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ROGER LASS / MARGARET LAING

Databases, Dictionaries and Dialectology. Dental Instability in Early Middle English: A Case Study¹

1. Preliminaries

1.1. *An Old English alternation*

Consider a situation in which a particular etymological category is expected to be represented by the *littera* 'x', but also appears (variably) as the *littera* 'y'.² If both 'x' and 'y' appear in a given text language or group of text languages, how do we discriminate between two possible interpretations of the variation 'x'~'y'?

1 These observations arise from detailed analytical work on EME manuscript texts being undertaken at the Institute for Historical Dialectology, Linguistics and English Language, School of Philosophy, Psychology and Language Sciences, University of Edinburgh, towards the compilation of *A Linguistic Atlas of Early Middle English (LAEME)*. This research project was supported from 2000–2006 by AHRC for which gratitude is here expressed. We are also grateful to the University of Cape Town for support.

2 In this study we use the terminology of the medieval doctrine of *littera*. For the discussion parts of the paper we adopt our usual conventions (established by Michael Benskin (1997: 1 n. 1 and 2001: 194 n. 4)). *Littera* is the abstract notion of the letter, and when referred to independently of manuscript citation, *litterae* are enclosed in single inverted commas. *Figura* is the shape of a letter in a particular script or a particular realisation within that script; manuscript *figurae* are here enclosed in angle brackets or are italicised when combined as whole words or longer. *Potestates* are sound values and are represented by IPA symbols in phonetic brackets. Glosses and names of lexical categories are in small capitals. For illustrative manuscript forms cited from any of the *LAEME* corpora, we use the relevant 'internal format' for which see below.

- (a) There has been a variable sound change in which the *potestas* traditionally associated with ‘x’ has become that associated with ‘y’ or vice versa.
- (b) The variation is a case of litteral substitution without phonetic change.³

One simple interchange that has been commonly noted, is the appearance of ‘t’ where historically one would expect ‘þ’ ‘ð’ or ‘th’. This phenomenon appears early in the history of English. The occasional use of ‘t’ for ‘þ’ or ‘ð’ in the 3rd person singular present indicative in Old English is observed by Campbell (1959: §735 (b)):

The 3rd sg. has in some texts *-it*, *-et* beside *-iþ*, *-eþ*. While in *Ep.*, *Cp.* this might be regarded as graphic [...] the appearance of the form in later texts suggests a genuine phonetic variant.

Campbell (1959: §57 (7)) further notes:

t rarely represents a spirant: instances are *earbet-* (Ep. 619, Cp. 1320), *hāēt-* (Cp. 570), *flītat* (Cp. 680), *Sūtangli* (Ct. 9), *Cuutfert* (Ct. 11), for *earfoþ-*, *hāþ-*, *flītaþ*, *Sūþ-*, *Cūþferþ*.

In other words, Campbell is suggesting that in these forms *t* represents [θ]. He gives no justification for why he identifies any particular form as a ‘phonetic’ or ‘graphic’ phenomenon, but his observations do raise an important issue. The use of ‘t’ for ‘þ’ or ‘ð’ in Old English is found not just in weak syllables like the verbal inflections, but also in the strong syllables of lexical items. What is also apparent is that by the

3 Interpretation (b) invokes what we call a Litteral Substitution Set (LSS) (Laing 1999, Laing/Lass 2003) where a scribe has a number of orthographic choices for a particular segment. For a rich example, scribe D of Trinity College Cambridge 323 has the following variants for the reflex of OE *-ht*: {‘ct’, ‘st’, ‘t’, ‘ch’, ‘cht’, ‘dt’, ‘tht’, ‘tt’, ‘ʒt’, ‘d’, ‘tf’}. There is no reason to suppose that this set represents more than two sound values, one with a preceding fricative and one without (although a third in [θ] is also possible). The problem of differentiating between interpretations (a) and (b) above arises in the complex interchange of dental consonant graphs in early Middle English and this paper attempts to make the case for interpretation (a) being desirable in this instance.

time we get to early Middle English the ‘t’~‘þ’/‘ð’ alternation takes its place within a set of possibly related patterns of variation. These involve *litterae* that typically have (on historical grounds) phonetically similar but not identical reference:

- (a) the use of ‘t’ for expected ‘þ’, ‘ð’ or ‘th’;
- (b) the use of ‘d’ for expected ‘þ’, ‘ð’ or ‘th’;⁴
- (c) the use of ‘þ’, ‘ð’ or ‘th’ for ‘d’;
- (d) the use of ‘þ’, ‘ð’ or ‘th’ for ‘t’.

What is the status of this variation?

1.2. *A Linguistic Atlas of Early Middle English corpus of tagged texts*

We first noticed the existence of this series of variations while working with the corpus of tagged texts (CTT) created in the making of *A Linguistic Atlas of Early Middle English (LAEME)*. For *LAEME* (and for *A Linguistic Atlas of Older Scots – LAOS*), we have developed a corpus-based approach to historical dialectology. Instead of using a questionnaire, we transcribe entire texts (or extensive samples of very long texts) in a format that can be lexico-grammatically ‘tagged’. From each tagged text is derived a text dictionary, which is the equivalent of a linguistic profile in *LALME*, but whose content is not limited to questionnaire items. A text dictionary is a taxonomised inventory of the entire surviving output of a text witness (or of the entire sample transcribed), and the resulting assemblage is a proper subset of a given scribe’s total usage. Sets of tags (equivalent to (non-preselected) *LALME* questionnaire items) and their associated scribal forms may be sorted, analysed and compared electronically (using software written for the purpose by Keith Williamson). This means that for the entire *LAEME* CTT we have access to all possible lexical and grammatical contexts for any linguistic phenomenon. So in practice, the *LAEME* CTT becomes both the source of observations,

4 Evidence for this appears later than that for (a); i.e. it seems to be a Middle English phenomenon not an Old English one.

such as the dental variations listed above, and also the facilitating tool for their investigation.

2. Etymologies as heuristics

2.1. *The corpora*⁵

As well as the CTT, there is now an added, purely historical utility: a Corpus of Etymologies (CE). This is currently under construction and aims to give the history of every spelling recorded in the *LAEME* CTT. *LAEME* etymologies are not like those of standard lexicography, such as are provided in OED. By contrast, a *LAEME* etymology unpacks and makes explicit the *narrative* that brings a particular attested form into existence. Each etymology is a step-by-step history of the form it labels. Within the narrative histories of the CE, accounting for all the variant spellings recorded in the CTT has made it necessary to construct a further corpus – of changes (CC), which names, describes and comments on all the phonological and morphological changes occurring in the etymologies.

Spellings, and the underlying phonic substance inferable from them, may be compared within single lexical items, and also across sets of etymologically equivalent segments. The facility to compare the appearances of linguistic phenomena across the full range of EME lexis, and across a large number of texts, throws up some surprising sets of variants such as those listed in Section 1.1 above. The discovery of hitherto largely unnoticed sets of variants has made it necessary to construct ‘new’ changes that are often not listed as such in the handbooks.

5 The *LAEME* CTT has been compiled by Margaret Laing between ca. 1990 and the present. The added utilities of the Corpus of Etymologies (CE) and the Corpus of Changes (CC) are the work of Roger Lass since he joined *LAEME* in 2002.

2.2. Etymologising rare variants of CHILD

The map of a *LAEME* etymology is:

\$tag⁶
 morphological category
 etymology proper in the form:
 || *root ((change 1)) > new derived form ((change 2)) > new derived form etc.
 Commentary if needed

The first stage in our observation of the phenomena under discussion here arose when the etymological narrative for the word CHILD was being undertaken. This involved a complete search of the *LAEME* ‘tag dictionary’ to identify all forms for CHILD and its derivatives.⁷ Construction of the root etymology appeared to be straightforward. The final result was:

(a) Etymology

\$child/n
 SNt⁸
 || **kilp* - ((EDH)) > **kild* ((VP)) > [tʃild]. OE *cild*
 Cf. Go *kilpei* WOMB, *inkilpō* PREGNANT WOMAN. This root does not appear to be attested outside of EGmc except in this word.

The initials in double parentheses are links to the *LAEME* Corpus of Changes.

(b) Links to Corpus of Changes

The map of a CC entry is:

-
- 6 A prototypical tag consists of a lexical element (‘lexel’) and a grammatical element (‘grammel’). \$ introduces the lexel, / introduces the grammel. Some tags may consist of a grammel only, but none of a lexel only. In this paper the grammel-only tags will be the verbal endings. The lexels are usually modern English equivalents or OE etyma and are mostly transparent. But for discussion of the ongoing key to the lexels see Section 5.1 below.
- 7 The *LAEME* ‘tag dictionary’ is a complete inventory of all forms in the *LAEME* corpus listed alphanumerically by their ‘tags’. See further below.
- 8 SNt = Strong Neuter.

((abbreviated name of the change)); %flags indicating the status and variability of the change; full name of the change [time of the change]
 Commentary.

The changes invoked in the etymology of CHILD are:

((EDH))% n, ?v:⁹ Early Dental Hardening [WGmc]

After Voiced Fricative Hardening ((VFH)) turned the reflexes of IE **bh*, **dh*, **gh* to their homorganic stops, **b* > [d] (presumably via [ð]) after **l*, **n*: Go *in-kilp-ō* PREGNANT WOMAN, cf. OE *cild* CHILD, Go *falpan*, *finpan*, cf. OE *fealdan*, *findan* FOLD, FIND. This change is given as exceptionless in the handbooks, but may not have been in the ancestor of OE, judging from the occasional ME spellings of CHILD with final <y, d, TH>.¹⁰ (For an alternative interpretation of these spellings see s.v. ((LDS)).¹¹

((VP))% r:¹² Velar Palatalisation [OE]

In front vowel environments **k* > [tʃ], **g* > [j] except after nasals and in gemination where it becomes [dʒ].

3. Further developments

3.1. More on CHILD

This explanation appeared to account for most of the LAEME forms for CHILD. But, aside from <CILD>, <CHILD>, spellings that require no further etymologising, some forms were recorded that prompted the invocation of further changes. For instance, <CHILT> appears to

9 The flags after the change title mean respectively ‘named in LAEME for the first time (or in recent times outside of the standard handbooks)’, and ‘possibly variable’.

10 In this and following examples from the CE, citations from the LAEME CTT are in angle brackets and are in ‘internal format’, i.e. capital letters for plain text manuscript letters (manuscript capitals or *litterae notabiliores* are preceded by *); lower case for expansions of abbreviations and for ‘special’ letters as follows: ae = aesc, d = edh, g = insular ‘g’, w = wynn, y = thorn, z = yogh.

11 I.e. Late Dental Spirantisation. We will return to this sound change in Section 3.6 below.

12 r = ‘regionally restricted’

have undergone a change, which we call Final Devoicing 2 ((FD2)).¹³ So some Middle English forms for CHILD may have longer and more complex stories than their Old English etyma.¹⁴ Examination of all the forms of CHILD and its derivatives in LAEME CTT took us back to the early history: four further forms stood out as having the ‘wrong’ final consonant.

\$child/n CHILd¹⁵
 \$childhood/n<pr CHILd+HOd
 \$childing/vn CHILTH+ING CHILd+INGE

Cf also:

\$childing/vn CHILDy+INGE

If they are not ‘merely orthographic’, the first four spellings in -d- and -TH- could be due either to sporadic failure of ((EDH)) (see above) or, at least as likely, a later spirantisation. In order to come to a judgement about their status it is essential to look at the entire writing system(s) of the text language(s) in which they occur. A directed search for the textual origins of these forms in the CTT gave us the following results:

arundel248t.dic¹⁶

-
- 13 ((FD1)) Final Devoicing 1 is an OE change which affects only the final voiced velar, e.g. *burg* ~ *burh*.
- 14 In the case of ((FD2)), this is a very frequently observed phenomenon, but does not form part of the set of changes we are mainly dealing with here except insofar that it may provide input to one of them, but see Section 5.1 below.
- 15 Here the format is that of the LAEME ‘tag dictionary’. For details see n. 6 above.
- 16 The .dic labels are the filenames of the text dictionaries derived from the relevant tagged texts in the LAEME CTT. The tagged texts themselves have identical filenames but with a .tag suffix instead of a .dic suffix. For a full list of the LAEME CTT filenames and their associated manuscript designations see Appendix 1. Those listed in this section correspond to: London, BL Arundel 248, fols. 154r-155r: 4 lyrics; Cambridge, Gonville and Caius 234/120, pp. 1-185: extracts from *Ancrene Riwe* – sample tagged pp. 1-59; London, British Library, Cotton Caligula A ix, fol. 246v: *Orison to Our Lady*; Oxford, Jesus College 29, part II, English on fols. 144r-195r; 198r-200v –

childing/vn<pr CHILTH+ING 1

caiusart.dic
 child/n CHILd 1
 \$childhood/n<pr CHILd+HOd 1

cotorisont.dic
 childing/vn<pr{rh} CHILd+INGE 1

jes29t.dic
 childing/vn<pr{rh} CHILDy+INGE 1

3.2. *arundel248t.dic*

The spelling CHILTHING in *arundel248t.dic* needs to be assessed in the light of the scribe's other spellings for CHILD and in the light of his use of TH elsewhere. The relevant entries in *arundel248t.dic* give the following sequence for CHILD and its derivatives:

\$child/n CHILD 1
 \$child/n<pr CHILD 1
 \$child/n<pr{rh} CHILDE 1
 \$child/nG CHILDES 1
 \$child/nOd CHILD 2
 \$child/nOi CHILD 1
 \$childing/vn<pr CHILTHING 1
 \$childing/vn<pr{rh} CHILTINGE 1 CHILTInGE 1

Beside seven 'normal' spellings in -D- we find two in -T- as well as our one -TH- form. The Arundel scribe uses TH in the following further contexts:

sample tagged fols. 156r-168v, 169r-174v, 179v-180v, 182r-185v, 187r-188v. Note that the example of the word CHILDING in Jesus 29 is from that manuscript's version of *Orison to Our Lady* and corresponds to the same word in Cotton A.ix: the shared texts in these manuscripts go back to a common exemplar. The numbers following the citations in internal format indicate text frequency: in the present example, one occurrence of each form.

1. Word initially (very occasionally beside much more common thorn-spellings) in e.g. THIN THINE; THROWE (< OE *þrāg* TIME);¹⁷
2. Medially in e.g. BLITHE BLITHE; BOTHEN BOTH; OTHER and OTHRE OTHER;
3. Syllable finally in e.g. DETH DEATH; FELTHE FILTH; SOTH, SUTH SOOTH and in 3rd sg. present indicative endings: +TH (contracted forms only beside uncontracted +ET only).

He also uses TH in contexts where we would not expect historical [θ], viz:

4. Commonly in words with *ht* in Old English, e.g. ARITH(E) ARIGHT; BRITH(E) BRIGHT; LITH(E) LIGHT; MITH(E) MIGHT;
5. Occasionally word finally where we would expect historical [t], e.g. *FETH beside FET FEET; LETH beside LET for LET past tense.

On the basis of this information, how do we determine what the status of the TH in CHILTHING is? The evidence on face value presents us with the following possibilities for the Arundel scribe's use of TH in his recorded output:

- (a) TH can represent varyingly both [θ~ð] and [t] (as well as possibly [xt]).
- (b) TH represents [t] only, alongside more common T-spellings.
- (c) TH represents [θ~ð] only, and we are observing a varying set of sound-changes for segments that would normally be spelled with D or T (or fricative +T).

It can be seen from the above that manuscript spellings can never be analysed in isolation. They are parts of systems of scribal praxis where each usage may influence our interpretation of each other usage. Here, because the Arundel scribe has left us with only limited output, and because his sound to symbol mapping is in other ways

17 Word initially, the Arundel scribe also occasionally uses H-spellings for historical [θ].

idiosyncratic,¹⁸ this is perhaps as far as we can go in our assessment of CHILD in this particular text language. However, if we hypothesise that interpretation (c) is at least a possibility, we would have to seek further support for the sound changes implied by these spellings. In the case of CHILTHING there are two possible trajectories for a sound change:

- (a) devoicing (cf. CHILTING) followed by spirantisation;
- (b) direct spirantisation of [d] to [ð].

Are there similar kinds of variants in any other text languages represented in the LAEME CTT?

3.3. *jes29t.dic*

The spelling CHILDyINGE seems to be a compromise between a stop and a fricative spelling, unless it implies an affricate which would be a reasonable step on the way to spirantisation. Again, this form needs to be assessed beside the Jesus scribe's spellings for other dentals that might be involved in change processes. The text dictionary derived from the tagged sample for the Jesus scribe in the LAEME CTT shows the following possible support for spirantisation of original [d]:

```
$forweorYan/vSpp-aj FURWRyE 2
$forweorYan/vSpp{rh} FOR-WURyE 2
$weorYan/vSpp{rh} IWORyE 1
```

These are past participles of the reflex of OE *weorþan*, which would be expected to show [d] from Verner's Law. The thorn-spellings would seem to indicate a fricative, which in turn suggests spirantisation of the original. However, in this verb, a likely alternative interpretation of the thorn-spellings would be analogy to the present system. Reducing the number of alternants in strong verbs is extremely common throughout Middle English. Thorn-spellings in the

18 See further Laing (2008).

past participle and past plural of *weorþan* are very frequent across the whole *LAEME* corpus.

However, the Jesus scribe also shows a number of spellings that seem to suggest spirantisation not of [d] but of [t]. These can occur initially, medially or finally. Words in which these spellings occur are cited in bold below alongside any ‘normally spelled’ variants with which they co-occur:

\$begitan/vsjsps13{rh} **BI-GETHE** 1
 \$efete/npl **EUETHEN** 1
 \$outs:Y/npl<pr{rh} **HOUy-SYyE** 1
 \$sot/aj SOT 1 **SOTH** 1
 \$sot/n *SOT 1
 \$teach/vi **TECHE** 3
 \$teach/vi-m **TECHE** 1
 \$teach/vi{rh} **TECHE** 1
 \$teach/vps11 **THECHE** 3 **TECHE** 2
 \$teach/vps12 **TECHEST** 1
 \$teach/vpt13 **TAUHTE** 1
 \$teach/vpt13{rh} **TAHTE** 1
 \$teach/vsjsps12 **TECH** 1
 \$tear/npl<pr **TERES** 1 **THERES** 1
 \$tear/nplOd ***TERES** 1
 \$tooth/npl **TEy** 1
 \$tooth/npl<pr{rh} **THEy** 1

There are also sporadic spellings that may indicate the opposite change to spirantisation, i.e. occlusivisation of fricatives either voiced or voiceless. See the emboldened variants below, again cited alongside co-occurring ‘normal’ spellings:

\$breath/nOd{rh} **BREy** 1
 \$breath/n{rh} **BRED** 1 **BREy** 1
 \$lothly/aj **LODLICH** 4 **LODLICHE** 1
 \$lothly/ajOd **LODLICH** 1
 \$si:Y/n-av **SYyE** 1
 \$si:Y/n-av{rh} **SID** 1 **SIyE** 1 **SYyE** 1
 \$si:Y/n<pr **SYyE** 1
 \$si:Y/n<pr{rh} **SIyE** 1
 \$si:Y/npl<pr-k{rh} **-SYyE** 1
 \$with{a}/pr **WIy** 27 **WYy** 1 **wIT** 1
 \$with{f}/pr **WIy** 3
 \$with{t}/pr ***WYy** 1

\$with{w}/pr WIy 18 WYy 3 *WYy 1

If we have apparent evidence for two sound changes going in opposite directions we have to consider two possibilities:

- (a) that the two historical categories have merged and that either spelling will serve to represent the output;
- (b) we may have an instance of two changes competing for the same environment (cf. Wang 1969).

3.4. *cotorisont.dic*

The Cotton scribe of *An Orison to Our Lady* is the same as copied *The Owl and the Nightingale* in the same manuscript. He is a well known literatim copyist whose language reflects whatever variability he found in his exemplars. There is no further relevant evidence in the short text of *An Orison to Our Lady*, but in his other texts, which are all in types of language belonging not far from each other in the South West Midlands, we have examples of three of the four possible changes evidenced in *jes29t.dic*. The Cotton scribe has both +ED and +ET spellings for the 3rd sg pres indicative endings beside more common +Ey spellings. These occlusivations are also evidenced sporadically in lexical words. He also shows +wORyE spellings for the reflexes of the past participle of OE *weorþan*.

But it is when we come to *caiusart.dic* that we see the full possible extent of these alternations in large enough numbers to make it difficult to deny them phonetic status or to suppose them due merely to ‘scribal error’ or to the workings of analogy.

3.5. *caiusart.dic*¹⁹

Below we present all the examples of unexpected spellings (emboldened) of dental reflexes, alongside any alternants, in the text dictionary derived from *caiusart.tag*. For the purposes of this paper, we omit ordinal numbers and Scandinavian loan words, because of uncertainties of etymological developments. Adding such material would certainly increase possible examples. Grammel-only tags in the material below are as follows: *\$/v-imp22* = imperative plural; *\$/vpp* = weak past participle; *\$/vps13* = present indicative 3rd sg.; *vps21, 22* and *23* = present indicative first, second and third plural.

\$/hood/xs-n<pr +HAD 3 +**Hod 1** -HADE 1
\$/v-imp22 +**ET 6** +**D 5** +**ED 5** +Ed 5 +IEd 1 +d 1
\$/vpp +ED 80 +D 11 +ET 4 +**Ed 3** +EDE 3 +DE 1 +ID 1 +**d 1** +**de 1**
\$/vps13 +**ED 142** +d 48 +**D 31** +**ET 27** +Ed 21 +**T 4** +**ID 2** +**IED 2** +**IT 1** +de 1
\$/vps21 +**ED 6** +**D 3** +**ET 3** +Ed 3 +ETH 1 +**IED 1**
\$/vps22-apn +**ED 4** +**ET 2** +Ed 1 +**IED 1**
\$/vps23 +**ED 18** +**ET 8** +Ed 4 +**D 3** +**IED 3** +IEGH 1 +IEd 1 +ETH 1 +TH 1 +d 1
\$/be/vps21 **BEOD 2** **BEOT 1** **BEOD 1** **BOTH 1**
\$/be/vps23 **BEOD 20** **BEOD 9** **BEOT 2** +**BED 1** **BED 1**
\$/child/n CHILD 4 **CHILd 1**
\$/child/npl CHILDREN 4
\$/childhood/n<pr **CHILDHAD 2** **CHILD-HADE 1** **CHILdHOd 1**
\$/cweYan/vSpt13 **CwEd 2** **CwED 1**
\$/cweYan/vps13 **Qd 2** **QD 1**
\$/dead/aj **DEAD 2** **DEADE 2** **DED 1** **DEd 1**

19 The Gonville and Caius text of *Ancrene Riwle* was written by a scribe using an idiosyncratic form of script with cursive features, influenced by contemporary document hands. He was apparently working at high speed. Neil Ker (in Wilson 1954: xii-xiii) says that the scribe was “trained abroad”, an opinion taken up by Dobson (1976: 295); and also Millett (2005: xvi). This explanation is supposed to account for the scribe’s ‘corrupt orthography’. Such an opinion is however no longer tenable. Ker’s judgement was based on the putative ‘Continental’ formation of the scribe’s <ɾ>, (and less often <s> and <f>) with an extra ‘tail’ being added to the stem to take it below the baseline. *Figurae* formed like this do, however, appear in other English book hands of the early thirteenth century (Malcolm Parkes, p.c. 2002). They are also found in document hands of the late twelfth and early thirteenth century; for some examples (beside others that may have been made with a single backward curving stroke) see Johnson/Jenkinson (1915: vol. 2, pls. VIIc and d, VIII, IXa and X).

\$earth/n EORdE 5 EORyE 3 **EORDE 1** ORyE 1
 \$end/n ENDE 4 **ENdE 1**
 \$forth-/xp-n **FORD- 2** FORd- 1
 \$forth/av **FORD 9** FORd 5 **wORD 1** wORd 1
 \$forweorYan/vSpp-pl **FORwURyEN 1**
 \$gold/n **GOLd 1**
 \$good/aj/n GOD 27 GODE 7 **GOD 2**
 \$lae:YyU/nOd **LEADyE 1**
 \$lord/n LAUERD 19 **LAUERd 2** LEAUERD 2 LOUERD(+)
 \$lothless/ajOd **+LADLES 1**
 \$ly:Yerli:ce/av LUyERLICHE 1
 \$ly:Yre/aj<pr **LUDEr 1**
 \$mae:Ylessli:ce/av **MEDLESliche 1**
 \$mouth/n MUd 2 **MUD 1** MUTH 1
 \$murder/n<pr **MURDRE 1** MURyRE 1
 \$murder/vpt12K2 **MURDREDEST 1**
 \$other/aj OyER 11 OdRE 2 **ODER 1** OyERE 1
 \$scendful/ajpl<pr SCHENDFULE 2 SHENT-FULE 1
 \$scendfulleikr/nOd SCHENDFULLEC 1
 \$scendfulli:ce/av **SCHENdFULLICHE 1**
 \$sooth/aj SOD 3 **SOD 2**
 \$stalwartly/av **STEALEwARDliche 1**
 \$swi:De/av SwlyE 4 SwldE 3
 \$swi:De/av-cpv **SwIDERE 1**
 \$unlothness/n **VNLADNESSE 1**
 \$weorYan/vi **IwURDEN 1** IwURyEN 1 wURyEN 1
 \$whether/cj **HwEDER 1**
 \$with-/xp-v **wID- 2**
 \$withal/av MID-ALLE 3 **wID-ALLE 1**
 \$within/av INwId 4 **INwID 2** IN-wId 1 **wID-INNEN 1**
 \$without/pr **wID-UTEN 8** UTEwID 2 UTEwId 2 **wIDUTEN 2** wIdUTEN 1
 \$with/pr **wID 51** wId 9 **VID 2** **wIND 1** **wIT 1**
 \$world/n wORLD 9 **wORLd 1**
 \$worth/aj **wURD 2** wURd 1 wURyE 1
 \$wrath/n **wREDyE 2** **WARTyE 1**
 \$yet/av GET 6 *GET 1 GETEN 1 **GETH 1** IGEcTEN 1 yET 1

The data listed above reveal extensive interchange among the dental obstruent graphs, which may well indicate phonetic change. One explanation is that historical [d] and [ð] have merged and historical [t] and [θ] have merged, and the traditional *litterae* are interchangeably adopted for the outputs. We cannot tell in this case whether the outputs are stops or fricatives. But the ‘competing changes’ explanation would support a face-value reading for:

- (a) spirantisation of [d] in e.g. DEAD, GOLD, GOOD, LORD and in the reflex of the past participle of OE *weorþan* as well as in the weak past participle endings;
- (b) spirantisation of [t] is confined to one example of YET spelled GETH;
- (c) very extensive occlusivisation of the voiced dental fricative in e.g. EARTH, LOTHLESS, MOUTH, MURDER, UNLOTHNESS, WHETHER, WITH as well as the (presumably previously voiced) present indicative verbal endings in +(E)D;
- (d) extensive occlusivisation of the voiceless fricative in the present tense verbal endings in +(E)T and in the wIT-spelling of WITH.

The assumption in (c) above is that voiced [ð] has hardened to [d] and in (d) above that voiceless [θ] has hardened to [t]. But what are we to make of apparent (rather unlikely) voicing in final position e.g. in the +(E)D spellings in the present tense verbal endings and spellings like MUD for MOUTH and wID for WITH? The ‘received wisdom’ response might be to suggest scribal carelessness in failing to cross the ‘underlying’ or ‘intended’ <ð>.²⁰ But the sheer numbers of these spellings (20 in BEOD for ARE, 51 in wID for WITH etc) makes this explanation scarcely credible. This same phenomenon is observable in

20 We are grateful to Michael Benskin for reminding us that Anglo-Latin or Anglo-French orthographic traditions should also be considered as possible inputs for or influences on early Middle English spelling systems. *The Ancrene Riwle* contains Latin quotations interspersed in the English text. The Caius scribe’s renditions of these Latin passages show no idiosyncratic use of dental graphs. There is no French surviving in his hand for comparison. However, early Old French does use ‘d’ for [ð~θ]. By the time of the Norman Conquest, the dental fricative had been deleted in intervocalic position and in post-vocalic final position in all French dialects other than those of the West (Britton 1992: 283; Pope 1934: §§346-347). [ð~θ] survives in Old West French, and thence in Anglo-French, into the thirteenth century (see spellings in ‘d’ and ‘t’ in AND s.v. *bonté, charité, deinté, dru, fei, nativité*; and there are likely to be many more examples, given the extent to which AND is based on normalised texts). Sporadic spellings of dentals in ‘dh’ and ‘th’ are also found in Anglo-French texts (we owe this observation to Philip Bennett). It would be of great interest to examine the dental graph systems in the works of thirteenth-century scribes for whom output in both Anglo-French and Middle English survives, e.g. those of Oxford, Bodleian Library, Digby 86 and London, British Library, Cotton Caligula A.ix, part II.

numerous other text languages in the *LAEME* CTT. A voicing in syllable-final position might seem unusual, but in the face of such widespread evidence must be seriously considered. We might then postulate an extension of the environment of (c) above so that [θ] > [d] presumably via [ð]. We now lay out below the entries in the CC that relate to our four postulated changes.

3.6. The changes²¹

- (a) ((LDS)) %n, v: Late D Spirantisation [ME]
[d] > [ð, θ]. This manifests as unexpected <d, y, TH> spellings for historical [d]. Examples: <dON> for DO, <yRUNC> for DRINK, <wORyE> for past participle from OE *weorþan*, <GOd> for GOOD, <+TH> for weak past participle. The forms <CHILd, CHILTH+> may be the result either of this change or failure of ((EDH));²² it is impossible to tell. Note that there are survivals of a later Middle English version of this change: *mother, father, weather, gather, together*.
- (b) ((LTS)) %n, v: Late T Spirantisation [ME]
[t] > [θ]. Examples <yATH> for THAT <THECH> for TEACH, <YEFyE> for GIFT.
- (c) ((LDH)) %n, v: Later Dental Hardening [ME]
[ð] > [d] and [θ] > [ð] > [d]. This manifests in writings of <D> for expected <d, y, TH>. A particularly rich source is *caiusart.tag*, which has among others, variable <+ED> for 3rd sg pres indicative, <DED> for DEATH, <FORD> for FORTH, <MUD> for MOUTH.
- (d) ((TH))%n, v: Theta Hardening [OE, ME]
[θ] > [t]. This occurs as early as the 8thc. OE glosses (Corpus, Epinal), and sporadically later. In ME it is commonest in verb endings that would normally end in <y, d> e.g. imperative pl, pres indicative 3 sg and pl as <+ET, +IT>. It does however occur very frequently also in other forms, e.g. *chertseyt.tag* <+TEOF> for -THIEF, *bestiaryt.tag* <wIT> for WITH, <BOYT> for BOTH.

21 For a 'map' of a Corpus of Changes entry and a key to the conventions used here see Section 2.2 (b) and n. 9 above.

22 Early Dental Hardening, see Section 2.2 (b) above.

3.7. Significance

Of the 167 different text languages so far sampled in the *LAEME* CTT, 23 show evidence of all four changes, 30 show evidence of three out of the four, 40 show evidence of two out of four, 50 show evidence of one of the four. Only 24 texts show no evidence of our changes. Of these 24 texts, only two are longer than 500 words, and for some very short texts there may simply have been no suitable contexts for the changes to surface.²³ Given the widespread evidence for spellings across the CTT, covering a broad geographical range, we consider that the phenomena they represent should be added to the inventory of genuine English sound changes.²⁴

The process we have followed shows how there has to be a balanced approach to the assessment of idiosyncratic manuscript spellings. As we pointed out in Section 2.4 above, looking at individual scribal systems is vital for detailed interpretation of sound to symbol mappings, but it can lead to a certain myopia. In the text dictionary for bod34t.tag (the sample in the *LAEME* CTT taken from Oxford, Bodleian Library, Bodley 34 – the ‘B’ element of the famous AB language) we find evidence for three of our changes. Theta Hardening occurs occasionally in e.g. +ET endings for 3rd sg pres indicative, and in WIT-UTEN for WITHOUT. Late dental hardening

23 For a listing of the tagged texts grouped according to the evidence they display of the changes, see Appendix 2.

24 Spirantisation and ‘despirantisation’ in the dental series have been sporadically recognised in the standard handbooks. For a recent treatment see Wełna (2004). Wełna also cites such handbook references as there are (2004: 252). For EME citations Wełna’s data is not wholly accurate: in Table 4 *burdene* cited from *Gen. & Ex. 1467* should read *birdene*, while *burdene* cited from *Lamb. Hom. 5* should in fact read *burðene*. The latter does not therefore belong in the table and it should also be removed from Table 7. In Table 7 Wełna has *Owl and Night*. listed as a South-Western text (confusingly with the label *Sur.*, a south-eastern county). The dialect of the ‘original’ is disputed; both surviving manuscripts, however, belong in the South-West Midlands. Wełna cites two examples of *d*-spellings for the word ‘earth’ from *Owl and Night*. (he does not say which manuscript); these spellings (in both manuscripts) are in fact for the word *eard* DWELLING and do not belong in the table. Similarly the citations of EARTH from *Lambeth Hom.* and *Layamon A* and those in Table 8 for *Trin. Coll. Hom.* and *Genesis & Ex* should be removed as they all also belong to *eard*.

occurs more frequently in e.g. +ED endings for 3rd sg pres indicative, and in CLADES for CLOTHES, EORDLICH for EARTHLY, LADLI for LOTHLY and ODER for OTHER. Late D Spirantisation occurs in e.g. GOd for GOOD, HIRd for OE *hīred* HOUSEHOLD, LEAd+Ed plural pres indicative of LEAD, and LAUerd for LORD. We have recorded no examples in this text sample of Late T Spirantisation.

In the phonology section of her edition of *De Liflade ant te Passiun of Seinte Iulienne*, d'Ardenne (1961: 197, §36) makes a detailed assessment of spelling peculiarities in the Bodley text and her judgement is that:

[...] the letters *ð* and *d* are frequently confused by misplacing or omission of the bar: phonetic change from *ð* and *d* is thus usually doubtful. It certainly has occurred before *l* (so already in OE.) in *ladlich* loathly [...] in which *d* is usual in AB.

This statement shows that assessment of individual text languages in isolation can lead to a tendency to 'explain away' observed spelling phenomena. It is true that the two *litterae* 'ð' and 'd' differ in their formation only in the presence or absence of a bar on the ascender, and the possibility of scribal error in the use of these *figurae* must always be considered. But in the ca. 13,000-word sample from Bodley 34 in the LAEME CTT we find 19 examples of 'ð' for 'd' and 27 examples of 'd' for 'ð': this looks like something more significant than 'confusion'. When we set this evidence beside the observations of similar phenomena across the whole extent of EME usage, especially in the light of spellings in 'þ' as well as 'ð' (e.g. ALyER+ for the prefix ALDER- in five tagged texts and ELYERNE-MAN in creditonbt.tag for ALDERMAN), it seems to us that the scribe of Bodley 34 is showing normal and unconfused scribal behaviour, merely registering minor and as yet undiffused sound changes.²⁵

25 In our ca. 15,000-word sample from Cambridge, Corpus Christi College 402, *Ancrene Wisse* (the A element of AB language) we find sporadic evidence of all four of our changes. Late T Spirantisation is represented by the single occurrence of IFEdERET for the past participle of the verb FETTER. There are far fewer examples of the other three changes than appear in bod34t.tag.

4. Some difficult evidence

4.1. Problematic spellings

Beside the recorded spellings in D/T for historical [ð, θ] and the y/d/TH-spellings for historical [d, t], there are sporadic other forms which may be evidentially interesting. Given the necessity for looking at spelling phenomena both in the context of individual scribal systems and across the whole CTT, we first present the equivocal spellings as they appear in the individual text dictionaries. To save space, this time we cite only the forms in question, not any co-occurring forms. The relevant segments are in bold.

4.1.1. Listing by tagged text

```
add25031t.dic
$witness/nOd WITHTENESSE 1

adde6at.dic
$sooth/av SODT 1

adde6bt.dic26
$/vps13 ETz 3 +EzT 1 +ITz 2 +Tz 1 +YTz 1 +z 2 +zT 2
$/vps23 +ITz 2 +ETz 1
$hence/av HEzE 1
$without/pr WITz-OUTE 1 WITz-OUTIN 1
$with/pr WITz 1

bodley26t.dic
$struth/n TROUHT 1

caiusart.dic
$lae:YYu/nOd LEADyE 1
```

26 In the verbal endings and other citations in this text and in some others, the lower case z stands for a *figura* that is identical with the scribe's yogh used in [j] and in [x] contexts. Here, where it seems to stand for [θ~ð], it is possible that the *figura* goes back not to yogh but to the syllabic abbreviation (from Latin and French usage) for *-et* which was transferred in early Middle English via verbal endings to stand also for *-ep/-eð/-eth*, i.e. for [eθ], and thence also for [θ] alone, not just in verbal endings, whence also for [ð] in medial position.

\$wrath/n wREDyE 2 WARTyE 1

clericot.dic
\$dead/aj{rh} DEDH 1

corp145selt.dic
\$white/aj WIZT 2

coteleoBvit.dic
\$without/pr WITy-HUTIN 1

cotvespemat.dic
\$selcu:Y/av SELCUHT 1

dulwicht.dic
\$mouth/n MUHT 2
\$what/pn WAHT 1

edincmat.dic
\$la:Yian/vps23 LEHTES 1
\$wit/npl WIHTIS 1

edincmbt.dic
\$without/pr *WIHT-OUTEN 1
\$with{w}/pr WIHT 3

egpm2t.dic
\$ni:Yful/ajplOd NIHTFULLE 1
\$with{a}/pr wIHT 1

emmanuel27t.dic
\$mouth/n<pr MUTy

genexodt.dic
\$loth/aj{rh} LOdT 1
\$scri:Dan/vSpt13{rh}SCROdT 1

jes29t.dic
\$schilding/vn<pr{rh} CHILDyINGE 1

lamhomA1t.dic
\$strengthen/vps13 STRENGdDEd 1
\$wrath/n wREDdA 1 wREDde 1

lampmt.dic
\$sot/n *SOHT 1

laud108at.dic
\$forth/av **FORHT** 2
\$sooth/aj{rh} **SOTy** 1
\$soothness/n<pr **SOTyENESSE** 1
\$with{w}/pr **WIHT** 1

laud471dwct.dic
\$/vps13 +**EyT** 1

laud471kst.dic
\$/vps13K2 +**EDH** 1
\$be/vps23 **BIEDH** 1
\$mouth/n **MUDH** 1

layamonAat.dic
\$li:Yan/vpt13 **LIDdE** 1
\$li:Yan/vpt23 **LIDdEN** 2
\$writ/n **WRIH** 1

layamonAbt.dic
\$aeYele/ajOd ae**DdELE** 1
\$forth/av **FORH** 5 **FEORH** 1 **FOR** 1 **FORHD** 1
\$send/v-imp22 **SENDdE** 1
\$with-/xp-v **WIH-** 1
\$within/pr **WIH-INNEN** 1
\$withthat/cj **WIH-yON-yE** 1
\$with/pr **WIH** 7 **WIHT** 1

nerowgt.dic
\$wrath/n<pr y**REDdE** 1

ramseyat.dic
\$cy:Yan/vps11 **KYDHEN** 2

ramseycott.dic
\$cy:Yan/vps11 **KIDHEN** 1

tencmFft.dic
\$oath/nOd **ADH** 1

titusart.dic
\$wrath/n **wRADdE** 4

tr323dt.dic
\$/vps13K2 +**IDy** 1

trincleoDt.dic
 \$death/nG DETyIS 1

vitell3t.dic
 \$/vps13[V] +yT 1

vvat.dic
 \$cy:Yan/vps13-ct KYDH 1

wellsat.dic
 \$forth/av FURHT 1

winchestert.dic
 \$cu:Yrae:den/n gE-CUyDREdENE 1

worcthcreedt.dic
 \$eft/av EFTd 1

worcthfragst.dic
 \$geddian/vpt13K2 gEOdD^EDE 1

It is very difficult to know how to comment on this array of unhistoric spellings. If we take as our starting point the historic origins [t], [d], [θ] and [ð], we can arrange the various spellings under those headings.

4.1.2. Listing by historical segment

Historic [t]

H \$writ WR**IH**
 HT \$sot/n *SOHT \$what/pn WAHT \$wit/npl WIHTIS
 THT \$witness/nOd WITHTENESSE
 Td \$eft/av EFT**d**
 zT \$white/aj W**izT**

Historic [d]

DH \$dead/aj{rh} DE**DH**
 Dd \$send/v-imp22 SEND**dE**
 Dy \$childing/vn<pr{rh} CHIL**Dy**INGE

Historic [dd]

dD \$geddian/vpt13K2 gEO**dD**^EDE

Historic [θ]

0 \$forth/av FOR

DH present indicative endings and \$cy:Yan/vps13-ct **KYDH** \$mouth/n **MUDH**
 \$soath/nOd **ADH**
 DT \$sooth/av **SODT**
 Dy pres indicative endings
 H \$forth/av **FORH FEORH** \$with/pr **WIH(-)**
 HD \$forth/av **FORHD**
 HT \$forth/av **FORHT FURHT** \$mouth/n **MUHT** \$ni:Yful/aj **NIHT-** \$selcu:Y/av
SELCUHT \$truth/n **TROUHT** \$with/pr **WIHT** **wIHT**
 Ty \$mouth/n<pr **MUTy** \$sooth/aj{rh} **SOTy(-)** \$with/pr **WITy-**
 Tz pres indicative endings and \$with/pr **WITz(-)**
 dT \$loth/aj{rh} **LOdT** \$scri:Dan/vSpt13{rh} **SCROdT**
 yD \$cu:Yrae:den/n **gE-CUyDREdENE**
 yT pres indicative ending
 zT pres indicative endings

Historic [θθ]

Dd \$wrath/n **yREDdE** **wRADdE** **wREDdA** **wREDdE**
 Dy \$lae:YYu/nOd **LEADyE** \$wrath/n **wREDyE**
 Ty \$wrath/n **WARTyE**

Historic [ð]

DH \$cy:Yan/vps11 **KIDHEN KYDHEN**
 Dd \$aeYeLe/ajOd **aeDdELE** \$li:Yan/vpt13 **LIDdE** \$li:Yan/vpt23 **LIDdEN**
 HT \$la:Yian/vps23 **LEHTES**
 Ty \$death/nG **DETyIS**
 dD \$strengthen/vps13 **STRENGdDEd**
 z \$hence/av **HEzE**

4.2. Significance

4.2.1. Phonographic profiling:

Litteral and Potestatic Substitution Sets

It is unlikely that this large number of problematic spellings have the same sound to symbol mappings across all the text languages in which they occur. Before one can make claims about whether orthography represents sound change in progress (and if so what change) or whether it represents ‘merely’ litteral substitution, it is necessary for any one text language to produce what we call a ‘phonographic profile’ (Lass/Laing 2005: 289; Laing 2008: 22-28). This can be done for the entire text language, or for a subset of chosen etymological categories/graphs under consideration. A phonographic profile

presents in list, tabular or graphic form the mappings between orthographic and phonological segments in a text language. It thus invokes both Litteral Substitution Sets and the phonic equivalents of LSSs, Potestatic Substitution Sets (PSSs) (Laing/Lass 2003).

We exemplify with a phonographic profile in graph form of the spellings for our historic [t], [d], [θ] and [ð] appearing in a single text language – that of *dulwicht.tag*. Once the historic segments have been linked to the *figurae* that realise them, any other historic segments realised by those same *figurae* are then added to the profile, giving us the full set for these sounds and *figura* mappings:²⁷

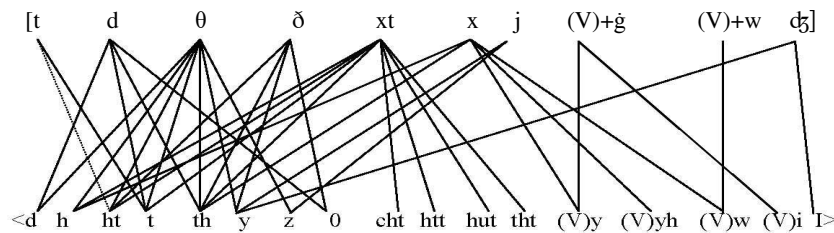


Figure 1. Phonographic profile of dental consonant mappings in *dulwicht.tag* (London, Dulwich College MS XXII, fols. 81v-85v: *La Estorie del Euangelie* Lincs).

To progress further in our assessment of the problematic spellings, these mappings of etymological categories to orthographic segments would then have to be analysed. Any possible conclusions about sound-symbol equivalences could be drawn only in the light also of other text languages' profiles. Some cases will always remain equivocal.

4.2.2. Further caveat

In Figure 1 above the line joining [t] with 'ht' is dotted as a caveat. The single form in the text language that it represents is WAHT for

27 Note that in this text language the NE Midland scribe uses the *figura* <y> in both [i~j] contexts and [θ~ð] contexts as well as once for [ɟ] (in YOYE for JOY). This complex usage combined with spellings showing diphthongisation in words with OE V+[x], triggers the addition to the profile of certain of these vocalic and palatal categories.

WHAT, which at face value might suggest HT for [t]. Consider, however, the following extract from *dulwicht.dic*:

```
$what/RTI>pr *WAT 1
$what/pn WAHT 1
$when/cj >W>EN 6 *WEHN 3 *WEN 2 WEHN 2 VEHN 1
$whenthat/cj *WEN-YAT 1 WAN-YAT 1
$wherefore/av-k WAR-FORE 1
$whereof/av-k >W>ARE-OF 1
$wherethrough/av-k *WARE-YORU 1
$whether/cj *WEHER 1 *WEHR 1
$which/pn<pr WIHLC 1
$while/cj WIHL 1
$whom/pn<pr WAHM 1 WAM 1
$whoso/pn >W>OH-SWO 1
$why/av *WI 1
```

For the reflexes of OE initial *hw*- there are spellings in *W*+vowel and also spellings in *W*+vowel+*H*. *WAHT* is one of these. In the light of the other evidence for OE initial *hw*- in this text language it seems less likely that *HT* is here a spelling for [t] than that *WAH* is a spelling indicating the presence of frication in the syllable not tied to a specific segment. In other words something like a Firthian prosody (Firth 1942). This assessment of the Dulwich scribe's use of *H* as a prosodic marker is perhaps supported by the following spellings in his text language: *FOULH*, *FUHL*, *FOUHL* beside *FOUL* for *FOWL*. It is also possible that in some words *H* is on its way to being lost which would account for the spelling *OHLD* beside *OLD* and *HOLD* for *OLD*.

The scope of this paper does not allow us to make phonographic profiles of the dental obstruents in all the relevant text languages. We will not attempt here therefore to account further for any of the problematic spellings listed in Section 4.1 above, except to say that some, such as *Dd* and possibly *DH* may perhaps imply affrication as a way station on the path to spirantisation.

5. Conclusions and connections

5.1. Heuristics and external sources

In this paper we have shown how observation of detailed data in the *LAEME* CTT has driven the creation of new historical utilities – the *LAEME* CE and CC. The corpora themselves thus have complementary heuristic functions, enabling both the serendipitous capture of hitherto unnoticed phenomena and also their more detailed investigation.

The wider contextualisation of such investigations of early Middle English is made possible by the ability to access external sources such as the OED Online and the electronic MED. For instance, one might be examining a specific early Middle English text witness and be interested in a form or set of forms appearing in it for a particular item: e.g. spellings for the word DEAD in *Lazamon A, Hand B*. Accessing the text dictionary for the sample of *Lazamon A, Hand B* in the *LAEME* CTT would enable a comparison of all the recorded spellings for that word in that scribal text language, viz:

```
$dead/aj DEAD 4 DEaeD 3 DaeD 2 DEeD 1
$dead/ajOd{rh} DEAD 1
$dead/ajn DEaeDE 1
$dead/ajnpl<pr DaeDEN 1
$dead/ajpl DEaeDDE 1
$dead/ajpl{rh} DEAD 1 DEAd 1
$dead/aj{rh} DEAd 1 DED 1
```

The tagged text itself could be searched by means of the tag `$dead/aj` to find all the textual contexts for the spellings, to determine whether there is any patterning in the use of different variants. Alternatively, a general interest in early Middle English spellings for DEAD would trigger entry to the main tag dictionary of the entire *LAEME* CTT where all the recorded spellings for `$dead/aj` are listed as follows:

```
$dead/aj *DEAD *DED *DEDE +DED DE DE>H>IT DEAD DEADE DEAT DEAD
      DED DEDE DEID DET DETD DEYD~ DEaeD DEd DEeD DIED DYAD
      DaeD Daed
$dead/aj-cpv DEAD+RE DEAD+URE DEADD+RE
$dead/aj-k +DED
```

\$dead/aj<pr DEAD DEADE DED DEDE DYADE
 \$dead/ajG DEAD+E DED+E
 \$dead/ajOd *DED +DED+ DEAD DEAD+ DEADE DED DEDE
 \$dead/ajOd-k -DED
 \$dead/ajOd{rh} DEAD DED
 \$dead/ajn DED DEDE DEaeDE DYAD
 \$dead/ajn-av DEDE
 \$dead/ajn<pr DED DEDE
 \$dead/ajn<pr{rh} DEDE
 \$dead/ajnG DEAD+^ES DED+ES DaeD+AN
 \$dead/ajnOd DEDE [D]EADE
 \$dead/ajnOi DEDE
 \$dead/ajnpI DEAD+E DED+E
 \$dead/ajnpI<pr DEAD+E DYAD+E DaeD+EN
 \$dead/ajnpIOd *DED+E DEAD+E DEAD+EN DED DED+E DED+EN DEED+E
 DYAD+E
 \$dead/ajnpIOd{rh} DEAD+E DED+E DIED+E
 \$dead/ajpl *DED+E DEAD DEAD+E DED DED+E DEaeDD+E DYAD+E
 \$dead/ajpl-k +DED+E
 \$dead/ajpl<pr DED DYAD+E
 \$dead/ajpl<pr{rh} DED+E
 \$dead/ajplG DEAD+RE
 \$dead/ajplOd *DED DED+E
 \$dead/ajplOd{rh} DED+E
 \$dead/ajpl{rh} DEAD DEAD+E DEAd DED DED+E
 \$dead/aj{rh} DE DEAD DEAd DED DEDE DEDH DEED DETD DYAD DaeD

From here, special interest in, say, spellings in DEAd would direct the enquirer, via a special search program, to the text dictionaries derived from those text witnesses that employ the spellings DEAd – in this case only the two scribes (A and B) of *Laȝamon A*. An enquirer with interest in the use of the word in early Middle English could consult the entry for \$dead/aj in the Key to the Lexels where there is brief semantic information and cross references to MED and OED:

\$dead/aj (1) = “having ceased to live, deprived of life; bereft of sensation, benumbed; insensible to, indifferent to; futile, useless; deadly, mortal”; *be dead* = “to have died”; as noun “a dead person, one who has died” (< OE *dēad*). MED s.v. *dēd* adj. and MED s.v. *dēd* adj. as n. OED s.v. *dead* a. (n.¹, adv.). Cf. \$deadly/aj, \$deadly/av, \$death/n, \$die/vpp. CE \$dead/aj.

Anyone requiring detailed citation of variants of the word in later Middle English can then link to MED. Anyone wishing to access

earlier cognates and an OED-type etymology of the word DEAD can direct their steps to OED. The Lexel Key also cross references to the relevant entry in the *LAEME* CE, which gives the narrative-type etymology of the word, accounting for all its spelling variants in the *LAEME* CTT, including DEAd, with a cross-reference to the relevant change ((LDS)) in the CC. See below:

\$dead/aj
 ||**ǣau*ǰ((VFH)) > **daud*((AUF)) > *daeud*((DHH)) > [dæad] *dēad*((EAM))
 > [dae:d]((LAER)) > [dɛ:d]
 The difference in final consonant between this word and \$death is due to an original accented suffix (IE form **dhau-t-ó-s*, probably a perfect participle, which would make the adjective deverbal). The Gmc reflex of **t*, i.e. **b*, is, because of the following accent, voiced by Verner's Law and follows the normal pathway for **ǰ*. There are quite a number of cases in which \$dead appears to end with a fricative, and \$death with a stop; we attribute these instances to well motivated sound changes (e.g. ((LDS)), ((LDH))), but with a pair of related words like this there is always the possibility of analogical 'contamination' or litteral substitution. The appearances however match the outputs of the sound changes, so we build them into the narrative. See also \$death.

phonology

/aj DEAd(E) DED(E) DEED(E) DEID DEYD~ DEaeD(E) DEeD DIED(E) DaeD
 All these medial vowel combinations are possible spellings for [ɛ:], though EI, EY are more normally used for diphthongs and IE for close [e:]. Sound changes of these kinds however appear to be ruled out. See further s.v. \$death/n.
 ?((LDS)) > DEDH
 DH possibly to indicate fricative
 ((FCD)) > DE
 ((KD)) > DYAD(E)
 ((FD2)) > DEAT DET DEHIT
 ((LDS)) > **DEAd DEEd Daed**
 DETD
 Difficult. T would seem to indicate ((FD2)) and D is expected. Perhaps TD is a complex litteral substitution
 DEaeDDE
 DD may be dittography rather than gemination.

Links to changes that have not been discussed above

((AUF))%n: au-fronting [OE]

Gmc **au* > [æ:u]. The output is subject to ((DHH)) in OE, giving [æ:a], i.e. *ēa*.

((DHH))%n: Diphthong height harmony [OE]

First named in Lass/Anderson (1975). This is a well-formedness constraint on the most characteristic kind of OE diphthong: the second elements come to agree in height with the first, so that e.g. [æu] > [æa], [eu] > [eo]. DHH affects both the original Germanic diphthongs and those formed by OE changes like breaking.

((EAM))%n: ea-merger [IOE]

\ddot{a} > \ddot{e} . The change of short *ea* leads to merger with *e*, and then further merger with *a*, so that the histories of the three categories, in those varieties and forms where they are initially distinct, collapse. For the history of \ddot{a} see ((LAER)).

((FCD))%v: Final Coronal Deletion [ME]

t, *d* delete when second members of clusters before another C or #. This is scattered throughout the texts, never constant. Deletion is promoted by the presence of an initial consonant in the following word or absolute finality in the phrase, less so by a following vowel. This is still common in ModE casual speech: coronal stops delete in final position, especially if the preceding consonant is homorganic (prototype in *LAEME*: frequent <CHIL> for \$child/n both in absolute finality and as first element of a compound). For a relevant discussion of modern instances and the complex variability patterns associated with them, see Chambers/Trudgill (1998: §9.9.2). The conditioning environments and variable status of this process appear to have changed little if at all from eME times.

((FD2)) %v, r{?SW}: Final Devoicing 2 [ME]

Voiced stops *b*, *d*, *g* > *p*, *t*, *k* in final position. This is relatively uncommon and geographically scattered, though some scribes, e.g. that of tr323at.tag, show it extensively.

((KD))%n, v, r{Kt}: Kentish Diphthongisation [ME]

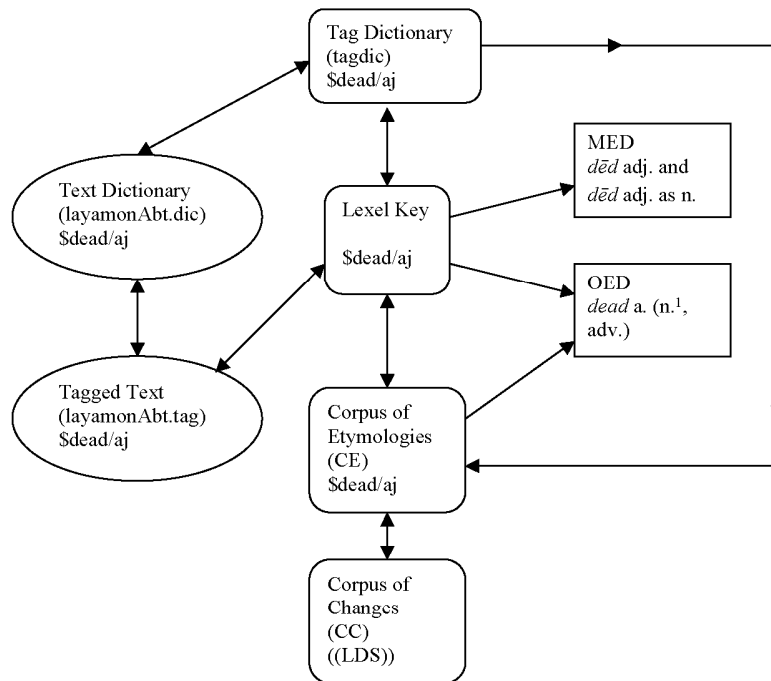
Long mid vowels (both 'open' and 'close') diphthongise by raising the first element, so that for expected <O, E> the results are <UO>, <YA>. These are not entirely parallel (diphthongisation of back vowels appears in our sample to occur only after *b*, *g*, while that of front vowels occurs in initial position and after *h* and dentals. But they are the same general and cross-linguistically very common type, and occur in the same text, ayenbitet.tag. Typical examples are \$good/aj <GUOD>, \$bone/npl <BUONES>, \$be:odan/vpt12 <BYAD>, \$dead <DYAD>, \$deaf <DYAF>.

((LAER))%n: Long \ddot{a} -raising [IOE/eME]

After monophthongisation of \ddot{a} [æ:a] ((EAM)), [æ:] > [ɛ:]. This change is posited in the standard handbooks, but there is really very little evidence one way or the other; since we are uncertain about the quality of OE) \ddot{a} , it could well have been [ɛ:] virtually from the beginning.

Now that *LAEME* and its associated corpora are web-mounted and active,²⁹ they too can serve as ‘external sources’ in the same way as MED and OED do now. For a diagram showing all these potential connections see Section 5.2 below.

5.2. The Paths of the *S*dead/



Key

- LAEME general utilities
- LAEME individual text files
- External sources

29 See www.lcl.ed.ac.uk/ihd/laeme1/laeme1.html.

References

Primary sources

See Appendix 1.

Secondary sources

- AND = *Anglo-Norman Dictionary* online edition at <www.anglo-norman.net/>
- Benskin, Michael 1997. Texts from a Township in Late Medieval Ireland. *Collegium Medievale* 10: 91-173.
- Benskin, Michael 2001. The Language of the English Texts. In Hunt, Tony (ed.), *Three receptaria from Medieval England*. Oxford: The Society for the Study of Medieval Languages and Literature. Chapter 4, 193-230.
- Britton, Derek 1992. Of *contreth* Matters. *Neophilologus* 76, 283-289.
- Campbell, Alistair 1959. *Old English Grammar*. Oxford: Clarendon.
- Cartlidge, Neil 1997. Orthographical Variation in the Middle English Lyrics of BL Cotton Caligula A. 9. *Neuphilologische Mitteilungen* 98, 253-259.
- Chambers, Jack K. / Trudgill, Peter ²1998. *Dialectology*. Cambridge: Cambridge University Press.
- d'Ardenne, S.T.R.O. (ed.) 1961. *þe Liflade ant te Passiun of Seinte Iulienne*. EETS OS 248. London: Oxford University Press.
- Dobson, E.J. (ed.) 1972. *The English Text of the Ancrene Riwele edited from B.M. Cotton MS. Cleopatra C VI*. EETS OS 267. London: Oxford University Press.
- Dobson, Eric J. 1976. *Origins of Ancrene Wisse*. Oxford: Clarendon.
- Firth, John R. 1948. Sounds and Prosodies. *Transactions of the Philological Society* 1948, 127-152 (1949).
- Holthausen, Ferdinand (ed.) 1888. *Vices and Virtues*, part 1. EETS OS 89. London: Oxford University Press.

- Hupe, Heinrich 1893. *Cursor Mundi*, edited by Richard Morris, part VII *Essay on the Manuscripts and Dialect by H. Hupe*. EETS OS 101. London: Oxford University Press.
- Johnson, Charles / Jenkinson, Hilary 1915. *English Court Hand A.D. 1066 to 1500*. 2 vols. Repr. 1967. New York: Frederick Ungar.
- LAEME = Laing, Margaret / Lass, Roger 2008. *A Linguistic Atlas of Early Middle English*. Online at <www.lel.ed.ac.uk/ihd/laeme1/laeme1.html>.
- Laing, Margaret 1999. Confusion *wrs* Confounded: Litteral Substitution Sets in Early Middle English Writing Systems. *Neuphilologische Mitteilungen* 100, 251-270.
- Laing, Margaret 2004. Multidimensionality: Time, Space and Strati-graphy in Historical Dialectology. In Dossena, Marina / Lass, Roger (eds) *Methods and Data in English Historical Dialectology*. Bern: Peter Lang, 49-96.
- Laing, Margaret 2008. The Middle English Scribe: *Sprach er wie er schrieb?* In Dossena, Marina / Dury, Richard / Gotti, Maurizio (eds), *English Historical Linguistics 2006. Volume III: Geo-historical Variation in English*. Amsterdam: Benjamins, 1-44.
- Laing, Margaret / Lass, Roger 2003. Tales of the 1001 Nists. The Phonological Implications of Litteral Substitution Sets in 13th-Century South-West-Midland Texts. *English Language and Linguistics* 7.2, 1-22.
- Laing, Margaret / McIntosh, Angus 1995a. The Language of *Ancrene Riwe*, the Katherine Group Texts and *þe Wohunge of ure Lauerd* in BL Cotton Titus D xviii. *Neuphilologische Mitteilungen* 96, 235-263.
- Laing, Margaret / McIntosh, Angus 1995b. Cambridge, Trinity College MS 335: Its Texts and their Transmission. In Beadle, Richard / Piper, A.J. (eds) *New Science out of Old Books: Studies in Manuscripts and Early Printed Books in Honour of A.I. Doyle*. Aldershot: Scolar Press, 14-52.
- LALME = McIntosh, Angus / Samuels, Michael L. / Benskin, Michael (eds) with the assistance of Margaret Laing and Keith Williamson. 1986. *A Linguistic Atlas of Late Mediaeval English*, 4 vols. Aberdeen: Aberdeen University Press.
- LAOS = Williamson, Keith 2008. *A Linguistic Atlas of Older Scots*. Online at <www.lel.ed.ac.uk/ihd/laos1/laos1.html>.

- Lass, Roger 1997. *Historical Linguistics and Language Change*. Cambridge: Cambridge University Press.
- Lass, Roger / Anderson, John M. 1975. *Old English Phonology*. Cambridge: Cambridge University Press.
- Lass, Roger / Laing, Margaret 2005. Are Front Rounded Vowels Retained in West Midland Middle English? In Ritt, Nikolaus / Schendl, Herbert (eds) *Rethinking Middle English: linguistic and literary approaches*. Frankfurt a.M.: Peter Lang, 280-290.
- MED* = Kurath, Hans *et al.* 1952–2001. *Middle English Dictionary*. Ann Arbor: University of Michigan Press. Online at <ets.umdl.umich.edu/m/med/>
- Millett, Bella (ed.) 2005. *Ancrene Wisse: A Corrected Edition of the Text in Cambridge, Corpus Christi College, MS 403, with variants from other manuscripts*. EETS OS 325. Oxford: Oxford University Press.
- OED* = Murray, J.A.H. *et al.* 1884–1928. *The Oxford English Dictionary*. Supplement 1933. ²1989. Oxford: Clarendon Press. Online at <www.oed.com/>.
- Pope, Mildred K. 1934. *From Latin to Modern French with Especial Consideration of Anglo-Norman*. Manchester: Manchester University Press.
- Wang, William S.-Y. 1969. Competing Changes as a Cause of Residue. *Language* 45, 9-25.
- Wełna, Jerzy 2004. Spirantisation and Despirantisation. In Kay, Christian / Hough, Carole / Wotherspoon, Irené (eds) 2004. *New Perspectives in English Historical Linguistics. Vol. II: Lexis and Transmission*. Amsterdam: Benjamins, 251-265.
- Wilson, R.M. (ed.) 1954 [for 1948, repr. 1957]. *The English Text of the Ancrene Riwle, with an introduction by N.R. Ker*. EETS OS 229. London: Oxford University Press.
- Wright, Cyril E. 1960. *English Vernacular Hands from the Twelfth to the Fifteenth Centuries*. Oxford: Clarendon.

Appendix 1

Key to the filenames in the LAEME Corpus of Tagged Texts

The *LAEME* CTT filename is in the form `filenamet.tag`. This is followed by the manuscript repository reference, including folio references and the title or description of text(s) in the relevant text language. For full information on the tagged texts, including date, localisation (if any), and the tagged sample see *LAEME*, Auxiliary Data Sets, Index of Sources.

- `aberdeent.tag` = Aberdeen University Library 154, fol. 368v: couplet and 3 quatrains
`add25031t.tag` = London, British Library, Add 23501, fol. 5v: *Ten Commandments*
`add27909t.tag` = London, British Library, Add 27909, fol. 2r: *Penitence for Wasted Life*
`adde6at.tag` = Oxford, Bodleian Library Add E.6, roll, hand A: *Sayings of St Bernard*
`adde6bt.tag` = Oxford, Bodleian Library, Add E.6, hand B: *XV Signs before Doomsday*
`adde6ct.tag` = Oxford, Bodleian Library, Add E.6, roll, hand C: *Pater Noster*
`arundel248t.tag` = London, British Library Arundel 248, fols. 154r-155r: four lyrics
`arundel292vvt.tag` = London, British Library, Arundel 292, fol. 3r-v: *Creed, Pater Noster, Ave Maria* etc
`ashmole1280t.tag` = Oxford, Bodleian Library, Ashmole 1280, fols. 48r, 192v: prayers
`ashmole360t.tag` = Oxford, Bodleian Library, Ashmole 360, fol. 145v, hand B: lyric
`ayenbitet.tag` = London, British Library, Arundel 57, fols. 2r-4r; 13r-96v: *Ayenbite of Inwyt, Pater Noster* etc.
`bardneyt.tag` = Oxford, Bodleian Library, Rawlinson C 510, fol. 3r: Fragment of *Stella Maris*
`benetholmet.tag` = London, British Library, Cotton Galba E ii, fols. 30r-v: clauses in English
`bestiaryt.tag` = London, British Library, Arundel 292, fols. 4r-10v: *The Bestiary*
`beverleyt.tag` = London, British Library, Cotton Charter iv 18: Athelstan's Charter
`blicklingt.tag` = Private: Blickling Hall, Norfolk 6864, fol. 35r: *Creed*
`bod34t.tag` = Oxford, Bodleian Library, Bodley 34, fols. 1r-80v: *St Katherine, St Margaret, St Juliana, Hali Meiðhad, Sawles Warde*
`bodley26t.tag` = Oxford Bodleian Library, Bodley 26, fols. 107r-108r: macaronic sermon
`bodley57t.tag` = Oxford, Bodleian Library, Bodley 57, fol 102v: lyric
`buryFft.tag` = Cambridge University Library Ff.II.33: Bury documents
`caiusart.tag` = Cambridge, Gonville and Caius 234/120, pp. 1-185: *Ancrene Riwe*

- candet1t.tag = Durham, Dean & Chapter Library A.III.12, fol. 49r: *Candet Nudatum Pectus*
- candet2t.tag = Oxford, Bodleian Library, Digby 45, fol. 25r: *Candet Nudatum Pectus*
- candet3t.tag = Oxford, Bodleian Library, Digby 55, fol. 49r: *Candet Nudatum Pectus*, etc
- candet4t.tag = Oxford, Bodleian Library, Rawlinson C 317, fol. 89v: *Candet Nudatum Pectus*
- candet5t.tag = Cambridge, St John's College A.15, fols. 72r, 120v: *Candet Nudatum Pectus*, etc
- candet6t.tag = Oxford, Bodleian Library, Bodley 42, fol. 250r: *Candet Nudatum Pectus*, etc
- candet7t.tag = London, British Library, Additional 11579, fols 35v-36v; 72v-73r: *Candet Nudatum Pectus*, etc.
- candet8t.tag = Cambridge, Sidney Sussex College 97 (Δ.5.12), fol. 111r: *Candet Nudatum Pectus*
- candet9linzat.tag = Linz, Statsbibliothek Sankt Florian XI.57, fol. 9v hand A: *Candet Nudatum Pectus*
- cccc8t.tag = Cambridge, Corpus Christi College 8, p. 457: lyric with musical notation
- ccco59t.tag = Oxford, Corpus Christi College 59, fols. 66r-v, 113v, 116v: verses
- chertseyt.tag = London, British Library, Cotton Vitellius A xiii, Chertsey Cartulary, fols. 50r-51v, 53v: six documents
- cleoarat.tag = London, British Library, Cotton Cleopatra C.vi, hand A, fols. 4r-198v: *Ancrene Riwe*
- cleoarbt.tag = London, British Library, Cotton Cleopatra C.vi, hand B's corrections
- clericot.tag = London, British Library, Add. 23986 verso of roll: *Interludium de Clerico et Puella*
- corp145selt.tag = Cambridge, Corpus Christi College 145, hand A, fols. 1r-210v: *South English Legendary*
- corpart.tag = Cambridge, Corpus Christi College 402, fols. 1r-117: *Ancrene Wisse*
- cotabusest.tag = London, British Library, Cotton Caligula A ix, part 2, fol. 248v: *The Ten Abuses*
- cotcleoBvit.tag = London, British Library, Cotton Cleopatra B vi, fol. 204v: *Pater Noster* and *Creed* etc.
- cotdoomsdayt.tag = London, British Library, Cotton Caligula A ix, part 2, fol. 246v-247r: *Doomsday*
- cotdwct.tag = London, British Library, Cotton Caligula A ix, part 2, fol. 246r-v: *Death's Wither Clench*
- coffaustat.tag = London, British Library, Cotton Faustina A.v fols. 10r-v, hand A: fragments of English in a Latin sermon
- coffaustbt.tag = London, British Library, Cotton Faustina A.v, fols. 105v-106r, hand B: verses on Lazarus in a Latin sermon
- cotlastdayt.tag = London, British Library, Cotton Caligula A ix, part 2, fol. 247r-248v: *The Latemest Day*
- cotorisont.tag = London, British Library, Cotton Caligula A ix, part 2, fol. 246v: *Orison to Our Lady*

- cotowlat.tag = London, British Library, Cotton Caligula A ix, part 2, *The Owl and the Nightingale*, language 1
- cotowlbt.tag = London, British Library, Cotton Caligula A ix, part 2, *The Owl and the Nightingale*, language 2
- cotsermont.tag = London, British Library, Cotton Caligula A ix, part 2, fols. 248v-249r: *Lutel Soth Sermun*
- cotvespemat.tag = London, British Library, Cotton Vespasian A.iii, hand A: fols. 2r-91v; 93va line 9-95vb line 19; 99ra-112vb; 119rb-139va line 36 *Cursor Mundi* and fols. 139va line 37-163ra: *Exposition of the Creed*, and *Lord's Prayer*, Prayers for the Hours of the Passion and to the Trinity, *Book of Penance*
- cotwillt.tag = London, British Library, Cotton Caligula A ix, part 2, fol. 246v: *Will and Wit*
- coventryt.tag = Stratford-upon-Avon, Shakespeare Birthplace Library, DR 10/1408, pp. 23-24: *Coventry Writ*
- creditonat.tag = London, British Library, Cotton Roll ii.11, language A: 3 Crediton documents
- creditonbt.tag = London, British Library, Cotton Roll ii.11, language B: Crediton document
- cuckoot.tag = London, British Library, Harley 978, fol. 11v: *Symer is icumen in*
- culhht.tag = Cambridge University Library Hh.6.11, fol. 70v: *Pater Noster* and *Ave Maria*
- digby2a1t.tag = Oxford, Bodleian Library, Digby 2, fol. 6r, hand A language 1: verse
- digby2a2t.tag = Oxford, Bodleian Library, Digby 2, fol. 6v, hand A language 2: verse
- digby2bt.tag = Oxford, Bodleian Library, Digby 2, fol. 15r, hand B: verse
- digby2ct.tag = Oxford, Bodleian Library, Digby 2, fol. 111r, hand C: verse
- digby86bodysoult.tag = Oxford, Bodleian Library, Digby 86, fols. 195v-197v: *Debate between Body and Soul*
- digby86hendingt.tag = Oxford, Bodleian Library, Digby 86, fols. 140v-143r: *Proverbs of Hending*
- digby86mapt.tag = Oxford, Bodleian Library, Digby 86, all the texts that are suitable for mapping
- digby86painst.tag = Oxford, Bodleian Library, Digby 86, fols. 132r-134v: *XI Pains of Hell* and *Sweet Ihesu*
- digby86siritht.tag = Oxford, Bodleian Library, Digby 86, fols. 165r-168r: *Dame Sirith*
- digpmt.tag = Oxford, Bodley Digby 4, fols. 97r-110v: *Poema Morale*
- dulwicht.tag = London, Dulwich College MS XXII, fols. 81v-85v: *La Estorie del Euangelie*
- edincmat.tag = Edinburgh, Royal College of Physicians, MS of *Cursor Mundi*, hand A, fols. 1r-15v
- edincmbt.tag = Edinburgh, Royal College of Physicians, MS of *Cursor Mundi*, hand B, fols. 16r-36v: Extracts from the *Northern Homily Collection*
- edincmct.tag = Edinburgh, Royal College of Physicians, MS of *Cursor Mundi*, hand C, fols. 37r-50v
- egblessedt.tag = London, British Library, Egerton 613, hand C, fol. 2r-v: *Blessed beo*
- eglitelt.tag = London, British Library, Egerton 613, hand D, fol. 2v: *Litel uoit eni man*

- egpm1t.tag = London, British Library, Egerton 613, hand G, fols. 64r-70v (e): *Poema Morale*
- egpm2t.tag = London, British Library, Egerton 613, hand F, fols. 7r-12v (E): *Poema Morale*
- egsomert.tag = London, British Library, Egerton 613, hand A, fol. 1v: *Somer is comen*
- egstellat.tag = London, British Library, Egerton 613, hand B, fol. 2r: *Stella Maris*
- emmanuel27t.tag = Cambridge, Emmanuel College 27, fols. 111v, 162r-163r: Lyrics
- eul107t.tag = Edinburgh University Library MS 107, fol. 89r: six verse lines
- fmcprmt.tag = Cambridge, Fitzwilliam Museum, McClean 123, fol. 114v: Old English letters; fols. 115r-120r: *Poema Morale*
- gandccreedt.tag = Cambridge, Gonville and Caius College 52/29, fol. 43r: *Creed, Pater Noster, Ave Maria, In manus tuas*
- genexodt.tag = Cambridge, Corpus Christi College 444, fols. 1r-81r: *Genesis and Exodus*
- gospatrict.tag = Carlisle, Cumbria RO, D/Lons/L Medieval Deeds C1: Gospatric's Writ
- hale135t.tag = London, Lincoln's Inn Hale 135, fol. 137v: *Nou sprinkes the sprai*
- hat26tct.tag = Oxford, Bodleian Library, Hatton 26, fol. 211r: *Ten Commandments and Seven Gifts of the Holy Ghost*
- havelokt.tag = Oxford, Bodleian Library, Laud Misc 108, fols. 204r-219va, hand C: *Havelok*
- herefordverset.tag = Hereford Cathedral Library O.III.11, fol. 122v: verse on the passion
- huntproct.tag = Kew, The National Archives, C66/73 (Patent Roll 43 Henry III), membr. 15 item 40, Chancery enrollment of proclamation in English by Henry III, dated from London, 18 October 1258
- iacobt.tag = Oxford, Bodleian Library, Bodley 652, fols. 1r-10v: *Jacob and Iosep*
- jes29t.tag = Oxford, Jesus College 29, part II, English on fols. 144r-195r; 198r-200v
- johnstandt.tag = Cambridge, St John's College 111 (E8), fol. 106v: *Stand wel moder*
- lam499t.tag = London, Lambeth Palace Library 499, fols. 64v-69r, 125v: lyrics
- lamhomA1t.tag = London, Lambeth Palace Library 487, fols 1r-21v, 30v-51v, hand A language 1: Lambeth Homilies I-V, IX-XIII
- lamhomA2t.tag = London, Lambeth Palace Library 487, fols. 21v-30v, 51v-65r, hand A, language 2: Lambeth Homilies VI- VIII, XIV-XVII
- lampmt.tag = London, Lambeth Palace Library 487, fols. 59v-65r, hand A: *Poema Morale*
- lamursnt.tag = London, Lambeth Palace 487, fols. 65v-67r, hand B: *On ureisun of ure louterde*
- laud108at.tag = Oxford, Bodleian Library Laud Misc 108, part 1, fols. 1r-200v, hand A: *Life of Christ, Infancy of Christ, South English Legendary*
- laud108bt.tag = Oxford, Bodleian Library, Laud Misc 108, hand B, fols. 200v-203v: *Debate between Body and Soul*
- laud471dwct.tag = Oxford, Bodleian Library, Laud Misc 471, hand A, fol. 65r: *Death's Wither-Clench*
- laud471kst.tag = Oxford, Bodleian Library, Laud Misc 471, hand B, fols. 128v-133v: *Kentish Sermons*

- layamonAat.tag = London, British Library, Cotton Caligula A.ix, part 1, hand A, fols. 3r-17rb (foot); 17va line 5-18vb line 6; 27ra lines 1-6 (BLIdE); 88ra-89rb line 3: Lazamon A
- layamonAbt.tag = London, British Library, Cotton Caligula A.ix, part 1, hand B, fols. 17va lines 1-4; 18vb line 7-26vb (foot); 27ra line 6 (yAT)-87vb (foot); 89rb line 4-194v (end): Lazamon A
- layamonBOt.tag = London, British Library, Cotton Otho C.XIII, fols 1r-146v: Lazamon B
- linzbt.tag = Linz, Statsbibliothek Sankt Florian XI.57, fol. 9v, hand B: fragment of verse
- linzct.tag = Linz, Statsbibliothek Sankt Florian XI.57, fol. 9v, hand C: quatrain
- maidsdwct.tag = Maidstone Museum A.13, main hand of English, fol. 93v: *Death's Wither-Clench*
- maidspat.tag = Maidstone Museum A.13, main hand of English, fol. 93r: *Proverbs of Alfred*
- maidststt.tag = Maidstone Museum A.13, main hand of English, fol. 243v: *Three Sorrowful Tidings*
- merton248t.tag = Oxford, Merton College 248, fols. 166r-167r: lyrics and sermon
- neroart.tag = London, British Library, Cotton Nero A.xiv, fols. 1r-120v, hand: *Ancrene Riwe*
- nerowgt.tag = London, British Library, Cotton Nero A.xiv, fols. 120v-131v, hand B: Wooing Group texts
- newcoll88t.tag = Oxford, New College 88, fols. 31r, 179r-v, 488v: lyrics and *Ten Commandments*
- ormt.tag = Oxford, Bodleian Library, Junius 1, fols. 3r-: *The Ormulum*
- oxproct.tag = Oxfordshire Record Office (Temple Road, Cowley), OCA/H.29.1: a proclamation in English of Henry III (single sheet copy), dated from London, 18 October 1258.
- petchront.tag = Oxford, Bodleian Library, Laud Misc 636, fols. 88v-91v: *Peterborough Chronicle*, final continuation
- pofh145t.tag = Cambridge, St John's College F.8 (145): 17 fragments of *Proverbs of Hendring*
- prisprayt.tag = London, Corporation of London Records Office, Guildhall, *Liber de antiquis Legibus*, fols. 160v-161v: *Prisoner's Prayer*
- ramseyat.tag = Kew, The National Archives, E 164/28, hand A, fols. 52v-53r, 59v-60r, 165v-166v: Register of Ramsey Abbey
- ramseybt.tag = Kew, The National Archives, E 164/28, hand B, fol. 229v: Register of Ramsey Abbey
- ramseycott.tag = London, British Library, Cotton Otho B xiv, fol. 263r-v: Fragment of a Ramsey Register
- rawlg18t.tag = Oxford, Bodleian Library, Rawlinson G.18, fols. 105v-106r: *Worldes blis*
- rawlg22t.tag = Oxford, Bodleian Library, G 22, fol. 1v: *[M]Irie it is*
- royal12e1at.tag = London, British Library, Royal 12.E.i, fols. 193r-194v, hand A: *Stond wel moder*

- royal12e1bt.tag = London, British Library, Royal 12.E.i, fol. 194v, hand B: versions of *My Leman on the Rood*, and *Thenk man*
- royal2f8t.tag = London, British Library, Royal 2.F.viii, fol. 1v
- royalkgat.tag = London, British Library, Royal 17.A.xxvii, hand A, fols. 1r-8v, 11r-45v: *Sawles Warde* (part), *St Katherine*, *St Margaret* (part)
- royalkgbt.tag = London, British Library, Royal 17.A.xxvii, hand B, fols. 9r-10v, 58v-70v: ends of *Sawles Warde* and of *St Juliana*, *Oreisun of Seinte Marie*
- royalkgct.tag = London, British Library, Royal 17.A.xxvii, hand C, fols. 45v para 2-58r: End of *St Margaret*, first bit of *St Juliana*
- salisbury82t.tag = Salisbury Cathedral Library 82, f. 271v: *Paternoster*
- scotwart.tag = London, British Library, Cotton Julius A v, fols. 180r-181v: *Prophecy of the Scottish Wars*
- sherbornet.tag = London, British Library, Add 46487, Sherborne Cartulary, fols. 24v-25r: boundary clause
- swinfieldt.tag = Herefordshire Record Office AL 19/2, *Registrum Recardi de Swinfield*, fol. 152r: Bromfield Writ
- tanner169t.tag = Oxford, Bodleian Library, Tanner 169*, p. 175: *Stabat iuxta crucem Christi*
- tcd432t.tag = Dublin, Trinity College 432, fol. 22r: version of *My Leman on the Rood*
- tencmFft.tag = Cambridge University Library Ff.VI.15, fol. 21r: *Ten Commandments*
- thorneykt.tag = Cambridge University Library, Add 3021, *Red Book of Thorney 2*, fol. 372: Kingsdelf document
- thorneymt.tag = Cambridge University Library, Add 3020, *Red Book of Thorney 1*, fol. 18r: Will of Mantat
- titusart.tag = London, British Library, Cotton Titus D xviii, fols. 14r-105r: *Ancrene Riwle*
- titushmt.tag = London, British Library, Cotton Titus D xviii, fols. 112v-127r: *Hali Meiðhad*
- tituslang2t.tag = London, British Library Cotton Titus D xviii, language T2: *Ancrene Riwle*
- titusskt.tag = London, British Library, Cotton Titus D xviii, fols. 133v-147v: *Saint Katherine*
- titusswt.tag = London, British Library Cotton Titus D xviii, fols. 105v-112v: *Sawles Warde*
- tituswoht.tag = London, British Library, Cotton Titus D.xviii, fols. 127r-133r: *Wohunge of ure lauerd*
- tr323at.tag = Cambridge, Trinity College B.14.39 (323), hand A: fols. 19r, 25rb, 25v, 27rb, 28r-29v, 32r-33v, 36r-46r, 47r-v, 83v-84r
- tr323bt.tag = Cambridge, Trinity College B.14.39 (323), hand B: fols. 20r-25r, 26r-27ra, 27v, 34r, 35r-v
- tr323ct.tag = Cambridge, Trinity College B.14.39 (323), hand C: fols. 30r-31v, 81v
- tr323dt.tag = Cambridge, Trinity College B.14.39 (323), hand D: fols. 81v-82r, 85r-87v
- trhom34ct.tag = Cambridge, Trinity College B.14.52, hand C, pp. 153-154: Trinity Homilies XXXIV

- trhomAt.tag = Cambridge, Trinity College B.14.52, Trinity Homilies, hand A: all the texts in this hand apart from *Poema Morale* are tagged in this sample
- trhomBt.tag = Cambridge, Trinity College B.14.52, Trinity Homilies, hand B: all the texts in this hand are tagged in this sample
- trin43Bt.tag = Cambridge, Trinity College 43 (B.1.45), hand B, fol. 73v: lyric on the approach of death
- trincleoDt.tag = The work of 'Scribe D' viz:
Cambridge, Trinity College 43 (B.1.45), fols. 24r-v, 41v-42r: verses and sermon and London, British Library, Cotton Cleopatra C vi, hand D continuous texts: fols. 22v-23r, 57v, 199r and London, British Library, Cotton Cleopatra C vi, hand D additions and corrections.
- trinpmt.tag = Cambridge, Trinity College B.14.52, hand A, fols. 2r-9v: *Poema Morale*
- vitell3t.tag = London, British Library, Cotton Vitellius D iii, fols. 6r-8v: *Floris and Blancheflur*
- vvat.tag = London, British Library, Stowe 34, hand A, pp. 1-74 line 17; 74 line 22-75 line 3: *Vices and Virtues*
- vvbt.tag = London, British Library, Stowe 34, hand B, pp. 74 lines 17-22; 75 line 3-95: *Vices and Virtues*
- vvcorrt.tag = London, British Library, Stowe 34: *Vices and Virtues*, the main correcting scribe
- vvtit.tag = London, British Library, Stowe 34: *Vices and Virtues*, the scribe of the titles
- wellsat.tag = Wells Cathedral Library, *Liber Albus* I, language 1, fol. 14r
- wellsbt.tag = Wells Cathedral Library, *Liber Albus* I, language 2, fols. 17v-18r
- westminstert.tag = London, Westminster Abbey Library MS 34/3, fol. 36v: verse on impossibilities
- winchestert.tag = London, British Library, Add 15340, fols. 116v-117r: *Vision of Edwin*
- wintneyt.tag = London, British Library, Cotton Claudius D iii: *Benedictine Rule*
- worddoct.tag = Worcester, Herefordshire and Worcestershire Record Office, BA 3814, fol. 38v
- worcermont.tag = Worcester Cathedral, Chapter Library Q 29, fols. 130v-131r
- worcthreedt.tag = Oxford, Bodleian Library, Junius 121, fol. vi: *Nicene Creed*
- worcthfragst.tag = Worcester Cathedral, Chapter Library F 174, fols. 63r-66v: Worcester Fragments
- worcthrgrlt.tag = Worcester Cathedral, Chapter Library F 174, fols. 1r-63r: Ælfric's *Grammar and Glossary*

Appendix 2

List of filenames in the *LAEME* Corpus of Tagged Text according to which show evidence of presence of the spelling alternations implying the possibility of the dental changes discussed in the paper. Those with evidence of all four types are listed first, then those with evidence of three, two, one, and finally those with no evidence of the alternations are listed last. Note that ordinal numbers and Scandinavian loanwords are not included in the assessment.

Tagged texts with spelling alternations implying the possibility of all four changes (23 texts):

ayenbitet.tag	havelokt.tag	merton248t.tag
bestiaryt.tag	jes29t.tag	neroart.tag
buryFft.tag	lam499t.tag	royalkgat.tag
caiusart.tag	lamhomA1t.tag	tr323at.tag
cleoarat.tag	lampmt.tag	tr323dt.tag
cotvespcmat.tag	laud471kst.tag	vvat.tag
digby86mapt.tag	layamonAat.tag	vvbt.tag
genexodt.tag	layamonAbt.tag	

Tagged texts with spelling alternations implying the possibility of three of the four changes (30 texts):

adde6at.tag	edincmat.tag	scotwart.tag
arunde1248t.tag	edincmbt.tag	tituslang2t.tag
bod34t.tag	egpm2t.tag	titusskt.tag
candet8t.tag	lamhomA2t.tag	titusswt.tag
cccc8t.tag	laud108bt.tag	trhomBt.tag
clericot.tag	layamonBOt.tag	trincleoDt.tag
corp145selt.tag	newcoll88t.tag	wellsat.tag
corpart.tag	petchront.tag	wintneyt.tag
cotowlat.tag	ramseyat.tag	worcthfragst.tag
dulwicht.tag	ramseycott.tag	worcthgrglt.tag

Tagged texts with spelling alternations implying the possibility of two of the four changes (40 texts):

adde6bt.tag	egpm1t.tag	royal2f8t.tag
adde6ct.tag	gandccreedt.tag	royalkgbt.tag
benetholmet.tag	gospatrict.tag	royalkgct.tag
beverleyt.tag	johnstandt.tag	titusart.tag
bodley57t.tag	laud108at.tag	titushmt.tag
candet5t.tag	maidsdwct.tag	tr323bt.tag
candet7t.tag	maidspat.tag	tr323ct.tag
chertseyt.tag	maidststt.tag	trhom34ct.tag
cotlastdayt.tag	nerowgt.tag	trhomAt.tag
cotowlbt.tag	ormt.tag	trin43Bt.tag
cotsermont.tag	pofh145t.tag	vitell3t.tag
digby2a2t.tag	prisprayt.tag	wellsbt.tag
digby86bodsoult.tag	rawlg18t.tag	
edincmct.tag	royal12e1at.tag	

Tagged texts with spelling alternations implying the possibility of one of the four changes (50 texts):

aberdeent.tag	culhht.tag	ramseybt.tag
add25031t.tag	digby2a1t.tag	rawlg22t.tag
arundel292vvt.tag	digby2bt.tag	royal12e1bt.tag
blicklingt.tag	digby2ct.tag	sherbornet.tag
bodley26t.tag	digby86hendingt.tag	swinfieldt.tag
candet1t.tag	digby86siritht.tag	tanner169t.tag
candet4t.tag	digpmt.tag	tcd432t.tag
ccco59t.tag	eglitelt.tag	tencmFft.tag
cleoarbt.tag	egsomert.tag	thomeymt.tag
cotcleoBvit.tag	egstellat.tag	tituswoht.tag
cotdoomsdayt.tag	emmanuel27t.tag	trinpmt.tag
coffaustat.tag	fmcprt.tag	vvcorrtag
coffaustbt.tag	hat26tct.tag	vvtit.tag
cotorisont.tag	iacobt.tag	winchestert.tag
coventryt.tag	lamursnt.tag	worcdoct.tag
creditonat.tag	laud471dwct.tag	worchthcreedt.tag
creditonbt.tag	linzct.tag	

Tagged texts showing none of the spelling alternations (24 texts):

add27909t.tag	cotabusest.tag	herefordverset.tag
ashmole1280t.tag	cotdwct.tag	huntproct.tag
ashmole360t.tag	cotwillt.tag	linzbt.tag
bardneyt.tag	cuckoot.tag	oxproct.tag
candet2t.tag	digby86painst.tag	salisbury82t.tag
candet3t.tag	egblessedt.tag	thorneykt.tag
candet6t.tag	eul107t.tag	westminstert.tag
candet9linzat.tag	hale135t.tag	worcsermont.tag