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Source: *Language*, Vol. 37, No. 2 (Apr. - Jun., 1961), pp. 215-230

Published by: [Linguistic Society of America](#)

Stable URL: <http://www.jstor.org/stable/410850>

Accessed: 18/09/2014 04:12

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## GERMANIC UMLAUT ANEW

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**1.1.** A realistic reinterpretation of the Old English spellings *ea*, *eo*, *io* has been suggested by Charles F. Hockett, who approached the problem *de novo* by investigating the evidence in the Vespasian Psalter and Hymns (Anglian dialect of the first half of the 9th century) and by interpreting this evidence in the light of modern descriptive techniques.<sup>1</sup> Hockett finds that the three digraphs in question represented independent phonemes (not allophones of /æ/, /e/, /i/) at a time prior to the writing of the VP, although 'Sound change and dialect mixture had probably led to a state of affairs in which every form pronounced with *io* had a by-form pronounced with *eo* (though not conversely), and in which every form pronounced with *ea* had a by-form pronounced with *a* or with *eo* (though again not conversely). These conclusions account both for the spelling habits which the Vespasian Scribe inherited and for the particular way in which he modified and varied those habits' (590).

In determining the phonetic values to be ascribed to *ea*, *eo*, *io* before the onset of the secondary modifications evident in VP, Hockett turns to the testimony of the Icelandic First Grammarian (ca. 1150). A bilingual person attempting to represent Old English sounds was faced with the paucity of vowel symbols in Latin. To find new symbols, the Old English vowels were analyzed with respect to the five Latin vowels, as was done for Icelandic by the First Grammarian. The latter, for instance, analyzed the sound represented by *ø* as 'made up from the sounds of *e* and *o*, spoken with the mouth less open than for *e* and more than for *o*, and therefore [is] written with the cross-bar of *e* and the circle of *o*'.<sup>2</sup> Hockett suggests, therefore, that those who established the Old English orthography chose *ea* (older spellings *æa* *æo*) to represent the height of /æ/ and the retracted tongue position of /a/, i.e. [a]; *eo* to represent the height and lip position of /e/ and the tongue position of /o/, i.e. [ə]; and *io* (older *iu*) to represent the height and lip position of /i/ and the retracted tongue position of /u/ or /o/, i.e. [i]. He then makes a theoretic pronouncement of great import for the interpretation of mutation in Germanic: 'From the point of view of realism in phonetic change, particularly in assimilations, it is certainly as likely that a back-umlauting of front unrounded vowels should produce unrounded back vowels as it is that a front-mutating of back rounded vowels should produce front rounded vowels. The same applies to the modification of vowel color by a following consonant: "breaking" is a loaded term stemming from the habit of talking about letters instead of sounds, and prejudices reinterpretation' (595).<sup>3</sup>

<sup>1</sup> *Lg.* 35.575-97 (1959), with references to previous treatments.

<sup>2</sup> E. Haugen, ed. and transl., *Language monograph* 25.13-4 (1950).

<sup>3</sup> Hockett's general presentation of the history of the term 'short diphthong' for *ea*, *eo*, *io* (577) is essentially correct. The first scholar to recognize the monophthongal nature of Old English *æ* and *oe* was Rasmus Rask in his *Angelsaksisk Sproglære tilligemed en kort Læsebog* (Stockholm, 1817). Rask, who had, for all practical purposes, only Hicces before him, was

On the basis of this reinterpretation of the digraph spellings, Hockett posits the following phonemic structure for what he calls pre-Anglian Old English (576):

	FRONT		BACK	
	SPREAD	ROUNDED	SPREAD	ROUNDED
HIGH	/i/ <i>i</i>	/y/ <i>y</i>	/ɨ/ <i>io</i>	/u/ <i>u</i>
MID	/e/ <i>e</i>	/ø/ <i>oe</i>	/ə/ <i>eo</i>	/o/ <i>o</i>
LOW	/æ/ <i>ae, æ, e, e</i>	(none)	/a/ <i>ea, æa</i>	/ɑ/ <i>a</i>

In his *Manual of phonology* 88 (Baltimore, 1955), Hockett describes this system as  $(2+2+1) + (2 \times 3)$ . It should be noted that the two innermost series of phonemes represent modifications of the phonemes in the two outermost series: front rounded /y/ and /ø/, and in certain instances low front spread /æ/, are the result of the *i*-mutation of the back rounded /u/, /o/, /ɑ/ respectively;<sup>4</sup> the back spread phonemes /ɨ/, /ə/, and /a/ are the products of the back mutation (including the influence of back consonants) of the front spread phonemes /i/, /e/, and /æ/.

This interpretation represents to my mind a real stride toward a more realistic approach to the problem of mutation in Germanic. First of all, it eliminates the need for assuming the development of a short monophthong to a 'short diphthong' and back to a short monophthong in the history of English vocalism from the West Germanic stage through Middle English; it eliminates the need for assuming that allophonic variants were designated in the orthography; it provides a reasonable explanation for the choice of the spellings *ea*, *eo*, *io*, and accounts for the relationship of these short nuclei to their long counterparts *ēa*, *ēo*, *īo*, which derive from Proto-Germanic diphthongs and result in Middle English

able to systematize the vowel changes in Old English rather well, primarily because of his familiarity with ancient and modern Scandinavian languages. Thus, he recognized the historical relationship between [u] and [y], [o] and [ø], [a] and [æ] [e], because there is a regular alternation between these sets of vowels in Old Icelandic and in his mother-tongue, Danish. Even the symbols for these sounds presented no problem for him, since Danish still uses *æ* and *y* to designate the *i*-mutation of *a* and *u*, and a relationship between the Danish symbol *ø* and the early Old English *oe* was clear to him through his studies of Old Norse paleography. Rask therefore assigned to the Old English symbols *æ*, *oe*, and *y* the phonetic values of Danish *æ* [æ], *ø* [ø], and *y* [y] (5-6). He also recognized the alternation between *æ*, *e*, *i* and *ea*, *eo*, *io*, *ie* in Old English (2 and 12-3), but the Scandinavian languages provided no basis for assigning a monophthongal pronunciation to the latter digraphs; indeed, such correspondences as OE *eorð*: OIcel. *igrð*, Dan. *jord* 'earth' dictated against such an assumption. As a result, Rask retained the traditional view (dating from Hickes) that *ea*, *eo*, *io*, and *ie* must represent diphthongs. Jacob Grimm leaned heavily on Rask in his treatment of Old English in the second edition of the *Deutsche Grammatik* (Göttingen, 1822) and thus passed on to succeeding generations the division of *æ*, *oe*, *y* and *ea*, *eo*, *io*, *ie* into monophthongs and diphthongs respectively.

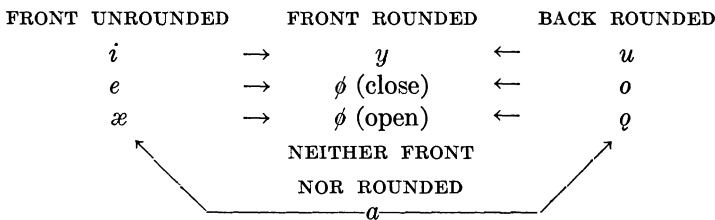
For a detailed discussion of the early scholarly treatment of the mutated vowels in the Germanic languages, see ch. 1 of my dissertation, *The Investigation of I-Mutation in the Germanic Languages* (University of Illinois, 1961).

<sup>4</sup> Hockett makes the point that /ɑ/ 'was not necessarily rounded in the physiological sense,' but 'occupied the structural position indicated on the chart' (576).

long monophthongs.<sup>5</sup> Most important of all, however, the new interpretation provides us with a sound basis for viewing mutation in the Germanic languages as a single uniform process traceable to the Proto-Germanic stage,<sup>6</sup> as is most strikingly illustrated by the parallelism which now becomes apparent between mutation in Old English and in Old Icelandic.

1.2. As early as 1879, Ludvig Wimmer had noted a distinct harmony in the results of *i*-(*j*-)umlaut and *u*-(*w*-)umlaut in Old Icelandic, whereby *ø* derives from four different sources: it is the *i*-umlaut of *o* and *q*, and the *u*-umlaut of *e* and *æ* (*ē*). Since *æ* is itself the *i*-umlaut of *a*, while *q* is the *u*-umlaut of *a*, Wimmer believed that there was originally a distinction in the pronunciation of *ø*, depending upon its origin: when derived from *e* and *o*, it was close [ø]; when derived from *æ* and *q*, it was open [œ].<sup>7</sup> Consequently, OIcel. *sþokkua* 'to sink (trans. and intrans.)', which is the reflex of both Proto-Gmc. *\*sinkyan-* (intrans.) and *\*sankyan-* (trans.), must represent the coalescence of two originally different root vowels in Old Icelandic: *\*sinkyan-* > pre-OIcel. *\*sekkya-* (*i* > *e* before *n*, and *n*+*k* > *kk*) > OIcel. *sþokkua* (*u*-umlaut of *e*), while *\*sankyan-* > pre-OIcel. *\*sænkya-* (*i*-umlaut of *a*) > *\*sækkua-* (*u*-umlaut of *æ*), which then coalesces with *sþokkua* (intrans.).

Almost 80 years after Wimmer, the same similarity in the results of *i*- and *u*-mutation in Old Icelandic was noticed by L. F. Brosnahan and G. W. Turner, who evidently were unfamiliar with Wimmer's article. They represent the relationship between the two mutations in a schema like the following:<sup>8</sup>



<sup>5</sup> I find Hockett's presentation of the development of Proto-Germanic /au, eu, iu/ to Old English /a, æ, (i)/ (595-7) very convincing, and much superior to the traditional view that the Old English reflexes were still actual diphthongs; cf. e.g. A. Campbell, *Old English grammar* §37 (Oxford, 1959). A distinct tendency of these Proto-Germanic diphthongs toward assimilation of the two elements, often leading to monophthongization, is apparent in Old Saxon (see J. H. Gallée, *Altsächsische Grammatik*<sup>2</sup> §§89-108 [Halle-Leiden, 1910]), Old High German (see Braune-Mitzka, *Althochdeutsche Grammatik*<sup>8</sup> §§43-9 [Tübingen, 1953]), and Old Norse (see A. Noreen, *Geschichte der nordischen Sprachen*<sup>3</sup> §§40-5, 106-8, 155-7, and 160 [Strassburg, 1913]).

<sup>6</sup> O. Höfler provides convincing arguments against the wave-theory of the spread of mutation from one Germanic dialect to the others and assumes a phylogenetic development in the various dialects conditioned by the gradual increase in strength of the Germanic stress accent (Akzentballung): *PBB* 77.30-66, 424-76 (Tübingen, 1955) and *PBB* 78.1-44 (Tübingen, 1956), as well as in *Mnēmēs khárin: Gedenkschrift Paul Kretschmer* 1.158-74 (Vienna, 1956).

<sup>7</sup> *Det philologisk-historiske Samfunds Mindeskrift* 179 (Copenhagen, 1879).

<sup>8</sup> *Arkiv för nordisk filologi* 73.120 (1958).

If we accept Hockett's hypothesis that the mutation of a back rounded phoneme under the influence of a following high front spread phoneme results in a front rounded allophone and that the mutation of a front spread phoneme under the influence of a high back rounded phoneme results in a back spread allophone, then it is obvious that the Old Icelandic phonemic system described by Wimmer and by Brosnahan and Turner must represent a modification of an earlier state in which the products of *i*- and *u*-mutation were not identical.

2. The history of all the living Germanic languages demonstrates two facts. (1) The inventory of short-vowel phonemes inherited from Proto-Germanic, which had the simple triangular system<sup>9</sup> /i/, /a/, /u/, was greatly augmented by allophones which arose before unstressed vowels in endings and suffixes and were later phonemicized through the reduction of the conditioning vowels.<sup>10</sup> (2) In the subsequent history of all the languages and dialects, the greatly augmented inventories have undergone radical changes in the direction of reducing the number of independent phonemes. Compare, for example, the complete absence of the front rounded phonemes in English, or the simplification of the 9-vowel system posited by Fourquet for Middle High German to a 7-vowel system in standard New High German and a 6-vowel system in modern Alsatian.<sup>11</sup> Let us look first at the augmentation of the short vowel system of Proto-Germanic.

2.1. PROTO-GERMANIC. The oppositions of the three short phonemes in Proto-Germanic were high front spread, high back rounded, and low neutral. From the very beginning, however, there must have been numerous allophonic variants of these phonemes, all conditioned by the nature of succeeding phonemes. The further development of the various Germanic dialects enables us to discern three distinct types of mutation: *a*-, *i*-, and *u*-umlaut. Reflexes of the first two types are found in all the living Germanic languages. The third, *u*-umlaut, is found in Scandinavian and in Old English, but seems to be lacking in the modern German dialects and their precursors (see §3), except that the consonants which have the same effect as *u*-umlaut on the root vocalism of Old English also have some influence on the development of root vowels in continental West Germanic.<sup>12</sup>

From the relevant characteristics of the three short phonemes of Proto-Germanic, we can determine the nature of the influence of /-i/, /-a/, and /-u/ on the preceding root vocalism.<sup>13</sup> In the case of *a*-umlaut, the partial assimilation which takes place in the root is primarily one of tongue elevation, i.e.

<sup>9</sup> See J. W. Marchand, *Lg.* 33.346-54 (1957).

<sup>10</sup> See W. F. Twaddell, *Monatshefte für deutschen Unterricht* 30.177-81 (1938), *Lg.* 24.139-51 (1948); H. Penzl, *Lg.* 25.223-40 (1949), *Arkiv* 66.1-15 (1951); J. Fourquet, *Word* 8.122-35 (1952), *Travaux de l'Institut de Linguistique* 1.109-24 (1956); V. M. Žirmunskij, *Doklady i soobščeniia Instituta Jazykoznanija Akademii Nauk SSSR* 5.79-106 (1953), [Schirmunskij] *PBB* 79[suppl.].374-87 (Halle, 1957); M. Steblin-Kamenskij, *Arkiv* 74.105-11 (1959); K. M. Nielsen, *Arkiv* 75.1-78 (1960); H. Kratz, *JEGPh* 59.463-79 (1960).

<sup>11</sup> Fourquet, *Travaux* 1.112-9.

<sup>12</sup> See Braune-Mitzka §27, Anm. 2; G. Manganella, *Annali: Sezione germanica* 1.139-51 (Istituto universitario orientale; Naples, 1958).

<sup>13</sup> In the following, /-i/, /-a/, and /-u/ will be used to indicate all vowel phonemes in following unstressed syllables and consonants following the root vowel which have a similar mutating effect.

the elevation of the tongue in the pronunciation of /i/ and /u/ was partially assimilated to the low elevation of /-a/, but the affected phonemes retained their other characteristics of front spread and back rounded, with respect to which /-a/ was neutral. The result is therefore a mid front spread allophone of /i/, [e], and a mid back rounded allophone of /u/, [o]. In the case of *i*-umlaut, the partial assimilation results in the fronting and raising of /a/ to [æ] (/a/ is neutral with respect to front-back, contrasts with /-i/ in height); /u/, which contrasts with /-i/ in respect to the point of articulation and lip position, undergoes a partial assimilation by assuming the front articulation of /-i/, but retains its lip rounding, producing the high front round allophone [y]. For *u*-umlaut, low neutral /a/ is raised and retracted to [ɑ], while high front spread /i/ retains its lip position, but assumes the back articulation of /-u/, resulting in the high back spread allophone [ɯ]. There were also instances in which /a/ was followed by both /-u/ and /-i/, e.g. Proto-Gmc. *\*apulŋ-*. The combined influence of these two succeeding phonemes neutralized the retracting and fronting nature of the assimilations, but raising, which was characteristic of both, resulted in a higher central allophone of /a/, [ə].<sup>14</sup> The phonemic-allophonic structure of Proto-Germanic may then be described as follows (with the conditioned allophones arranged around their own phonemes):

/i/	[ɯ]	[y]	/u/
	[e]		[o]
	[æ]	[ə]	[ɑ]
	/a/		

If all three conditioning factors had been reduced to a nondescript [-ə] at this stage, the phonemicization of the variants would have produced a 10-vowel system, but this was not the case. The reduction of unstressed vowels in Germanic proceeded at varying tempos. The first unstressed phoneme to undergo reduction was /-a/.<sup>15</sup> Accordingly, the allophones [e] and [o] became independent phonemes. Unstressed /-i/ and /-u/, however, were still present to exert a mutating influence, and the allophones called forth by them remained conditioned variants. With the phonemicization of /e/ and /o/, however, these new phonemes became eligible for allophonic variants of their own; namely, a front allophone of /o/, [ø], developed in those instances in which /o/, through analogical leveling, came to stand before /-i/, just as a back allophone of /e/, [ʌ],<sup>15a</sup> developed when

<sup>14</sup> It should be noted here that these are not the only allophones to have developed. There seem to have been innumerable variants, some of which have dropped entirely from view, while others have left traces in individual dialects; see §2.4, and cf. Fourquet, *Travaux* 1.118. Žirmunskij, *PBB* 79[suppl.].384, states on the basis of the evidence in modern German dialects: 'alle kurzen und langen Vokale und alle Diphthonge der vorderen, wie der hinteren Reihe werden im Althochdeutschen durch ein folgendes -i affiziert und zeigen engere (geschlossene), d.h. palatalisierte Lautvarianten, die als positionsbedingte Lautschattierungen in der Schrift nicht besonders bezeichnet werden.' For the purpose of comparing the development in Old Icelandic and Anglian Old English, however, the allophonic system outlined above is adequate.

<sup>15</sup> See Höfer, *PBB* 78.16–26.

<sup>15a</sup> [The inverted v is used here, in the absence of the proper IPA letter, to denote an unrounded vowel with the tongue position of o.—Editor.]



/e/ was introduced before /-u/. With the new phonemes and their allophones, the structure was therefore

/i/ [ɯ] [y] /u/  
 /e/ [ʌ] [ø] /o/  
 [æ] [ə] [ɑ]  
 /a/

The next important moment in the development was the reduction of /-i/ and the phonemicization of /y/, /ø/, and /æ/. For the time being, the back allophones of /i/, /e/, and /a/ (and including [ə], which now can be regarded as the back allophone of /æ/) remain conditioned variants. Upon the reduction of /-u/, the back allophones became phonemes and the mutation process reached its final limit and ceased. The result is a 12-phoneme system of the type 4+4+3+1, in which spreading and rounding is relevant only in the high and high-mid series:<sup>16</sup>

	FRONT		CENTRAL	BACK	
	SPREAD	ROUNDED		SPREAD	ROUNDED
HIGH	/i/	/y/		/ɯ/	/u/
HIGH-MID	/e/	/ø/		/ʌ/	/o/
LOW-MID		/æ/	/ə/		/ɑ/
LOW			/a/		

The system described above is the theoretical result of the development of allophones by the original three phonemes of Proto-Germanic and their phonemicization through the reduction of /-a/, /-i/, and /-u/, in that order. The actual reduction of unstressed vowels, and thus the phonemicization of allophones, occurred at different times in the various dialects, so that deviations from this basic pattern are to be expected.

**2.2. ICELANDIC.** It might be argued that the back spread phonemes posited above did not develop in Icelandic, since there is no special designation for them in the Old Icelandic orthography and since the First Grammarian fails to mention such phonemes. It must be remembered, however, that our records of Old Icelandic, compared with Old English, are relatively late (12th century). A rearrangement of the phonemic system had already taken place by the time of the First Grammarian, as we shall see below. In order to explain the phenomena of mutation in Old Icelandic on the basis of the harmony of the three umlauts, we must posit back spread phonemes for a pre-Icelandic period, and there is some direct evidence to support such an assumption.

As already mentioned (§1.2), Wimmer believed that originally there was a distinction in the pronunciation of OIcel. *sþkkua* [sþkkua] < Proto-Gmc. \**sinkyan-* and *sþkkua* [sækkua] < Proto-Gmc. \**sankʏian-*. His hypothesis seems well taken, but [ø] and [œ] are both front rounded vowels, and one must ask how the rounding was acquired. Since /e/ and /æ/ certainly are not rounded,

<sup>16</sup> Concerning the feasibility of such a system, cf. Hockett, *Manual of phonology* §§244-2443, and N. S. Trubetzkoy, *Grundzüge der Phonologie* 106 (Prague, 1939).

it would have to be assumed that the rounding is a concomittant of *u*-umlaut, as indeed is generally assumed.<sup>17</sup> However, since *i*-umlaut does not result in a spread allophone of /u/, it is reasonable to assume, as Hockett does, that *u*-umlaut does not result in a rounded allophone of /i/; the partial assimilation is restricted to the point of articulation, and the lip position of the affected phoneme remains unmodified. The original difference between the root vowels of the two prototypes of *sþkkua* was indeed one of opening, but not in the way envisaged by Wimmer and by Brosnahan and Turner: Proto-Gmc. \*/sinkʷan-/ > pre-OIcel. \*/sekkua-/ > \*/sakkua/ through the *u*-umlaut of /e/, while Proto-Gmc. \*/sankʷjan-/ > pre-OIcel. \*/sækkua/ through the combined *i*- and *u*-mutation of /a/. As we shall see, these forms did not become identical until the 12-phoneme system began to disintegrate and consolidate into a much simpler one.

Although Wimmer's description of the Old Icelandic mutation system is harmonious, it presupposes not only the *u*-mutation of a phoneme which is the result of *i*-umlaut ( $\text{æ} > \text{æ}$ ), but also the *i*-mutation of a phoneme which is the result of *u*-umlaut ( $\text{q} > \text{æ}$ ). The problem of the chronology of the two mutations has been much discussed, and the consensus is that *i*-mutation was the earlier.<sup>18</sup> If the chronology is correct (and everything seems to indicate that it is as far as phonemicization is concerned), and if we do not accept Kock's period theory,<sup>18a</sup> then we must question Wimmer's *i*-umlaut of *q* in forms such as

<sup>17</sup> Cf. e.g. A. Heusler's 'labial umlaut' as an inclusive term for *u*- and *w*-umlaut: *Altisländisches Elementarbuch*<sup>4</sup> §§67-75 (Heidelberg, 1950).

<sup>18</sup> See Heusler §59 and §68; the traditional view of the chronology of *i*- and *u*-umlaut is complicated by Axel Kock's theory of different periods within each, although Kock's 'older' *i*-umlaut is placed before his 'older' *u*-umlaut. The 'older' *u*-umlaut is supposed to have occurred before 'younger' *i*-umlaut, however, so that Kock can agree with Wimmer's derivation of OIcel. *þðli* < \**qðli* < \**aðuli*; see A. Kock, *Arkiv* 4.157 (1888).

<sup>18a</sup> Kock's three-period theory of mutation in Scandinavian was formulated in order to account for the discrepancy in development in the long and short stems, e.g. \**dōmiðō* > OIcel. *dōmda*, but \**talīðō* > OIcel. *talþa*. This theory, presented in all its ramifications in Kock's *Umlaut und Brechung im Altschwedischen* (Leipzig and Lund, 1916), enjoyed wide acceptance for over half a century, but strong opposition to it was voiced from the very beginning. In the last fifteen years, this opposition has steadily increased. The weaknesses in Kock's hypothesis have been adequately demonstrated in innumerable articles and monographs, of which I wish to cite here only the following: D. Seip, *Maal og Minne* 1919. 85-90; A. Sommerfelt, *Festskrift til Hjalmar Falk* 42-9 (Oslo, 1927); E. Neuman, *APhS* 4.193-246 (1929-30); B. Hesselman, *Omljud och brytning i de nordiska språken* (Upsala, 1945); H. Andersen, *Arkiv* 61.157-70 (1946), and *Festskrift til Peter Skautrup* 9-15 (Århus, 1956); the comments by T. Johannisson, A. Janzén, and H. Andersen in "Nordistmødet i København," *APhS* 19.1-61 (1947); H. Penzl, *Arkiv* 66.1-15 (1951); and M. I. Steblin-Kamenskij, *Arkiv* 74.105-11 (1959). My presentation of the simultaneous rise of the various umlaut allophones necessarily implies rejection of Kock's period theory. There thus remains the problem of accounting for the lack of umlaut in such forms as OIcel. *talþa*. To my mind, no entirely satisfactory explanation has yet been offered, although there seems to be some merit in various proposals in which the stress patterns and types of internal juncture in words with long and short roots are credited with permitting or preventing mutation. Alois Walde was apparently the first to propose that there was a different type of juncture in long and short stems and to deny (in contrast to Kock) that the presence or absence of mutation is dependent on the time of the syncope or apocope of /i/ (*Die*



*þǫðlingr* 'nobleman' < \**ǫðlingr* < \**apuling-*. The assumption of the simultaneous appearance of the various allophones in Proto-Germanic makes it possible to account for the dual mutation as an example of combined umlaut by which /a/ was subjected to the raising influence of both /-i/ and /-u/, while the fronting and retracting influences of these phonemes were neutralized. The result is a higher central allophone of /a/, i.e. \**apuling-* [əpuling-]. Again, we must inquire about the origin of the rounding in *þǫðlingr*. It cannot derive from the basic phoneme /a/, nor from *u*-umlaut, at whatever stage we assume the *u*-umlaut to have occurred.

By the time of the First Grammarian (middle of the 12th century), the 12-phoneme system of pre-Icelandic had already undergone significant modifications. The high front rounded /y/ and the high back spread /u/ had coalesced into a single phoneme written *y*. Whether this phoneme was actually front rounded, as generally assumed for this stage, may be questioned. It coalesces with the front spread /i/ in modern Icelandic,<sup>19</sup> and may therefore be best described as a high central phoneme /i/. This description is supported by the fact that the high-mid front rounded /ø/ and the high-mid back spread /Λ/ fall together with the low-mid central /ə/ into a single phoneme written *ø*, which also seems best described as a central vowel /è/ rather than a front rounded one. It is at this point that \**/sakkua/* and \**/səkkua/* > /*sèkkua/* *søkkua* and \**/əpuling-/* > /*èðlingr/* *þǫðlingr*. At the time of the First Grammarian, then, the phonemic system of Icelandic was:

	FRONT SPREAD	CENTRAL	BACK ROUNDED
HIGH	/i/ <i>i</i>	/i/ <i>y</i>	/u/ <i>u</i>
HIGH-MID	/e/ <i>e</i>	/è/ <i>ø</i>	/o/ <i>o</i>
LOW-MID	/æ/ <i>æ, e</i>		/a/ <i>ø</i>
LOW	/a/ <i>a</i>		

This 3+3+2+1 system was further modified through the coalescence of /i/ with /i/, of /æ/ with /e/, and of /a/ with /è/, producing the modern Icelandic system, which may be described as having the pattern 2+2+1 with a mid

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*germanischen Auslautsgesetze* 189-90 and 198 [Halle, 1900]). Closely allied to Walde's theory are the rhythm and stress hypotheses of Sommerfelt and Neuman. The juncture and stress theories have the virtue that they permit an explanation for the failure of mutation allophones to develop in the short stems without positing an artificial division of mutation into two periods separated by an interval in which the process was dormant. If open juncture between the root and the following syllable was a hindrance to assimilation (and thus to the formation of umlaut allophones), then we cannot agree with Penzl's statement, 'If a form without umlaut is not analogical, it can only go back to a form from which the *i*-sound was lost before the development of those allophonic variations that led to umlaut' (*Lg.* 25.229 [1949]). The problem is, of course, too complex to be discussed here in detail, but it may be pointed out that the anticipatory assimilation which is mutation is limited by junctural phenomena to vowel phonemes within single words. When the open juncture (in this case external) is removed, mutation can occur, as seen from the classic examples taken from Otfrid's Old High German: *meg ih* 'kann ich', *drenk ih* 'trank ich', *werf iz* 'warf es', *geb imo* 'gab ihm' (Braune-Mitzka, *Ahd. Grammatik* §26, Anm. 3 [Tübingen, 1953]).

<sup>19</sup> Indicated in the orthography about 1550; see Noreen §103.

central phoneme:<sup>20</sup>

	FRONT SPREAD	CENTRAL	BACK ROUNDED
HIGH	/i/ <i>i, y</i>		/u/ <i>u</i>
MID	/e/ <i>e</i>	/è/ <i>ö</i>	/o/ <i>o</i>
LOW		/a/ <i>a</i>	

Einar Haugen, in his description of the modern Icelandic system, lists the contrasts as simply unround, neutral, and round, and he classifies /è/ *ö* as mid round (i.e. in the back series below /u/), placing /o/ *o* in the mid neutral category. This, of course, would represent a shift in the historical development of the system. He does this because /o/ combines with both /j/ and /w/ to form unround and round diphthongs, but /è/ *ö* combines only with /j/ to form a neutral diphthong. Phonetically, Haugen lists short [ö] *ö* as neutral and short [o] *o* as back round.<sup>21</sup> However appropriate Haugen's description may be from the synchronic point of view, diachronically the shift in position of /o/ and /è/ is not readily comprehensible. The coalescence of Old Icelandic /a/ *ǫ* with /è/ *ø* (< /Δ/, /ø/, and /ə/) is more easily understood if modern Icelandic *ö* represents a central phoneme, and the whole system seems better described in terms of front spread, central, and back rounded.

From the development in Icelandic, it is clear that the Proto-Germanic system of three phonemes was augmented to at least twelve and then reduced again to only six. This is of importance in judging the history of all the living Germanic languages. The distinctions recorded in the orthography of any given dialect actually cover a multiplicity of variations and realignments which are all too easily overlooked.

Before leaving Icelandic, it should be noted that the system derived above for the earliest manuscripts (12th century) finds direct support in the First Grammatical Treatise. In pleading his case for the use of distinctive symbols for the mutated vowels after the pattern of the English, the First Grammarian analyzes these vowels with respect to the vowels of the two outer series, i.e. he compares /è/ *ø* with /e/ and /o/, /i/ *y* with /i/ and /u/, /æ/ *ę* with /a/ and /e/, and /a/ *ǫ* with /a/ and /o/. Nowhere does he mention lip-rounding as a distinctive feature, but merely the degree of aperture.<sup>22</sup> The exact shape of the ligatures which the First Grammarian proposed is not known, but the earliest Icelandic manuscripts use the digraph *eo* for what I have designated /è/, *y* for /i/, and *ao* for /a/.<sup>23</sup>

Now, it is generally assumed that the Icelanders received their ligatures for mutated vowels from the English,<sup>24</sup> and that *ø* is a combination of *o* + *e*.<sup>25</sup>

<sup>20</sup> Similar to the system proposed for Chaucerian Middle English by Hockett, *Manual of phonology* 86. For the Icelandic changes, see Noreen §§89, 91b, and 103.

<sup>21</sup> *Lg.* 34.65 and 69–70 (1958).

<sup>22</sup> Haugen, *Language monograph* 25.13–4.

<sup>23</sup> H. Spehr, *Der ursprung der isländischen schrift und ihre weiterbildung bis zur mitte des 13. jahrhunderts* 108 (Halle, 1929).

<sup>24</sup> Spehr 108.

<sup>25</sup> In spite of the First Grammarian's testimony that the symbol *ø* represents *e* + *o*,

Most important in this regard is the peculiar statement in the Third Grammatical Treatise (ca. 1245), according to which there are four 'diphthongs' (i.e. digraphs) in Latin and five in runes, one of the Latin 'diphthongs' not being found in runes, and two of the 'diphthongs' in runes not being found in Latin. The 'diphthongs' common to both are listed as *au*, *ae*, and *ei*; those found only in runes are *ey* and *eo*; the one peculiar to Latin is *oe*.<sup>26</sup> There is here a clear opposition between the native *eo* and Latin *oe*. Ólsen apparently believes that *eo* represents the prototype of *io* [jo] (< *e* by breaking) and discounts a superscribed *ø* found in the manuscript as 'an unsuccessful attempt [by a later scribe] to interpret *eo*'.<sup>27</sup> It is hardly possible, however, for *eo* to represent the true diphthong [jo], since there is no corresponding designation for [ja] (< *e* by breaking). Furthermore, it would be strange that the vowel which is the product of the *i*-umlaut of *o* (and of the coalescence with it of *ø*) should not be represented in the system described by the Third Grammarian. The meaning of this entire passage becomes clear only if we assume that *eo* is the designation of a mutated vowel in the high-mid series and that *oe* was reserved for Latin, i.e. it was not used in the early Icelandic orthography.<sup>28</sup> It follows, therefore, that the Icelanders borrowed *eo* from the English to designate their high-mid central phoneme and developed their own ligature from it as described in the First Grammatical Treatise. It should be noted that the assumed borrowing of Old English *oe* as the model for *ø* entails a chronological discrepancy: the First Grammarian wrote in the 12th century, i.e. in the Middle English period. It is extremely unlikely that he could have been familiar with the practices of Old English scribes. The adoption of English *eo* for a high-mid central phoneme in Icelandic correlates very well with the developments in Middle English, as does the use of *y* for the high central phoneme (see §2.5).

**2.3. PRE-ANGLIAN OLD ENGLISH.** The 12-phoneme system which was derived for Proto-Germanic in §2.1 looks very similar to that proposed by Hockett for pre-Anglian Old English; but in actual fact there are some significant differences, including an additional phoneme which I have designated /ə/.<sup>29</sup> In Anglo-Frisian, a basic shift in the phonemic structure inherited from West Germanic took place by which the low phoneme /a/ split and in most positions became /æ/. It is interesting and important to note that the conditions under which /a/ did not become /æ/ are the very ones under which *u*-umlaut (including 'breaking') occurs, in addition to those instances in which /a/ was followed by /-a/ in the next syllable or by a nasal.<sup>30</sup> The clue to the nature of this shift is given to us by the development of /a/ when followed by /-u-/ in a medial syllable and by /-i/ in the third syllable, e.g. Proto-Gmc. \*/aþuling-/. OE *æðeling* 'nobleman' can

Spehr believes that 'In wirklichkeit stimmt die erklärung wohl nur für *ao* [i.e. *a* + *o*] > *ø*' (108, fn. 6).

<sup>26</sup> *oe* has been inserted by the editor in place of the manuscript's sign for *oc* 'and', which must be a scribal error; B. M. Ólsen, ed., *Den tredje og fjærde grammatiske afhandling i Snorres Edda* 47-8 (Copenhagen, 1884).

<sup>27</sup> Ólsen 48, note to line 35.

<sup>28</sup> See my dissertation §1.3.

<sup>29</sup> Note that Hockett's /ə/ = my /ʌ/, Hockett's /i/ = my /ʊ/, Hockett's /a/ = my /ə/, and that I operate with four tongue heights in contrast to Hockett's three.

<sup>30</sup> See Sievers-Brunner, *Altenglische Grammatik* §10 and §14 (Halle, 1942).

and must be derived from the Proto-Germanic realization of \*/aþuling-/ as \*[əþuling-], just as was the case for OIcel. *þǫðlingr* (see §2.2).

Before the shift of the /a/ phoneme in Anglo-Frisian, the phonemic-allophonic system was identical with that posited for Proto-Icelandic:

/i/	[ɯ]	[y]	/u/
/e/ <sup>1</sup>	[ʌ]	[ø]	/o/
[æ] <sup>2</sup>	[ə] <sup>3</sup>	[ɑ] <sup>4</sup>	
	/a/ <sup>5</sup>		

The /a/ phoneme was realized in four allophones: front raised [æ] before /-i/, e.g. n. a. pl. [gæsti-]; central raised [ə] before /-u-/ + /-i/, e.g. [əþuling-]; back raised [ɑ] before /-u/, e.g. n. a. pl. [fatu]; and central low [a] before /-a/, /-e/, and /-/- (as well as nasals), e.g. g. pl. [fata], d. sg. [fate], n. sg. [fat]. At this point, however, the /a/ phoneme, including its various allophones, shifted forward. The only allophone which did not participate in the shift was [a] when it was followed by /-a/ (or a nasal). As a result of the shift, [æ] was further fronted and raised and joined the /e/ phoneme, e.g. [gæsti-] > /gesti-/; [ə] took the front position vacated by old [æ], e.g. [əðuling-] > [æðuling-]; [ɑ] took up the central position vacated by old [ə], e.g. [fatu] > [fətu]; while [a] underwent a split: before /-e/ and /-/- it took part in the shift to the front, joining old [ə] in the new [æ], e.g. [fate] > [fæte], [fat] > [fæt], but before /-a/ (and nasals) it remained low central [a], e.g. [fata]. After this realignment and the phonemicization of all the variants, the phonemic system of pre-Anglian Old English can be represented as follows:<sup>31</sup>

	FRONT		CENTRAL	BACK	
	SPREAD	ROUNDED		SPREAD	ROUNDED
HIGH	/i/ <i>i</i>	/y/ <i>y</i>		/ɯ/ <i>io</i>	/u/ <i>u</i>
HIGH-MID	/e/ <sup>1,2</sup> <i>e</i>	/ø/ <i>oe</i>		/ʌ/ <i>eo</i>	/o/ <i>o</i>
LOW-MID		/æ/ <sup>3,5</sup> <i>æ</i>	/ə/ <sup>4</sup> <i>ea</i>		
LOW			/a/ <sup>5</sup> <i>a</i>		

The 4+4+2+1 system thus derived has considerable advantages over the (2+2+1)+(2×3) system proposed by Hockett (see §1.1), since it makes the historical development both before and after this stage of pre-Anglian Old English and in West Saxon (see §2.4) easier to comprehend.

From Hockett's description, one gets the impression that the *æ* in *æðeling* represents the *i*-mutation of *a*, but such an assumption obscures the relationship between the various reflexes of Proto-Gmc. *a* in Anglian Old English (*a*, *e*, *æ*, and *ea*).<sup>32</sup> If *æ* is the *i*-umlaut of *a*, then the latter could not have been rounded

<sup>31</sup> The numbers indicate the origin of the phonemes in comparison with the Proto-Germanic diagram above. I have not included here the development of /a/ before nasals, which may well have resulted in a new back allophone; see Sievers-Brunner §79, and Campbell §40.

<sup>32</sup> In this comparison of the system proposed by Hockett with the one I am suggesting, I shall use the Old English designations of the phonemes for the sake of clarity, since I have found it necessary to use some of Hockett's symbols with values different from those which he intended.

and could not have occupied the structural position which Hockett posits for it. The problem is actually one of justifying the two back reflexes of Proto-Gmc. *a* in Hockett's scheme. By characterizing *ea* as a back spread and *a* as a back rounded phoneme, Hockett retains the four dimensions of his high and mid series in the low series (with the resulting hole in the pattern). As we have seen, the primary phonemes *i* and *u*, from which all phonemes of the high and high-mid (Hockett's mid) series derive, contrasted in respect to front-back and spread-rounded. Old English *æ*, *ea*, and *a*, however, all derive from the primary phoneme *a*, which was neutral with respect to front-back and spread-rounded (see §2.1). The introduction of rounding in these reflexes could only be a secondary innovation not connected directly with mutation. From the overall development of the Anglo-Frisian phonemic system, one must ask why the *i*-umlaut of Proto-Gmc. *a* in one instance is *e* (*gesti-*), while in another it is *æ* (*æðeling*). This question can only be answered by taking into consideration the development of mutation allophones in Proto-Germanic and the rearrangement of this phonemic-allophonic structure caused by the Anglo-Frisian shift in the *a*-phoneme.

Similarly, from Hockett's presentation, *ea* would seem to be the result of a back mutation of *æ*.<sup>33</sup> It is not possible, however, to reconcile *ea* as the back mutation of *æ*, and *æ* as the front mutation of *a*. Since, according to Hockett, all three of these phonemes have the same tongue elevation, and since the contrast spread-rounded cannot be present, the front mutation of the back member of the series and the back mutation of the front member should both result in a central phoneme. The development of front and back allophones of the various phonemes in Proto-Germanic makes it possible to understand the Old English phenomena of front and back mutation as manifestations of a single assimilatory tendency, and when we take into consideration the changes brought about by the Anglo-Frisian shift in the *a*-phoneme, we are able to see the true relationship between the Old English reflexes and to make a direct comparison between Old Icelandic *þðlingr* and Old English *æðeling*.

Another difference in the development of the phonemic systems of Old English and Old Icelandic should be mentioned here. In Proto-English, back allophones were conditioned not only by /-u/ and velar consonants, but also by /-ǔ/ (which undoubtedly should be interpreted as a rather high back phoneme). The Old English handbooks also list /-a/, which is always the reflex of older /-ǔ/, as a conditioning factor and call the mutation 'o/a-umlaut' when the 'velar umlaut' is not actually traceable to /-u/.<sup>34</sup> If we agree with Hockett that breaking and velar umlaut are essentially the same phenomenon, we must look to the unstressed vowels which cause this modification for the moment of the phonemicization of the back allophones, since, for the most part, the consonants were not reduced in any way and the allophones brought forth by them in the root syllables would have remained conditioned variants. It is obvious that the factor which led to the phonemicization was the reduction of original /-ǔ/ to /-a/. When this

<sup>33</sup> An intermediate stage *æ* is usually assumed in the handbooks for the development from Proto-Gmc. *a* to OE *ea*; cf. Sievers-Brunner §84, Anm. 1, and Campbell §139, fn. 1.

<sup>34</sup> Cf. Sievers-Brunner §93 and §108.2, and Campbell §205 and fn. 2.



reduction occurred, the back allophones were no longer conditioned variants in this position and the allophones which were still followed by the other conditioning factors (/u/, /h/, /r/ + cons., /l/ + cons., and /w/ not followed by /i/ or /j/) were then associated with the new phonemes.

**2.4. WEST SAXON.** In the treatment of Proto-Germanic and its development into Old Icelandic and pre-Anglian Old English, I have disregarded certain finer shades of mutation which must be considered when dealing with West Saxon. The mutation allophones posited above for Proto-Germanic are not the only ones possible, nor even the only ones probable. There is considerable evidence from various Germanic languages that allophonic variants were actually present in many instances which are usually overlooked in the discussion of mutation. Reflexes of some of these allophones are found in certain dialects, but often they have been completely lost from the mainstream of the language.<sup>35</sup> In West Saxon *ie*, representing the front mutation of *io* and *ea*, we undoubtedly have an instance of the retention of a distinction which was lost in the other dialects of Old English (and in Old Icelandic).

In addition to the front spread, front rounded, back spread, and back rounded allophones of the two highest tongue positions, there must also have been in Proto-Germanic central spread and central rounded allophones which resulted from combined umlaut, e.g. Proto-Gmc. \*/girnjan-/ must have been realized as [girnjan-], in which the retracting influence of /r/ + cons. and the fronting influence of /i/ counteracted each other to produce the high central spread allophone [i]. With the reduction of /i/, Proto-Gmc. \*/girnjan-/ [girnjan-] > WS /giran/ [giran] *giernan*. The allophone [i] is described as (high central) spread, since it derives from the spread phoneme /i/. If a rounded phoneme occurred in a position conducive to combined umlaut, the result would be a central rounded allophone. Such allophones do not seem to have left any trace in the dialects under consideration, so we may disregard them and label [i] merely high central. In a like manner, if /e/ came to stand in an environment calling for combined umlaut (through analogical leveling or other extraneous influences), we should expect the rise of a high-mid central (spread) allophone [ê]; such an allophone may actually be represented by the *e* of such non-West-Saxon forms as *erming*,<sup>36</sup> in which the development would have been the result of the introduction of the /e/ phoneme in the necessary environment as the result of the Anglo-Frisian shift in the /a/ phoneme, which we may represent as follows. Since Proto-Gmc. [ə], the result of the combined umlaut of /a/, is in fact a modified front mutation (i.e. it occurs before /i/, but is not fronted as far as [æ] because of the influence of /u-/), we may also represent it as [æ>], an allophone of /a/ somewhat further back than [æ]. With the Anglo-Frisian shift in which [æ] joined the /e/ phoneme, Proto-Gmc. \*/arming-/ [æ\_rming-] > \*/erming-/ [e>rm-ing-], in which [e>] is an allophone of /e/ further back than [e] but not as far back as [ʌ], i.e. a central (spread) allophone [ê]. In West Saxon, /ê/ has already coalesced with /i/, and, like the latter, is written *ie*.

<sup>35</sup> See note 14.

<sup>36</sup> See Sievers-Brunner §105.



In Anglian, [æ>] did not join the /e/ phoneme along with [æ], but remained an allophone of /a/, joining [a] in its shift to the new [æ].<sup>37</sup> The evidence would suggest that the higher central phonemes /i/ and /è/ coalesced with the back spread phonemes /u/ and /Λ/ in Anglian. Compare North. *giorna*, *hiorde*, Merc. *heorde*, *eorre*, in which we have a back spread phoneme (and the coalescence of /u/ and /Λ/) in place of the central /i/ found in WS *giernan*, *hierde*, *ierre*.<sup>38</sup>

The pre-West-Saxon phonemic system was therefore:

	FRONT		CENTRAL	BACK	
	SPREAD	ROUNDED		SPREAD	ROUNDED
HIGH	/i/ <i>i</i>	/y/ <i>y</i>	/i/ <i>ie</i>	/u/ <i>io</i>	/u/ <i>u</i>
HIGH-MID	/e/ <i>e</i>	/ø/ <i>e, oe</i>	/è/ <i>ie</i>	/Λ/ <i>eo</i>	/o/ <i>o</i>
LOW-MID	/æ/ <i>æ</i>		/ə/ <i>ea</i>		
LOW			/a/ <i>a</i>		

The essential difference in the structure of pre-Anglian and pre-West-Saxon Old English is then the retention of finer allophonic distinctions in the latter.

**2.5. MIDDLE ENGLISH.** The further development of the phonemic system in East Midlands Middle English also supports the assumption of a 4 + 4 + 2 + 1 system for pre-Anglian (§2.3). As Hockett has pointed out (see §1.1), the original pre-Anglian structure had already undergone some modifications by the time of the Vespasian Scribe (or his predecessor) in that /u/ *io* shows signs of coalescing with /Λ/ *eo*, and /ə/ *ea* shows signs of coalescing with /a/ *a* or /Λ/ *eo*. Other changes in the Old English period indicate a tendency to unround the front rounded phonemes /y/ and /ø/, so that these fall together with the front spread /i/ and /e/ respectively. In the Middle English period, /ə/ *ea* and /æ/ *æ* coalesce and then join once again with the /a/ phoneme. The result is the simple 2 + 2 + 1 system with a mid central phoneme.<sup>39</sup>

	FRONT SPREAD	CENTRAL	BACK ROUNDED
HIGH	/i/		/u/
MID	/e/	/è/ <i>eo</i>	/o/
LOW		/a/	

With the unrounding of the front rounded phonemes, the number of dimensions in the mid (former high-mid) series is reduced from four to three, and the relationship of /Λ/ *eo* to /e/ and /o/ can now be best described by calling it central and neutral as to spreading and rounding. I have therefore introduced the designation /è/ for this phoneme in early Middle English. The central nature of /è/ *eo* is attested by its later development in Middle English: normally it coalesces with front spread /e/, but when found in environments conducive to rounding, it falls together with back round /o/, e.g. OE /warpan/ > ME

<sup>37</sup> Anglian *e* instead of *æ* before *rc*, *rg*, *rh* is a younger development; see Sievers-Brunner §120, Anm. 2.

<sup>38</sup> In the case of the Anglian forms cited, it is usually maintained that *i*-umlaut did not occur; see Sievers-Brunner §107, Campbell §201.

<sup>39</sup> Cf. K. Brunner, *Die englische Sprache* 1.212–3 (Halle, 1950).

/worpən/ 'throw'.<sup>40</sup> The development of Old English *eo* to Middle English *e* is usually depicted as having passed through an intermediate stage [œ] in the 11th century, which then was followed by unrounding to [e] in the 12th century.<sup>41</sup> Actually, from the historical development of the phonemic system, we see that such an assumption is not necessary, and is indeed incorrect. Since *eo* designates a mid central phoneme in late Old English, there is every reason to assume that the Middle English reflex spelled with *eo*, *ue*, *oe*, *o*, and *u*<sup>42</sup> is the same central phoneme in early Middle English and was never rounded. When coalescence with /e/ occurred, this was the result of a fronting of /è/, not of an unrounding. The falling together of /ə/ *ea* with /æ/ *æ* in early Middle English is also readily understandable as a fronting of the low-mid central phoneme.

In Southwestern Middle English, there was also a high central phoneme /i/ *y*, the reflex of West Saxon *ie*, *i*, *y*, e.g. *yrre* /irrə/ (WS *ierre*). As we have seen, this phoneme was high central even in Old English.

With the establishment of late Old English and early Middle English *eo* and *ie*, *i*, *y* as central phonemes, the borrowing into Old Icelandic of the English spellings *eo* for /è/ and *y* for /i/ is not at all surprising (see §2.2).

**3. SUMMARY.** The phenomena known as *i*-, *a*-, and *u*-umlaut are seen to have developed in a remarkably uniform fashion in Old English and in Old Icelandic. This is of great importance, since these two languages are the oldest representatives (using the Latin alphabet) of the two main branches of living Germanic.

The three phenomena are actually the result of a single tendency which can be traced to the Proto-Germanic period—the partial assimilation of the point of articulation of the root vowel to that of a succeeding phoneme. This is, of course, no new discovery, but certain new aspects come to light. (1) *u*-umlaut does not entail 'labialization'. (2) Old English 'breaking' and velar umlaut are both organically related to Old Icelandic *u*-umlaut. (3) The term 'breaking' must properly be restricted to that phenomenon in Old Icelandic by which short /e/ is diphthongized, i.e. truly 'broken', however one may wish to interpret this diphthongization.<sup>43</sup> (4) The phonetic nature of the sounds represented by medieval spellings is more accurately approximated: Old English *ea*, *eo*, *io*, *ie* =

<sup>40</sup> See Jordan-Matthes, *Handbuch der mittelenenglischen Grammatik*<sup>2</sup> §65 and §66, Anm. 3 (Heidelberg, 1934).

<sup>41</sup> Brunner 1.212–3.

<sup>42</sup> Jordan-Matthes §65.

<sup>43</sup> It is significant that the traditional view of Scandinavian breaking as a type of umlaut has been seriously questioned in recent times by John Svensson, *Diſtongering med palatalt förslag i de nordiska språken* (Lund, 1944), and Valter Jansson, *Nordiska vinnamn* (Upsala, 1951), who believe the breaking to be essentially a spontaneous diphthongization. While the new interpretation has met much opposition (see 'Nordistmødet i København', *APhS* 19.3–61 [1947], I. Hoff, *NTS* 14.315–40 [1947], M. I. Steblin-Kamenskij, *Studia linguistica* 11.84–91 [1957], K. M. Nielsen, *APhS* 24.33–45 [1957]), the fact remains that no one has yet been able to propose a reasonable theory which would explain why *u*-(*w*-)umlaut in Old Icelandic changes *a* > *ø*, *æ* > *ø*, *e* > *ø*, and *i* > *y* (all monophthongs), while breaking affects only *e* and results in a diphthong (cf. L. Posti, *SSUF* 1946–8, 39–59, and J. Fourquet, *Tra-vaux* 1.111–3).

[ə], [ʌ], [ʊ], [i], Middle English *eo ue o u* = [è], *y* (in the Southwest) = [i]; Old Icelandic *ø, y* = [è], [i]. (5) The term 'o/a-umlaut' for Old English is a misnomer: /-a/ did not cause this mutation, but the reduction of /-ō/ to /-a/ was the primary factor in the phonemicization of the back allophones. (6) The relationship between the various reflexes of Proto-Germanic /a/ in Old English becomes clear when we consider the shift and split of Anglo-Frisian /a/ as a fronting of the point of articulation in which all allophones of /a/ took part with the exception of [a] before /-a/ and nasals. (7) The relationship between Old English *æ* in *æðeling* and Old Icelandic *ø* in *øðlingr* is clarified. (8) The assumption that mutation proceeded through medial syllables is rendered obsolete: the mutation did not occur in the manner *\*apuling-* > *\*apyling-* > *æðeling*,<sup>44</sup> but is a combined umlaut in which both succeeding vowels took part simultaneously.

The great common denominator between the mutations in the various Germanic languages is the presence of many conditioned variants of the root vowel phonemes in Proto-Germanic. The supposed absence of *u*-umlaut in East Norse and in continental West Germanic, which heretofore has prevented a uniform theory of mutation in all the Germanic languages,<sup>45</sup> is certainly the result of secondary realignments of the original phonemic-allophonic structure, rather than the failure of such allophones to develop in the precursors of these dialects. I am convinced, for example, that Old High German forms with *i* before *-u* are to be traced to the back spread allophone of Proto-Germanic /i/ [ʊ], which later coalesced with Middle High German /i/, e.g. Proto-Gmc. *\*/friþuz/* [frʊþuz] > OHG /fridu/ [frʊdu] > MHG /fridə/ [fridə] 'peace'.<sup>46</sup> The influence of the consonants /h/, /l/ + cons., and /r/ + cons., as well as of the intervening medial syllables, also points to a much more complicated allophonic system in pre-High-German than has heretofore been accepted. In East Norse, only remnants of *u*-umlaut are to be found, but they are nevertheless indications that East Norse also shared, at one time, the common heritage of back allophones.<sup>47</sup>

<sup>44</sup> Cf. Sievers-Brunner §95, Anm. 2; Campbell §203; Marchand, *Lg.* 33.351-4; and H. Weyhe, *PBB* 31.43-78 (1905-6).

<sup>45</sup> Cf. e.g. C. B. van Haeringen's dilemma, *De germaanse inflexieverschijnselen* ('umlaut' en 'breking') *phonetie beschouwd* 153 (Leiden, 1918).

<sup>46</sup> Cf. R. Kögel, *Literaturblatt für germanische und romanische Philologie* 8.108 (1887); M. Joesten, *Untersuchungen zu ahd. (as.) ë, i vor u der Folgesilbe und zur 1. Pers. Sg. Präs. Ind. der starken e-Verben (Kl. III<sup>b</sup>, IV, V)* (Giessen, 1931); Marchand, *Lg.* 33.346-54 (1957).

<sup>47</sup> See Noreen §7.1, and *Altschwedische Grammatik* §§65-71 (Halle, 1904); P. Skautrup, *Det danske sprogs historie* 1.124-5 and 127-8 (Copenhagen, 1944).