diphthongoidality, which in itself embodies that phonological feature by which the short diphthongoids are distinguished from the corresponding monophthongs *i*, *e*, *æ* and *u*, *o*, *α*.²⁴ The discussion of the phonological status of the sounds formed by breaking couldn't help evoking the interest for their appearance in the language either. It is true that already long ago the parallelism between the short diphthongoids from breaking in the place of Gmc. *i*, *e*, *a*, and the long diphthongoids in the place of Gmc. *iu*, *eu*, *au* was spoken about (Bülbring, § 130, n. 1). But now a historical-phonological reconstruction was put on this simple idea: the development consisted in that the products of breaking of the short vowels came to occupy the same position in the system of short vowels as the diphthongs of old origin in the system of the long vowels (Fourquet, p. 151). The appearance of the new short phonemes aimed to restore the parallelism between the long and the short vowels, upset with the appearance of *īu*, *ēo*, *āa*. With this the opposition of timbre gliding was spread over the short vowels, due to which for a period of time it was incorporated in the system.

Such a conception of the essence of breaking allowed to look anew at the details of this process. Let us begin with the characteristic of that positional distinction between the two groups of representations of the former *i*, *e*, *æ*, which served as a basis of breaking. Until recently the appearance of such a distinction was attributed to the influence of the particular post-lingual quality of the 'breaking' consonants *h*, *r*, *l*. But now it has become clear that the quality of the consonants was not at all decisive. Among the other positional representations it is simply the 'allophones' before *h*, *r*, *l* which had a comparatively more mobile *t i m b r e v a r i a t i o n*. And therefore indeed these allophones, better than others,

could be used by the language for creating an opposition of timbre gliding within the short vowels. Important in this case is only, as we see, the circumstance that in the positions before *h*, *r*, *l* plus consonant the timbre variations of the phonemes *i*, *e*, *æ* appeared comparatively stronger than in other positions (Plotkin, p. 23).²⁵ For us this is another example of the fact that in diachronic linguistics it is the distinction between little and much that often appears decisive (see above, p. 59).

As for the mechanism of forming the new phonemes in the place of the old ones, it is sufficiently well known from the preceding. Just like nasalized a^n was formed in the place of earlier Gmc. *a*, or velar α appeared in the place of earlier a^v , in the same way the phonemes *iu*, *eo*, *æa* developed due to the split of former *i*, *e*, *æ* by the formula $A : B > A_1 : B_1$. We have already said that the feature by which each of the three original phonemes was split was set by the phonological system. As a result of the phonemization timbre gliding became the feature relevant to new *iu*, *eo*, *æa*, while absence of timbre gliding became the feature relevant to new *i*, *e*, *æ*. Illustratively speaking the phonemes *iu*, *eo*, *æa* filled in, as it were, the vacant positions of the short diphthongoids, which were falling open by the appearance of the corresponding long diphthongoids $\bar{i}u$, $\bar{e}o$, $\bar{\alpha}a$. It is clear that \bar{a}^n and a^n no longer take part in the correlation between the three degrees of opening (VIII).

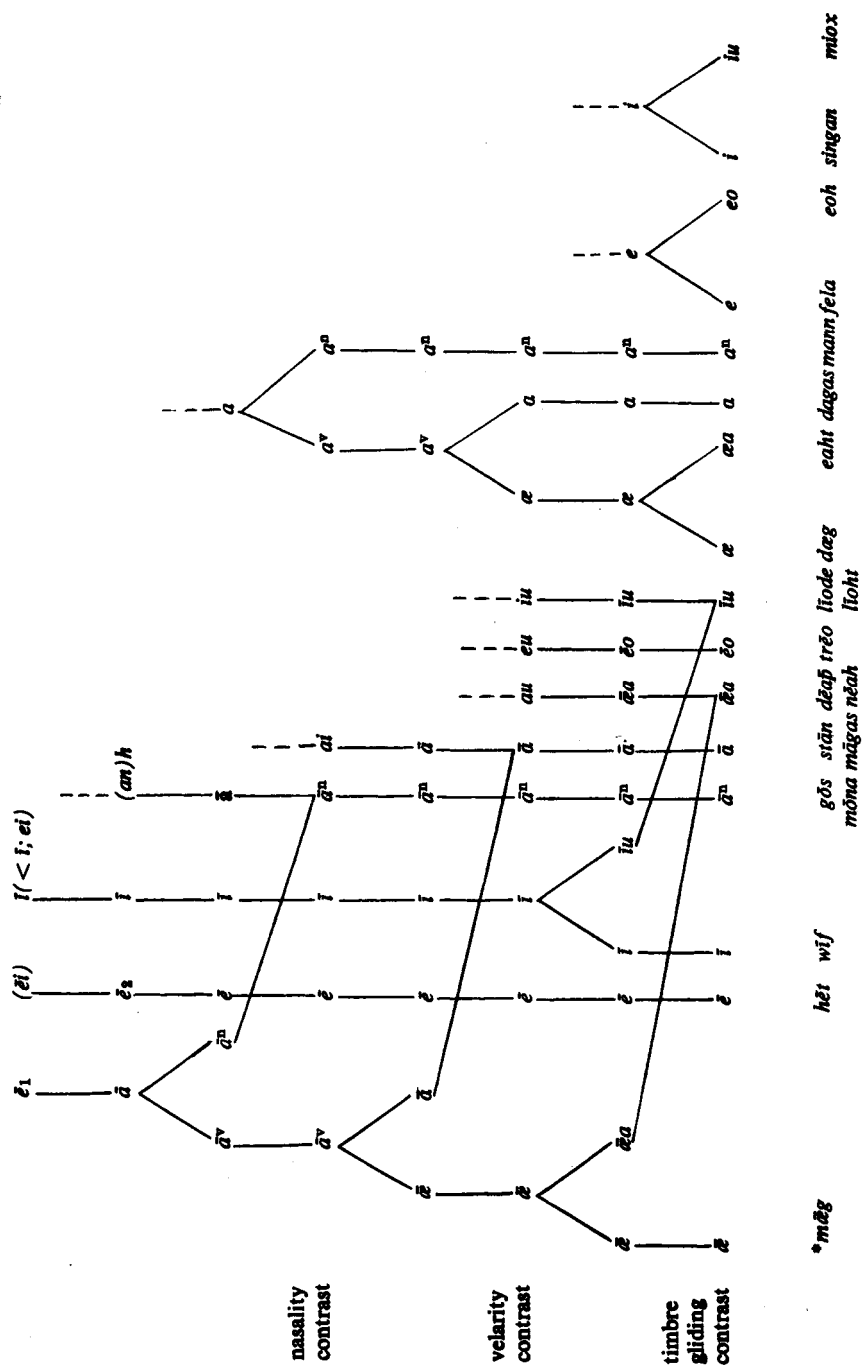
\bar{i}	$\bar{i}u$	\bar{u}		<i>i</i>	<i>iu</i>	<i>u</i>
\bar{e}	$\bar{e}o$	\bar{o}		<i>e</i>	<i>eo</i>	<i>o</i>
		\bar{a}^n				a^n
$\bar{\alpha}$	$\bar{\alpha}a$	\bar{x}		α	αa	α

(vii)

When studying the above changes one cannot help noticing the fact that every time the initial shifts in the field of the long vowels raised similar transformations in the field of the short vowels. Namely, close after the appearance of a nasality contrast with the most open long vowels, a similar opposition was developed with the short. Then, close after the appearance of a timbre opposition with the most open long vowels, an analogous opposition was developed with the short vowels too. Finally, close after the appearance of a timbre gliding opposition with the long vowels, a similar opposition is developed with the short! We noticed that in this period the shifts with the long vowels had been evoked by the entry into the system of new phonemes that were formed due to contraction of the 'old diphthongs'. We also noticed that the hypothetical forms reconstructed in the supposition of parallel changes with the short vowels agree well with the forms factually attested in the first records. We may now add that a constant demand for such a structural parallelism of the two vocalic subsystems is quite normal. One of the general peculiarities (universals) of phonological systems is that the number of marked phonemes cannot exceed the number of unmarked phonemes (Greenberg, p. 513). And since in the correlation of vowel quantity, characteristic of all the Old Germanic dialects, it was the long phonemes that were marked, it is clear that the appearance of new marked phonemes kept also calling forth unmarked phonemes, opposing them (Plotkin, p. 22).

To conclude I may submit a scheme of the changes described for Pre-English.

From Germanic to Primitive West-Saxon



It will not be difficult to notice that my former views on the history of the 'nasalized' vowels, and on the history of the long and short diphthongoids have undergone a most essential reconsideration. While in the former case the development seems now to be more complicated than it seemed before, in the latter, on the other hand, notable simplifications were found. Both questions have been expounded sufficiently complete just now and hardly require any completions. That is why I take the liberty to turn to the critical observations.

To begin with I am glad to notice that E. Kooper is obviously in sympathy with my idea about the initial impulse of a specific Inguaeonic development, which fact seems to be a significant one. But certainly, there are some points of disagreement, and it is upon them that I will dwell further on. Above all I must agree with E. Kooper that it is hardly possible to explain convincingly the coalescence of \bar{a}^n and \bar{o} by only one cause - the endeavour to avoid homonymity. However, I do not consider this cause to be the only one. What is important is that after the opposition $\bar{\alpha} : \bar{\alpha}$ had been created the phoneme \bar{a}^n appeared to be completely isolated and had an equal possibility to coalesce with $\bar{\alpha}$ or with \bar{o} . It is difficult to say what circumstance appeared decisive, however, beside other factors one might also mention a certain resistance in the sphere of the vocabulary. Although the phenomenon of homonymity is known in many languages one should take into account that in languages of a synthetic structure it is found more seldom than in languages of an analytical structure. Strictly speaking the pairs adduced cannot be considered homonyms. However, one should bear in mind (i) that our knowledge of the Old English vocabulary is fairly limited, and (ii) that even similar pairs did not prevent the coalescence of \bar{a}^n and \bar{o} .

To reject the historical-phonological reconstruction something better must be brought forward. However, the explanation E. Kooper brings forward (pp. 9-10) seems to me little convincing. Whatever the 'principle variant' of Gmc. \bar{e}_1 in the triangular system $\bar{i} : \bar{e}_2 : \bar{e}_1 : \bar{o} : \bar{u}$ was like, in any case the timbre distinction will be irrelevant for the only phoneme of maximum degree of opening. Similarly, in the following stage of the reconstruction, whatever the 'principal variant' of the phoneme

$\bar{\alpha}$ (< ai) was like, in the triangular system $\bar{i} : \bar{e}_2 : \bar{e}_1 : \bar{\alpha} : \bar{o} : \bar{o} : \bar{u}$ the phoneme $\bar{\alpha}$ is the only phoneme of maximum degree of opening, and a distinction of timbre must also be considered irrelevant for it (cp. Martinet, 1955, VI, 5). It is clear that in s u c h a system no velar allophone of Gmc. \bar{e}_1 can pass into $\bar{\alpha}$. Further it is not comprehensible why new $\bar{\alpha}$ (< ai) has a greater degree of opening than \bar{e}_1 if \bar{e}_1 took the place of IE \bar{a} , of which the short counterpart was the first element of Gmc. ai. In the system brought forward it is also difficult to understand the denasalization of \bar{a}^n . And finally doubts are raised by the use of such an illdefined conception as that of 'principal variant'.

E. Kooper assumes that Pre-English α , α , a^n were represented by a single phoneme a (p. 8) and erroneously attributes to me a similar point of view (ibid. ; see also his n. 40; in n. 16 Kooper seems to agree to regard a^n as an autonomous unit, though). Therefore it might be worth while to motivate my conception more fully. Let us begin with the fact that the universal mentioned above (see p. 63) requires

that the number of marked phonemes (long) should not exceed the number of unmarked ones (short). This requirement, however, will not be conformed to if the existence of the phonemes $\bar{\alpha}$, $\bar{\alpha}$, $\bar{\alpha}^n$ is admitted, but the existence of their short counterparts α , α , α^n denied.

Two other testimonies in favour of autonomous α and α before *i*-umlaut are worthy of our attention. Firstly, already then forms with α could appear by analogy in the place of forms with α - in West-Saxon, Northumbrian and in part of the Mercian dialect. E.g., historical *sæcc* 'strife' was the umlaut form of **sakkjō*, where α appeared instead of α under influence of the form *sacu*. In the same way α could also appear in the place of α under influence of other forms of the same word; e.g., before *i*-umlaut the word *hæcid* 'pike', occurring in the Epinal Glossary, must have looked like **hacid*, where the appearance of α instead of normal α was due to the influence of the parallel form *hacod* (Luick, § 188, 4). As one knows such transferences are possible only for the variants of two different phonemes (Trnka). And secondly, the prehistoric independence of α and α is confirmed by the facts of the extension of the Inguaeonic fupark. As is attested by the earliest of the runic inscriptions the extension of the runic series to 28 signs was standardized in them not later than the 5th century, and consisted in the appearance, in due course, of the $\bar{o}s$ -rune $\tilde{\text{f}}$ and the $\bar{a}c$ -rune f in the place of the former *asc*-rune f , whereas the *asc*-rune itself came to be called αsc -rune (Arntz, pp. 120, 122, 124; Fokkema, p. 6; Buma, p. 30). But in case of a positional variation the use of special graphic signs is indeed hardly probable (Ladd, p. 556; Penzl, 1964, p. 147). Sooner here the appearance of new functional units was fixed, and in particular of autonomous α and α . Thus, although all three phonemes α , α , α^n appeared in the language due to 'indirect' phonemization (see n. 9), this circumstance did apparently not prevent the bearers of the language to apprehend the short counterparts of long $\bar{\alpha}$, $\bar{\alpha}$, $\bar{\alpha}^n$, all as independent units.

To conclude something about the relative chronology of the phonemes \bar{e}_1 and \bar{e}_2 and their mutual relationship (Kooper, n. 12). Above (p. 52) I had already the opportunity to observe that there were no direct indications in the records whatsoever. As in Gothic, where there is no \bar{e}_2 , the phoneme \bar{e}_1 did not expand to the level of \bar{a} we are entitled to think that in the West Germanic area both changes are interrelated: if there was no development of \bar{e}_2 , there was no change $\bar{e}_1 > \bar{a}$. Adopting this working hypothesis (Kuryłowicz, p. 51) I tried to take another step towards an internal reconstruction and in particular to connect the two interrelated shifts already mentioned with the contraction of *an*, *am*, and others before *h*. Our construction can be corroborated by comparing the facts it predicts with the forms of the records. And this indeed is the object to which the above pages are devoted. I appreciate that, like every phonological 'solution' (Steblin-Kamensky, pp. 45, 52), the hypothesis about the first impulse, determining the 'Inguaeonic' and the 'non-Inguaeonic' lines of development, cannot be considered final. But it could clarify our conceptions, by connecting the individual sound changes with each other and explaining them; while without it one must content oneself with a mere description of the attested or reconstructed facts.²⁶

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Notes

1. The nasalized quality of the vowel lengthened due to the loss of *n* is acknowledged by some investigators (Brunner, p. 60; Zhirmunsky, 1964, p. 142; Sievers-Brunner, § 45, 7; Luick, § 85; Wright, § 40), but not by others (Smirnitsky, 1955, § 87.3; Streitberg, § 93; Vachek, p. 15; Höfler, p. 47). These two are not the only suggestions put forward (cf. Gysseling, p. 27).
2. Campbell supposes that at first Gmc. $\bar{e}_1 > \text{WGmc. } \bar{a}$ in all positions (and this form was retained in Old High German and in Old Saxon), after which the movement went into two directions: nasalized \bar{a}^n before nasals, and front \bar{e} in other positions. There exists, however, another opinion too: OE \bar{a} was formed directly from Gmc. \bar{e}_1 without intermediate \bar{a} (cp. Zhirmunsky, 1964, pp. 142-143; Luick, § 95; Frings, p. 35; Schwarz, pp. 189-190). Moreover, by no means all investigators acknowledge the development of nasalized $\bar{a}^n < \bar{e}_1$ before nasals, many are inclined to explain the appearance of historical \bar{o} by a 'heightening' or labialization of WGmc. \bar{a}^n from \bar{e}_1 (cp.: Smirnitsky, 1955, § 87; Zhirmunsky, 1964, p. 142; Sievers-Brunner, § 64; Luick, § 111).
3. Usually the development $a > \bar{a}$ is characterized as spontaneous, i.e. unconditioned, palatalization. Recently an explanation was unsuccessfully sought now in a tendency towards a more heightened pronunciation (Martinet, 1952, p. 16), now in an energization of the articulation (Brosnahan, pp. 118-119).
4. To Luick breaking and 'velarization' in the same positions are two stages of the impact the breaking consonants exercised on palatal vowels (breaking to be the laxer stage, 'velarization' the tensor). The forms obtained in both cases were even regarded as dialectal variants of one and the same phenomenon (Luick, § § 153, 159). However with other authors there is no such combination (e.g. Sievers-Brunner, § § 50.2, 84 n. 1, 85 n. 1).
5. I have in mind the discussion about the short diphthongs of Old English that has been going on for over twenty years, beginning in 1939 (Daunt). See particularly: Stockwell and Barritt, 1951; Kuhn and Quirk, 1953; Stockwell and Barritt, 1955; Kuhn and Quirk, 1955; Komissarchik and others.
6. This view was opposed however by a Dutch author (Van Haeringen, 1922, pp. 274-275).
7. It is assumed that the expansion of \bar{e}_1 to the level of \bar{a} was conditioned by the appearance in the West Germanic dialects of new \bar{e}_2 that took the original place of \bar{e}_1 i.e. the place of the unit of medium degree of opening (Kurylowicz, p. 51). Indeed, without the appearance in the language of new \bar{e}_2 the phoneme \bar{e}_1 could hardly become the unit of the maximum (third) degree of opening. But something else must also be taken into account: \bar{e}_1 could hardly take the place of the long counterpart of the phoneme *a* if even earlier IE \bar{a} and \bar{o} had not coalesced in the form \bar{o} .
8. The development of $an > \bar{a}$ before voiceless fricatives supposes the forming of one long phoneme in the place of two short, which fact corresponds exactly with the contraction of the 'old diphthongs' of the type *ei*, *ai*, *au* (see below, § 4). And this is not a mere coincidence. In the previous period both the semivowels \bar{i} , \bar{u} and the nasals had taken part in a special system of sonants, so that the sequences of the type *an*, *am* could also be accounted Germanic 'diphthongs'. It is highly probable that the reduction of the nasals (as that of the semivowels) was the result of the collapse of the old system of sonants, and was connected with the prosodic changes caused by the Germanic word accent.
9. In describing the development of the Germanic vowels it was observed that with the appearance of \bar{e}_2 (see n. 7) the opposition (\bar{i} , \bar{e}) : (\bar{u} , \bar{o}) was established, due to which short *o* appeared, which was at first absent in Germanic. And it is due to the phonological distinction between corresponding long \bar{o} and \bar{u} that the short vowels *o* and *u*, being formerly variants of the phoneme *u*, become 'indirectly' autonomous (Kurylowicz, p. 54). We shall speak more loosely about 'indirect' autonomy, thereby bearing in mind that the autonomy of a given unit was supported in the language due only to the presence of certain structural conditions.

10. Campbell relates this change to a number of West Germanic innovations, while other writers found the oldest Inguaeonic innovation in it (Luick, § 86).
11. Although triangular systems with an isolated position of the unit of maximum degree of opening are widespread and have an undoubted stability, they develop as a compromise between the requirements of an equal integration of all the phonemes and the conditions of the asymmetry of the speech organs. But the language is not likely to abandon the possibility of combining the two sorts of requirements. And this is what indeed is assumed in our reconstruction, although the choice is not the only possibility, to which testifies the further development (see below, p. 58).
12. This is how a 'physical' sense might be disclosed of what was predicted by the formula of the split. If the stability of a system supposes a resistance to blending the units (Martinet, 1955, IV, 10-18), then the stability of new \bar{a} depends on the degree in which it resists to a blending with \bar{a} . A strengthening of this resistance will be possible in case the language manages to distinguish both units more precisely. But it is the realizations of \bar{a} before *n, m* that prevent such a distinction, since in a physical respect they stand close to the realizations of new \bar{a} .
13. Cf. Campbell, § 130. By the way, more widespread are conceptions of a development without nasalization: WGmc. *a* was changed into a labialized (or 'heightened', or 'dark', by different authors) sound *a*, parallel to the development before nasals of long \bar{a} from \bar{e}_1 (Zhirmunsky, 1964, p. 143; Smirnitsky, 1955, § § 85, 87; Sievers-Brunner, § 79; Luick, § 110).
 Since in forms of the type *mann, monn*, etc., neither 'palatalization' of Gmc. *a* > \bar{a} , nor further 'restoration' of this \bar{a} > *a* were to be found, the reasonable conclusion was drawn that even before 'palatalization' the reflex of Gmc. *a* before nasals got somehow separated out (Bülbring, § 130, n. 2; Luick, § 115, 291). I suppose the nasalized quality of this short *a* was for the first time mentioned in: Van Haeringen, 1920, pp. 48-53.
14. To explain the development of \bar{o} in the place of $\bar{a}^n < an$ it was suggested to take into account a tendency towards a 'circular movement' in a system of five nasalized sounds (Lüdtke, 1957, pp. 177-179). An attempt was made to connect the form \bar{o} in the place of \bar{a} (Gmc. \bar{e}_1) before *n, m* with a tendency towards a 'heightened' articulation of a vowel before nasal consonants (Penzl, 1958, p. 165). However, neither the tendency, observed as it were in a number of languages, nor the combinative impact of an adjacent consonant can explain why the development took place just in the period described.
15. As known a distinction of rounding with the open vowels is hindered on account of the asymmetry of speech organs (cf. Martinet, 1955, IV, 34).
 The elimination of the nasality opposition was most probably not the only object of the timbre opposition. Thus, on a functional level the distinction of \bar{a} (< *ai*) from \bar{a}^v appeared 'economical' also because it prevented the appearance of many homonyms (cp. WS \bar{a} 'always' - \bar{a} 'law'; *bār* 'boar' - *bār* 'bier'; *hālig* 'holy' - *hālig* 'inconstant').
16. It must not be thought as if such a hypothesis were entirely arbitrary. Since in the 11th and 12th centuries \bar{o} appears in the place of Gmc. *ai* there is some ground to surmise that indeed \bar{a} (< *ai*) came to stand in a series with \bar{o} , \bar{u} , while \bar{a}^v sooner tended to \bar{e} , \bar{i} . And that indeed velarity was the marked feature we can judge by another fact. In the historically attested opposition *a* : \bar{a} (in writing *a* : \bar{a}) the first phoneme is found only in those words where a back vowel is present in the post-tonic syllable (see below, p. 58), and consequently it has a narrower sphere of use (see above, p. 56). By the way, also in the previous stage the markedness of the new opposition was set by that very phoneme which was about to enter the system (see § 2).
17. We are concerned with the fact that the task of forming a timbre opposition between \bar{a}^v (\bar{e}_1) and \bar{a} (*ai*) could only be realised at the expense of the earlier nasality opposition between \bar{a}^v and \bar{a}^n . If we assume the opposite, i.e. that the phoneme developed in the place of \bar{a}^v could maintain oppositional relations with both \bar{a}^n and \bar{a} , we must consider that its distinctive 'potential' was one unit higher than that of the other elements of the system (cp. above, p. 54). But this is hindered by the asymmetry of speech organs (see n. 15).

18. That the nasalized *a* retained its original *a*-character was also shown in: Van Haeringen 1920, pp. 48-53.
19. I have in mind the cases which are reflected in pairs of the type WS *ōht* 'persecution' - *āht* 'anything', *fōn* 'to seize' - *fān* 'enemies' (see below, p. 65).
20. I prefer to talk about 'diphthongoids' as distinct from diphthongs, such as, e.g., Common Gmc. *ei*, *ai*, *au*, *eu*. Such a distinction is justified from a phonological point of view, since in the first case we are concerned with single phonemes with a gliding articulation, and in the second with biphonemic sequences (see Plotkin, p. 18).
21. Luick noticed an essential difference between the second components of the old Germanic diphthongs and their Old English counterparts: the latter no longer stand in a series with the other consonants, therefore the development of the new sound complex should be looked upon as the development of a whole (Luick, § 63, n. 1).
22. It may be assumed that particularly facts of prosody and of distribution are at stake: e.g., the syllable division could never run between a vowel and a semivowel, and between a vowel and a liquid or a nasal sonant only in the presence of a following consonant (cp. above, n. 8).
23. In this connection one cannot help mentioning a suggestion that both Gmc. *ai* and Gmc. *au* were avoided by Anglo-Frisian palatalization of Gmc. *a* > *æ*, while OE *āea* appeared from **ā* (< *au*) due to a general Old English tendency to diphthongization (Vleeskruyer, p. 183). Clearly, the author felt some hidden regularity, though he did not know how to explain it.
24. In this connection the articles by Kuhn and Quirk (see above, n. 5) appear convincing to me.
25. That what matters is not the quality of the consonants *h*, *r*, *l*, but indeed the aim (the 'task') of the linguistic system is also apparent from the following. While in English the faculty of *h*, *r*, *l* was used to retract the articulation of the vowel, their faculty was used in Gothic to widen the articulation, and indeed *i*, *u* were changed into *e*, *o* before *h*, *r*. Similar phenomena are to be found in Old High German and in the other old Germanic languages (see the Comparative Grammar, II, pp. 130-131).
26. Finally I consider it my pleasant duty to give expression to my sincere gratitude to my young Dutch colleague Drs. Erik Kooper for his generous assistance in preparing the English text of this article.

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