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On the phonemicization
of the Old High German i-*umlauts*

ABSTRACT: In this article it will be argued that the Old High German *i*-umlaut phenomena produced phonemic changes before the factors that triggered them off changed or disappeared. When they reached their final stages, the products of *i*-umlaut became distinctive in the phonological system of the language and contrastive at a lexical level.

1. The Old High German distance assimilation changes generally known as *i*-umlauts affected a great number of vowels, both short and long, as well as the inherited diphthongs.

Since *i*-umlaut is caused by *i*-sounds in the following syllable (/i/, /iː/, /j/), the relevant changes must have taken place before the factors that triggered them off changed or disappeared. This means that *i*-umlaut was completed before or during the Old High German period (ca. 750–1050), even if it is not normally indicated in the available sources, except for the mutation of /a/ (written *e*)[1]. The gap between the time when the relevant changes occurred and the time when the Middle High German available sources begin to indicate (tentatively and inconsistently) the umlauted vowels has generally been regarded as a difficulty in the reconstruction of the phonological processes involved.

In a well-known article published in 1938, William F. Twaddell tried to resolve this difficulty by maintaining that there was no reason for the scribes to indicate the Old

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1. Attempts to indicate the other products of *i*-umlaut are found only in late Old High German, especially in the case of umlauted /u/ (= [yː]), which is sometimes rendered with *iu* after its merger with /iu/ (< PGmc */eu/) – see Braune, Heidermanns 2018: 79.

High German umlauted vowels, since these were merely allophones of the original phonemes. But when the triggering factors changed or disappeared, these allophones became phonemes and the scribes began to indicate the umlauted vowels. This approach was taken up and expanded by Herbert Penzl (1949), while the allophone theory in connection with *i*-umlaut was elaborated by other scholars, Marchand (1956) and Moulton (1961) among others.

This traditional or 'classic' interpretation rests on two assumptions. The first is that the Old and Middle High German periods differed greatly in the representation of the umlauted vowels and diphthongs. This notion may have been prompted by the normalized symbols used in grammars and handbooks, but the actual practice of contemporary scribes shows that there was no great discontinuity between the Old High German and the Middle High German situation, so that for a long time the umlauted vowels continued to be represented with the letters used for the non-umlauted vowels. The confusion between umlauted and non-umlauted vowels shows that the letters of the Latin alphabet were slowly and gradually adapted to the needs of the German language, and that this process of adaptation was probably to a certain extent delayed by the fact that in many instances there was morphological alternation between forms with non-umlauted vowels and forms with umlauted vowels – for example in OHG *holz – holzir* (actually *hölzir*) –, so that the forms with umlauted vowels were orthographically associated with the corresponding non-umlauted vowels (as *holz* in our example) – see Cercignani 2022b.

The second assumption on which the traditional interpretation rests is that the new allophones became phonemes when the relevant sounds in the following syllable changed or disappeared. A serious objection to this view is that the change or loss of the conditioning factors would result in the loss of the relevant allophones. For if a phone is actually conditioned, the change or loss of the conditioning factors results in its reversal to the main phonetic features of the phoneme to which it belongs.

The obvious corollary is that if an alleged allophone does not disappear, it is because the relevant phone has already attained phonemic status. How, then, can an umlaut allophone attain phonemic status? Before examining the specific cases created by the Old High German *i*-umlaut phenomena, it is important to note that the factors which trigger off a change can be adduced to explain a diachronic phenomenon, not necessarily as conditioning factors in the synchronic analysis of the new situation created by the change itself. We should therefore distinguish between two aspects of phonological change: the diachronic phenomenon, which is triggered off by specific factors, and the resulting synchronic situation, which is determined by new systemic distinctions (e.g. /o:/ vs. /ø:/) and new oppositions at a lexical level (e.g. *schon* vs. *schön*).

2. The pre-literary Old High German vowels affected by *i*-umlaut were the back vowels /u:/, /u/, /o:/, /o/, the diphthongs /iu/, /uo/, /ou/, and the central vowels /a:/ and /a/ before *i*-sounds (/i/, /i:/, /j/) in the next syllable. The products of the relevant changes were the front rounded vowels /y:/, /y/, /ø:/, /ø/, the front diphthongs /iy/, /yø/, /øy/, the long

front vowel /æ:/, and the short front vowels /æ/, /ĕ/ (both from /a/). The phoneme /ĕ/ soon shifted to /e/, thus pushing the pre-existing /e/ (< PGmc **/e/) to the lower value /ɛ/.

2.1. The *i*-umlaut of the back vowels resulted in a complete fronting of the original vowels. Obviously, we cannot reconstruct all the intermediate stages of the change, but we may assume that at an early stage the new phones would be somewhat advanced back vowels, a series of allophones that may be rendered with [u̟:], [u̟], [o̟:] and [o̟]. However, at a later stage the new phones would have become front rounded vowels ([y:], [y], [ø:], [ø]), which would be clearly distinct from a whole series of unrounded front vowels (/i:/, /i/, /e:/, /e/) in the phonological system of the language. It was at this point that the new phones became phonemes, since in the front area there was now a systemic distinction between rounded and unrounded vowels. All this may be summarized as follows:

Early stage   Final stage
/u:/ →[u̟:]→→→→→→→   /y:/ ↔ /i:/
/u/ → [u̟]→→→→→→→   /y/ ↔ /i/
/o:/ →[o̟:]→→→→→→→   /ø:/ ↔ /e:/
/o/ → [o̟]→→→→→→→   /ø/ ↔ /e/

From this we may arrive at a general conclusion, namely that a new phone can acquire phonemic status when it becomes distinctive in the phonological system of the language, irrespective of the context in which it occurs at a lexical level. With regard to *i*-umlaut we may observe that 1) when the gradual change reached its final stage, the original triggers ceased to be conditioning factors; 2) the phonemicization of *i*-umlaut occurred when the triggering factors were still present, not when they changed or disappeared.

In the new situation the phonemic oppositions between the rounded front vowels and the unrounded front vowels were obviously present also at a lexical level in equivalent or nearly equivalent proximity (i.e. surrounding) contexts.

Examples[2]:

/y:/ ↔ /i:/, as in *lūten* < **hlūdjan* (MHG *lūten*) 'läuten'[3] and *līta* (MHG *līte*) 'Leite';

/y/ ↔ /i/, as in *luggī* (MHG *lüge* > *lǖge*) 'Lüge' and *liggen* (MHG *ligen* > *līgen*) 'liegen';

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2. When not otherwise stated, all the examples cited in this article are taken from AWB (1952–); Köbler (2014) and MWB (2006–).

3. The *ä* in *läuten* is due to the analogy of the *a* in *Laut*, the historical spelling of the OHG MHG form (written *luten*, *liuten*) being *leuten* (see Grimm, Grimm 1965–2018: s.v. *läuten*), which has *eu* representing earlier /øy/ (/y:/ > /ɤy/ > /øy/ > /œɤ/ > /ɔɪ/). Cf. *Leute* (OHG *liuti*, MHG *liute*), with /y:/ from /iy/ (umlauted /iu/), and *heute* (OHG *hiutu*, MHG *hiute*) with /y:/ from /iu/.

/ø:/ ↔ /e:/, as in *ōri* (MHG *ȫre*) 'Öhr, Nadelöhr' and *ērī* beside *ēra* (MHG *ēre*) 'Ehre';

/ø/ ↔ /e/, as in *holī*[4] (MHG *höle > hȫle*) 'Höhle' and *helī* (MHG *hele > hēle*) 'Hehl'.

If we consider that in the Old High German period unstressed long vowels had probably become short in the spoken language, the above instance *ōri* ↔ *ērī* could in fact be adduced as a minimal pair, in addition to *holī* ↔ *helī*.

Having become phonemes, the new rounded front vowels /y:/, /y/, /ø:/, /ø/ now contrasted also with the rounded back vowels /u:/, /u/, /o:/, /o/ both at a systemic level and at a lexical level in equivalent or nearly equivalent proximity contexts. From a diachronic point of view, this implies that the Old High German *i*-umlaut of the back vowels produced a series of simple splits, which can be exemplified as follows:

– split of /u:/ into /u:/ and /y:/, as in *(h)lūtēn* (MHG *lūten*) 'lauten' and *lūten* (MHG *lūten*) 'läuten'[5];

– split of /u/ into /u/ and /y/, as in *brunno* (MHG *brunne*) 'Brunnen' (obsolete 'Brunne')[6] and *brunnī* (MHG *brünne*) 'Brünne';

– split of /o:/ into /o:/ and /ø:/, as in *scōno* (MHG *schōne*) 'schon' and *scōni* (MHG *schȫne*) 'schön'[7];

– split of /o/ into /o/ and /ø/, as in *holo* (MHG *hole > hōle*) 'Loch' (obsolete 'Hohle')[8] and *holī*[9] (MHG *höle > hȫle*) 'Höhle'.

2.2. The Old High German *i*-umlaut produced similar results with regard to the relevant elements of the diphthongs /iu/, /uo/, /ou/. When these came to exhibit the rounded front values [y] and [ø], the new diphthongs attained phonemic status, in that they became systemically distinct from the pre-existing diphthong /ai/ > /ei/, which had unrounded front features in the second element.

In the new situation the phonemic oppositions between the new front diphthongs /iy/, /yø/, /øy/ and the diphthong /ai/ > /ei/ were obviously present also at a lexical level in equivalent or nearly equivalent proximity contexts.

Examples:

/iy/ ↔ /ei/, as in *liuti* (MHG *liute = lūte*) 'Leute' and *leitī* (MHG *leite*) 'Leitung';

/yø/ ↔ /ei/, as in *bruoten < *brōdjan* (MHG *brüeten*) 'brüten' and *breiten* (MHG *breiten*) 'breiten';

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4. The form *holī* (originally **hulī-* > MHG *hüle*) appears to derive from a new formation **holī-* on the analogy of **hola-* < **hula-* (OHG *hol*). Both MHG *höle* and *hole* (**hulō-*), as well as MHG *lüge*, *ligen* and *hele*, underwent open syllable lengthening.

5. On OHG *lūten*, MHG *lūten* (written *luten*, *liuten*) see fn. 3, above.

6. See Grimm, Grimm 1965–2018: s.v. *Brunne*, where *Brunnen* is referred to as the false nominative form.

7. Note also *ōri* (MHG *ȫre*) 'Öhr, Nadelöhr' ↔ *ōra* (MHG *ōre*) 'Ohr'.

8. See Grimm, Grimm 1965–2018: s.v. *Hohle*: «in der bedeutung hohlheit, höhlung».

9. For the form *holī* see fn. 3.

/øy/ ↔ /ei/, as in *ougen* < *augjan (MGH *öugen*) 'äugen'[10] and *eigan* (MHG *eigen*) 'eigen'.

Again, if we consider that in the Old High German period unstressed long vowels had probably become short in the spoken language, the above instance *liuti* ↔ *leitī* could in fact be adduced as a minimal pair, in addition to *bruoten* ↔ *breiten*.

Having become phonemes, the new diphthongs /iy/, /yø/, /øy/ now contrasted also with /iu/, /uo/, /ou/ both at a systemic level and at a lexical level in equivalent or nearly equivalent proximity contexts. From a diachronic point of view, this implies that the Old High German *i*-umlaut of the diphthongs /iu/, /uo/, /ou/ produced a series of simple splits, which can be exemplified as follows:

– split of /iu/ into /iu/ and /iy/, as in *hiuru* (MHG *hiure* = *hūre*) 'heuer' and *hiuri* (MHG *[ge]hiure* = *hūre*) 'geheuer, einfältig';

– split of /uo/ into /uo/ and /yø/, as in *suozo* (MHG *sueze*, adv.)[11] and *suozi* (MHG *süeze*) 'süß'.

– split of /ou/ into /ou/ and /øy/, as in *houwa* (MHG *houwe*) 'Haue' and *houwi* (MHG *höuwe*) 'Heu';

With regard to the *i*-umlaut of /iu/, it should be noted that soon after its rise, the phoneme /iy/ generally merged with /y:/ from umlauted /u:/. Before the end of the Old High German period a similar merger affected also non-umlauted /iu/ in vast areas of Alemannic and Franconian (see Wiesinger 1970: II, 233 f.). This explains why *Leute* (OHG *liuti*, MHG *liute* = *lūte*) and *heute* (OHG *hiutu*, MHG *hiute*) now exhibit the same diphthong, which is due to the historical development /y:/ > /ɣy/ > /øy/ (written *eu*) > /œY/ > /ɔɪ/).

2.3. The *i*-umlaut of the central low vowel /a:/ implies raising and fronting of [a:] to [æ:]. When it came to exhibit front features, the new phone [æ:] attained phonemic status, in that it became systemically distinct from the other front vowels, the pre-existing /e:/ and /i:/.

In the new situation the phonemic oppositions between /æ:/ and /i:/, /e:/ were obviously present also at a lexical level in equivalent or nearly equivalent proximity contexts.

Examples, with an occasional minimal pair:

/æ:/ ↔ /i:/, as in *wāhī* (MHG *wāhe*) '(obsolete) Wähe'[12] and *wīhī* (MHG *wīhe*) 'Weihe';

/æ:/ ↔ /e:/, as in *māri* (MHG *māre*) 'Mär' and *mēriro* beside *mēroro* (MHG *mēr[e]*) 'mehr';

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10. The obsolete spelling *eugen* (Grimm, Grimm 1965–2018: s.v. *äugen*) has been replaced by *äugen* on the analogy of *Auge*.

11. Cf. also *fruoi* (MHG *vrüeje*) 'früh' vs. *fruo* (MHG *frue*, adj.) – KSW 2018: § A 154.

12. Grimm, Grimm 1965–2018: s.v. *Wähe* f.: 'zierlichkeit, herrlichkeit'.

Having become a phoneme, the new front vowel /æ:/ now contrasted also with /a:/ both at a systemic level and at a lexical level in equivalent or nearly equivalent proximity contexts. From a diachronic point of view, this implies that the Old High German *i*-umlaut of /a:/ produced a simple split, which can be exemplified as follows:

– split of /a:/ into /a:/ and /æ:/, as in *swāro* adv. (MHG *swar*) and *swāri*, adj. (MHG *swār[e]*) 'schwer'[13].

2.4. The available evidence shows that the *i*-umlaut of /a/ produced two different results: 1) a low front vowel, when the raising and fronting influence of the *i*-sounds in the next syllable was counteracted by certain consonant clusters[14]; 2) a higher front vowel in other contexts. The first case will be referred to as "weak *i*-umlaut of /a/" and the second as "strong *i*-umlaut of /a/"[15].

Obviously, we cannot reconstruct all the intermediate stages of these changes, but we may assume that the weak umlaut of /a/ produced a vowel /æ/ and that the strong *i*-umlaut of /a/ produced a slightly centralized close /ë/ which, though written *e* like the reflex of PGmc **/e/, was in fact a different phoneme[16]. A subsequent re-adjustment of the unrounded front vowels resulted in a lowering and fronting of the new /ë/ to /e/ and, consequently, in a lowering to /ε/ of the pre-existing /e/ (< PGmc **/e/).

Both [æ] and [ë] became systemically distinctive among the unrounded front vowels, since they were clearly distinct from the pre-existing front vowels /e/ and /i/.

In the new situation the phonemic oppositions between /æ/, /ë/ and /e/, /i/ were obviously present also at a lexical level in equivalent or nearly equivalent proximity contexts.

Examples of the new oppositions between /æ/ and /e/, /i/:

/æ/ ↔ /e/, as in *[gi]slahti* (MHG *geslähte*) 'Geschlecht' and *slehtī* (MHG *slehte*) 'Fläche';

/æ/ ↔ /i/, as in *[gi]slahti* (MHG *geslähte*) 'Geschlecht' and *slihtī* (MHG *slihte*) 'Schlichtheit'.

As already noted, if we consider that in the Old High German period unstressed long vowels had probably become short in the spoken language, the above instances *slahti* ↔ *slehtī* and *slahti* ↔ *slihtī* could in fact be adduced as minimal pairs.

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13. OHG /æ:/, MHG /ε:/ may give either /ε:/ or /e:/ in Present Standard German. See Cercignani 2022a.
14. The relevant clusters were /ht/, /hs/ or consonant plus /w/ in the whole of the Old High German area (Franconian and Upper German). In Upper German also when the intervening clusters were /l/ or /r/ plus consonant, /h(h)/ from PGmc /k/, or /h/ from PGmc /h/.
15. The traditional terms are "primary umlaut" and "secondary umlaut", which were devised to indicate that the stage [e] was reached in Old High German and that the stage [æ] belongs to Middle High German. As emphasized above, however, *i*-umlaut was completed before or during the Old High German period (ca. 750–1050).
16. The separate identity of the two vowels is confirmed by Middle High German rhymes and by recent dialects that show different reflexes of the two vowels – references in Braune, Heidermanns (2018: 48, fn. 1).

Examples of the new oppositions between /ë̆/ and /e/, /i/, with an occasional minimal pair:

/ë̆/ ↔ /e/, as in *belgen* (< **balgjan*) '(obsolete) bälgen'[17] and *belgan* (< **belgan*) '(obsolete) belgen'[18];

/ë̆/ ↔ /i/, as in *fellen* (< **falljan*) 'fällen'[19] and *fillen* (< **filljan* < **felljan*) 'Fell abziehen'.

Having become phonemes, /æ/ and /ë̆/ now contrasted also with /a:/, both at a systemic level and at a lexical level in equivalent or nearly equivalent proximity contexts. From a diachronic point of view, this implies that the Old High German *i*-umlaut of /a/ produced a split of /a/ into /a/, /æ/ and /ë̆/. Examples:

– split of /a/ into /a/ and /æ:/, as in *slahta* 'Schlacht' and *[gi]slahti* 'Geschlecht';

– split of /a/ into /a/ and /ë̆/, as in *balg* 'Balg' and *belgen* (< **balgjan*) '(obsolete) bälgen'[20].

As anticipated above, a subsequent re-adjustment of the unrounded front vowels resulted in a lowering and fronting of the new /ë̆/ to /e/ and, consequently, in a lowering to /ɛ/ of the pre-existing /e/ (< PGmc **/e/).

As a result of these developments, Old High German came to exhibit three types of short *e*-sounds: /e/, /ɛ/, and /æ/. This state of affairs is not surprising, especially if one considers that three types of short *e*-sounds are reported from Modern Swiss German (see Russ 1990: 369), where their distribution is, however, somewhat different. In the line of development that led to Present Standard German, the three vowels were later reduced to one, the antecedent of today's /ɛ/ (see Cercignani 2022a).

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17. See Grimm, Grimm 1965–2018: s.v. *bälgen* (to flay or skin), which has *ä* instead of *e* on the analogy of *Balg*.

18. See Grimm, Grimm 1965–2018: s.v. *belgen* (to quarrel or wrangle). Cf. the new formation *balgen* from *Balg*.

19. The causative *fällen* has *ä* instead of the historical *e* on the analogy of *fallen* and *Fall*.

20. For the spelling *bälgen* see fn. 17, above.

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