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Old English Without Short Diphthongs: The Outlines of a New Interpretation

Abstract

The traditional interpretation of Old English (OE) spelling is problematic in (1) positing short diphthongs, not otherwise known to exist, and (2) not resolving various coincidences involving the spelling/writing of Old Irish (OI): that OI uses spellings that appear to represent short diphthongs (*gaib*) but do not, and that OE is written in the Irish hand. Both problems can be solved by positing that the spelling/writing system of OE was developed by Irish missionary linguists who perceived OE as being like OI in having front and back consonants, and spelt OE in the manner of OI: using front or back vowels as diacritics for front or back consonants.

1. Introduction

Old English (OE) and Old Irish (OI) share what may be called "under-moraic" spellings: two consecutive Vs that do not count as two moras. Some examples are OE *beorn* 'warrior' and OI *gaib* 'take' and *biur* 'bear-I'.[1] Though the long-standing conventional wisdom is, by omission, that the co-occurrence of under-moraic spellings in OE and OI is a coincidence, this seems improbable in two spelling systems that were adjacent and contemporaneous and show other signs of having been connected, such as using the same (Irish) hand (Hogg 1992, 10) and the same (Irish) kind of ink (Green 1998, 268). Furthermore, though Irish of all periods uses under-moraic spelling and (till recently) the Irish hand, English uses under-moraic spellings only while it also uses the Irish hand, during the Old period. Overall, the two usages are strongly associated. Purely historical considerations also indicate non-coincidence. To quote Morris (1973, 392)

> Aedan's [Irish] church was spread by the conquering armies of Northumbria, who made themselves masters of England. When the West Saxon king was persuaded to accept Christianity, his Northumbrian suzerain stood sponsor at his baptism; the kings of the Mercians… went north for baptism by the banks of the Tyne. In the south and the midlands, as well as in the north, monasteries modeled on [Irish] Iona proliferated… and Irish teachers established themselves in ruined Roman forts or towns.

Essentially the same point is made by Mayr-Harting (1991, 99). Given the full range of evidence, which has long been known, Mossé (1945, 31) reasonably concludes that "it was Irishmen who taught the English to write the sounds of their language" (transl. DLW). Reasons will be given below to think that this is indeed what happened.

As for how the evident non-coincidence arose, there are four realistic possibilities, depending on how we answer two questions. The first question is whether under-moraic spellings in OE and OI were (originally) intended to represent (1) phonemic short diphthongs, or (2) short monophthongs followed by front or back Cs. (From here on, "short diphthongs" will be used to mean "phonemic short diphthongs" unless otherwise noted.) Using underlining to represent super-short elements, OE *beorn* and OI *gaib* could have meant (1) /b<u>eo</u>rn/ and /g<u>ai</u>v/, or (2) /ber^{ɣ}n^ɣ/ and OI /gav^j/. The second is, whether the phonemes in question existed in both OE and OI or only on OI. Since there is no realistic chance that (spoken) OI influenced (spoken) OE, any "two-language" solution would really have to be a "three language" solution: we would have to posit that phonemes of the type occurring in OE and OI also occurred in Old Brittonic, being passed on from this to Old English along the lines suggested by Shrijver (2009).

As for the first question, secondarily articulated Cs are known to exist in living languages (including Irish of all periods), whereas short diphthongs apparently are not. At least no author positing short diphthongs in OE or OI, conveniently dead languages, has ever successfully demonstrated that short diphthongs are known in living languages. Most alleged cases are treated by White (2004). Two others not treated there are not convincing: in the case of Inari Lappish, it appears that Schrijver (197, f.n.) misread his source, for Sammallahti (1984, 309) does not say that Inari Lappish has contrastive short diphthongs, and Bye (2007, 59) explicitly says that it does not. In the case of Witoto, it appears that Minor (1956) did not appreciate the effect of Meeusen's rule (which in fairness was not well-known at the time) in lowering the second of two consecutive independent high tones, so that his supposed minimal pairs proving short diphthongs are not truly minimal. (Further details are best not pursued here.) Clearly it is better to posit that the under-moraic spellings of OI and OE were originally intended to spell back or front Cs after short front Vs.

An unserious possibility, posited by Greene (1962), is that OI had a mix of short diphthongs and secondarily articulated Cs. Apparently the idea was that short diphthongs are known from OE, though strangely enough Greene (624) mentions OE without making any such argument. There are two serious problems with this. One is that it does not solve the problem that it is presented as solving, that the traditional interpretation of the consonantal system of OI assumed by (among others) Thurneysen (1946), is unattested: even if short diphthongs are attested, systems with a mix of short diphthongs and secondarily articulated Cs are also unattested. (Or at least if they are, Greene does not give any evidence that

they are, notwithstanding the fact that his argument clearly requires this.) Another is that, as (McCone 1996, 27) notes, there is no evidence of any contrast between short diphthongs in /-u̠/ (the only type posited by Greene) followed by a non-front C and short Vs followed by a non-front C. This implies that the older interpretation of Old Irish as having (like later Irish) front and back Cs plain and simple (e.g. Quinn 1975, 5), is correct.

As for the second question, if the English were for the most part taught to write and spell OE by Irish missionary linguists who heard OE as having the same sound system (in relevant aspects) as OI, this alone would explain why OE is spelled in (more or less) the manner of OI, using front or back Vs as diacritics to spell front or back Cs, and no additional predictions are made by positing that OE really did have the sound system of OI. To posit that it did would be a violation of Occam's Razor. Three additional considerations point to the same conclusion.

First, if Irish missionary linguists heard OE as having, like Irish, an across-the-board distinction between front and back Cs that it did not really have, we would expect OE to show non-contrastive spellings. In fact it has long been noted that the under-moraic spellings of OE are for the most part predictable, as if generated by a spelling rule. There are only two types of possibly contrastive under-moraic spellings that should have been used in early OE (for example the writings of Aldhelm) before loss of UCs, which are still found lingering in the earliest surviving texts from around 700–725 (Lass 1994, 62–3): the *steal* 'stall' vs. *stæl* 'steal' type, from reduction of final geminates, and the *earn* 'eagle' vs. *ærn* 'ran' type, from metathesis. Each type can be seen as non-contrastive. In the *steal* vs. *stæl* type, <ea> in *steal* could well be by graphic analogy (which would have no cost if there was no contrast) from non-zero forms like dative plural *steallum*, where <ea> is predictable by rule. In the *earn* vs. *ærn* type, the change of original /ærn/ 'earn' to /yarn/ seen in ME cases like *Yarnicombe* 'eagle-valley' could well have happened in OE, pushed by metathesis of original /ræn/ to /ærn/. That <ea> in OE could in fact spell /ya/, showing that the change in question happened in OE, is independently indicated by the cases of inverse spelling noted by Hogg (215). Thus it is plausible that non-contrastive under-moraic spellings were used in the earliest OE texts. To assert that they were is in a sense merely to re-assert the traditional interpretation (TI) that the short diphthongs of OE were always phonemic even when they were fully predictable variants of the short Vs they were derived from (e.g. Hogg 17). But a system developed by natives to represent native perception which is what the TI has always posited, should not employ non-contrastive spellings. On the other hand, a system developed by foreigners to represent foreign perceptions might well employ non-contrastive spelling, as in the case of Quechua noted by Stockwell and Barritt (1961, 76).

Second, if OE acquired an across-the-board distinction between front and back Cs from Brittonic (there being no independent reason to think that Brittonic had any such thing), we have no explanation for why under-moraic spellings from

back umlaut are later than under-moraic spellings from breaking (Hogg 152): both types should have been employed from the very beginnings of OE spelling. But if the under-moraic spellings of OE were non-contrastive and regarded as generated by a set of spelling rules, then as Northumbrian prestige yielded to Southumbrian prestige as of about 725 (Stenton 1989, 202), a Northumbrian spelling rule that did not call for under-moraic spellings in cases of back umlaut could be replaced by a Southumbrian rule that did, as nothing but graphic propriety was at stake in any event. That back-umlaut was stronger in Southumbrian than in Northumbrian is independently indicated by the fact that lowering of short /io/ (including cases from back umlaut) to /eo/ occurs in Southumbrian but not in Northumbrian (Hogg 192). More on this will be said where appropriate below.

Third, there is no independent reason to think that medieval English (or Brittonic) gained and lost an across-the-board distinction between front and back Cs. If the only reason to think so is to make a connection between OE and OI, there had better be no better way to do so.

The most promising possibility appears to be (1) that the under-moraic spellings of OE and OI were originally intended to represent front and back Cs, and (2) that of the languages possibly involved only OI really had an across-the-board distinction between front and back Cs.

In presenting what is in effect an article-length treatment of a book-length topic, the only realistic approach is to pretend that it is 1850 and start over, doing what should have been done if an overly Germano-centric approach had not prevented the problems noted above from being appreciated. As the subject is full of questions that cannot be answered without raising further questions, *ad infinitum*, it has been necessary to draw the line at various somewhat arbitrary points. Matters that must be given little or no treatment include: (1) an alternative historical phonology, without short diphthongs, for prehistoric OE, (2) a historiography of the various issues that arise, (3) lower levels of detail, (4) "counter-objections" to objections that are only superficially plausible, (5) Irish influence in consonantal spellings, (6) what happened when the sound system of early OE was imposed (in two widely separated stages corresponding to the earlier and later stages of the AS conquest) on the sound system of Brittonic, and (7) whether various foundational assumptions of the field are valid. The focus will be on Mercian, as this was the dialect of greatest importance during the period of greatest importance.

At this point, some statement on conventions becomes necessary. In a language with palatal affricates, often geminate, it is convenient to use the conventions usual in Indic, where<c, j> represent the sounds of PDE *church, judge*, and <y> represents IPA /j/ (as already above in the case of *Yarnicombe*). Accordingly it sensible to use <ü, ö> for front/round Vs, and <ï, ë> for central Vs, high "yeri" and mid "wedge". (This also obviates having to make arbitrary distinctions between "open" and "close" mid Vs that are not otherwise warranted.) The sounds of PDE *pit, put* will be represented by <I, U>. Two sounds with the timing expect-

ed of one will be indicated, as has been done above, by underlining, e.g. /be<u>o</u>rn/. <E> will be used to represent any front (but not also round) V, and <K> will be used to represent any velar obstruent. The term "umlaut" will mean front umlaut unless otherwise noted. The phrase "loss of umlaut conditioners" will mean "loss or change (to a non-umlauting element) of umlaut conditioners", and "UC" will mean "umlaut conditioner". With Cs, the terms "back" and "front" will often be used for "velarised" and "palatalised", and with Vs "velarised" will be used to mean what would more precisely be described as "post-velarised": for example the /e/ of *beorn* will be called "velarised /e/". Spellings will often be used to refer, without commitment, to whatever sounds they represented, e.g. <eo> may be used to mean "whatever 'eo' meant."

2. The basic scenario

2.1. Historical background

Properly speaking the first OE spelling system, using the Roman hand rather than the Irish hand and almost certainly not using under-moraic spelling of the Irish type, was developed in Kent not long after 600 for the laws of Aethelberht, which do not survive in their original form. But the *continuing* tradition of OE spelling begins with the Irish mission. During the period from about 635–650 Irish missionaries (or teachers) often went over to England, first in Northumbria and later in Southumbria (Mayr-Harting 94, 100), and were successful in achieving a lasting conversion of most of the country, at least of the larger and more important kingdoms beyond the SE.

It must be stressed that much of what follows is intended as "by hypothesis". The various cases should be clear in context. As the Irish had been writing their own language since a bit before 600 (O'Croinin 1995, 189), they had no reason to think that OE should not also be written. OE was apparently reduced to writing by Irish missionary linguists in two semi-separate processes. The first system was developed in Northumbria about 635–640, probably with Aedan (d. 651), who reportedly learned OE (Mayr-Harting 102), as primary missionary linguist, and with Oswald and Oswiu, who reportedly knew OI (Bede 145, 187), as primary native informants. The second system was developed in Southumbria at Malmesbury, (just barely) in Mercia, about 660–665, almost certainly with Maeldubh (d. 675) as primary missionary linguist and Aldhelm (639–705), who William of Malmesbury (226–227) says (wrongly) was the first person to write OE, as primary native informant.[2] It is otherwise known (Mayr-Harting 192, 196) that Maeldubh and Aldhelm were teacher and student. Thus the Northumbrian system was probably about a generation earlier than the Southumbrian system. It seems probable that various "archaic" spellings (noted in any grammar of OE)

were more Northumbrian than archaic, though the matter cannot be treated here. Though the Northumbrian system was earlier, the Southumbrian system was in the end more important, simply because Southumbria, especially Mercia, was more important. Though the TI presents the impression that the spelling system of OE was developed by numerous unidentifiable English monks, it was probably developed, in its most significant form, by a single identifiable Irish monk: Maeldubh.

As for why, other than mere possibility, we would think the Northumbrian system was earlier, it appears that by about 670, following the Synod of Whitby in 664 (Mayr-Harting 103) and the arrival of Theodore of Tarsus at Canterbury in 669 (Mayr-Harting 122), a great anti-Irish rage was sweeping the English church, affecting even Aldhelm (Mayr-Harting 197). Any Irish system not already established by this point would have been swept away and replaced by its Roman equivalent, still extant in the laws of Aethelberht. Since this did not happen, the Northumbrian system must have been established by 670, which points to an earlier time (and earlier personages) for its development. By contrast the Southumbrian system must have been quite young in the late 660s, as there are no plausible candidates earlier than Maeldubh and Aldhelm who could have developed it. Thus the Northumbrian system probably served as a shield for the Southumbrian system during this period.

2.2. Background assumptions on the pre-history of OE

Something must be said about what is literally assumed (and so will get minimal defense here) about the pre-history of OE. First, Frisian is descended from (Anglian) OE rather than the other way around. That this is reasonable on historical grounds is shown by Stenton (6–8) and Bazelmans (2009). Other considerations, archeological, genetic, and linguistic, pointing to the same conclusion cannot be treated here. Second, OE still had original /ææ/. Third, Pre-OE /-u/ had become reduced to something like [-U] phonetically, probably best taken as /-o/ phonemically. This will be called "the Riothamus Syndrome", after its analogue and motivation in Brittonic: did not have diphthongs like Pre-OE /Eu/, but did have sequences consisting of a front V followed by an unstressed and reduced back V (Jackson 1953, 459–460). Fourth, loss of UCs had not yet happened.

Fifth, all allophones of original velars, front and back, hard and soft, had become phonemes, including breath [h]. Reasons to think so cannot be given here, except in one case of unusually high importance: backing of front Vs, i.e. "breaking", before /x/ does not make sense unless such /x/ had for some strange reason become /xˠ/, which implies the existence of /xʲ/. The reason that these changes happened is that all of the phones in question were phonemes in Latin/Romance or Brittonic. It seems probable that Brittonic, much influenced by L/R after several centuries in the Roman empire, was the language that Pre-OE was

imposed on in SE Britain, since otherwise it is hard to explain why the Germanic conquerors of SE Britain did not adopt L/R as the Germanic conquerors of NE Gaul did. Victorian fantasies about genocide need not detain us: surely the reason the Anglo-Saxons did not adopt L/R, whilst the Franks did, was that the Anglo-Saxons encountered much low-prestige Celtic and little high-prestige L/R, whilst the Franks encountered the opposite. There is evidence (Jackson 404–412, 517–525, 565–572) indicating that Brittonic had /h/, /xᵛ/, and /xʲ/, and had a rule that only /xʲ/, never /xᵛ/, was permitted before voiceless dentals. It seems probable that this led to overuse of /xʲ/ in OE peasant dialect, which would tend to adopt the phonemes and phonotactics of Brittonic, and that this in turn led to overuse of /xᵛ/ noble dialect by hypercorrect reaction: /E(E)xʲ/ > /E(E)xᵛ/ (except in cases of umlaut). In Anglian, this change happened after /ææxʲ/ became /eexʲ/. Such a scenario would explain why breaking occurs with /x/ but not with /γ/: nothing in the phonotactics of Brittonic would motivate overuse of palatal /γ/ in peasant dialect, so nothing in the sociolinguistics of early AS England would motivate overuse of velar /γ/ in noble dialect. The change of /EExʲ/ to /EExᵛ/, coupled with the Riothamus Syndrome, made contrast between /EExᵛ/ and /Eoxᵛ/ no longer viable, as both types came out as [EEUx]. What this led to will be seen below.

2.3. The beginnings of a new interpretation

As for Irish perceptions of OE Vs, only cases in a stressed C-C frame will be considered, as it is clear that these were the basis for later generalizations by the English. Most cases call for no comment. OE /o(o), u(u)/ followed by UCs, which is to say future /ö(ö), ü(ü)/, were perceived as /o(o), u(u)/ followed a front C. The case of the low Vs, OE /ɑ(ɑ)/ and /æ(æ)/, is more complex. Because OI had only one low V, /a(a)/, both OE /æ(æ) and /ɑ(ɑ)/ were taken as this, and so could not be distinguished directly. They could be distinguished indirectly, by regarding /ɑ(ɑ)/ as /a(a)/ preceded and followed by a back C and /æ(æ) as /a(a)/ preceded *or* followed (*but not both*) by a front C. (Only a non-low front V would be high/front enough to make both a preceding C and a following C sound front to Irish ears.) Evidently <e> was the preferred diacritic for indicating front Cs with /a/ (to Irish eyes, <ia> meant /ia/). In cases involving (1) /æo/, (2) a preceding front C ("palatals") or (3) (in short cases only) a following back C (breaking, back umlaut), clearly <ea> was better. In the case of long /ææ/, which was (as is shown by failure of umlaut to produce any phonemic effect) pronounced more or less as [æe], and in a few short cases like /dæi/ *dæg*, clearly <ae> was better. But in typical cases of short /æ/, e.g. /fæst/ 'firm', Irish ears were bewildered, and only English informants, insisting that the V in question was the short of the V spelt <ae> in long cases, could tilt matters toward <ae>. In the end, <ae> became the default.

As [U] is more or less the sound of velarization (Laver 1994, 325), the Riothamus Syndrome caused OE /beod/-[bee̲U̲d] to be heard as /beedᵛ/. Evidently <-o> was (as often in later Irish) the preferred diacritic for following back Cs. Accordingly /beedᵛ/ was spelt as *beod*, *accidentally representing native perception* and thus concealing foreign mis-perception. The parallel between long and short diphthongs in OE spelling (1) was originally *in the perception of the Irish*, not the English, and (2) was a matter of long and short front *monophthongs followed by back Cs*, not long and short *diphthongs*. Failure to realize this has been a major source of the TI's problems, by allowing the argument that if long <io, eo, ea> spell long diphthongs, then short <io, eo, ea> should spell short diphthongs. As long as we do not worry about whether short diphthongs are demonstrable, or about connections with OI, this is a good argument. As soon as we do, it is not.

Since the second element of OE diphthongs, something like [-U] or [-ë], had little rounding, umlaut of this would produce more or less [-e], which when combined with umlaut of the first element would result in [ee] and [ie]. Certainly /ee/ was perceived as /ee/, spelt <e>, and probably /ie/ (though not existing in OI) was perceived as /ie/ and spelt <ie>.

As for the specific spellings employed, no "uniquely determined" result is realistically to be expected. The spelling system developed for OE was not the spelling system of OI but rather an adaptation of the spelling system of OI, similar in principle (using front Vs as diacritics with front Vs and back Vs as diacritics with back Cs) but different in detail. Asserting that <ea> would not be used in OE spelling because it was not used in OI spelling (Schrijver 198, f.n.) is like saying that <zh> would not be used in the English transliteration of Russian (*Zhivago*, *Zhukov*) because <zh> is not used in English: adapters are free to adapt after all, especially if the spelling system of their native language is full of holes. For example, OI spelling made no distinction between front and back Cs after /ii/ (Thurneysen 57). There is no reason that Irish missionary linguists would want to maintain this and other irrationalities as the system was adapted to OE. In many ways (e.g. using <e> and <o> as diacritics) the spelling system of OE is more similar the spelling system of later Irish than to the system of Old Irish. But this is not surprising: later reforms were simply anticipated.

The most important difference between the Northumbrian and Southumbrian systems was that the Northumbrian system did not use the broken spellings <io, eo, ea> in cases of back umlaut, whereas the Southumbrian system did. The reason for this has already been seen: back umlaut was phonetically stronger and more salient in Southumbrian than in Northumbrian.

Though vocalic spellings must be the focus here, one consonantal spelling is worth noting: OI spelling could use <pb, td, cg> for /b, d, g/ (Thurneysen 23). This seems to be the origin of OE cases like <ecg> for /ej/ 'edge'.

The basic Irish spelling system for OE was, by hypothesis, as follows. Front C's are designated by "F" and back Cs by "B". The spellings of importance here have been put in bold. To the extent that there was a difference between Northumbrian and Southumbrian (one suspects some influences from the former on the latter), the system given below is Southumbrian.

	Monophthongs					Diphthongs		
OE Perception:	/i(i)/	/e(e)/	/æ(æ)/ /ɑ(ɑ)/	/o(o)/	/u(u)/	/io,	eo,	æo/
OI Perception:	/i(i)/	/e(e)/	/a(a)/	/o(o)/	/u(u)/	/ii,	ee,	aa/
F-F	i	e	X	X	X	ie	ee	X
F-B	**io**	**eo**	**ea**	eo	eu(?)	**io**	**eo**	ea
B-F	X	X	**ae**	oi	ui	X	X	X
B-B	X	X	a	o	u	X	X	X

This is a bad system. First (as has been noted), no direct distinction is made between /æ(æ)/ and /ɑ(ɑ)/. Second, no distinction can be made between /EE/ and /Eo/ before a back C. This is critical: *tioh* 'pull' does not prove /tioxʸ/, as /tiixʸ/ would also be spelt as <tioh>. Since the trend over the OE period is for /Eo/ to become /EE/, /EE/ seems more probable. But if so, finding that original /tiix/ appears as <tioh> indicates not breaking but rather the opposite: early "smoothing" before /xʸ/. Third, no distinction can be made between /EE/ and /Eo/ after a front C: <ceas> 'chose' might mean /cææs/ or /cæos/. Fourth, no distinction can be made between diphthongs and back Vs after a front C: <ceas> might mean /cæos/ or /cɑɑs/ and <ceos> 'choose' might mean /ceos/ or /coos/. (Thus /cɑɑs/ and /coos/, the ancestors of PDE *chose* and *choose*, perhaps existed in OE.) There are in total *three* things that <ceas> could have meant: /cææs/, /cæos/, or /cɑɑs/. The reason for all these problems is simple: the original spelling system of OE, because it was developed by speakers of OI who heard OE as OI, was not able to spell distinctions that did not exist in OI. Otherwise the syndrome is not easily explained. As for why Irish missionary linguists heard OE as OI when they could have heard it as Latin, again here the Riothamus Syndrome looms large: cases like [iUC] struck Irish ears as /iiCʸ/. If full rounding had remained, producing cases like [iu], this misperception probably would not have occurred. Proof that Irish missionary linguists did indeed hear OE as being like OI may be found in the fact that they employed under-moraic spellings of the type found in OI but not in Latin.

OE diphthongs in /-o/ not followed by a C were regarded as diphthongs in /-u/, which did exist in OI (Thurneysen 42–45), and were of course spelt with <-u>. It seems probable, though little hinges on it, that /æo/ was (in cases with a preceding C) spelt as <eau>.

2.4. Revenge of the natives: reinterpretation by the English

It remains to be seen what all this would look like to the native English. First it would seem that spellings used within a C-C frame should generalised: if /bærn/ was spelt as <bearn>, then /ærn/ should be spelt as <earn>, however irrational this might seem to Irish eyes in a word with no preceding C to be marked as front. Furthermore, if /io, eo, æo/ were to be spelt as <io, eo, ea> when followed by a C, they should be spelt the same way, rather than as <iu, eu, (e)au>, when not followed by a C, especially as such combinations were not otherwise used. Though to Irish eyes <ae, oi, ui> contained meaningful diacritics, to English eyes <ae> would (from the start) appear to be a digraph for /æ(æ)/, and (skipping ahead a bit) after loss of UCs <oi, ui> would appear to be digraphs for /ö(ö), ü(ü)/, again without regard for whether there was any following C to be marked as front for Irish eyes. For later Germanicists strongly inclined to assume that OE spellers would never use Vs as diacritics of Irish origin on associated Cs, the effect of these changes was very damaging: by removing many diacritics from the system they concealed the role that diacritics had originally played, and thus accidentally concealed Irish influence. Finally and most importantly, it would seem (1) that short /i, e, æ/ were to be spelt as <io, eo, ea> in certain environments (breaking environments in all OE and back-umlauting environments in Southumbrian only) and (2) that /æ(æ)/ was to be spelled as <ea> after palatals. Two consequences are worth nothing: from the beginning the OE spelling system had spelling rules, and from the beginning short and long <io, eo, ea> had meanings that were (except in the case of <ea> after palatals) completely unconnected with each other, as suggested but not explained by Daunt (130). Thus the spelling system of OE was from the beginning quite a lot more abstract and "un-phonetic" than the TI has been willing to contemplate.

During the period of Northumbrian hegemony, as has been noted, OE spellers used the Northumbrian version of the rule for broken spellings (short <io, eo, ea>), without back umlaut. As Northumbrian hegemony was (slowly and unsurely) replaced by Southumbrian hegemony, OE spellers began to use the Southumbrian version of the rule, with back umlaut. Since nothing but graphic propriety was ever involved, spellers were free to adopt whatever version of the rule was most "high-prestige" at the time, and that is what they did. Spellers were also free to carry out whatever purely graphic analogies struck them as sensible, as in <færst> (2PS of 'fare') instead of rule-predicted <fearst>, by analogy with other verbs without /r/ where <æ> was regular (Campbell 1959, 62, 315). This scenario is critical, for otherwise we have (like Schrijver) no explanation for why back umlaut is not fully present in the earliest texts.

3. Later developments

3.1. Umlaut, lowering, and loss of umlaut conditioners

The next question is what happened in cases regarded by TI as showing the umlaut of diphthongs, short and long. Though the TI collapses umlaut and loss of UCs as "umlaut", it must be stressed that "umlaut" in the sense of raising/fronting due to the *presence* of UCs, as in cases like /æ … i/ > /e … i/, is hardly the same thing as "umlaut" in the sense of new phonemes being created due to the *absence* of UCs, as in cases like /u … i/ > /ü … e/. The two will be strictly separated here.

It is clear that in Anglian short /æ/ in otherwise breaking environments and /æo/ were umlauted to /e(e)/. (The term "otherwise breaking environments" is used because there is no good reason to think that breaking, a kind of backing, and umlaut, a kind of fronting, ever occurred in the same environments.) Since /æo/ was umlauted to /ee/, indicating that the umlaut of /-o/ was /-e/, it is to be expected that /io/ would be umlauted to /ie/, as has already been suggested above. EWS <ie> was almost certainly created to spell this /ie/. Anglian <io> must result from a later dissimilatory change (after loss of UCs) of /ie/ to /io/. Not so clear is what short /e, i/ in otherwise breaking environments and /io/ were umlauted to. (Apparently there were no cases involving /eo/ (Hogg 134)). The TI would have us believe that the answer is short and long /io/, with some rigamarole about /i/ followed by /rC/ and UCs supposedly not being subject to breaking in Anglian (Campbell 59, Hogg 90). The first part of this is not clearly shown by the evidence, which includes numerous cases (those with following /r/) where not <io> but <i> appears, and the second part is transparently an *ad hoc* device to explain away such cases.[3] Nor does it make sense to think that umlaut would uniquely fail with /irC/ in Anglian, when in all other cases in all other OE it does not, or that *fronting* would produce Vs that were *back* in their rightward portions. The TI on this matter is so problematic that it is best to just start over.

Examination of the evidence reveals that in short cases (1) the umlaut of /e/ in otherwise breaking environments appears as <io> (Hogg 134), *as if /e/ in such environments somehow became /i/ not followed by UCs*, and (2) the umlaut of /i/ in otherwise breaking environments appears as <i>, though *iorre* 'anger' acts like it had /e/ when in fact it had /i/ (Hogg 90). As stated, this does not make sense: the two types should have fallen together as /i/ when /e/ was umlauted to /i/. The difference must go back to the fact that all cases of /e/ are in fact cases of /erd/ (Campbell 48, 81–82), being caused by /rd/ rather than /e/. Once we realize this, it is clear what happened: after umlaut of /erd/ to /ird/ there was an early loss of UCs after /ird/, causing such cases to develop as if they always had /i/ and never had UCs. The same thing probably happened after /irr/ when followed by a front V, as in *iorre*, but not when followed by a back V, as in *afirran* (< /afirryan/) 'take away'. Thus there was a time when the words were /irræ/ and /afirryan/. The

/i/ in /irræ/ was subject to (secondary) velarization, like all other /i/ in such environments, whilst the /i/ in /afirryan/ was not. In both cases the initial result would have been variation between forms with and without /y/, soon subject to leveling. Thus it seems that the umlaut of short /e, i/ in Anglian was /i/ (as expected) and that <io> appears only in cases where UCs were subject to early loss.

In Southumbrian, short and long <io> were lowered to <eo>. Though the TI (e.g. Hogg 189–194) would have us believe that both changes happened at the same time during the 800s, the fact that inverse spellings (for both types) appear even in the earliest texts (Hogg 192) shows that lowering must have happened before around 700. It stands to reason that the change would occur first in the short case, as there must have been a time when /i/ in short [iU] was velarised, and therefore somewhat lowered, whilst the first /i/ in [iiU], being more distant from the source of velarization, was not. Since /i/ without following UCs must have been phonetically lower than /i/ with following UCs, such /i/ might well become regarded, as UCs were lost, as /e/. Lowering in short cases apparently occurred, as part of a chain not long before loss of UCs. It may well relevant that in Brittonic short /i, u/ had become /I, U/ (Jackson 284), as in later English, so that original /i/ was already somewhat lowered, enough so that only a little more lowering would push it into the range of /e/. The change perhaps was in part an aversive reaction to up and coming central /ɨ/ for <io> in peasant dialect, which clearly did get into noble dialect (as will be seen soon below) in Northumbrian, and was perhaps threatening to do so in Southumbrian.

Where short <io> was not lowered, i.e. in Northumbrian, the obvious question is what old /i/ in breaking environments (<io>) became, once loss of UCs rendered it no longer a predicable variant of /i/: if short <io> did not mean /io/, then what did it mean? Short <io> must have represented (1) a high V that could be produced by velarization of /i/, and (2) a high V other than /i/, /ü/, or /u/. Both considerations point to central /ɨ/. (It is quite possible that in Mercian too velarised /i/ became /ɨ/ before becoming /e/, but it has been thought better to posit that /i/ became /e/ directly.) The fact that in EWS short <ie>, though not in contrast with short <i> (or <io>), appears at all must indicate that /ie/ had become /ɨɨ/, causing cases of velarised short /i/ to become regarded as short /ɨ/ (spelt <ie>) by acoustic similarity. But this is late, without direct relevance to Anglian.

Parallelism would suggest that in Anglian after loss of UCs short <eo> meant /ë/. Contrast between /ë/ and /ö/ is (just barely) demonstrable, in the Turkic language Gagauz. But fortunately we do not have to go that route, as there is no good evidence of contrast between short <eo> and <oe>: cases of *eoh* vs. *oeh* (the only type that occurs) could easily spell contrast between /xˠ/ and /xʲ/. Such a contrast, already posited above for other reasons, would be much more probable than contrast between /ë/ and /ö/. As cases of long /öö/ provide independent evidence for /ö/ in OE, it seems best to posit that in noble dialect short [ë] developed as an allophone of /ö/ in velarizing environments, and was spelt <eo>. There are in

fact some examples of <eo> spelling long /öö/ (Hogg 125), indicating that some spellers did indeed regard <eo> as spelling /ö(ö)/. The absence of <eo> spelling short /ö/ is probably due to the rarity of short /ö/.

It is worth noting that if peasant dialect did not have /ö(ö)/, [ë] would be taken as /ë/. This possibility may seem more theoretical than real, but it is not: as Brittonic did not have /ö(ö)/, OE peasant dialect probably also did not have /ö(ö)/. It may seem that this, if real, would be an isolated case, but again it is not: long /ïï/ (traditionally regarded as /üü/) clearly existed in Brittonic (Jackson 305, 587), and people who could manage long /ïï/ could probably manage short /ï/ in a pinch, at least during a generation or two of routine bilingualism during language shift. Likewise short /ë/ arguably occurred in Brittonic, though no argument can be provided here beyond noting that /u/ in Brittonic names would not appear in OE (borrowed as early as 600) with <e> and <y> (Jackson 679), unless the change of /u/ to /U/ to /ë/ in Brittonic (later seen in English) had already occurred by then. (It is far from clear why Jackson claims that the change did not occur till centuries later, when this is contradicted by evidence that he himself adduces.) Though at first Brittonic had only long /ïï/ and short /ë/, the two cannot be collapsed as one, or they would have fallen together with the development in Brittonic (later seen in English) of syllable isochrony (Jackson 338–344). The upshot is that Brittonic apparently had central Vs but not front/round Vs. For the present, the implications of this can only be noted, not pursued: OE peasant dialect too would have central Vs but not front/round Vs. Since this is what (in time) appears in medieval English (but not in other medieval Germanic), areal suspicions must be aroused.

Though parallelism would suggest that in Northumbrian /io/ became /ïï/ and /eo/ became /ëë/, there appears to be no good reason to think so. Indeed it has been stressed above that from the beginning the long and short diphthongal spellings were not regarded by OE spellers as representing parallel entities, so that arguments from graphic parallelism alone have little real force.

To return to Mercian, the situation was now that there was: (1) a rule that /ö/ was to be spelt as <eo> in certain environments, and (2) no rule about spelling /i/ as <io> in certain environments. An already artificial system was becoming even more artificial.

3.2. Further removal from reality: fronting and smoothing

Two sound changes fairly soon made matters even worse. The change of old /ææ/ to /ee/ (pushed by new /ææ/ from loss of UCs) meant that there was no longer a rule that long /ææ/ after palatals was now to be spelt <e>: *cease* became *cese*. For the moment there were still cases where short /æ/ after a palatal was spelled <e>: /cæster/ 'city' was still presumably spelt as <ceaster>. But once second fronting (Hogg 138–142) occurred, changing all non-velarised /æ/ to /e/, there were no

longer any cases (except in breaking, where <ea> was independently called for, e.g. <ceart>) where short /æ/ did not imply a preceding palatal. Accordingly there was no longer any point in having a rule demanding that /cæster/ had to be spelled as <ceaster>: /cæster/ was re-spelt as <cæster>, and the original spelling rule for palatal diphthongization (PD) was lost from the system. Though second fronting was limited to a fairly small area round Lichfield in West Mercia (Hogg 140), loss of the spelling rule for PD was accepted generally in Mercian, no doubt because the dialect of Lichfield was very "high prestige". By the time the later change of /ɑ/ to /æ/ came along, making /kæster/ a possible word that would also have to be spelt as <cæster>, so that spelling /cæster/ as <ceaster> would have been useful again, it was too late: the rule for PD had been lost from the system.

Partly because raising of /æ(æ)/ to /e(e)/ also happened in Kentish and partly because of Mercian prestige over Kentish, absence of PD also became the rule there. All this presents the impression that Mercian and Kentish never had PD, which is, as Campbell (111) notes, "puzzling from the point of view of dialect geography". If PD is an innovation, which it must be if it was a sound change, then PD should be central in its geography, which is not what we see. But if *absence* of PD was an innovation, which it could only be if PD was a spelling rule, then *absence* of PD should be central, which *is* what we see. Absence of PD should also, of course, be found in the same areas as its causes, raising of /æ(æ)/ to /e(e)/, and that too is (at least in the core area round Lichfield) what we see. The TI that there are no connections here, and that PD just randomly violates dialect geography, has little to recommend it.

Part of the TI (Hogg 108) is that, because long front vowels are not phonemically affected by umlaut, PD is proven to be a true sound change, not a mere spelling rule, by the case of <chesee> in WS: /cææsi/ > /cæosi/ > /ceösi/ > /ceöse/ > /ciöse/ > /ciese/ > /cüüse/ > "cyse". (The TI does not spell out the individual stages, which are improbably numerous.) But it is rather too convenient for the TI that it stops following the development of <cyse> in later SW English: where we should find <chuse> (spelling /cüüse/) or <chise> in ME writing and /caiz/ in modern dialect speech, instead we find <chese> in SW Middle English (MED: Guilds of Winchester) and /ciiz/ (or essentially similar forms) in SW dialect (Wright 1905, 372). In both cases this is more or less as in other English, and the reason is clear: LWS /cüüse/ must be a ghost word.

The obvious question is why <cyse> spelling /ceese/ was ever created. As WS /ö(ö)/ became /e(e)/, WS came to need a new digraph to spell /e(e)/ after palatals in cases like /ceese/. Otherwise, cases like <cese> 'cheese' and <cen> 'keen' would have been ambiguous as to whether <c> was palatal or velar. Since <ie> was already in use (for /ie/), <ie> was the obvious solution: <i> being the diacritic and <e> spelling the main V. The TI that WS spelling shows <ie> after palatals simply because the WS speech developed /ie/ after palatals fails to note the clear functional connection between loss of /ö(ö)/ and use of <ie>: what hap-

pened was not that /ciese/ just happened to develop but rather that as <oe> was lost <ie> was pressed into service to spell preceding palatals. Since during the transition from EWS to LWS <ie> and <y> became regarded as equivalent, LWS <y> acquired *all* previous functions of LWS <ie>, *including spelling /e(e)/ after palatals*: <ciese> was re-spelt as <cyse>. Thus LWS <cyse> means not /cüüse/ but /ceese/, which is of course why all later evidence points back to /ceese/.

As for how /ceese/ ever developed, with umlaut apparently applying to a long front vowel, Samuels (1952, 36) posited long ago that the first half of /ææ/ in /cææsi/ was raised to [e-] after palatals, a syndrome independently evidenced (Hogg 112–113, 170, 216), whilst the second half was raised to [-e] by umlaut, the combined effect being a change of /ææ/ to /ee/. Once we admit that OE spelling could be so abstract, the development is simple: /cææsi/ > /ceesi/ > /ceese/.

Further damage was done to the use of diacritics with velars by Anglian smoothing (Hogg 142–152), which is here regarded as primarily a change of /EoK/ to /EEK/. In the case of /io/ at least, this change must have happened before lowering of /io/ to /eo/, or else /cioken/ 'chicken' would appear as <ceocen>, and in the absence of evidence to the contrary it is probably best to regard all cases as happening before such lowering. Anglian smoothing has caused quite a lot of be-wilderment among Anglicists (Hogg 142–143), as they have attempted to explain why following /x/ should be expected to cause both backing (in breaking) and fronting (in Anglian smoothing): /EEx/ > /Eox/ > /EEx/. But since, as has been seen, to Irish eyes <ioC, eoC, eaC> might well mean /iiCᵛ, eeCᵛ, aaCᵛ/, there is no proof that the distressing false step ever occurred. Despite what the TI has always simply assumed, spellings like <tioh> 'pull' from /tiix/ show only that /EEx/ and /Eox/ fell together, not what they fell together *as*. Given that the overall trend in medieval English is for original /-u/ to be lost (with compensatory lengthening), a change of /Eoxᵛ/ to /EExᵛ/ seems more probable than a change of Eoxᵛ/ to /EExᵛ/. If so, then the two types fell together as /EEx/, which was in effect the first smooth-ing. It makes sense that the process would happen earlier before /xᵛ/ than before /k/, because of the need to slow down when producing a fricative. Likewise it makes sense that the process would next affect velars before other Cs, since desire to produce clearly back velars would have a masking effect on preceding [-U]. Presumably the same processes occurred with /ɤ/ and /gg/, though in these cases matters are complicated by secondary considerations not worth going into here.

Once all /EoK/ became regarded as /EEK/, the spellings <io, eo, ea>, now appearing to indicate /io, eo, æo/, began to seem wrong, and were replaced by <i, e, æ>, regardless of the fact that this meant giving up on spelling the distinction between velars and palatals. Such non-distinction was somewhat irrational, but spelling is often irrational, and spellings like <cicen> show that the distinction was in fact abandoned regardless of whether this was irrational. Non-distinction in long cases then overflowed into short cases. Since the original Irish spelling conventions applied to clusters, which had to be either all front or all back, in

cases like *eolh* 'elk' disuse of diacritics with velars was applied across /r, l/, producing things like <elh>.

The abstract similarity between absence of PD and Anglian smoothing is clear: both are in effect disuse of diacritics to spell the velar/palatal distinction. Clearly the TI that there is no connection between the two fails to make a connection that should be made. Since both raising and Anglian smoothing were fairly early, happening during the period of Northumbrian hegemony, the original Southumbrian system was altered in "evidence-destroying" ways before it was used in surviving texts. Later on Northumbrian accepted smoothing, as the sound change that motivated it in Mercian, Anglian smoothing, also happened in Northumbrian. But Northumbrian did not accept absence of PD, as one of the major sound changes that motivated it in Mercian, second fronting, did not happen in Northumbrian, which therefore never lost its reason to spell /cæster/ as <ceaster>, etc.

As for later /eo/, there seems to be no reason to think that this become /öö/ in ME. French loans like *people* do not prove, or even particularly suggest, that ME <eo> meant /ö/: whatever ME <eo> meant, /ëë/, or /öö/, or (in long cases) /eo/ would have been *the nearest* equivalent to French /ö/, regardless of whether it was also *an exact* equivalent. In the case of /eo/, it appears more probable that /-o/ in /eo/ was increasingly encroached on by /e-/, till the whole became regarded as (a kind of) /ee/, much as with /æo/. Short and long <eo> in ME words probably meant the same thing that the meant in OE words: short /ë/ (once /ö(ö)/ was lost) and long /eo/.

To sum up, Mercian spelling (1) lost the rule for spelling /i, e/ before back Cs, (2) lost the rule for spelling /æ(æ)/ after front Cs, (3) lost the rule for spelling front Vs with following velars, and (4) gained a rule for spelling some /ö/ as <eo>. The end result, especially when combined with historical, analogical, and etymological spellings, was a system that was about as far from being phonetic as a fairly young spelling system is likely to be. It is unfortunate that the TI, with its strong inclination to regard OE spelling as phonetic, has been so reluctant to recognize that, as Mossé (28) puts it (transl. DLW), "the spellings of OE are far from being phonetic."

3.3. Brief historiography

The first person to point out (more than briefly) the serious problems with the TI, both the problem with short diphthongs and the problem with resemblances to Irish, was Daunt (1939). Unfortunately it is not entirely clear what she was proposing as an alternative. Overall it seems that, being unwilling to challenge Thurneysen's interpretation of OI, Daunt posits that OI had *neutral* and *back/round* Cs, and that somehow because of this Irish missionary linguists taught their

English pupils to hear and spell phonetically *back* Cs as if they were phonemically back. Sadly this makes no sense: if OI did not have back Cs, Irish missionary linguists would not have had any concern with such things. It should be noted that Daunt says much else of considerable value. Mossé (28, 30–31, 41–44) presents a similar interpretation, but very briefly, again with less than perfect clarity (31) about what sound system is posited for OI.

Stockwell and Barritt (in various works) deny that OE had short diphthongs (phonemic or phonetic) and at least in 1955 claim that OE <ea> represented a sound between /æ/ and /ɑ/, not in contrast with /æ/. This last does not explain why any need for a distinct spelling would be felt, and is falsified by cases like *Yarnicombe*, where OE /æ/ in *earn* has become /ya/, indicating that at some point the pronunciation was indeed something not far from [ea]. This is a convenient place to note that it is not disputed here that OE had phonetic short diphthongs which if lengthened (for moraic continuity) would be taken as phonetic long diphthongs, as in /mæoras/ 'horses' and /seolas/ 'seals'.

Hockett (1959) claims that <io, eo, ea> represented /ï(ï), ë(ë), a(a)/. In two out of six cases, short /ï/ and short /ë/, this makes more sense than Hockett apparently realized. Clearly it was a great failure that he did not note the areal connection with Brittonic, which would have made his case more convincing by making it non-random that central Vs would appear in English rather than in other Germanic. But /ï, ë/ should not have developed in noble dialect until loss of UCs, too late for these to be relevant to the original spelling system of OE. Furthermore, the consistency seen in <eo> vs. <oe> etc. indicates that Irish ears heard F-B with <eo> and B-F with <oe>, which is expected if the Vs at that time were (post-velarised) /e/ and (post-palatalised) /o/, but not if they were already "steady-state" /ë/ and /ö/.

Schrijver claims that the Celtic of SE Britain had the same kind of sound system proposed by Greene for OI.[4] It has been seen that such a system is dubious for OI itself. Nor is such a system independently indicated for Brittonic (which *pace* Shcrijver was surely the Celtic of SE Britain). Be that as it may, an additional serious problem, already noted, is that the theory fails to explain why back umlaut should be later than breaking.

4. Conclusion

In the beginning were (1) the Riothamus Syndrome, Britons taking Pre-OE /-u/ as /-o/-[-U], and (2) the great allophonic split, Britons taking all allophones of Pre-OE velars as phonemes. As part of this, the Brittonic rule that only /xʲ/, not /xˠ/, could occur before voiceless dentals was taken into OE. Overuse of /xʲ/ in peasant dialect led to overuse of /xˠ/ in noble dialect, specifically after front Vs (except before UCs). As a result, contrast between /Eoxˠ/ became /EExˠ/ became impossible, and

all /Eoxᵛ/ became regarded as /EExᵛ/. During the mid to late 600s, Irish missionary linguists began to develop spelling systems for OE, first in Northumbria and later in Southumbria. Because OI had front and back Cs, and was spelt in the Irish manner using front and back Vs as diacritics, OE was heard as having front and back Cs, spelt using front and back Vs as diacritics. This explains why OE writing uses the Irish hand and why OE spelling, like OI spelling, uses under-moraic spelling that might appear to represent short diphthongs. In long cases, the difference between /EoC/ vs. /EEC/ was heard, because of the Riothamus Syndrome, as /EECᵛ/ vs. /EECʲ/. To the English, it appeared that long <io, eo, ea> were to be used to spell the diphthongs /io, eo, ea/. In two out of three cases, this accidentally captured native perception, masking the original presence of foreign misperception. In short cases, merely phonetic differences were heard as phonemic, so that to the English it appeared that the resulting spellings were generated by a rule calling for /i, e, æ/ to be spelt using the broken spellings <io, eo, ea> in certain environments. The main difference between the Southumbrian and Northumbrian systems was that in Southumbrian the environments calling for broken spellings included cases of back umlaut, whereas in Northumbrian they did not. Since only a spelling rule was at stake, the Northumbrian version of the rule was used during the early (and fleeting) period of Northumbrian hegemony, and the Southumbrian version of the rule was used during the later (and lasting) period of Southumbrian prestige. Shortly before UCs were lost, Southumbrian lowered velarised /i/ to /e/. As UCs were lost, Southumbrian retracted velarised /e/ to [ë], which was taken as /ö/ in noble dialect but as /ë/ in peasant dialect. Northumbrian retracted velarised /i/ to /ï/. Since central /ë/ and /ï/ existed in Brittonic, their appearance in English is more probably due to Brittonic influence than to coincidence. In Anglian, the raising of /æ(æ)/ to /e(e)/ and the continuing change of /Eo/ to /EE/, by this point affecting cases with following velar plosives, so reduced the value of diacritics with velars that all diacritics with velars were given up, leading to loss of palatal diphthongization and explaining its central geography.

Spoken OE did not just randomly diverge from other Germanic by becoming full of glides, which in later days were randomly lost from spoken English just when the Irish hand was being lost from written English. Spoken OE was not (except for the Riothamus Syndrome) any more full of glides than was any other Old Germanic. Written OE is full of glides because written Old Irish was full of glides, which was because in spoken OI glides were used to signal front and back Cs. The differences seen between the spelling of Old English and the spelling of other Old Germanic lie not in *what* the languages were but rather in *who* developed the spelling systems in question. To posit that short diphthongs occurred in OE but not in OI does not explain why under-moraic spellings are found in both. To posit that (contrastive) short diphthongs occurred in both OE and OI does not explain why contrast cannot be demonstrated in OI (or really in early OE). To posit that short diphthongs occurred in OE or OI is to posit in dead languages phonemes

of a type not demonstrable in living languages. To posit that front and back Cs occurred in the Celtic of SE Britain does not explain why back umlaut appears later than breaking. Some version of what is posited above appears to be the only remaining possibility.

Notes

1   Two examples are given for OI because they could conceivably represent different types, though reasons are given to think that they do not.
2   Aldhelm quite probably was the first person to write OE as part of the continuing tradition in Mercia or Wessex, and William can perhaps be forgiven for being unaware of earlier figures in Northumbria and Kent.
3   That cases of <i> as the apparent umlaut of what should have been broken /i/ appear only in cases with /r/ is a side-effect of various accidents, not to be regarded as meaningful in itself: /l/ does not cause "breaking", and whether /x/ caused "breaking" cannot be determined because of "smoothing".
4   O'Neill (2009) makes many valuable points regarding evidence of significant Irish influences in OE spelling. However his larger conclusion that the OE spelling system was developed in Ireland cannot be accepted.

References

Bazelmans, Jos. 2009. "The Early Medieval Use of Ethnic Names from Classical Antiquity: the Case of the Frisians." *Ethnic Constructs in Antiquity: The Role of Power and Tradition*. Ed. Ton Derks, and Nico Roymans. Amsterdam: Amsterdam University. 321–337.

Bye, Patrik. 2007. "Grade Alternation in Inari Saami and Abstract Declarative Phonology." *Saami Linguistics.* Ed. I. Toivonen, and D. Nelson. Amsterdam: John Benjamins. 53–90.

Campbell, Alistair. 1959. *Old English Grammar.* Oxford: Clarendon Press.

Daunt, Marjorie. 1939. "Old English Sound Changes Reconsidered in Relation to Scribal Tradition and Practice." *Transactions of the Philological Society* 38: 108–137.

Green, D. H. 1998. *Language and History in the Early Germanic World.* Cambridge: Cambridge University Press.

Greene, David. 1962. "The Colouring of Consonants in Old Irish." *Proceedings of the 4th International Congress of Phonetic Sciences, Helsinki 1961.* Ed. A. Sofijärvi, and P. Aalto. The Hague: Mouton. 622–624.

Hockett, Charles. 1959. "The Stressed Syllabics of Old English." *Language* 33: 575–97.

Hogg, Richard. 1992. *A Grammar of Old English: Phonology*. Oxford: Blackwell Publishers.

Jackson, Kenneth. 1953. *Language and History in Early Britain.* Dublin: Four Courts Press.

Lass, Roger. 1994. *Old English: A Historical Linguistic Companion.* Cambridge: Cambridge University Press.

Laver, John. 1994. *Principles of Phonetics.* Cambridge: CUP.

Mayr-Harting, Henry. 1991. *The Coming of Christianity to Anglo-Saxon England.* University Park Pennsylvania: University of Pennsylvania Press.

McCone, Kim. 1996. *Towards a Relative Chronology of Ancient and Medieval Celtic Sound Change*. Maynooth: St. Patrick's College.

McSparran, Frances, ed. 1999. *The Middle English Compendium: The Middle English Dictionary*. *A HyperBibliography of Middle English Prose and Verse*. Ann Arbor: Humanities Text Initiative – University of Michigan (http://quod. lib.umich.edu/m/med/)

Minor, Eugene. 1956. "Witoto Vowel Clusters." *International Journal of American Linguistics.* 22: 131–137.

Morris, John. 1973. *The Age of Arthur: A History of the British Isles from 350 to 650.* London: Weidenfeld.

Mossé, Fernand. 1945. *Manuel de l'Anglais du Moyen Age, 1: Vieil Anglais.* Paris: Aubier.

O'Croinin, Daibhi. 1995. *Early Medieval Ireland*. London: Longman.

O'Neill, Patrick P. 2009. "The Irish Role in the Origins of the Old English Alphabet: A Re-ssessment." *Anglo-Saxon/Irish Relations before the Vikings.* Ed. James-Graham Campbell, and Michael Ryan. Oxford: Oxford University Press. 3–22.

Quinn, E. G. 1975. *Old-Irish Workbook*. Dublin: Royal Irish Academy.

Sammallahti, Pekka. 1984. "New Developments in Inari Lappish Phonology." *Zur Phonologischen Beschreibuing Uralischer Sprachen.* Ed. P. Hajdu, and L. Honti. Budapest: Akademiai Kiado.

Samuels, M. L. 1952. "The Study of Old English Phonology." *Transactions of the Philological Society* 51: 15–47.

Schrijver, Peter. 2009. "Celtic Influence on Old English: Phonological and Phonetic Evidence." *English Language and Linguistics* 13.2: 193–211.

Stenton, Frank. 1989 [1971]. *Anglo-Saxon England* (3rd edition). Oxford: Oxford University Press.

Stockwell, R., and C. Barritt. 1951. *Some Old English Graphemic-Phonemic Correspondences -ae, ea, and a.* (Studies in Linguistics: Occasional Papers 4). Norman, Okla: Battenburg.

Stockwell, R., and C. Barritt. 1961. "Scribal Practice: Some Assumptions." *Language* 37: 75–82.

Thurneysen, Rudolph. 1946. *A Grammar of Old Irish; Translated from the*

German by D. A. Binchy & Osborn Bergin. Dublin: Dublin Institute for Advanced Studies.

White, David L. 2004. "Why we Should not Believe in Short Diphthongs." *Studies in the History of the English Language II: Unfolding Conversations.* Ed. A. Curzan, and K. Emmons. Berlin: Mouton de Gruyter. 57–84.

William of Malmesbury. 2002 [1125]. *Deeds of the English Bishops; Translated by David Preest.* Woodbridge (U.K.): The Boydell Press.

Wright, Joseph. 1905. *English Dialect Grammar.* Oxford: OUP.