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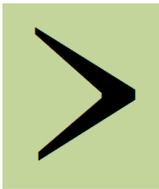
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## **The historical phonology of Old English: a critical review**

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### **Abstract**

There is a widely accepted chronology of sound laws, covering the transition from Proto-West Germanic to Old English, found in every handbook of Old English. This chronology contains sound laws whose only function is to cancel the effects of previous ones, such as 'retraction' and 'smoothing', reversing 'fronting' and 'breaking'. This chronology of sound laws is allocated to the relatively short period between the arrival of the Anglo-Saxons in the 5th century and the oldest Early Old English sources around 700. On close scrutiny, some aspects of the theory turn out to be problematic: the series of sound laws is fairly unique in the history of Germanic languages; some of the sound laws are phonetically unlikely (e.g. 'Anglian smoothing'); the extensive, sometimes repetitive, sequences (up to 5 stages) of forms in only 250 years seem hardly realistic; none of the questionable developments is positively confirmed by runic evidence; the theory requires the interpretation of many attested forms as 'merely' spelling issues or signs of dialect mixture, instead of evidence of historical changes. This article offers a detailed discussion of these problematic issues, to conclude that the theory is in need of revision.

## **1 The Standard Theory**

### **1.1 Introduction and central issue<sup>1</sup>**

There is a widely accepted chronology of sound laws, covering the transition from Proto-West Germanic to Old English, starting with Luick (1914-40) and later modified by scholars such as Campbell, Brunner, Fulk, Stiles, Hogg and Ringe. This comprises sound laws such as fronting, breaking, *i*-mutation and Anglian smoothing (for the details

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<sup>1</sup> This article is part of a diptych, the second part presenting an alternative chronology for the earliest history of Old English (Versloot, to appear). The text of the two introductions overlaps in parts.

see section 1.3). I will refer to this theory as the *Standard Theory* (ST). Extensive overviews are given by Campbell (1977, 50–112), Hogg (2011 [1992], 74–168) and Ringe & Taylor (2014, 167–336).

Adjustments to the standard chronology have been put forward on various occasions, e.g. by Ball & Stiles (1983), Toon (1987; referring back to criticism by Kuhn from 1939) and Toon (1992). Krupatkin (1970, 50) is bolder in his criticism and mentions an implausible “zigzag’  $a > \text{æ} > a$ ” when discussing the theory of restoration of fronted PGmc  $*a$ . Doubts have also been raised by Kortlandt (1999, 2008). Kortlandt (1999, 46), referring to the various stages as given in Fulk (1998), formulates his objections against this chronology in the following way:

The main difficulty with [the Standard Theory]’s chronology is the unmotivated character of the sound changes: we find backing at stage 1, fronting at stage 3, backing at stage 5, fronting at stage 6, backing at stage 7, fronting at stage 9, and backing at stage 11. What was the driving force behind these alternating developments?

An illustration of the current discourse is a paper by Howell & Somers (2008), who discuss Anglian smoothing. They state that this process is “[...] difficult for scholars to adequately explain in either theoretical or phonetic terms.” They observe that the forward-backward movement as in  $*n\bar{e}h > *n\bar{e}oh > n\bar{e}h$  ‘near’ is an “apparent paradox” (p. 187). The historical reality of smoothing is, however, not seriously questioned by the authors. An entirely different approach is offered by Schrijver (2014, 70), who suggests an influence from a Celtic substratum as the trigger of many of the Old English vocalic changes. The resulting imposition of the phonological system would cause a fairly abrupt change in the vowel system by imposing Celtic pronunciation habits on West Germanic vowels, with the result looking like the outcome of a complex set of consecutive sound laws.<sup>2</sup>

A common stage or common chronology for Old Frisian and Old English is explicitly denied in the traditional approach e.g. by Campbell (1977, 52, §131), despite the many similarities between the two languages. Stiles (1995, 211) states that: “[...] it is not possible to construct the exclusive common relative chronology that is necessary in order to be able to establish a[n Anglo-Frisian] node on a family tree.”

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<sup>2</sup> Nielsen (2015, 274) and Laker (2019) relativize Schrijver’s claims. Nielsen stresses the similarity with developments in other, non-emigrant varieties of Germanic, whereas Laker additionally points out various mismatches in the details of developments in Old English and Celtic. One of Laker’s arguments is the mismatch in relative chronology. This last aspect may need revision, if the alternative chronology that will be presented in Versloot (to appear) were to be accepted.

Archaeological evidence, however, supports the idea that the Germanic settlers of Britain and the post-Migration Frisians have a shared origin and maintained close cultural contacts during the first three or four centuries after the *landnam* ('adventus Saxonum'; Colleran 2016, Nicolay 2005, 2017, Hines & Behr 2019). A comparison between various forms of Old English and Old Frisian shows that in terms of phonological shape it is especially the West Saxon form of Old English that deviates strongly from the continental sister languages, Old Frisian and Old Saxon, rather than the language of the early Northumbrian fragments, as will be illustrated further in section 1.4. The current descriptions of the phonological history of (pre-)Old English pose a number of methodological problems in the current theory, which will be discussed in the rest of this paper. Given the gravity of these objections, it can be concluded that the Standard Theory needs revision. An alternative reconstruction of the historical phonology of pre-Old English, based on the language of the Épinal and Erfurt Glossaries and the early Northumbrian material, will be presented in a second article (Versloot, to appear).

My paper is organised as follows: section 1.2 provides a more detailed formulation of the research question, namely: what should a theory of pre-Old English phonological changes cover and what should it exclude, and how can claims about the phonological changes be evaluated? The rest of section 1 addresses a series of general methodological issues relating to the Standard Theory. Section 2 discusses various contradictory aspects of individual sound laws that are part of the Standard Theory. The results of the analysis are summarised in a concluding section 3.

Hogg's *A grammar of Old English Vol. 1, phonology* ([1992] 2011) is a relatively recent presentation of the historical phonology of Old English with extensive argumentation and summaries of controversial issues relating to what I call the 'Standard Theory'. In order to limit the discussion of this theory, I confine myself largely to Hogg's descriptions and argumentation, occasionally extended with references to Campbell's (1977) presentation of the theory and the more recent overview by Ringe & Taylor (2014). My criticism should, however, not be understood as being specifically targeted against Hogg's interpretation of the facts.

## 1.2 Delimiting pre-Old English

The beginnings of the linguistic developments of Old English lie in the 5th century, when Germanic speaking peoples invaded present-day England on a larger scale (Higham & Ryan 2015, 70–125, Hines & Behr 2019) and resettled Frisia (Nieuwhof 2016, Nicolay 2017). The

linguistic communalities between Old English and Old Frisian had not gone unnoticed, e.g. Siebs (1889). The ‘old-school’ way of reasoning about so-called Anglo-Frisian communalities found its climax in Schwarz’s (1951) *Goten, Nordgermanen, Angelsachsen*. Schwarz formulates what seems to be the *communis opinio* about the origins of *Anglofriesisch*: “Es wird mit Recht geschlossen, daß die gemeinsamen Züge des Fries. und Ae. bereits auf dem Festlande ausgebildet waren.” [It is rightly concluded that the common features of Frisian and Old English had already been established on the Continent]. The Anglo-Frisian hypothesis of a common idiom brought to England by the Germanic invaders was severely criticized in Hans Kuhn’s (1955) seminal article. He argued for a fairly undifferentiated North-West Germanic language, prior to the movements of the Great Migrations. The relationships among and differentiation of the Germanic languages were carefully analysed in the work of Nielsen (1985, 1998, 2000), who shows a nuanced picture of a couple of early changes leading to a gradual differentiation between North Germanic, North Sea West Germanic and Continental West Germanic, before, during and after the Anglo-Saxon *landnam*. This delicate and complicated process, without sharp boundaries, but largely taking place in a language continuum, was also described in Stiles (2013). Most of the ‘classical’ North Sea Germanic features fall in the period during and after the *landnam*; Stiles (2013, 32) calls them ‘*Post-West-Germanic*’. Little to nothing can be ascribed to a specific Anglo-Frisian idiom on the Continent, prior to the year 400. Interestingly, the core of these ideas can already be found in Chadwick (1889, 264-265).

The Standard Theory claims that essential steps such as fronting, retraction, breaking and *i*-mutation are prehistorical, i.e. were completed before the first attestations of Old English (Campbell 1977, vii, Hogg 2011, 74). A theory of prehistoric (pre-attestation) developments in pre-Old English has the task to describe the developments in the period between reconstructed Proto-(West) Germanic and the earliest attestations of Old English. The early Anglian sources, encompassing the Mercian Glossaries and the early Northumbrian material (Toon 1992, 427) are the oldest substantial evidence of Old English. They date from the late 7th and early 8th centuries. Their exact attestation date is not relevant; what matters is that they are the oldest extensive written evidence of Old English. Some earlier runic finds may provide additional insights in the earlier period. The West Saxon sources represent later developments of Old English, most of them nearly 200 or more years younger than the oldest sources and they are therefore not the primary target of a reconstruction of prehistoric sound changes. There

are two alternatives to interpret the differences between the early Anglian sources and later West Saxon:

- the phonological shape of West Saxon can be understood as the result of later sound laws on top of the prehistoric ones, applying to all pre-Old English dialects; this poses the question as to what extent the differences between Anglian and Saxon can be chronological rather than diatopical in nature
- West Saxon can only be understood correctly with a (somewhat) different chronology of prehistoric sound laws

In the first interpretation, an alternative theory can leave the reconstruction of these later developments open for further evaluation; in the latter case, a revision of the current chronology of prehistoric sound laws based on the mentioned sources, strictly speaking, only applies to the varieties they represent. An alternative reconstruction of the pre-Old English sound changes in Anglian, based on the development of PGmc *\*a* in the oldest sources, is attempted in Versloot (to appear).

This article will evaluate the current Standard Theory with a view to the attested linguistic variation in (early) Old English and with reference to the early Anglo-Saxon runic inscriptions, which are expected to attest to the changes described as ‘pre-Old English’. This evidence-based approach contrasts with Campbell’s conviction that it is “[...] not possible to date any of these sound-changes by observing their gradual appearance in texts, and we can establish their approximate dates and arrange them in chronological order by theoretical means only.” (Campbell 1977, 106, §246). Campbell’s hypothesis is not falsifiable and allows for the atypical chronology of the Standard Theory, discussed in section 1.3.

### **1.3 The typological-chronological inversion in the arrangement of sound laws**

The total number of sound laws for the traditionally distinguished varieties of Old English shows a remarkable inversion. The null-hypothesis is that a younger variety of a language is separated from the proto-language by more sound changes than an older variety. Under the interpretation of the Standard Theory, the situation for Old English is reversed. Table 1 presents the pre-Old English sound laws for the Old English dialects according to the Standard Theory. Note that the table contains only those items that are relevant for this discussion: general early sound laws such as the loss of nasals before fricatives are not included here. The relative order of sound laws is based on Hogg (2011), who differs only marginally from Campbell (1977, 109) or Luick (1914–40).

Northumbrian	Mercian	West Saxon	§ Hogg
Raising of /æ:/ > /e:/	Raising of /æ:/ > /e:/	—	3.25
Rounding /a(:)/ > /ɔ(:)/	Rounding /a(:)/ > /ɔ(:)/	Rounding /a(:)/ > /ɑ(:)/	5.3
Monophthongization /ai/ > /a:/	Monophthongization /ai/ > /a:/	Monophthongization /ai/ > /a:/	5.7-9
Fronting /a/ > /æ/, except -IC	Fronting /a/ > /æ/, except -IC	Fronting /a/ > /æ/	5.10-13
Breaking	Breaking	Breaking	5.16
Combinative 'breaking' /æ/ > /a/	Combinative 'breaking' /æ/ > /a/	—	5.28
Restoration of /a/ (Palatal diphthongization)	Restoration of /a/	Restoration of /a/	5.35
<i>i</i> -Mutation	<i>i</i> -Mutation	<i>i</i> -Mutation	5.47-55
Smoothing	Smoothing	—	5.47ff
ca. 725	ca. 700/775	ca. 900	5.93

**Table 1:** Sound laws for Early Old English per dialect according to the Standard Theory. The sound laws marked with grey background reverse the effects of fronting or breaking.

Table 1 shows that according to the Standard Theory, early 8th century Northumbrian and Mercian went through nine or ten<sup>3</sup> sound changes to end up with a shape of the language that hardly differs from Continental Old Saxon, as will be illustrated in section 1.4. To obtain this archaic linguistic shape, four sound laws, marked in the table with a grey shading, are only there to reverse the effect of earlier changes. In the approach of Campbell (1977, 55, § 143), the limited fronting of /a/ > /æ/ in Anglian, namely not before -IC (I leave out the context before -w here for reasons explained in section 2.2.2), is split into two sound laws: first a general fronting followed by another reversing sound law before -IC. For the more than 150 years younger Early West Saxon only seven changes

<sup>3</sup> There is very little evidence for palatal diphthongization in the early Northumbrian texts: *sceppend*, *scōp* Cadmon's Hymn vs. *sceal* Leiden Riddle.

are required, one of them still to reverse the effect of an earlier one. The setup of sound laws is summarized in Table 2.

<b>Early Anglian</b>	<b>Early West Saxon</b>
Older	Younger
More Archaic shape	More Innovative shape
More Sound Laws	Fewer Sound Laws
Multiple ‘Repair’ Sound Laws	One ‘Repair’ Sound Law

**Table 2:** The chronological-typological inversion of sound laws in Old English dialects.

This is a very unusual situation from a typological and methodological point of view. The expectation would be that the substantial differences between the early forms of Continental West Germanic and West Saxon, compared to Mercian and Early Northumbrian, are the result of later and additional sound laws that came on top of a fairly restricted set of changes that can be reconstructed for the oldest Anglian varieties. In particular, the ‘repair’ sound laws are typologically unusual, and I am not aware of any similar configurations in the history of other Germanic languages. It looks as if the theory of the early phonological history of Old English was built on the extensive West Saxon evidence and especially on the later sources, given the frequent problems with seemingly Mercian traces in Early West Saxon (see examples in the discussion in sections 1.6 and 2). To get it right for the (older) minor sources, a couple of ‘repair’ sound laws have been added to the theory.

#### **1.4 Early Northumbrian and Continental Old Germanic**

The unlikeliness of the standard chronology can be illustrated by a comparison between words from Cædmon’s Hymn (CH) in the early Northumbrian versions with the West Saxon version (Tanner Ms. 10) and the corresponding forms in Old Saxon and Old Frisian. Many of the differences between Northumbrian and West Saxon concern the appearance of diphthongs in West Saxon versus monophthongs in all the other varieties, as can be seen in Table 3.

WS OE	Nhbr. OE (Moore)	Old Saxon	Old Frisian
heofenrīces weard	hefaenricaes uard	hebanrikeas uuard	∅ werda
meotodes meahte	metudæs maecti	metodes mahti	∅ macht/mecht (NAs)
weorc fæder	uerc fadur	uuerc fader	werk- feder
sceop	scop	∅	scop
ærest halig	ærist haleg	erist halag/helag	erest/arest helich
eorðan[ylda]bearnum	aelda barnum	eldea barnon	eeld- bernum
middangeard	middungeard/-gard (L)	middilgard	∅-garda
drihten	dryctin	drohtin	drochten

**Table 3:** Words from Cædmon's Hymn in the early-Northumbrian Moore-version, compared to the word forms from the West Saxon version and their Old Saxon and Old Frisian cognates. ∅ refers to unattested forms; the Old Saxon and Old Frisian forms come from Tiefenbach (2010) and Old Frisian corpora, respectively.

At first glance, there are very few differences between the Nhbr. forms and the Old Saxon forms in particular. The only substantial difference between the two languages comes from the more widespread implementation of *i*-mutation in Old English. Old Saxon has primary *i*-mutation (applying to short PGmc *\*a* only), as in OE *aelda* OS *eldea* < PGmc *\*aldiō-* against OE *dryctin* – OS *drohtin* < PGmc *\*druxtina-* with secondary *i*-mutation. Both languages show the monophthongization of PGmc *\*ai*, even with similar outcomes as evinced by OE *ærist*, *hālig* – OS *ērist*, *hālag* (next to more frequent *hēlag*). There is no *a priori* reason to assume that words that continue the PGmc vowels nearly unaltered into Old Saxon, such as in *(u)uerc*, would be the product of fronting, breaking, retraction and smoothing processes in Old English. This is, however, what the Standard Theory claims, as illustrated in Table 4.

PGmc	Early Old English						Old Saxon attested	West Saxon attested
	Fronting	Breaking	Retraction <sup>4</sup>	<i>i</i> -mutation	Smoothing	attested		
*wardu-	*wærd-	[*weard]	*ward	—	—	uard	uuard	weard
*maxtī-	*mæxtī-	*meaxti	—	*mexti	—	mehti	mahti	mihte
*werka-	—	*weorc	—	—	*werc	uerc	uuerc	weorc
*fad(u)r-	*fædur	—	*fadur	—	—	fadur	fader	[fæder]
*aldiō	*ældiō	— *ealdiō	*aldiō —	*ældia *ieldia	—	aelda	eldea	ylða < *ielda
*barn	*bærn	[*bearn]	*barn	—	—	barnum	barnon	bearnum

**Table 4:** Sound laws of Pre-Old English according to the Standard Theory

Table 4 illustrates the redundancy of the Old English sound laws from the perspective of the early Northumbrian evidence when compared with Old Saxon. All of the vowels that match the conservative Old Saxon vowel qualities (*uard*, *uerc*, *fadur*, *aelda*, *barnum*) supposedly all went through at least two intermediate steps. The shape of the vocalism of the words in Table 4 in Old Saxon and Early Northumbrian can be reached by only applying *i*-mutation; the effect of the other Old English sound laws is only there to cancel out each other's impact. The Standard Theory seems, however, to be tailor-made for the 200-year younger West Saxon, which encompasses the largest proportion of attested texts in Old English.

In this paper, I will work with an alternative hypothesis, following more or less the chronology of sound changes for Old Frisian (Bremmer Jr 2009, 24–38), which is much simpler:

1. limited fronting of *\*a*, implying that *\*a* was never fronted in contexts that the Standard Theory considers to be instances of retraction

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<sup>4</sup> The term 'retraction' refers to the supposed back-movement of an /æ/ to /a/ (or /ɑ/). Such a movement is mentioned under the labels 'Combinative breaking' and 'Restoration' (Hogg 2011, 89, 93). I will mostly refer to it as 'retraction'. Campbell (1977, 60, §157) mentions *a*, next to *o*, *u* as the cause of retraction. Hogg is less explicit but gives various examples with /a/ in the second syllable. However, at the time that fronting took place and that its blocking by back vowels (in my approach) was relevant, most instances of unstressed OE *a* had the vowel quality  $\bar{a}$  (Nielsen 2010, 111; see also Versloot 2019). Ringe & Taylor (2014, 190–192) are aware of the fact that for a prehistorical sound change also prehistorical vowel values should be considered: *\*ā*, *\*ō*, *\*u*, *\*q*.

2. *i*-mutation
3. breaking of \**a* in specific contexts in the 7th and 8th centuries — only there where it is actually manifested in the written texts — a process that is the source of the synchronic alternation between *gard* and *geard* in the two Early Northumbrian versions of CH

The details of this alternative, Anglo-Frisian (AF) chronology are presented in Versloot (to appear).

### 1.5 Ignored or lacking evidence

Available textual counterevidence for the Standard Theory has been ignored on various occasions. Attested spellings which are not in line with the idea that developments like fronting, retraction and breaking are considered prehistoric and pre-literary are consistently reasoned away by assuming a divergence between spelling and pronunciation, or they are dismissed as ‘spelling errors’, ‘scribal confusion’ or resulting from a mixture of different ‘established spelling traditions’. In this section, I will present a couple of examples of ignored evidence or lacking evidence. More examples are presented in the detailed discussion in section 2. Section 1.7 addresses the way scribal practices are invoked as explanations for forms that do not fit the Standard Theory.

With reference to breaking, presumably an old and prehistoric development (Campbell 1977, vii), Campbell notes that “[i]n some early texts, forms occur in which the glide developed by breaking is not indicated in the spelling” (Campbell 1977, 54–55, § 140). He explicitly states in a footnote that unbroken forms in *Bede* appear in early manuscripts. This is confirmed by Hogg (2011, 83, fn. 5), and van der Schee (2015) reasons in the same way in a recent article. Campbell writes about the breaking of ‘Prim. OE *æ*’ thus:

In Kt. and W-S [...] while *a* appears freely for Prim. OE *æ* in early texts, *ea* rapidly asserts itself as the prevailing spelling. Thus, in Kt. charters of before 800, *ea* appears once only, *Uuealhhunes* g.s., Ct. 8 (dated 770), but in the following century *ea* becomes increasingly more common and appears practically always in the tenth-century *KG*. Similarly, in W-S, in earlier texts *ea* and *a* both appear, e.g. in the part of *P[arker] C[hronicle]* written by the first scribe *ea* occurs 29 times and *a* 104 times in accented syllables; but in late W-S *ea* becomes exclusively used.” (Campbell 1977, 55, § 143).<sup>5</sup>

The variation is apparently considered a matter of mere spelling, because the breaking to /*εa*/ is supposedly pre-Old English, and the

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<sup>5</sup> For an analysis of the evidence from the Parker Chronicle, see section 1.6.

observations are not taken as indication that breaking was possibly only spreading at the time of the attestations mentioned.

An example of lacking evidence for an assumed prehistoric sound change can be found in Hogg's *Grammar of Old English 1*. In section 5.23 (p. 86), Hogg writes that:

the long vowel /e:/ is broken to /eu/, by the time of the earliest texts. [...] the only examples are of nWS  $\bar{e}$  = WS  $\bar{x}_1$ . Further, the only examples of breaking of nWS  $\bar{e}$  occur before /x/, and in Angl. the resultant diphthong is monophthongized by Angl. smoothing unless /x/ was firstly lost [...].

This narrows down the body of evidence quite drastically: despite the postulated breaking of /e:/ before (earlier) *x*, the default realization in Anglian is the monophthong(!)  $\bar{e}$ . The evidence explicitly mentioned as proof of breaking (Hogg 2011, 87), with assumed *eo* < \* $\bar{e}x$  without smoothing due to the loss of \**x* (PsGIA<sup>6</sup> *neolæcan* 'to approach', *neowest* 'nearness' < PGmc \**nēx-westi-* and Kentish *nior*, *neor* 'nearer'), can be explained in a different way, as will be discussed in section 2.2.2. Scholars seem to ignore the fact that the oldest attestation in an Anglian variety of a word that is supposed to prove the early date of breaking is without breaking, namely *neweste* in Charter 98 from ca. 745 (as attested in the DOEEC).<sup>7</sup> It is not until 100 years later that we come across *neoweste* (PsCaA 1, PsGIA, from ca. 850). More logical would be to interpret the form *neoweste* as a later development from *neweste*. The same text, PsGIA, is said to contain another piece of evidence, namely *nēolæcan*. I didn't find this exact form, but one comes across forms such as *geneolaeceð* or *geniolaecað*, but also *genehlaecað*. The last form contradicts the idea that the loss of *x* (and hence the lack of smoothing) are particularly old and prehistoric. The form with *neo-* looks rather like a vocalization of /x/ as in PDE *low* < ME *lāh*. This would be in line with the interpretation of 'breaking' as a phonetic process of weakening of the consonant, developed by Howell (1991).<sup>8</sup>

The form *unneg* 'un-near' on the 8th century Franks Casket (FC) is supposedly the product of breaking and smoothing developments, but it could just as well show that breaking (in Northumbrian) is rare and late, and does not apply to  $\bar{e}$ . Toon (1987:283) concludes on the basis of the material in the Épinal and Erfurt Glossaries (EpGl and ErfGl)

<sup>6</sup> This label refers to the glossed psalter, also known as the Vespasian Psalter. Hogg (2011) refers to it as Ps(A), Campbell (1977) as VP; the text has the Cameron number C7.7 (<https://tapor.library.utoronto.ca/doe/#listoftext>).

<sup>7</sup> <http://www.esawyer.org.uk/charter/98.html#>; DOEEC = Healey (2004).

<sup>8</sup> Compare the development in Danish: ON *dagleg-* 'daily' > [dawli]; *hagi* 'garden' > [hæwø]; \**x* may have been voiced in *genehlaecað* between a vowel and /l/.

(Pheifer 1974, Herren, Porter & Sauer 2020) that smoothing of /ěo/ was not a prehistoric sound law, which contradicts the Standard Theory's statement about the prehistoric nature of both smoothing and then also breaking of \*/e:/ — if smoothing hadn't taken place, a form with <e> cannot be derived by the application of smoothing and hence the <e> attests to an originally unbroken vowel. Therefore, the form *unneg* on FC rather shows that such a breaking never took place in Anglian, at least not in Early Northumbrian.

The reasoning found in Hogg (2011, 87) in the discussion of breaking of short /i/ seems unnecessary complicated to me. For breaking before \*/x/, it is mentioned that “[...] most forms are found with *i*-umlaut of the breaking diphthong [...]”. WS *sihb* and Angl. *sīb* ‘sees (3.sg.)’ < PGmc \**sixiþ* are presented as evidence for earlier breaking (“\**sihiþ* > \**siuhiþ*”), whereas the WS form shows in fact only syncope of the second vowel and the Angl. form attests to an early loss of the intervocalic \**x* and subsequent contraction. The only positive evidence for breaking comes from Kentish *siohb*,<sup>9</sup> which resembles OFri. *siucht*, where breaking before /xC/ took place in the 7th or 8th century. A similar overinterpretation of the evidence is found in the examples WS *filhb*, Angl. *fileþ* < PGmc \**filxiþ*, which are supposed to support the earlier existence of a never attested form “\**fiulhiþ*”. While none of the attested forms, except for the Kentish form *siohb*, shows any real breaking, we are supposed to believe that broken forms existed at the intermediate stages in all varieties of Old English.

An interesting example of the different ways in which scholars deal with attested evidence comes from the discussion of the Caistor-by-Norwich knucklebone inscription **raihan**, dated to the 5th century (Looijenga 2003, 284). Ringe & Taylor (2014, 171) state that “[...] it might [...] exhibit inherited \**ai* with no change”, which would provide an important *datum post quem* for most of the sound laws mentioned in Table 1.<sup>10</sup> Page (1994, 107) thinks that the inscription “might still be convincingly Scandinavian”, a conclusion stipulated by the single-barred **h**, in order to fit Luick's hypothesis — “in complete absence of direct evidence” (sic!) (Page 1994, 107) — that the transition from PGmc \**ai* > (pre-)OE *ā* should be dated in the 3rd or 4th century.<sup>11</sup> The

<sup>9</sup> DOEEC does not contain any such Kentish form, only *forsiohð* in OccGl 49.

<sup>10</sup> Compare Campbell's rejection of the possibility to date the changes, mentioned in section 1.2.

<sup>11</sup> It is in fact highly unlikely that the form with the diphthong can be of Scandinavian origin. The \**ai* was monophthongized in Scandinavian exactly in the position before \**x* as evinced by various runic inscriptions. This process was already completed around 400, which makes a Scandinavian origin of a 5th century Anglian inscription with **ai** improbable (Versloot 2017, 294–296).

in my view more favourable approach by Ringe & Taylor leads to the conclusion that all the developments in Table 1 must be squeezed into a period of no more than 250 years: the **raïhan** inscription in the early 5th century and the archetype of the Mercian Glossaries from the late 7th century (Pheifer 1974, lvii, xci).

### 1.6 The Parker Chronicle (Chron(A))

The first part of the Early West Saxon *Parker Chronicle* (*PC*) (Chron(A)) contains frequent spellings of <a> before -lC, which goes against the prediction made by the Standard Theory, namely that breaking of PGmc \*a in West Saxon before -lC was pre-Old English. This contradictory evidence is, however, ignored (see the quotation from Campbell in section 1.5) or interpreted as a sign of ‘Mercian influence’ (Sprockel 1965, xix, Ringe & Taylor 2014, 184, fn.6). I analysed the text of the *PC* for all instances of <(e)al>+C. I distinguished hand ‘A’ (ca. 900 AD) from the other scribes, following Sprockel (1965, xviii–xxii). Hogg (2011, 129) describes the language of Hand A as one of the “[...] EWS texts which show signs of being (influenced by) an *a*-dialect”, leaving it open whether this *a*-dialect was Mercian or a variety of West Saxon. Campbell (1977, 110, §258) states that “[s]pellings with *a* penetrate eW-S and eKt. extensively [...]”, due to “mutual influence of established orthographical systems”. For each of the authors it is beyond doubt that breaking in this context must have been implemented in genuine West Saxon long before the *Parker Chronicle* was written. None of them considers the option that PGmc \*a had not yet been broken in West Saxon at the time of the attestation of hand A.

The first section of the chronicle contains unbroken spellings in e.g., *aldormann* ‘alderman’ or *salde* ‘sold’. My analysis focusses on instances of PGmc \*a followed by -rC and -lC without *i*-mutation. A couple of lemmas can be found both in part ‘A’ and in the rest of the chronicle, rendering a comparison possible. Some morphemes appear in various personal names (PN), such as -*wald* (e.g. *Oswald*, *Ecwald*) or *Ealh-* (e.g. *Ealhmund*, *Ealhstan*); -*w(e)ard* appeared both in names (e.g. *Eaduard*, *Æpelward*) and in adverbs (e.g. *easteward*); see Table 5 for a summary of the distribution of attested forms.

lemma	cluster	% <i>ea</i> -hand A	% <i>ea</i> -hand B-E	tokens
PN- <i>wald</i>	- <i>ld</i>	0	0	40
<i>aldormonn</i>	- <i>ld</i>	3	100	52
<i>all</i>	- <i>ll</i>	10	100	71
<i>sellan</i> (past)	- <i>ld</i>	25	100	20
<i>haldan</i>	- <i>ld</i>	33	100	5
adv- <i>weard</i>	- <i>rd</i>	100	100	15
PN- <i>weard</i>	- <i>rd</i>	100	97	35
PN- <i>heard</i>	- <i>rd</i>	100	100	15
<i>weorþan</i> (past)	- <i>rp</i>	100	100	40
<i>healf</i>	- <i>lf</i>	100	100	25
<i>Ealh</i> -PN	- <i>lh</i>	100	100	13

**Table 5:** Lemmas with PGmc \**a* before *-r/lc* without *i*-mutation in the *Parker Chronicle*, attested at least two times in both the early hand and later hands. PN = personal name, adv. = adverb.

The words with ample attestation in the entire chronicle and little or no breaking in hand ‘A’ have been marked with a grey-tone in Table 5. They all contain *-ld* or *-ll* clusters. Names with *-wald* as the second element lack breaking in all sections of the *PC*: the last, mostly unstressed, part of a word is less inclined to show breaking. The same tendency can be observed in the sequence *-alh* in the data from hand ‘A’: PN-*walh* appears only with *a*, whereas *Ealh*-PN is always spelled with a broken vowel <*ea*>. The contrast between first and second syllable is not relevant for the sequence *-ard/b*, which shows breaking of \**a* from the very early parts of the *PC*, hand ‘A’ onward. The relevance of word structure can be illustrated by the contrast between the simplex *healf* (always with breaking in hand ‘A’), and *H(e)alfdene*, which appears once with *Half-*. By the same token, the scribe of hand ‘A’ is more reluctant to apply breaking in the polysyllabic word *aldormann*, than in the simplex words *h(e)aldan* and *s(e)alde/-on*.

I tested all words with *-r/l+d/ð/p* in the entire text of the *PC* for the following features: *-r* vs. *-l*, hand ‘A’ vs. the rest of the text, the position of the *a* in the word (first part of a compound or derivation vs. latter part) and the number of syllables (excluding inflectional endings for otherwise monomorphemic stems) in a logistic regression analysis. All evaluated features contributed significantly to the contrast between *ea* and *a* (see Appendix). For *-r* vs. *-l* and the text fragment, this comes as no surprise. The latter two factors comply with a hypothesis that

breaking may have emerged from short *\*a* that was lengthened before specific consonant clusters (see Versloot, to appear) — lack of stress in a second syllable prevents lengthening, while the word-isochrony principle constrains lengthening in polysyllabic words, even when the *a* appears in the stressed first syllable.

It is noteworthy that the alternation is always between <al>/<ar> and <eal>/<ear>, as in *aldormon* ~ *ealdormon*; next to 3 tokens with (-)*bearn*, there is one *barn*, and next to 36 tokens *healf-*, there is one *half-*, but no *\*bærn* or *\*hælf*<sup>12</sup>; compare also EpGl *fosturbearn* and ErfGl *fo[s]tribarn*, but no *\*baern*, and Cædmon's Hymn 'Moore' *-geard* vs. 'Leningrad' *-gard*. This suggests that *æ* and *ea* exclude each other rather than that they are part of a chronological-phonological sequence.

Finally, one may consider the potential Mercian origin of the *-alC*-spellings (Hogg 2011, 129). Hogg (2011, 157-158) explicitly ascribes non-WS spellings in the chronicle to Mercian influence. When comparing the progression of breaking in EpGl and ErfGl with the distribution of broken and non-broken forms in hand A, one can observe clear differences. The Glossaries show no breaking before *\*-lx* or *\*-lf*, as in *salh* 'sallow (tree)' or *scalfor* 'diver (bird)', whereas Table 5 shows that these contexts are breaking contexts for the scribe associated with hand 'A' of the *PC*. There is no reason why a scribe, influenced by Mercian, would show this influence selectively. Moreover, it is hardly reconcilable with a scribal spelling influence interpretation that the observed variation between *a* and *ea* by hand 'A' follows statistical patterns, based on phonological principles. It seems more logical to consider the text of hand 'A' in the Parker Chronicle as a genuine form of early-West Saxon that shared some but not all of the distributional features of breaking with the language of the early Mercian Glossaries. The breaking appears significantly later in the *Parker Chronicle* in contexts that are resilient to phonetic lengthening, which lends support to the breaking-through-lengthening hypothesis. More important is the implication that breaking was an ongoing phonological process around 900 in West Saxon and did not take place in the prehistoric periods of English. The alternations between broken and unbroken forms in Cædmon's Hymn and the Mercian Glossaries (from around 700) and the unbroken forms in early manuscripts of Bede's *Historia* (see section 1.5), indicate that breaking in Old English had begun only briefly before, in the 7th century.

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<sup>12</sup> There is a single attestation of *forbarn* next to *forbærn*, apparently a strong past tense form of *forbærnan*, alongside weak forms such as *forbærnde*.

## 1.7 Scribal errors and practices

In order to explain discrepancies between the theory and the attested spellings, the Standard Theory often takes recourse to the idea of widespread spelling errors on the one hand and a mixture of established spelling traditions on the other. In all, Hogg invokes ‘scribal error(s)’ and ‘scribal confusion’ 15 times in his chapter 5, which deals with the vocalic changes.

The result is a myriad of early Mercian scribal influences on Early West Saxon and Kentish and an increasing impact of West Saxon on the other varieties of written Old English at a later date (for a nuanced discussion of this issue, see Toon 1992, e.g. 443–444). I do not deny the potential for an impact from scribal centres (see e.g. Rem [2003] for a thorough analysis of this effect for Middle Dutch in Holland), or the long path that some texts had from copy to copy, but the proponents of the Standard Theory apply these arguments in a sometimes very inconsistent and eclectic way (cf. the presumed Mercian patterns in the Parker Chronicle). The use of a phrase like “no doubt” often reflects circular reasoning rather than well underpinned arguments.<sup>13</sup> I will discuss three examples of this kind of problematic reasoning in more detail below.

Campbell ascribes the alternation between <ae> and <e(e)> in the early Mercian glossaries to “imperfect differentiation” of <ae> and <e(e)>, which were said to be “equivalent in the contemporary spellings of Latin” (Campbell 1977, 52, § 128 fn. 2; in a similar vein Hogg 2011, 61). The EpGl contains ca. 25% <ae>-spellings for PGmc \*ē<sup>1</sup>. If these are random, equivalent spelling variants, one could expect a similar ‘confusion’ in the spelling of the <ae> from PGmc \*ai with *i*-mutation. However, here the spelling <e(e)> appears in only 1 instance in EpGl (n = 23). This indicates that the alleged scribal confusion was constrained by knowledge about historical phonology, which is an unlikely scenario. The same pattern was observed in the previous section about the <a>-spellings in the *Parker Chronicle*. Given the fact that the ‘misspellings’ for PGmc \*ē<sup>1</sup> reflect the reconstructable pre-stage \*ǣ, it seems much more logical to interpret the <ae> spellings for \*ē<sup>1</sup> as a witness of the

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<sup>13</sup> There are 22 instances of the collocation “no doubt” or “undoubtedly” in Hogg’s chapter 5, discussing the Old English vowels. Here are a few examples with page numbers from Hogg (2011):

- occasional examples with *-e-*, no doubt the Angl *i*-umlaut of *ea*, can be found, such as ... (p. 130, when talking about Early West Saxon texts)
- the change is very poorly represented in OE texts, partly no doubt because of the conservative influence of the *Schriftsprache*. (p. 211)
- apparent examples from much earlier texts are undoubtedly due to scribal error, ... (p. 212)

last stage of the transition  $\bar{æ} > \bar{e}$ . This transition is thus attested in the earliest Anglian writings and can therefore not be prehistoric.<sup>14</sup>

Earlier scholars seem very convinced about such “[...] confusion of < $\bar{æ}$ > and < $\bar{e}$ >.” (Hogg 2011, 129, fn.1).<sup>15</sup> The spelling with <ae> for PGmc \**au* with *i*-mutation in Bede is supposedly “purely graphic”, an opinion apparently also held by Luick, while the instances of <e> in early WS texts are “no doubt merely a sign of Merc. influence on EWS.” (Hogg 2011, 129). The idea that WS <i(e)> might have developed from  $\bar{e}$  (as it e.g. did later in English in the Great Vowel Shift) is not given any consideration.

‘Ad hoc’ (Ringe & Taylor 2014, 183–4) argumentation by Hogg can be found in the discussion of *uuiurthit* ‘becomes’ in Bede’s Death Song (BD). Hogg (2011, 91, fn.2) considers it to be a deliberate misspelling for \**uuurthit*, in order to avoid the sequence <uuu>, where he argues that <ui> “of course” represents /y/. But Bede’s Death Song and other Early Northumbrian sources contain many instances with <y> for /y/, such as CH *dryctin* ‘Lord’ < PGmc \**druhtina-* or BD *yflaes* ‘evil’ < PGmc \**uþila-*, so there is no reason to assume an alternative spelling \*<ui> here. The spelling with a sequence of <uuu> is found in *thriuuuintrī* ‘three winter’ in EpGl. Bede’s Death Song contains two instances of breaking of PGmc \**e*: *uueorthae* and *uuiurthit*, forms of the verb ‘to become’, where PGmc \**e* stands before /r/ + a voiced, non-velar consonant. The contrast between the diphthongs <eo> and <iu> can be understood in terms of height harmony with the following vowel: *eo* ~  $\bar{æ}$  and *iu* ~ *i*.

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<sup>14</sup> The confusion about the <ae>-spellings is emblematic. Pheifer (1974, lx) claims that Campbell (1977, 52, § 128 fn. 2) regards them as archaisms, which I can only understand as meaning that they are the reflections of an earlier \* $\bar{æ}$ -stage in Mercian. But then Pheifer continues, stating that <ae>-spellings “reflect [...] early uncertainty in the representation of non-WS. [e:]”. The claim made is that the sound value was definitely “[e:]”, which is reiterated by the statement that the development from \* $\bar{æ} > [e:]$  “was certainly pre-literary”, with a reference to Luick. Pheifer can be interpreted as saying that the scribes used only [e:] in their speech, but that they got confused by the no-longer existing, pre-literary pronunciation with \*[ $\bar{æ}$ ]. This presumes an unlikely knowledge of historical phonology among the scribes or the existence of an unattested corpus of earlier writing. Taking Campbell (1977, 51, §130 fn.2) at face value, one has to conclude that there is no evidence that Campbell considers these spellings to be archaisms. Campbell only says that they are “[...] probably due to imperfect differentiation of the symbols [...]”, so purely spelling without implications for the chronology.

<sup>15</sup> Note the real confusion here, between the phonological interpretation  $\bar{æ}$  (or rather: / $\bar{æ}$ :/) and spelling <ae>. Length was hardly ever marked and never spelled with macrons: < $\bar{æ}$ >, < $\bar{æ}$ ē>.

A theory that stays closer to the attested forms and needs less help from the discussed type of reasoning is to be preferred in my perception; see Toon (1992 esp. pp. 447-448) for a similar inclination towards a chronological interpretation of linguistic variation in manuscripts.

## 2 Detailed criticism of the Standard Theory

The Standard Theory, claiming a chronological order with developments taking place before the first attestations of English around 700, turns out to have various flaws, which, taken together, render this theory problematic. Here, I follow Hogg's (2011, 74–149) overview, referring to the section numbers in his treatment.

### 2.1 First Fronting and related issues (Hogg § 5.3–15)

The fronting of PGmc *\*a* is clearly established in the history of English and Frisian. It is the structural-phonological mirror-event of the rounding of *\*a*. Nasalization and rounding of PGmc *\*a* before nasals is widespread in Old English, Old Frisian and Old Saxon, but at the same time phonologically unstable (for Frisian see Versloot 2014a), with *o* ~ *a*-alternations present in all languages (Ringe & Taylor 2014, 142–146). A couple of issues relating to the details of the First Fronting are discussed in this section.

#### 2.1.1 Widespread fronting

A couple of words with PGmc *\*a* are attested in early Anglo-Saxon runic inscriptions. Note the following inscriptions, containing the *ansuz* or *æsc*-rune (Waxenberger 2013, 2019):

- Caistor-by-Norwich (East Anglia) astragalus, **raihan**, ca. 425–475: ᚱ = /a/; evinced by the position in the diphthong and the ending.
- The Spong Hill urn (East Anglia), ca. 450–550: ᚱᚱ **alu/ælu** (?) with no positive *futhorc* character; the sound value of the *ansuz*-rune is open for interpretation: if interpreted as an early inscription, it attests the original /a/-value (as in the Caistor-by-Norwich inscription; see Waxenberger 2019, 70); if interpreted as a *futhorc*-inscription, it attests to the stage of general fronting *before* the restoration of *\*a* when followed by a back vowel.<sup>16</sup>

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<sup>16</sup> Waxenberger (2013, 33–35) claims that the inscription shows “restoration of [a] before velar vowels”. According to her, the *ansuz*-rune can be used for all the allophones between [ɛ] and [â], including broken vowels, until ca. 600.

- Loveden Hill (Mercia), ca. 450-550: **-b|ƿd = bad** (Nedoma 2016) or **-b|ƿd = bæd** (Waxenberger 2019, 63,70 fn. 18); the word is considered to represent *\*badwō-* ‘battle’, OE *beadu*, or the masculine form *\*badu-*.
- Chessel Down II (Ilse of Wight) silver plate, ca. 525–550, contains positively *futhorc* characters and therefore **ƿk|** seems best interpreted as *\*æk(k)ō*, with a fronted *æ* vowel, possibly before a geminated consonant, followed by a back vowel, cf. OE *Acca* (e.g. in Bede 3 & 5 and Chron D,E,F). The form reads as a masculine *n*-stem, pre-Old English *\*Æk(k)ɔ* (Nedoma 2016, 10, fn.8) < *\*ak(k)ōn/-an-*. Nedoma also mentions a Kentish *Eacca*.<sup>17</sup> Retraction or — in a different approach — absence of fronting before a back vowel is common but not uniform, with an intervening geminated consonant (Hogg 2011, 94); Ringe & Taylor (2014, 189) describe general retraction before geminates plus back vowel. Words with geminate *tt*, *pp*, *ww* have fronted vowels in EpGl & ErfGl, including the only two *n*-stems: *-laeppan* ‘cloth’, *screuua* ‘shrew-mouse’.<sup>18</sup> Old Frisian has *a* in such words, such as in *lappa*.
- A different approach comes from Waxenberger (2019: 63,70), who reads the text as *\*[akɔ]*, apparently with a single consonant. She reconstructs that the **ƿ** could be used for both [a] and [æ] until ca. 550–575, which leaves the exact interpretation of the form open. This implies that both fronting and retractions must have been completed by that time, but these developments are not explicitly mentioned in her chronology.
- Whitby I (Yorkshire) bone comb, dated to ca. 700, reads **aluwaluda** ‘almighty’ with **ƿ** in **alu** and **waluda** (Waxenberger 2011).

Therefore, if we assume a date of early 6th century for Spong Hill, Chessel Down II and Loveden Hill, applying a reading **ælu** *\*/ælu/*, **æko** *\*/æk(:)ɔ/* and **bæd** *\*/bæd/* respectively, one may claim that there is runic evidence for general early fronting before 500, also before back vowels. That leaves the 6th century for the implementation of breaking, followed by retraction, as witnessed by Old English *Acca*, in the course of the 6th century, to be completed before *i*-mutation at around 600.

However, one could just as well claim that Spong Hill should be read **alu** *\*/alu/*, indicating that PGmc *\*a* was simply never fronted before back vowels (the interpretation applied for Frisian), whereas Chessel Down II can receive the interpretation *\*/æk:ɔ/*, a context that shows fronting in the Mercian Glossaries, without any need to invoke a later retraction stage. The form *Acca* would represent the non-fronted

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<sup>17</sup> Nedoma refers to Second Fronting as an intermediate stage, but that interpretation can be ruled out, given the early date of the inscription. Second Fronting is supposed to post-date *i*-mutation according to Hogg (2011, 138) and the phonemicization of *i*-mutation is dated ca. 600 (Waxenberger 2019, 73). Besides, it is absent in Kentish.

<sup>18</sup> All other instances with geminates in the Glossaries are either with nasals or /l:/ or are followed by an *i*-mutation factor.

version, which fits the ambiguous impact of the context  $*aC_1C_1V_{back}$ . Where Kentish *Eacca* should be derived from depends on the exact interpretation of breaking. Nedoma's interpretation of Loveden Hill, with **bl̥d**, where **l̥** represents an  $*[a]$  without any fronting and a specific onomastic loss of the final vowel  $*-u$  (Nedoma 2016, 18), fits in here as well. It implies the sequence  $*badu > -bad$ , with simple blocking of fronting before the following  $*-u$  in the 5th century and before the final vowel was lost, no later than 550. Otherwise, one would have to squeeze the whole development of fronting, breaking, retraction and loss of  $*-u$  into the period of 450–550.

Unfortunately, we have to conclude that the runic inscriptions do not provide decisive evidence for either of the two chronologies. Whitby I shows the well-known fact that PGmc  $*a$  was not fronted in Anglian before  $-lC$ , which is not a controversial interpretation in any approach.

The crucial issue is the ambiguous interpretation of the **l̥**-rune and the potential allophonic realizations 'underneath' the use of this character, in particular advocated by Waxenberg. The proponents of the Standard Theory avoid mentioning absolute dates for the various steps: fronting, breaking and retraction (see Campbell's statement, quoted in section 1.2), but from other indications, discussed earlier (**raihan** and the dating of *i*-mutation), we can conclude that these three processes must be fit between 450 and some time before 600. An additional complicating factor is the time span of the various dating methods.<sup>19</sup> Unfortunately, there are no words attested with a fairly certain reading in contexts where the Standard Theory predicts a broken vowel as an intermediate stage (cf. Table 4).<sup>20</sup>

Early and widespread fronting is assumed to account for broken forms, because the breaking product *ea* is supposed to be derived from  $*æ$  (see Table 4). One of the puzzling aspects of this theory is that a

<sup>19</sup> For examples of dating issues in general see, e.g., Imer (2011), Waxenberger (2011, 69–70).

<sup>20</sup> I have identified three potentially relevant inscriptions, but they are all not particularly old and they all have interpretive issues:

- Mortain Cascet: **gewarhtaæ** 'made' (Looijenga 2003, 289), ca. 700–900 (*RuneS*: s.v. OE-GB-61), a past tense of OE *wyrca*; Hogg & Fulk (2011, 275) mention similar forms, all 'Anglian', which is not the core region of breaking;
- Carisbrooke Mount (Isle of Wight): **..gæ(r/u)æ..** (Looijenga 2003, 293), ca. 775–825 (*RuneS*: s.v. OE-GB-15). This reading is doubtful, but if correct, one would expect a broken vowel before  $*rw$  in a southern dialect (Isle of Wight).
- London (bone): **tatberht** (Looijenga 2003, 293) ca. 700–900 (*RuneS*: s.v. OE-GB-48); here one should expect breaking of  $*e$  to  $*beorht$  — London seems too southern for 'Anglian Smoothing'.

chronological or diatopical ('das zeitliche Nacheinander ist das räumliche Nebeneinander', in a similar vein König 2001, 141) sequence of  $a > \text{æ} > ea$  is not attested; for example, next to WS *eald*, only non-WS *ald* is attested bar only a few rare forms with the spelling *æld-*, mostly ascribed to 'Second Fronting'; idem for *eall-*, *all-*, and *æll-*.<sup>21</sup> If the sequence were  $*al- > *\text{æ}l- > eal-$ , one could expect more instances of *æl-*. The pattern of attestations suggests that *ea-* developed directly from *a-*. A similar observation was made in section 1.6.

About the retraction of  $\text{æ}$  before *l*, Campbell writes: "§ 143.  $\text{æ}$  retracted before *l* followed by a consonant in Angl. texts, including the early glossaries" (Campbell 1977, 55). Hogg (2011, 79–81) leaves the option open that PGmc  $*a$  had never been fronted before  $*l$  in Anglian, whereas Ringe & Taylor (2014, 185–186) adhere to Campbell's view that  $*a$  was first fronted and later retracted before  $*l$ . Both Campbell (1977, 55) and Hogg (2011, 81) signal the fact that early WS texts show more  $\langle a \rangle$  than  $\langle ea \rangle$  before  $/l/$ . Campbell (1977, 110, §258) states that "[s]pellings with *a* penetrate eW-S and eKt. extensively [...]", due to "mutual influence of established orthographical systems". Considering the early texts and their scarcity, it seems quite bold to me to talk about "established orthographical systems". Given the early date of breaking according to the Standard Theory, an allographic rendering of  $/\text{ea}/$  by  $\langle a \rangle$  would have to go back to a 5th century scribal tradition, where  $\langle a \rangle$  was used to mark unbroken  $/a/$ . Hogg tries to solve the discrepancy between the theory and the actual attestations by assuming two different dialects in the south, an *a*-dialect and an *ea*-dialect, and the difference between early WS and late WS is interpreted as a spatial shift, "[...] although the geography of the change remains obscure" (Hogg 2011, 81). Despite the lack of evidence for Hogg's theory, and ignoring the obvious chronological cline in the data, the transition from  $\langle al \rangle$  to  $\langle eal \rangle$  is not interpreted as a chronological change, but it is assumed that a fully-fledged *ea*-dialect already existed from the very first moment of attestations (compare section 1.6).

That there is a conceptual tension between fronting of  $*a$  before  $*r, *l, *x$  on the one hand, and breaking in the same contexts — which presupposes back consonants — on the other, is also acknowledged by Ringe & Taylor (2014, 185–186). Laker (2019, 13) points out the

<sup>21</sup> Figures for the word (*e*)*alle/-a* from the DOEEC:

'Early' Old English ( <i>e</i> ) <i>alle/-a</i>	$\langle a \rangle$	$\langle \text{æ} \rangle$	$\langle ea \rangle$
Anglian	183	0	25
West Saxon & Kentish	12	3	676

phonological parallel in Old High German, where the contexts *\*xC*, *\*rC* and *\*lC* block fronting through *i*-mutation. Ringe & Taylor (2014, 185–186), however, argue that fronting is plausible by the following incremental reasoning. At first, it is claimed “[...] that fronting occurred even before the velar fricative /h/ [...]” invoking some of the key-witnesses, discussed in section 2.2.2. Then it is stated that “[i]f a velar fricative did not inhibit fronting at that time, it is unlikely that /l/ would have done so, even if it was verlarized” (Ringe & Taylor 2014, 185–186). So, the first, phonetically unlikely, development should convince us of the likelihood of the second one. Consequently, we end up with series of unlikely events, all hinging on a few key-witnesses, which are the topic of the section 2.2.2.

Although I voice this criticism, I do not claim that a solution is easy. Frisian shows no fronting before *\*x* or *\*lC*, but before *\*rC* the situation is much more complex. When *\*rC* is followed by a PWGmc back vowel *\*u* or *\*ō* or preceded by *\*b, f, p* it comes out as PFri *\*[a̠]*, a vowel that develops into /a/ or /ɛ/ in different modern dialects (Hoekstra & Tigchelaar 2014). In the sequence *\*warC*, the Proto-Frisian vowel may have even been [a], considering the back-vowel realizations in some dialects (North Frisian *uurt*, East Frisian *woort* < OFri *warte* < PGmc *\*wartōn*-‘wart’). In most of the remaining contexts, however, the vowel comes out as Old Frisian <e>, as in *therm* ‘intestines’, *merch* ‘marrow’. The Épinal Glossary show mostly <ea> in the context *\*arC*, which is not very helpful for the identification of the exact vowel quality before breaking. The Erfurt Glossary is much more diverse in this respect, but does not show a clear one-to-one-correspondence with the Frisian situation, despite the fact that the contexts of Labial+*\*arC* or *\*warC* are known to be associated with Old English <a>, in particular in Northumbrian (Hogg 2011, 89–90; Ringe & Taylor 2014, 181–182). On the lexical level, however, the correspondences often fail: OFri *bern*, *\*bars*, *warte*, ErfGl *barn*, *baers*, *uaertae/uearte/uertae*. An important difference is the differentiation between PGmc *\*zC* (always <ae>) and *\*rC* in Anglian, while no such contrast is found in Frisian. Another dissimilarity between Frisian and Anglian seems to be that Frisian consistently has /a/ before *\*x*, as in *nacht* ‘night’ and *fax* ‘long hair’, whereas Anglian shows rather *n(a)echt*- and *fex* ‘kelp’.<sup>22</sup>

Therefore, when considering the differences between Old English and Old Frisian, but also *within* Old English, one should take into consideration that /r/, /l/ and /x/ may have had different realizations: [R] or [r] for /r/, [L] or [l] for /l/ and [x] or [ç] for /x/. Present-day dialects of all Germanic languages indicate that these realizations may

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<sup>22</sup> Instances with *i*-mutation have been excluded from the discussions in this paragraph.

differ strongly within a single linguistic continuum, with consequences for the inclination of preceding vowels to be fronted or broken.

### 2.1.2 Absolute and relative dating of the monophthongization of PGmc \*ai

A related issue is the relative dating of fronting and monophthongization of PGmc \*ai. The standard approach is that PGmc \*a developed into \*æ, also as part of the diphthong \*au > \*æu. This places the monophthongization of PGmc \*ai in the time before the fronting, because otherwise \*\*ǣ would be the expected product of that monophthongization. This is considered to separate Frisian and English from the very beginning of their developments (Campbell 1977, 52, §131-2).

The runic evidence tells a different story. The form [sk]amella ‘footstool’ < Latin *scamellum* (Fallward), from the early 5th century, originating from the so-called Weser-Elbe triangle, one of the main regions of origin of the Anglo-Saxons, as well as the **raihan** ‘roe-deer’ < PGmc \*raixan- (Caistor-by-Norwich), from the middle of the 5th century, show that both fronting (ǣ = /a/) and monophthongization did not take place before the middle of the 5th century (for a description of the inscriptions, see Looijenga 2003, 239-240, 284). The combined evidence of Anglo-Frisian early *futhorc*-inscriptions shows a relative order of the developments:

ca. 450 — rounding > fronting > monophthongization of \*ai — ca. 550  
(Waxenberger 2013, 41)<sup>23</sup>

The chronology in the Standard Theory is based on the assumption that vowels in diphthongs behave in the same way as their monophthongal equivalents. This is demonstrably not true in many contemporaneous languages, e.g. Dutch /a/ = [ɑ], /au/ = [aw]. Another example comes from Wallis Swiss German, where OHG *o* was retained, but the diphthong *ou* developed into *öi* (Wipf 1910, 32, 38). So, there is no need to postulate the dating of monophthongization of \*ai before the fronting and this order is not supported by the runic evidence (Ringe & Taylor 2014, 170–171).

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<sup>23</sup> Waxenberger (2019) suggests an absolute dating of the processes with two different scenarios with respect to the order of monophthongization of \*ai and the fronting and rounding of \*a. Remarkably enough, breaking stays entirely out of the discussion, even when stage 4 in her chronology includes *i*-mutation, which is considered to be younger than breaking in the Standard Theory (cf. Waxenberger 2013).

## 2.2 Breaking (Hogg § 5.16–34)

### 2.2.1 PGmc \*ē<sup>1</sup>

Breaking of non-WS \*ē > \*ēo presupposes the raising of PGmc ē<sup>1</sup> to \*ē at a very early stage in the chronology (Hogg p. 61; see also Table 1). It is generally held that PGmc \*ē<sup>1</sup> developed to ē in Mercian at a fairly early date, except for the position before nasals, where we find <a(a)> or <ou> in EpGl and ErfGl. In other contexts, ErfGl has, apart from three instances with <ei>, only <e>; this demonstrates that the raising of \*ǣ was already completed by the time of the attestation of ErfGl. The development from ǣ > ē took place in Kentish in the 9th century (Hogg 1988, 194–198).<sup>24</sup>

Table 6 shows the distribution of the spellings <ae> and <e(e)> for PGmc \*ē<sup>1</sup> and PGmc \*ai with *i*-mutation in the Épinal Glossary. The figures in the table illustrate that these two spellings are not applied at random, but show a clear correlation with the etymology of the lemmas.

Épinal Glossary	PGmc *ē <sup>1</sup>	PGmc *ai > *ā + <i>i</i> -mutation
<ae>	9	23
<e(e)>	27	1

**Table 6:** The spelling of \*ē<sup>1</sup> not before nasals, and \*ai + *i*-mutation with <ae> or <e(e)>; the contrast is highly significant in a Fisher's Exact Test: p < 0.0001

The EpGl contains 28% tokens with <ae> in words with PGmc \*ē<sup>1</sup>. I would argue that 'scribal confusion' — as discussed in section 1.7 — is not an attractive interpretation for so many deviating forms, given the fact that ǣ < PGmc \*ai with *i*-mutation is nearly consistently spelled <ae> (Table 6). Therefore, I hypothesize that the transition from pre-OE \*ǣ > ē was in its final stage in the EpGl-variety of Old English and hence cannot have been prehistoric. In Frisian, the raising of PGmc ē<sup>1</sup> to /e:/ post-dates the settlement of the North Frisian Islands around 700, which is in line with the developments in ErfGl. The crucial point of this reasoning is that it renders the whole reconstruction of *-neg-* 'near' < PGmc \*nēhwa- (Franks Casket), with early raising of pre-Old English \*ǣ

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<sup>24</sup> This relatively late date of raising in Kentish was already identified by DeCamp (1958, 235), who also points out the reflex of proponents of the Standard Theory (here Luick and Sievers-Brunner) to discard counterevidence by assuming dialect mixture in the manuscript. DeCamp (1958, 240) explicitly mentions the raising of ǣ > ē as a 7th century innovation in Old English, except for West Saxon. I do not, however, adhere to his identification of *i*-mutation as a continental feature, originating in southern Germany.

< PGmc  $\bar{e}^1$  and subsequent breaking and smoothing \* $n\bar{æ}h-$  > \* $n\bar{e}h-$  > \* $n\bar{e}oh-$  > \* $n\bar{e}h-$ , obsolete.

The evidence from the Anglo-Saxon runic inscriptions partly supports this chronological interpretation, partly complicates the matter. There are two Anglo-Saxon runic words that seem to contain a PGmc  $\bar{e}^1$ : **mægæ** ‘relative (dat.sg.)’ on the Undley Bracteate (East Anglia) from the late 5th century (Waxenberger 2013, 46) and **-mer??** as part of the name **sigimer-** on the Ash Gilton (Kent) sword pommel from the late 6th century (Looijenga 2003, 276; see also Hines 2006, 196). The former can be derived from PGmc \* $m\bar{æ}gai$ , the latter from \* $m\bar{æ}r(i)jaz$ . The two inscriptions confirm a chronological order of the change, but the dating of the change from \* $\bar{æ}$  > \* $\bar{e}$  to the late-6th century is earlier than concluded above. Note, however, that \* $m\bar{æ}r(i)jaz$  has an *i*-mutation factor which may have caused an earlier raising than in other contexts.<sup>25</sup> EpGl contains both words with <e(e)>: *meeg* and *mere* ‘famous’ (adj.).

### 2.2.2 Inadequate ‘key-witnesses’ for early breaking

It is typical for the Standard Theory that, on the one hand, so many forms are ignored or reasoned away (such as the *al*-spellings in early WS), while, on the other hand, the whole theory hinges upon only 2 or 3 key-witnesses. The forms *ēa* ‘river’ and *slēan* ‘to hit’ are generally invoked as the key-witnesses for early fronting and breaking of PGmc \**a* (Hogg 2011, 78–79; Ringe & Taylor 2014, 177, 189–190). The forms PsGlA *neolæcan* ‘to approach’, *neowest* ‘nearness’ and Kentish *nior*, *neor* ‘nearer’ serve as evidence for the breaking of \* $\bar{e}$  < PGmc \* $\bar{e}^1$ .

All these key examples consist of words with a vowel followed by PGmc \**x*. An analysis of such words (Ringe & Taylor 2014, 177–179, 214–215, 314–317), and in particular the evidence from the earliest sources (the Épinal and Erfurt Glossaries, the somewhat younger Corpus Glossary and the early Northumbrian texts) makes it clear that the /x/ was still present in many words in the early 8th century, such as *thuachl* ‘washing (s.)’ < PGmc \* $pwaxla-$ , *æhrían* ‘ears of grain’ < \* $axiz-$  or *suehor* < \* $swex(u)ra-$  ‘father-in-law’ (WS *pwēal*, *ēar*, *swēor*). In words with preserved /x/, there are no diphthongs. The Standard Theory interprets this as a consequence of Anglian Smoothing, but if such a process existed at all, it was only gradually implemented during the 8th century, as was shown by Toon (1987, 283; compare section 2.2.3).

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<sup>25</sup> An *i*-mutation effect is not an immediately obvious — although not impossible — explanation for some of the differences in the distribution of <e(e)> and <ae> in EpGl.

An illustrative example is the reconstructed development of *swēor*, ‘father-in-law’, PGmc *\*swexra-* > pre-OE *\*swexur*, attested in EpGl in the plural as *suehoras*, but in ErfGl with contraction after loss of the *x*: *sueoras*. There is no need to assume an intermediate stage with a broken vowel *\*\*sweoxur-*, with subsequent smoothing, as Campbell (1977, 99, §235 (2), 102, §238 (2)) and Hogg (2011, 177) do. The difference between the impact of both approaches is illustrated in Table 7: the Standard Theory requires two extra steps, whereas the Anglo-Frisian hypothesis is leaner and builds entirely on forms attested in the Mercian Glossaries.

ST:	<i>*swexur</i> > <i>*sweoxur</i> (breaking) > <i>*swexur</i> (‘smoothing’) > <i>*swēur</i> (contraction) > <i>swēor</i>
AF:	<i>*swexur</i> > <i>swexor-</i> (= EpGl: <suehor->) > <i>swēor</i> (= ErfGl: <sueor->)

**Table 7:** The development of PGmc *\*swexur* ‘father-in-law’ according to the Standard Theory or the Anglo-Frisian hypothesis.

Accordingly, the development of OE *hwēol* is believed to involve the sequence *\*xwexwla* > *\*xweoxwla-* (breaking) > *\*xweoxol-* > *\*xwexol-* (smoothing) > *hwēol* (loss of *\*x* and contraction) (Hogg 2011, 177). This lengthy sequence is superfluous; the form *huueol-* can directly be derived from the vocalization of the semi-vowel (Ringe & Taylor 2014, 306) and the loss of intervocalic *\*x*: *\*xwexwla* > *\*xwexul-* > EpGl *huueol-*.

Let us now return to the mentioned key-witnesses for early fronting and breaking: *ēa*, *slēan* and *nēo-*. The earliest attested form for ‘river’ is *ēo-* (Ep/ErfGl). The form *ēa* is a later/WS development. The form *eo-* can easily be derived from *\*axwō-* > *\*æxwu* > *\*æxu* > *\*æu* > *eo*, with contraction and without breaking of any sort; so also Kortlandt (1999, 49).<sup>26</sup> In the same way, *slēan* (e.g. in the somewhat younger Vespasian Psalter (PsGIA)), can be derived from *\*slaxan-* > *\*slæhan* > *\*slæan* > *slēan*. Moreover, the verb *slēan* shows extensive variation in the paradigm due to strong analogical reshufflings, with root vowels involving not only *ēa*, but also *ā*, *æ*, *ē*, and their *i*-mutated variants *īe*, *ē*, *y* (Campbell 1977, 316–317, §744). This strong variation does not make it

<sup>26</sup> See Hogg (2011, 175): “When a front vowel was immediately followed by a back vowel, then in all dialects the hiatus was normally resolved by diphthongization, with the unstressed vowel becoming the second element of a long diphthong.” The consistent appearance of PGmc *\*a* before *\*x* as a fronted vowel *æ* or *e* in the Mercian Glossaries makes it conceivable that *\*x* was actually *\*[ç]* in Anglian and facilitated fronting. The alternative is: fronting before a velar *\*[x]*, breaking (= diphthongization) because the */x/* was velar, followed by smoothing (= monophthongization) before the very same velar. I find it difficult to accept such a scenario.

a solid candidate to be a ‘key-witness’ in the chronology, because a clear distinction between regularly developed vowels and analogical vowels is a hazardous enterprise. Compare also Kortlandt (1999, 49) for various other potential scenarios and Hogg (2011, 96, 179) for his vision on the variant *slān*.

The forms that the Standard Theory claim as evidence for the breaking of pre-OE \**ē* were discussed in section 1.5: PsGIA *neolæcan* ‘to approach’, *neowest* ‘nearness’ and Kentish *nior*, *neor* ‘nearer’. A prerequisite for breaking to *ēo* is the early raising to \**ē̄*. For the lack of evidence for such an early raising in Anglian, see section 2.2.1. Hogg (2011, 86, 87) includes the Kentish examples here, suggesting that also Kentish had early raising of PGmc \**ē̄*<sup>1</sup>, but on page 61 he only mentions Anglian dialects. Also Campbell (1977, 50, §128, 99, §235 (2)) seems to operate with a Kentish *ēo* from an early \**ē̄*. Hogg (1988, 194–196) himself showed on the basis of 9th century charters that the raising from *ǣ* > *ē* in Kentish is of much later date than breaking in the Standard Theory (also mentioned in Hogg 2011, 204). A 9th century Kentish *ē* could never be the input to breaking in the Standard Theory, ranked much earlier in the chronology. We also do not need any breaking to interpret the Kentish forms. The PWGmc comparative form \**nāxwōza-* developed to pre-OE \**nǣxora-*; *ǣ* was later raised in Kentish and the intervocalic \**x* was lost, which resulted in *neor-*. Exactly the same developments took place in Frisian, which shows further accent shift to *niār* ‘nearer’ (compare Kentish *nior*; positive OFri. *nēi*). Old Frisian never had the type of breaking that is assumed for Old English in the Standard Theory. This implies that the development of diphthongs before a lost pre-OE \**x* was a different process than the breaking of short vowels before *-r/IC* and that the former can hardly be used as key-evidence to determine the chronology of the latter.

The development of \**xw* in PGmc \**nēx-westi* ‘nearness’ was different from that of the comparative form *neor*, due to the morpheme boundary between \**nēx* and \**westi-*: \**nēx-westi-* > *nēwest* (earliest attestation <newest>, 745). The later form *neowest* may be the result of a later glide insertion between the *e* and the *w*: \*[e<sub>o</sub>w]; compare EpGl *beouuas* < PGmc \**bewwu/-a* ‘barley’. One may also consider the scenario sketched in section 1.5 with vocalisation of [x] > [ɯ] from a not attested \**nēxwest*.

To sum up:

- the attested sequences such as from *suehoras* (EpGl) to *sueoras* (ErfGl) do not need to be explained by breaking and smoothing before the time of the first attestations; *eo* in such words can simply be interpreted as the result of contraction after loss of intervocalic \**x*
- words such as *eo* and *slean* can be understood in the same way

- the Mercian and Kentish examples with *\*nēx-* fail as evidence for early breaking because of the unproven early raising of PWGmc. *\*ā* all the way to *\*ē*
- the subsequent assumption that forms such as *neolæcan* are the result of early breaking, followed by loss of *\*x* before the application of Anglian Smoothing, is strongly contested by attestations such as *genehlaecað* with <h> but no broken vowel, attested side by side with *geneolaeceð*
- the existence, on the one hand, of diphthongs in Old Frisian and Old English, as in *niār* ‘nearer’ (OE *nēor*) and *swiāring* ‘son-in-law’ (OE *swēor* ‘father-in-law’), and the lack of diphthongs, on the other, in Old Frisian in words with *-r/IC*, e.g. *bern* ‘child’ (OE *bearn*), *jerne* ‘willing’ (OE *geornlice* ‘diligently’), indicate that these were two separate processes, where evidence from the context before *\*x* (contested here) is not automatically applicable to the context before *-r/IC*; additional evidence for an independent interpretation of these two phonological contexts also comes from Old Norse, *with* breaking before *-r/IC* (ON *gjarna* ‘willing’), but without breaking before *\*x* (*nær* ‘nearer’) (Dyvik 1978)

I therefore conclude that the handful of ‘key-witnesses’ for an early date of the breaking do not stand individual scrutiny. There are plausible, different interpretations for each of these instances, and some interpretations from the Standard Theory are not supported by the data, so they cannot be taken as a reason to ignore so many other attestations that do not comply with the predictions of the Standard Theory.

### 2.2.3 The lack of smoothing of PGmc *\*eu* and *\*au* and OE *\*ěo* and *\*ěa*

One of the most intriguing sound laws in the history of English phonology is Anglian smoothing (see the quote in section 1.1). Apart from the phonological (un)likeliness, it turns out that such an effect was far from regular in the language of the Mercian Glossaries. There is only one example of a word with PGmc *\*eu* in a potential smoothing context in the glossaries. The word does not show ‘smoothing’: *-fliogae* ‘fly’ < PGmc *\*fleugō-*. The <io> is the regular continuation of PWGmc. *\*iu* < PGmc *\*eu* with height harmony.

Additionally, ‘smoothing’ of short *eo* (sometimes the text shows *ea*) (< PGmc *\*e*) is not regularly applied in the early glossaries either (Hogg 2011, 143; Toon 1987). At the same time, one finds many unbroken forms in the glossaries which should qualify for breaking, but not for smoothing: eleven instances with <e> or <i> in contexts where the Standard Theory predicts breaking. The Standard Theory correctly predicts the vowel in tokens with PGmc *\*e* in breaking and smoothing contexts in only 65% (26/40), as shown in Table 8.

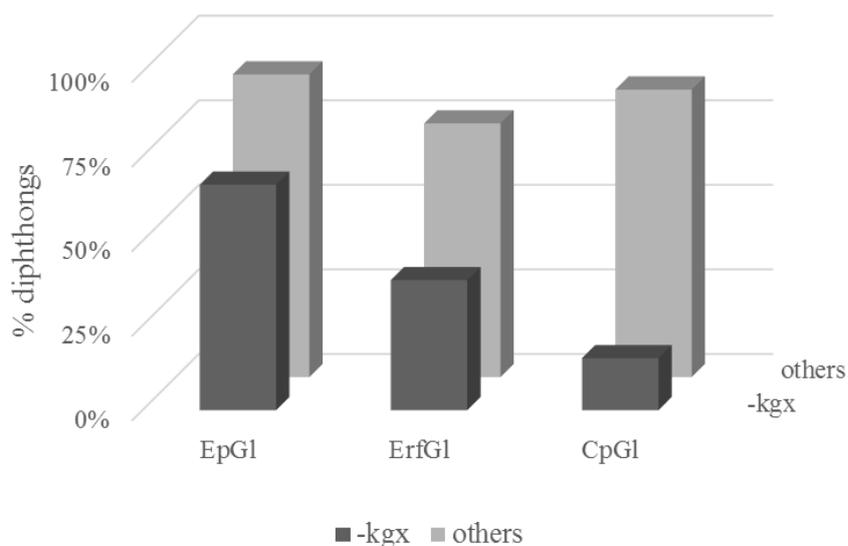
EpGl	<e, i>	<eo, ea>
breaking	11	16
breaking + smoothing	10	3
unbroken	55	0

**Table 8:** Mismatch of breaking and smoothing in the Standard Theory. The theory predicts that the attested forms would only fall in the grey cells.

Toon (1987, 283) in his eminent article on language change in the Old English period considers only instances represented in the second data row of Table 5, and concludes from this that smoothing was being implemented at the time of the writing of the Épinal Glossary. He does not consider the instances represented in the first data row in the table, which shows that the whole approach of ‘breaking and conditional smoothing’ provides in fact a poor explanation of the distribution of <e, i> vs. <eo, ea> in the Glossary.

The same holds for the ‘smoothing’ of the short diphthong *ea* from breaking. EpGl has six instances of PGmc *\*a* in a ‘breaking-and-smoothing’ context (without *i*-mutation and without words with PGmc *\*-axt-*), four of them have *ea*: *mear(isern)* ‘branding-iron’ < PGmc *\*marka-*; *uueargrod* ‘gallows’ < PGmc *\*warga-*; *leax* ‘salmon’ < PGmc *\*laxsa-*, *(frist)mearc* < PGmc *\*markō-*.

Only for PGmc *\*au* is there convincing evidence of a trend towards monophthongization before velar consonants during the 8th and 9th centuries, as can be seen in Figure 1.



**Figure 1:** The application of monophthongization of PGmc *\*au* before velar consonants, *-k/-g/-x* in the three Mercian glossaries.

Taking all these facts into account, I conclude that pre-attestation ‘Anglian smoothing’ of broken vowels as it is operationalized in the Standard Theory did not exist and therefore cannot account for the unbroken, assumingly ‘smoothed’ forms in the early (Anglian) texts. In my view, the sound law is a reconstruction artefact.

### 2.3 *i*-mutation of diphthongs (Hogg § 5.82)

The *i*-mutation of non-WS *\*ea* and *\*ēa* is supposedly *e/ē*. Contrary to the WS development to <ie>, this non-WS development can hardly be called *i*-mutation, but rather a form of monophthongization. This is not the expected impact of *i*-mutation factors, for which I can quote Hogg (2011, 17) himself: “[...] it is improbable that *i*-umlaut had a general monophthongization effect.” A more logical effect is a direct raising of *\*æ > e*. Compare the following options in the Standard Theory and my alternative Anglo-Frisian hypothesis:

ST: *\*a > \*æ* (fronting) > *\*ea* (breaking) > *\*e* (‘*i*-mutation’)

AF: *\*a > \*æ* (fronting before palatal C) > *\*e* (*i*-mutation)

My alternative interpretation with breaking postdating *i*-mutation also accounts for the form *feormat* in EpGl (ErfGl <caeormad> = *\*fæormad*) < PGmc *\*farmjan*- ‘to supply’ (note the class transition from Weak I > Weak II).

ST: *\*a > (fronting) \*æ > (breaking) \*ea > (‘i-mutation’) \*e > \*\*ferm-*

AF: *\*a > (fronting before palatal C) \*æ > (i-mutation) \*e > (breaking before rC<sup>voiced/non-velar</sup>) feorm-*

The implications of a later date of breaking in the chronology are discussed in detail in Versloot (to appear).

### 3 Conclusion regarding the Standard Theory

In the previous sections of this article, I have discussed various flaws and contradictions of the Standard Theory. I believe that many of them pose serious challenges to the theory, and the accumulation of inconsistencies is, in my view, fatal. The criterion for falsification is the following: the theory claims that the mentioned developments are ‘prehistoric’ and took place before the attestation of the Mercian Glossaries. The fact that later stages of the language (e.g. 10th century WS, early Middle English, etc) positively attest to developments such as

the monophthongization of (*i*-mutated) diphthongs, more extensive breaking phenomena or otherwise the raising, lowering or rounding of vowels does not contribute to the credibility of the Standard Theory, describing the phonological history of English between the *landnam* and the first attested texts in the early 8th century. To sum up:

- the axioma of general fronting of PGmc *\*a*, both as a single vowel and as part of the diphthongs *\*ai* and *\*au*, is unproven and, given the **raihan**-inscription and the absence of fronting before *\*w*, in fact, unlikely; but see Ringe & Taylor (2014, 175) for contemporaneous parallels for the development *au* > *æu*
- the abundant number of intermediate steps with alternating fronted — retracted or broken — smoothed forms, involving a high number of repetitive stages is methodologically unlikely; these reconstructed stages seem too many to reasonably fit in the timeframe between ca. 450 and 700
- there is no positive evidence for the assumed intermediate steps from runic inscriptions
- there is a lack of attested dialects with the intermediate stage *\*æ* before breaking
- the key-witnesses for early fronting and breaking (*ēa*, *slēan*, *nēowest*) can just as well and even more easily be explained in a different way; counterevidence from early 7th century attestations without breaking (e.g., in early attested names) and the 8th century form *neweste* is ignored
- these key-witnesses all concern the context before *\*x*, which is not necessarily conclusive for the context before *-r/IC*
- the assumed early raising of PGmc *\*ē<sup>1</sup>* in Anglian is unproven and ignores counterevidence from the early glossaries; without early raising, there can be no early breaking of *\*ē*
- ‘Anglian smoothing’ is — if at all — only partially implemented; I rather consider it to be a reconstruction artefact to account for the lack of breaking in many non-WS forms — an attempt that, given the evidence from PGmc *\*a*, *\*e* and *\*eu*, did not turn out to be successful for the interpretation of the data in the Glossaries
- the suggested pattern of monophthongization through *i*-mutation in non-WS dialects is typologically uncommon and the reconstructions are fraught with unattested intermediate steps

Additional points of criticism from earlier sections include:

- the mismatch between the number of reconstructed sound changes for WS and Anglian, and their actual dates of attestation
- the high number of ‘repair’ sound laws for exactly the language of the oldest sources
- the lack of parallelism with the chronologies for Old Frisian and Old Saxon, which — especially the former — start from the same common

position of Proto-West Germanic and very often show the same or very similar outcomes as Old English

- the rejection of many instances of counterexamples from the attested data, which are ignored by invoking scribal confusion, ‘Mercian influence’, etc

All these points of criticism bring me to conclude that the Standard Theory is untenable and needs thorough revision. This revision has to come from a close scrutiny of the earliest attestations of Old English, the short Northumbrian fragments and the glossaries known as Épinal and Erfurt Glossaries (Versloot, to appear). Although not imperative, linguistic similarities between Old English and Old Frisian indicate — as a starting hypothesis for the interpretation of the Early Old English evidence — that the chronologies of Old English and Proto-Frisian may have been largely parallel or at least parallel to a larger extent than has been hitherto assumed.

### Comments invited

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### Appendix: Statistical Model for the Parker Chronicle

lemma	section	rC	mono	syll 1or 2	no-breaking	breaking
ald	0	0	1	1	2	0
aldormonn	0	0	0	1	34	1
aldormonn	1	0	0	1	0	17
AldX	0	0	0	1	11	0
AldX	1	0	0	1	1	3
all	0	0	1	1	18	2
all	1	0	1	1	0	54
Arcenbryht	0	1	0	1	2	0
Bældæg (Baldur)	1	0	0	1	2	0
bearn	1	1	1	1	1	1
Carl	0	1	1	1	10	0
Ceardic	0	1	0	1	0	3
EalhX	0	0	0	1	0	10
EalhX	1	0	0	1	0	4
EarnX	0	1	0	1	0	4
haldan	0	0	1	1	2	1
haldan	1	0	1	1	0	2
healf	0	0	1	1	0	5
healf	1	0	1	1	0	20
HealfX	0	0	0	1	1	4
hwearf	0	1	1	1	0	2
pallium	0	0	0	1	5	0
gesellan (pst)	0	0	1	0.5	9	3

gesellan (pst)	1	0	1	0.5	1	8
weald	1	0	1	0.5	1	8
weall	1	0	1	1	0	2
geweorþan (pst)	0	1	1	0.5	0	25
geweorþan (pst)	1	1	1	0.5	0	15
Xald	1	0	0	0	4	0
Xbald	0	0	0	0	18	0
Xbald	1	0	0	0	3	0
Xbalding	0	0	0	0	2	0
Xbearn	0	1	0	0	0	2
XfalcenX	1	0	0	0	2	0
Xgeard	0	1	0	0	0	4
Xhealfe	1	0	0	0	0	6
Xheard	0	1	0	0	0	14
Xsweltan (pst)	0	0	1	0.5	1	1
Xwald	0	0	0	0.5	28	0
Xwald	1	0	0	0.5	12	0
Xwalding	0	0	0	0	8	0
Xwalh	0	0	0	0	11	0
Xwalla	0	0	0	0	7	0
Xweallcyn	1	0	0	0	0	2
Xweard	0	1	0	0	0	2
Xweard	1	1	0	0	2	31
Yweard	0	1	0	0	0	5
Yweard	1	1	0	0	0	10

### Logistic Regression Analysis

Definition of the independent variables: All four variables are binary and the value '1' refers to the feature that is expected to favour application of breaking.

- 'section' = section A (0) or other section (1)
- 'rC' = stem in rC (1) or lC (0)
- 'mono' = monosyllabic base form (1) or polysyllabic (0)
- 'syll 1 or 2' = \*a was found in the first syllable of the word (1) or in a later/second syllable (0)

198 cases have Y = 0 (no breaking); 271 cases have Y=1 (breaking).

<b>Variable</b>	<b>Avg</b>	<b>SD</b>
1 section	0.45	0.50
2 rC	0.28	0.45
3 mono	0.41	0.49
4 syll1or2	0.60	0.42

Overall Model Fit...

Chi Square= 279.8581; df = 4; p = 0.0000

Coefficients, Standard Errors, Odds Ratios, and 95% Confidence Limits...

<b>Variable</b>	<b>Coeff.</b>	<b>StdErr</b>	<b>p</b>	<b>O.R.</b>	<b>Low -- High</b>
1 section	2.94	0.29	0.000	18.9	10.6 33.5
2 rC	3.37	0.39	0.000	28.9	13.4 62.3
3 mono	0.98	0.30	0.001	2.7	1.5 4.8
4 syll1or2	0.95	0.39	0.014	2.6	1.2 5.5
Intercept	-2.66	0.35	0.000		

<https://statpages.info/logistic.html>