

## INTRODUCTORY TOUR TO THE ELEMENTS OF eLALME

Three manuscripts are used for illustrative purposes:

Cambridge, Trinity College 1230 (O.3.58).

Lincoln Cathedral Chapter Library 91 (A.5.2);

London, British Library, Cotton Tiberius D vii.

All three manuscripts appear in *LALME*, but only the last was analysed and a Linguistic Profile (LP) made of its language for inclusion on the *LALME* maps. For the other two, short samples are provided as appendices to this document, along with LPs derived from those short samples. These are purely for illustrative purposes, to show how the mapping programs work. **Much longer samples would be needed for a genuine LP and mapping attempt.**

### Preliminaries

- Open Firefox or preferred browser and Google eLALME and/or
- Log on to: <http://www.lel.ed.ac.uk/ihd/elalme/elalme.html>
- Scroll down to the foot of the front page, click on **About eLALME** and read the text there for general orientation. Under ‘What does eLALME contain?’ > ‘Linguistic Profiles’ pay special attention to the section on bracketing in the first paragraph and also the central paragraph beginning ‘The original questionnaire was made up of....’.
- Scroll down to the bottom of the ‘About eLALME’ page and click on **Main Page**.
- The menu bar on the left hand side contains a number of options:

### Index of Sources

This is the database of manuscripts containing Middle English that were investigated for the making of *LALME*. Each entry contains a variable amount of information arranged in a number of ‘fields’.

### Search by Field

- Click on **Search by Field**
- Under ‘SEARCH’ ‘OR SELECT FROM’, check the ‘hand(s)’ box and type ‘Robert Thornton’ into the ‘FOR STRING’ box. Alternatively: check the ‘manuscript’ box and type ‘Lincoln Cathedral’ into the ‘FOR STRING’ box
- Under ‘DISPLAY’, check ‘Full Record’.
- Scroll down and click **SEARCH INDEX OF SOURCES**.
- The search results will include this entry:

Lincoln Cathedral Chapter Library 91 (A.5.2). The hand of Robert Thornton. ff. 179r-189r: Bonaventura, *Privity of the Passion*. Robert Thornton was born at Oswaldkirk, Yorks. This text is one of those copied in a different language from Thornton’s own. For a description of the contents of the MS see C. Horstmann, *Yorkshire Writers* i, p. 180 seq. and Birts 1951, p. 72 seq.; further references in Lewis & McIntosh 1982, pp. 152-3. Lincolnshire.

- This is the base manuscript for second of the two Rolle texts edited in Sisam’s *Fourteenth Century Verse & Prose* (Oxford: Clarendon Press 1921, and later edns), no. IVB. It is the base manuscript for all three Rolle *Exempla* given in R.D. Fulk’s *An Introduction to Middle English* (Toronto: Broadview Press, 2012) no. 23. The copyist of this manuscript, Robert

Thornton was a Yorkshire landowner who flourished in the mid-15<sup>th</sup> century. He lived near Stonegrave in the North Riding of Yorkshire. This is not far from the birthplace of Richard Rolle (about 150 years earlier) near in Thornton-le-Dale, near Pickering. Rolle died in 1349 in Hampole in the West Riding of Yorkshire, not far from the border with Lincolnshire. Robert Thornton copied numerous texts as well as those by Rolle mentioned above. Thornton's exemplar for the Rolle texts is likely to have been local to Yorks as it is strongly northern in character. But although the language he perpetuated is generally northern or northerly, it nevertheless tends to be somewhat mixed, reflecting at least to a certain extent the differing language he found in his various exemplar texts. His texts were therefore not used for mapping in *LALME*. The one text treated in *LALME* is from a different part of the manuscript from those anthologised in Sisam and Fulk, and is in Lincolnshire language (though not 'pure' enough to be mapped).

- If a text has been analysed and a LP made of its language, the LP number is given near the end of the Index of Sources entry, followed by the Ordnance Survey Grid Reference to its localisation. Normally, non-mapped texts lack an LP, and there will usually be some comment in the Index of Sources entry to say why the language was not considered suitable for analysis and/or mapping. If a text does have an LP, which (for whatever reason) has not been entered on the maps, then this is also noted.

### Search by County

- Click on **Search by County**
- Under 'England', check the 'Gloucestershire' box (counties are listed alphabetically)
- Scroll down and click **FIND INDEX OF SOURCES ENTRIES BY COUNTY**
- Scroll down to LP 7051 (LPs are listed in numerical order) and you will find this entry:

London, British Library, Cotton Tiberius D vii. *ca.* 1400, MED. Two hands in similar language. f. 38v seq. Trevisa, *Polychronicon*. Original analysis from R. Morris and W.W. Skeat, *Specimens of Early English*, part II (Clarendon Press Series, 1872), pp. 235 seq.; ff. 100v-106 and 200v. Originally formed a composite LP with the analysis of Manchester, Chetham's Library 11379, q.v. The texts have not been re-analysed, but separate LPs (mapped at the same location) have been made from the original analyses done by MLS. The language of Hand A of this MS is notably similar to that of Manchester, Chetham's Library 11379. LP 7051. Grid 369 199. Gloucestershire.

- This is the base manuscript for the Trevisa texts edited in Sisam's *Fourteenth Century Verse & Prose* (Oxford: Clarendon Press 1921, and later edns), no. XIII. The same texts are also used in R.D. Fulk's *An Introduction to Middle English* (Toronto: Broadview Press, 2012) no. 29. The part analysed for *LALME* is a different and longer sample. If you click on 7051 underneath the entry, the full LP, headed by its Index of Sources entry, will appear in a separate tab/window. (You cannot access individual LPs from results produced by the **Search by Field** facility.) The LP has been assigned to Berkeley in S. Gloucs. Note that John Trevisa was a Cornishman. He was a Fellow of Exeter College, Oxford 1363–65 and of Queen's College, Oxford 1372–76. He was expelled for 'unworthiness' (involvement in some sort of quarrel or riot) in 1376 and became Vicar of Berkeley where he spent most of the rest of his life. He died in 1402. One might assume that when the language of this copy of his work (not in his own hand and not in Cornish English) turned out to fit well (in relation to other localised texts) in that area of Gloucs, that it was then placed by MLS in Berkeley on the assumption that a local scribe had been employed to copy the local vicar's work – a linguistically independently confirmed local association.

## Regnal Years

- Clicking **Regnal Years** produces a document, which lists the regnal years of English monarchs 1377-1546/47. This is provided for reference because many of the local documents are dated by means of the year of the reigning king; e.g. 20 April 3 Henry VI (the third year of the reign of King Henry VI), i.e. 1425. It is important to recognise that a regnal year begins from the day of the new monarch's succession. So conversion of a particular day in a particular regnal year into that of a modern four-digit year, will be one of two consecutive years, depending on which side of the date of succession the relevant day falls. For most of the documents dated by regnal year in *LALME* the modern four-digit date has been supplied alongside in brackets for convenience in search routines.
- Go back to **Search by Field** and under **SEARCH** and **OR SELECT FROM** check the **date** box. In the **For String** box type 14. Leave the **RESTRICTIONS** boxes unchanged. Under **DISPLAY** check the **manuscript** box and the **date** box. Then click the **SEARCH INDEX OF SOURCES** box at the foot of the page.
- The results will come up displayed in alphabetical order of repository with just the manuscript's repository designation and the date fields appearing. You will see that there is a mixture of date formats but all precise dates from the 1400s will appear, those dated by regnal year only in the manuscript will show the 1400s dating alongside. In those cases a full account of the day of the year whether by normal calendar date or by saint's day or other designation is retrievable from the full entry. Typing 14 into the search box will also bring up the 14th cent. type of dating. These of course belong to the 1300s not the 1400s. To retrieve those you would have to type 15th into the search box. To obtain a list of all manuscripts in eLALME with a 15th century dating, you would need to amalgamate the results of the two searches removing those with the '14th cent.' label. Note that these approximate datings may be subdivided into half or quarter centuries. They will have been arrived at by palaeographic assessment of scribal hand(s) and/or from manuscript contents, and are for the most part gleaned from catalogues and/or scholarly editions.

## Linguistic Profiles

A Linguistic Profile (LP) is the result of examining texts for the occurrence of a set of predetermined linguistic criteria: the questionnaire. The LP lists all the forms for the questionnaire items recorded from the text analysed. Unbracketed forms are sole or dominant forms; those within single parentheses occur approximately between a third and two-thirds as often as the dominant form(s); and forms within double parentheses occur less than one third as often as dominant form(s).

## By County

- Click **By County**
- Under 'England', check the 'Norfolk' box (counties are listed alphabetically)
- Scroll down and click **FIND LPS BY COUNTY**. The result will display as an array of LP numbers arranged in numerical order.
- Click on **4279**. The result will show the LP, prefaced by its 'Index of Sources' entry.
- Scroll down to Items 22 and 23 and see Norfolk *x*- spellings for SHALL and SHOULD. Scroll down to Items 41, 44 and 53 to see *qw*- spellings for WHILE, WH- and WHERE respectively. Such spellings, especially in combination, are strongly suggestive of the late Middle English of Norfolk.

## By LP Number

- Click **By LP number**. A set of LP number ranges will appear. You can then select 4000-4998 and find LP 4279 that way.
- One Norfolk manuscript whose contents were not analysed for mapping in *LALME* is the one from which a sample LP can be found in Appendix 1. The manuscript does have an entry in the Index of Sources though, under Cambridge, Trinity College 1230 (O.3.58).

## Questionnaire

The Questionnaire is the new eLALME version, which includes the original Appendix of Southern Forms. These extra items are mostly found in the range 323-425; the forms listed under these items were not all collected systematically as the forms listed under the first 322 items were. Some ‘Southern Appendix’ items, however, have been infiltrated into the 1-322 sequence as sub-items. If they represent collection of only select form types for that item this is made clear and the sub-item marked with an asterisk. In the original appendix of southern forms appearing at the end of vol. 4 of the printed *LALME*, the presence of the (sub-)item was often recorded only as the (sub-)item title, followed by a list of LPs in which it was found. In other words, for these (sub-)items in these LPs no actual forms were recorded. In eLALME, for any such item in the 323-425 series (or any asterisked sub-item in the 1-322 series), the fact of the appearance of the item (in some unspecified form) is recorded as X. For those southern LPs that have been made anew for eLALME, actual forms have been recorded for the relevant (sub-)items; so there will often be a mixture of actual forms (for a few LPs) and X (for the majority).

## Abbreviations

Lists for reference all the abbreviations used in the Linguistic Profiles

- We will leave ‘**Fitting**’ and **Maps** until later in this tour.

## Listings

The contents of the LPs are here arranged by item.

## County Dictionary

- Click **County Dictionary**. A set of item number ranges appears. These are in batches of 50. The first 69 items correspond to the ‘core’ questionnaire items for both the Northern and Southern areas of the survey, i.e. those that were deemed to be likely to occur most frequently and to show significant regional variation. Items 70-303 are listed alphabetically thereafter. Items 304-320 are derivational suffixes, with leading or trailing hyphens, also listed alphabetically, followed by two further miscellaneous items. For 323 onwards see under **Questionnaire** above. You can either use the **Questionnaire** to determine which number range you need for a given search, or (at least for the alphabetical list) browse to find what you are looking for.
- Click **51-100**. The list of those items appears.
- Click **55 THROUGH**. The forms are listed alphanumerically and this means that forms beginning with a hyphen (as second elements of a compound) come first, followed by those which have a leading ? (indicating an uncertain reading), followed by the alphabetical list proper, with capital letters coming before lower case. Forms with trailing hyphens (first elements of a compound) occur within the main alphabetical list (see further under the next bullet point below). The county abbreviations and associated LP numbers in which the form is found follow each form. The bracketing round the numbers indicates the frequency of occurrence of that form in that LP in the usual way as described in **About eLALME**. See

how long it takes to scroll through all the spellings – 515 altogether. If one discounts duplicates formed by separating capitalised and non-capitalised forms, and those with leading or trailing hyphens from those without, there are still 467 distinct spellings.

- Note that, ideally, elements of compounds should have been treated separately from instances of the item as a stand-alone form. To separate these now would involve detailed revision of the LPs for this item. In one LP revised for eLALME (LP 7340) this has been done, resulting in the sub-item 55-10 THROUGH *cpd*. The compound THROUGH variants (both first elements of a compound with trailing hyphen) show that one matches the spelling of one of the stand-alone variants, the other does not.
- Click your usual back arrow to return to the set of item number ranges and click **1-50**. Click **10 SUCH** which is another highly variable item. There are 143 different spellings listed – 139 if you discount duplicates with trailing hyphens. You can see which are the more commonly found spellings by the large number of LPs associated with them.

### Item List

- Click **Item List** and again **51-100** and **55 THROUGH**. Here the LPs are listed in numerical order followed by the forms for THROUGH found in each with relative frequencies shown by brackets.
- Now we will return to:

### Maps

#### Dot Maps

The eLALME Dot Maps are very much like the printed *LALME* ones but more colourful. Also there are many more of them (1,200 in *LALME*, more than 1,700 in eLALME). The extra numbers represent an important improvement. For reasons of cost, the publisher would only allow 1,200 maps in the printed *LALME*. Unfortunately this meant that some sets of Dot Maps for particular items were left incomplete, which can be frustrating for the user who wants to compare particular distributions. In eLALME the idea was to make this good by providing complete sets of philologically informed Dot Maps for the items mapped. The eLALME Dot Maps illustrate (with red dots) the geographical distribution of individual linguistic features as indicated by each map's title. As with those in the printed *LALME*, the three different sizes of dot show relative frequency of occurrence corresponding to the bracketing system in the LPs. There is the added refinement that they optionally differentiate those LPs which do not show the particular feature but which have some other form attested for that item (blue dots) from those which have no forms at all attested for that item (white dots). This is a very important distinction: absence of evidence is not evidence of absence.

- Click **Dot Maps**. This brings up the index to the Dot Maps listed by Questionnaire Item number and Map Title – 15 to a screen page – 115 screen pages. Each item number represented will have a set of diagnostic Dot Maps associated with it. The list of 1,720 maps can be searched by means of typing an item name or any part of a map's title in the 'Find maps that have' search box
- Type SUCH in the search box and click **Submit**
- The titles of the set of Item 10 SUCH maps will be displayed (in this case on more than one page).
- Find SUCH: all spellings with *-lk(-)*. (2nd from top) and click **Show Map**. In a few seconds the map should come up in another tab or window (depending on your browser settings) with red dots showing presence of *swilk* etc and white dots showing absence of that type of form. Click on the map to zoom. The size of the dot indicates relative frequency of the form-

type in the same ratio as the bracketing: i.e. large = unbracketed form, medium = single bracketed form, small = double bracketed form.

- Go back to the previous tab/window, where the SUCH map index is, and this time check the ‘Show locations of other features’ box after the SUCH: all spellings with *-lk(-)* option and again click **Show Map**. After a few seconds the map will come up again, this time with additional blue dots showing the location of texts in which the item SUCH appears but not in an *-lk(-)* type form. The white dots now indicate that the texts localised there do not contain the item SUCH at all. It can be seen that this is especially important for any conclusions one might want to draw about distributions in the North West. Click on the map to zoom.
- If you wish you can return to the previous tab/window and click **Show Map** (with or without checking the ‘Show locations of other features’ box) of the first map on the SUCH list, viz. SUCH: all forms ending in *-ch(e)* or *-chee*. The resulting map will be (roughly) the inverse of the previous one because palatal and non-palatal forms are (roughly) in complementary distribution in this item. Note that neither map, however, shows ‘sik’ or ‘slik’ types for which there are other maps.
- Beware: the *-ch(e)* type map will take a long time to materialise because so much data is involved in it. ‘Under the bonnet’ of the website the Dot Maps are stored as files of actual manuscript spellings (found in any one or more of the localised LPs) that come under the description in the map title. When you click on **Show Map**, a program creates the map ‘on the fly’ using the relevant file. Some maps take longer to process than others.
- Go back to the ‘Find maps that have’ box. Type in WELL and click **Submit**.
- Select Item 281 WELL adv: *weel(-)*, incl rare *wheel* by checking the ‘Show locations of other features’ box and clicking **Show Map**.
- When the map comes up click on it to zoom. Notice that in the northern half of the survey there are red, blue and white dots as normal. This indicates that the item WELL *adv.* was on Angus McIntosh’s main northern questionnaire. Notice also that in the Southern half of the survey there are scattered red, blue and white crosses. The red crosses indicate presence of *weel(-)* forms in an unsystematic collection. In this case, M.L. Samuels only collected forms of the adverb WELL *other than* those spelled ‘wel(l)’. The blue crosses in the south will mostly indicate forms of the ‘wil’ type – the other main not-‘wel(l)’ variant.
- Go back to the ‘Find maps that have’ box. Type in THOSE and click **Submit**. Note that for the southern half of the survey, only ‘they’ type and ‘those’ type were collected for this item. Select the THOSE: ‘tho’ type map (with or without clicking the ‘Show locations of other features’ box). When it comes up, zoom on it. Although Samuels did not collect such forms, you will nevertheless notice scattered red crosses in the southern half of the survey. This is because some southern LPs have been remade for eLALME and the analysis of the texts redone from scratch. The data collection for these newly made LPs was done fully for items that were originally only partially collected. The relevant information is therefore given on the maps for those few revised LPs, but with the warning (by means of a cross rather than a dot) that the data collection was not as a whole systematic because there is no equivalent information available for the unrevised LPs in the south.

### ‘User-defined Maps’

This function enables the user to make a Dot Map – whether to replicate one that already exists or to produce one with a different definition. You can obviously play with this yourselves, but here is an illustrative exercise to introduce you to the concept.

- Click **‘User-defined Maps’**
- First click **Key** at the top right hand side of your screen. Also check the boxes on the upper left side of the screen: ‘Show all survey points’ and ‘Show survey points where LP item is present, but in different forms’.

- On the top left hand side of the screen click the green arrow at ‘Select one or more items’ to access the drop down **Item List**.
  - Scroll down to item 14 MAN. Each item has information as to whether it was collected for both Northern and Southern areas and also for Ireland (not mapped in any version of LALME). Check the 14 MAN box and click on the green upward arrow again to fold up the drop down list.
  - Click on the green arrow at ‘Select one or more forms’ to access the drop down list of all the forms for MAN. Check the box for -mon near the top, then scroll down to where the ‘mo-’ spellings start and check the boxes of all of them (18 in all). Click on the green arrow to fold up the drop down list.
  - Click **Make map**. The grey map will be populated with dots and beside it will appear a window with all the forms of MAN (including those selected by you, which will be highlighted).
  - The dark blue dots show ‘mon’ forms. The light blue dots show places without ‘mon’ but with some other spelling for the item. In this simple example this will mean ‘man’ forms. White dots, as usual, show survey points where the LP(s) lack(s) attestation of the item at all.
  - You can click on any coloured dot to get more information. For the sake of the exercise, find the four dark blue dots that are separate from the main block of dark blue dots - they are in the central south of the country – two in Oxfordshire and two in Hampshire. Click on all four in turn and see what happens.
  - The dots will change to a different colour and a small window, colour-coded to that dot, will appear in a second large window beside the map. The coloured window lists all that LP’s forms for the item, with red dots (large, medium or small) indicating their relative frequencies. Sometimes there are multiple LPs mapped at a single point as with the most southerly of the four dots you have clicked. Clicking on a blue LP number brings up the relevant LP in a different tab/window and you can see item 14 MAN forms in the normal LP format. Close any LP you have accessed. Clicking on the black cross in the right hand corner of a small coloured-coded window closes that window. This facility is the nearest eLALME can get to providing Item Maps.
  - Pass your cursor over the forms listed beside the map under the Item heading 14 MAN. For each form over which you hover the mouse, red dots (all one size) show where that form is attested.
  - Find the basic form ‘mon’ (no hyphens, no italics) among the highlighted forms and hover the mouse. The red dots largely coincide with the dark blue ones.
  - Now find the basic ‘man’ form (no hyphens, no italics) somewhere above ‘mon’, and hover the mouse. You will see that these two contrasting forms are not in complementary distribution; ‘man’ types are found almost everywhere, ‘mon’ types only in the west.
  - This system does not readily show the distribution of LPs that show *both* ‘mon’ type *and* ‘man’ type variants. A general impression can be gained by comparing the two maps by eye (whether the User-defined ones or the versions provided as Dot Maps). Otherwise recourse must be had to examining individual LPs and/or using the mouse to reveal distributions via the red dots as described above. An overlay system would obviously be more helpful in showing such distributional combinations.
- Extra exercise: combining two items:
    - Return to the drop down ‘Select one or more items’ arrow. Leave item 14 MAN still checked and check item 13 MANY also. Fold up the list.
    - Return to the drop down ‘Select one or more forms’ arrow. Leave the MAN ‘mon’ forms still checked and scroll down as necessary to check all the ‘mo-’ spellings for MANY (12 in all not counting the one prefaced with ? near the top of the list). Fold up the list.

- Click **Make Map**. When the map is populated, the dark blue dots show ‘mon(-)’ type spellings in either or both items. You will see that the distribution for ‘mony’ type is not so discrete as for ‘mon’ because there are lots of extra blue dots in the south, north and east which were not there for the ‘mon’ only map.
- If you hover over basic ‘mon’ and then basic ‘mony’ you will see the point.
- For interest, take time to hover over ‘meny’ (two forms before the high-lighted ‘mony’ forms begin).

- Back in the Menu Bar, go up again to:

### Linguistic Profiles

- Click **‘Fitting’**. The fitting page will appear with a list of all the LP items on the left and a map, populated with all the survey points in dark red, on the right.

#### **First Exercise**

- We will try to fit the language of one of the carols in Cambridge, Trinity College 1230 (O.3.58). The text and its LP appear as Appendix 1 below. **The LP has been made for illustrative purposes only – normally a much longer stretch of text would be used.**
- For the purposes of the fitting exercise a small subset of items from the LP has been chosen to attempt the fit:

3rd sg pres ind ending in -yth  
 ‘y’ for thorn in e.g. y<sup>e</sup>i for THEY.  
 x- in SHALL and SHOULD  
 weel for WELL.

- At the top left of the screen is a green button labelled **Show instructions**. Click on it and read to get your bearings. Then click **Hide Instructions** or you won’t be able to see the whole screen.
- Under ‘LP Items’ scroll down to item 61 Pres 3sg. Check the box. (Ignore sub-items.)
- Under ‘Forms’ the selected item will now appear. Ignore the check box beside the item (checking this would cause *all* the forms of the item to be selected, which you do not want to do). Instead, click on the green + button to see the forms.
- Check every box that has an ending that implies final [θ] as opposed to [s], or anything else. Checking just **-yth** will discount far too many areas – you want to work from the general to the particular, not the other way around. For the purposes of this exercise, ignore all spellings with ‘3’ in them including **-e3th**. (What is represented by ‘3’ in a particular context has to be assessed by careful scrutiny of the text language in which it appears.) You can include suitable spellings with added final ‘e’ and don’t forget ‘y’ for thorn spellings. So check the following:

-aþ	-ithe	-uþe
-eith	-iy	-y
-eth	-iþ	-y <sup>e</sup>
-ethe	-iþ <sup>e</sup>	-yth
-etþ	-iþe	-ythe
-ey	-oth	-yy
-eye	-oþ <sup>e</sup>	-yþ
-eyth	-th	-yþ <sup>e</sup>
-eythe	-the	-yþe
-eþ	-uth	-þ
-eþ <sup>e</sup>	-utþ	-þ <sup>e</sup>
-eþe	-uþ	-þe
-ith	-uþ <sup>e</sup>	



- Click **Fit forms on map**.
- After some seconds delay, the map will adapt to what you have submitted. Dots remaining dark red indicate presence of one or more of your checked forms. Slightly paler dots indicate that the relevant texts have some different form(s) for the item. White dots indicate no information for that item. Item 61 was only collected for the northern area of survey so any coloured dots in the south indicate newly analysed LPs for which the data was collected.
- Return to the 'LP Items' column. Leave item 61 still checked and check in addition item 7 THEY.
- In the 'Forms' column leave still checked the forms that you selected for Item 61. Scroll down (or check the green minus button for item 61 to put it away) and you will see that Item 7 has appeared. Again ignore the 'check-all' box beside the item itself, and click the green + button to 'release' the forms. If necessary scroll down to find them.
- Check all the forms beginning with 'y' (as opposed to 'th' or 'p' or anything else). So check continuously between y, y- etc as far as and including y<sup>ie</sup>, yy.
- Click **Fit forms on map**. The program will automatically reset the locations, i.e. all the dots will go dark again.
- After some seconds the data from the second item (7) will be fitted, followed by that from the first item (61). This happens automatically – just wait.
- When the result appears you will notice that the dark dots are mostly in a wedge-shaped area including East Anglia and Lincolnshire in the east as the broad part of the wedge. There are a few outliers with 'y' for thorn further south.
- **IMPORTANT WARNING. The few dark dots further north are deceptive because they are potentially 'false positives'**. Click on one or two and you will see from the pop-up boxes showing relevant forms that they have y- in THEY, but no attestation for Pres ind 3sg. They would be expected to have final -s rather than -eth etc. for this item. Generally the more items included in a fit the fewer false positives there will be, but some texts on the maps are very short and therefore have very small numbers of items in their LPs. These texts are likely very frequently to show up as quite dark dots in a fitting exercise, because they will have very few forms available to exclude them. If they are isolated among a large number of pale(r) dots and there are dark dots with numerous 'hits' elsewhere to provide a true positive, then the isolated ones can usually safely be discounted.
- Return to the 'LP Items' column. Leave items 7 and 61 still checked and check in addition items 22 SHALL sg and 22-30 SHAL pl and 23 SHOULD sg and 23-30 SHOULD pl. (You can ignore the other sub-items).
- Under 'Forms', leave everything else unchanged (or click the green minus buttons) and scroll down to the new items. Click all four new green + buttons, scrolling down as necessary, and as you go along check all forms beginning with x- in all four lists.
- Click **Fit forms on map**. The program will automatically reset the locations, i.e. all the dots will go dark again. Again the fitting will happen automatically and gradually in the reverse order you have set up the data. This will take some time – be patient.
- When the result appears you will see that most of the map is really pale with a cluster of dark dots only in East Anglia. The few remaining other dark dots when clicked reveal that they only have one 'hit' for the selected data. Since they are surrounded with paler dots they can be confidently excluded.
- Return to the 'LP Items' column. Leave items 7 and 61 and 22 and 22-30 and 23 and 23-30 still checked and check in addition Item 281 WELL adv. and 281-20 WELL adv. excl 'wel(l)'
- Under 'Forms', leave everything else unchanged (or click the green minus buttons) and scroll down to the new items. Click both new green + buttons and check all spellings with -ee- in them (five in 281 (include **wheel**) and three in 281-20).

- Click **Fit forms on map**. The program will automatically reset the locations, i.e. all the dots will go dark again. Again the fitting will happen automatically and gradually in the reverse order you have set up the data. This will take some time.
- Apart from one in Wales, which only has one ‘hit’, there are only two fully dark dots left. To find out what they are, zoom in with the Google zoom + button at the top left of the map and negotiate with the Google arrows. Then click on the leftmost of the two dark red dots. The box will come up showing LP 4566 and the relevant forms in it - all four items represented. (You may have to enlarge the map using the + button in the top left hand corner to access the full box; the enlarged map can be moved around with the mouse.) Similarly when you close the first box and click the rightmost of the two dark red dots a box will come up showing LP 4647. You can access the LPs themselves to see if they match the carol text in other items. If so, these points could be considered ‘poles of attraction’ for where the carol text might be localised. Obviously this little exercise cannot produce a convincing ‘fit’ – far too few items have been used and the text to be fitted is much too short. But the principles are clear.

### Second Exercise

- We will try to fit the language of Robert Thornton’s copy of Richard Rolle’s *Nature of the Bee* from Lincoln Cathedral Chapter Library 91 (A.5.2). The text and its LP appear as Appendix 2 below. The LP has been made for **illustrative purposes only – normally a much longer stretch of text would be used**. Also, as indicated above under Index of Sources (pp. 1–2) Robert Thornton’s language is likely to be a bit **mixed, so this exercise is unlikely to yield a fully satisfactory fit**.
- For the purposes of the fitting exercise a small subset of items from the LP has been chosen to attempt the fit:

Item 62 Pres ind pl: ‘-s’ type, incl abbr *-es* and *-us*.

Item 48 OE, ON  $\bar{a}$  words: all *a-* spellings AND Item 28 FROM: ‘fra’ type AND Item 275 TWO: ‘twa’ type, all forms with simple *a*.

Item 10 SUCH: all spellings with *-lk(-)*.

Item 19 IS: *es* and rare *hes*.

Item 54 MIGHT vb: ‘mo(u)C(t)’ ‘mowC(t)’ and ‘muC(t)’ types (eg *moght*, *mouȝht*, *mowght*, *muȝt*).

Item 7 THEY: ‘thay’ type, with *-ai(e)* or *-ay(e)* AND Item 9 THEIR: ‘their’ type, with medial *-ei-* or *-ey-*

- Under ‘LP Items’ scroll down to item 62 Pres ind pl. Check the box. (Ignore the sub-item of item 62).
- Under ‘Forms’ the selected item will now appear. Click on the green + button to see the forms.
- Check all the endings with ‘s’ in them – 10 in all.
- Click **Fit forms on map**.
- After some seconds delay, the map will adapt to what you have submitted. Dots remaining dark red indicate presence of one or more of your checked forms. Slightly paler dots indicate that the relevant texts have some different form(s) for the item. White dots indicate no information for that item. Item 62 was only collected for the northern area of survey so any coloured dots in the south indicate newly analysed LPs for which the data was collected.
- Return to the ‘LP Items’ column. Leave item 62 still checked and check in addition items 28, 28-10, 48 and 275.
- In the ‘Forms’ column leave still checked the forms that you selected for Item 62. Scroll down (or check the green minus button for item 62 to put it away) and you will see that the new Items have appeared. Click the four green + buttons to ‘release’ the forms and if necessary scroll down to find them. In 28 and 28-10 check only **fra**. In 48 check only **a** and **aa**. In 275 check all the forms with simple final ‘a’, viz: **thwa**, **tua**, **twa**, **twaha**.

- Click **Fit forms on map**. The program will automatically reset the locations, i.e. all the dots will go dark again.
- After some seconds the data from the items you have selected will be fitted in turn. This happens automatically – just wait.
- When the result appears you will notice that the dark dots are already confined to northern England and Scotland, north of a line running between the Ribble in the West and just south of the Humber in the East. If you click on the only remaining dark dot just south of this area (near Liverpool in the NW Midlands) you will find it has only one ‘hit’.
- Unfortunately, the nature of Northern ME is that it has numerous forms that are very distinctive in contrast to more southerly ME but once it is identified as northern it is much more difficult to find differentiating features within the northern area.
- To illustrate this problem, proceed in the same way as before, and check item 10 in the ‘LP Items’ column, leaving all the other items still checked. In the ‘Forms’ column’ leave all the forms already checked unchanged but release the forms for SUCH by clicking its green + button. Then check all the forms with a vowel followed by **lk**. When you click **Fit forms on map** the same process as before will be repeated. But when the result finally appears you will find that the southerly area that was already paler is paler still, but that there has been almost no change in the area of remaining dark dots. This is because the distribution of **-lk** in SUCH is much the same as the other features already fitted. Also some dark dots remain because the item SUCH is frequently missing from the short documentary texts that are prevalent in a number of areas in the North.
- The next item 19 IS is more helpful. Proceed in the same way and in the ‘Forms’ column for 19 IS check only **es** and **hes**. The result of this addition allows the whole of Scotland to be removed from the area of likely fit, and narrows the area to a diagonal band comprising North Lincs, most of Yorks and N Lancs but does not exclude parts of Cumberland, Westmoreland, Durham or Northumberland.
- Now that the area is considerably narrowed down one can start to use more unusual forms in an attempt to refine the fit still further. One should always progress from the more general to the more particular not the other way round. It is at this stage that with the paper and pencil method of fitting, using the printed *LALME*, one might turn from the Dot Maps to the Item Maps.
- Instead continue as before and check Item 54 MIGHT vb and 54-03 MIGHT pl. Continue to leave all your other choices unchanged. The program works cumulatively.
- In Item 54 check **mogh** and **moght** and then everything between **mought** and **mu3thte** inclusive. In Item 54-03 check **moght**, **mogth** and **mowght**. Click **Fit forms on Map**.
- The result narrows the diagonal band considerably, though the fit is still affected by non-occurrences of certain of our chosen items so that the dark red dots remain unaffected even though the data for the texts associated with them may be very scanty.
- One interesting element in the Thornton LP is the co-occurrence of both **-ai/-ay** and **-ei/-ey** forms in THEY and THEIR. This could imply linguistic mixture – but it need not. As one might expect, there are text languages in areas contiguous to both **-ai/-ay** and **-ei/-ey** areas where both types are found. It is now that the shortcomings of the present eLALME fitting program become apparent. If one chooses either or both of Item 7 THEY or item 9 THEIR and checks all the relevant spellings, the program does not differentiate between texts that have *both -ai/-ay and -ei/-ey* forms and those that have only *one or the other* type. On the printed *LALME* Item Maps it is easy to see which LPs have both and which do not. In these circumstances, one can at best attempt a fudge with the web-based program that cross-checking with the pencil and paper method shows is not too wide of the mark. This is, however, obviously not fully satisfactory – see final bullet point below.

- Proceed as before and check Item 7 THEY and Item 9 THEIR. Under ‘Forms’ check all ‘thai/thay’ type spellings in THEY and all ‘their/theyr’ type spellings in THEIR. This gives a rough idea of where the two types overlap. NB clearly you must ignore all initial **h**- types.
- The final result is inconclusive, but a few observations can be made. If we reran the program and included only **mo** + fricative spellings for MIGHT instead of also including **mou-** and **mu-**, the only LP where all the selected features are found in **combination** is LP 210 in N Lincs. LP 115 in the West Riding combines ‘mought’-type spellings with the co-occurrence of **-ai/-ay** alongside **-e-** in THEY and THEIR but not **-ei/-ey**. There seem to be two possible poles of attraction for the ‘best fit’ for *The Nature of the Bee* but since LP 210 is the only one that fits totally we might prefer a localisation near to it. If one allows ‘mught’-type spellings to be a match for ‘mought’ (as we so far have) then LPs 18 and 32, somewhat NW of LP 115, in the West Riding of Yorks become poles of attraction too.
- For this, and for any other attempt at fitting the language of a text, the original printed *LALME* remains useful because of the set of Item Maps in vol. 2. This is particularly important in the final stages of fitting, when a general area of potential fit is already established but a more exact localisation may yet be possible to achieve. The Item Maps display actual spelling variants (and, importantly, *combinations* of variants) for 62 selected items for each localised LP. For a full explication and a worked example showing how to use the Item Maps see: Michael Benskin, *The ‘fit’-technique explained*, in Felicity Riddy (ed.), *Regionalism in Late Medieval Manuscripts and Texts* (Cambridge: D.S. Brewer, 1981), pp. 9–26. Results obtained from the original *LALME* must obviously take into account revisions and additions in e*LALME*, for directions to which see **eLALME Introduction**, accessible from the eLALME website’s Main Page.

For these fitting exercises, suitable items have been selected for you. Making decisions about which items will be useful in relation to fitting a particular LP takes experience. Even when the items are chosen, it takes practice and a certain amount of philological awareness to decide which forms to select, especially for items with large numbers of variants and complex patterns of variation. With the pencil and paper method of fitting this is easier because one uses the printed Dot Maps for which the forms have already been selected for any one map. If you find it difficult to make decisions (for this exercise or for any other that you might choose to experiment with) it will be useful to have the ready-made Dot Maps index up in another window. You can then look at the philologically informed set that has been made for you for any one item. The map titles will give you a clue as to what forms should be considered as going together to make a dialectally diagnostic map and what forms should be treated separately as dialectal discriminants.

For more detailed information about the making of *LALME* and about the methodology underpinning the linguistic analyses, see the **Original Atlas Introductions**, accessible in downloadable form from the Main Page of the eLALME website, and cf. Michael Benskin, ‘The Middle English Dialect Atlas’, in Michael Benskin and M.L. Samuels (eds.) *So meny people longages and tonges; philological essays in Scots and Middle English presented to Angus McIntosh* (Edinburgh: The Editors, 1981), pp. xxvii–xli.

## APPENDIX 1: TEXT AND LP ASSOCIATED WITH THE FIRST FITTING EXERCISE

## CAROL – TRANSCRIPT FROM PHOTOGRAPH

From: Cambridge, Trinity College MS O.3.58 (1230)

Nowel nowel nowel to vs is born owr god emanuel .

1 In bedlem y<sup>i</sup>s berde of lyf .  
 Is born of marye maydyn and wyf .  
 He is boye god & man I-schryf . Nowel nowel .  
 Thys *prince* of pees xal secyn al stryf .  
 5 & wone wyth vs *perpetuel*.

This chyld xal bey vs wyth hys bloyd  
 And be naylyd vp-on the royd .  
 Hys raunsum pasyth al erdly goyd. Nowel . nowel .  
 Allas qwat wyth dar be so woyd .  
 10 To sle so ienty<sup>l</sup> a iowel .

Be hys powste he his emprys .  
 Schal take fro helle at hys vprys .  
 And saue mankende vp-on y<sup>i</sup>s wys. Nowel . nowel .  
 Thus telly vs y<sup>e</sup> *prophecys* .  
 15 yat he is kyng of heuen & helle .

This maydenys sone to hys empere  
 Schal stey to heuene be his powere .  
 hys holygost vs alle xal lere . *Nowel* . *Nowel* .  
 [Ther] y<sup>e</sup>i and ye fadyr in feere .  
 20 Schul regne o god y<sup>i</sup>s leue I weel .

Pray we y<sup>i</sup>s chyld wyth good entent .  
 in our deyng he vs *present* .  
 On-to hys fadyr omnypotent . Nowel Nowel .  
 The ferst tydyng of y<sup>i</sup>s testament .  
 25 Browth to vs seynt gabryel .

Line 19: first word lost because of damage to the manuscript — *Ther* supplied.

## LINGUISTIC PROFILE DERIVED FROM THE TEXT ABOVE

Cambridge, Trinity College 1230 (O.3.58). First half 15th cent. A roll containing thirteen carols, with music. The language of these clearly belongs to Norfolk, but was not analysed for inclusion on the *LALME* maps because there was already more than enough material suitable for mapping. This Linguistic Profile has been made (for illustrative purposes only) from just one of the carols in the roll. It is made from the transcription above which was done from a photograph of the carol. This small LP of a tiny extract is too partial to be reliable but is sufficient to illustrate the principles of the fit-technique.

Item number	Item	Forms
1	THE	the, y <sup>e</sup> , ye
7	THEY	y <sup>e</sup> i
14	MAN	man, man-
15	ANY	any
19	IS	is
22	SHALL sg	xal, schal
22-30	SHALL pl	schul
26-20	TO prep +h	cf. on-to
26-30	TO prep +V	to
28	FROM	fro
44	WH-	qw-
48	OE, ON ā ('a', 'o')	o
57	Sb pl	-s
58	Pres part	-ande, -and
59	Vbl sb	-yng
61	Pres 3sg	-yth
62	Pres pl	-y
65	Weak ppl	-yd
66	Str ppl	-n
67	Ppl pfx 'i-' or 'y-'	I-
75	ALL	al, alle
94	BOTH	boye
101-10	BUY inf	bey
102	BY	be
114	DIE vb	deyng [vbl sb]
119	EARTH	cf. erdly
130	FATHER	fadyr
138	FIRST undiff	ferst
155	GOOD	good; cf. goyd <i>rh</i>
164	HEAVEN	heuen, heuene
166	HELL	helle

175	HOLY	holy
178	I +C	I
179-30	KIND sb	-kende
190	LIFE	cf. <i>lyf rh</i>
220	ONE adj	o
224	OUR	owr
229	PRAY vb	pray
247	SON	sone
278	UPON	vp-on
281	WELL adv	weel
293	WITH	wyth
375	'oy', 'oi' for ME $\bar{o}$	cf. bloyd, royd, goyd, woyd <i>all rh</i>

APPENDIX 2 – TEXT AND LINGUISTIC PROFILE ASSOCIATED WITH THE SECOND FITTING EXERCISE.

ON THE NATURE OF THE BEE – TRANSCRIPT FROM FACSIMILE

From: Lincoln Cathedral, Chapter Library MS 91, The Thornton Manuscript, fol. 194r–v.

Moralia Richardi heremite de natura Apis vnde quasi Apis Argumentosa ¶ Apis`

1 The bee has three kyndis :/ Ane es y<sup>t</sup> scho es neuer ydill and scho  
 es noghte with thaim yat will noghte wyrke /. Bot castys  
 194v thaim owte and puttes thaim away /~ Anothire es yat when scho flyes  
 Scho takes erthe in hyr fette yat scho be noghte lyghtly ouer-heghede  
 5 in the ayere of wynde wynde ~ The thyrde es yat scho kepes  
 clene and bryghte hire wynges ~ Thus ryghtwyse men yat lufes  
 god are neuer in ydyllnes For owthyre yay ere in *trauayle prayand* or  
 thynkande or redande or othere gude doande / or w<sup>t</sup> takand ydill men .  
 And schewand thaim worthy to be put fra y<sup>e</sup> ryste of heuen : For yay  
 10 will noghte *trauayle* ~ here yay take erthe yat es yay halde yam selfe  
 vile 7 erthely : that thay be noghte blawen w<sup>t</sup> y<sup>e</sup> wynde of vanyte  
 and of pryde Thay kepe thaire wynges clene /: that es y<sup>e</sup> twa *comman-*  
*dementes* of charyte : yay fulfull in gud *concyens* : and thay hafe othyre  
 vertus vnblendyde w<sup>t</sup> y<sup>e</sup> fylthe of syn and vnclene luste ~ Arestotill  
 15 sais yat y<sup>e</sup> bees are feghtande agaynes hym : yat will drawe yaire  
 hony fra thaim ~ Swa sulde we do agaynes deuells . yat afforces  
 tham to reue fra vs y<sup>e</sup> hony of poure lyfe 7 of grace : For many are  
 yat neuer kane halde y<sup>e</sup> ordyre of lufe yne[nc]e<sup>1</sup> yaire frendys sybbe  
 or *Fremmede* Bot outhire yay lufe yaym ouer mekill [or thay lufe yam  
 20 ouer lytill]<sup>2</sup> settand thaire thoghte vnryghtwysely on thaim or yay  
 luf thaim ouer lytill : yf yay doo noghte all as yey wolde till yam  
 Swylke kane noghte fyghte for thaire hony For thy y<sup>e</sup> deuelle *turnes*  
 it to wormes . and makes yeire saules . ofte sythes . full bitter . in angwys  
 and . tene : and besynes of vayne thoghtes . 7 *oyer* wrechidnes : For thay  
 25 are so heuy in erthely frenchype . yat yay may noghte flee in till  
 y<sup>e</sup> lufe of Ihesu criste . in y<sup>e</sup> wylke yay moghte wele for-gaa y<sup>e</sup> lufe  
 of all creaturs lyfande in erthe : where-fore accordandly : Arystotill  
 Arestotill sais yat some fowheles are of gude flyghyng yat passes fra a  
 lande to a-nothire Some are of ill flyghyng for heuynes of body  
 30 and for yaire neste es noghte ferre fra y<sup>e</sup> erthe ~ Thus es it of thaim  
 yat turnes yam to godes seruys Some are of gude flyeghyng for  
 thay flye fra erthe to heuen and rystes thaim thare in thoghte  
 and are fedde in delite of goddes lufe and has thoghte of na lufe of  
 y<sup>e</sup> worlde Some are y<sup>t</sup> kan noghte flyghe fra yis lande : bot in y<sup>e</sup>  
 35 waye late theyre herte ryste : And delyttes yaym in sere lufes  
 of men and women : Als yay come 7 gaa : nowe . Ane . 7 . nowe  
 a-nothire : And in Ihesu criste yay kan fynde na swetnes : Or if  
 yay any tym fele oghte . it es swa lyttill and swa schorte :  
 for othere thoghtes yat are in thaim : yat it brynges thaim till  
 40 na stabylnes . or yay are lyke till a fowle yat es callede strucyo  
 or storke yat has wenges and it may noghte flye : for charge of  
 body : Swa yay hafe vndirstandyng : and fastes and wakes and  
 semes haly to mens syghte : bot thay may noghte flye to lufe  
 and contemplacyone of god yay are so chargede wyth othyre  
 45 affeccyons and othire vanytes ~ Explicit

<sup>1</sup> MS ynesche

<sup>2</sup> This phrase has been copied twice (dittography) because of eyeslip. Here it is in the wrong place.



## LINGUISTIC PROFILE DERIVED FROM THE TEXT ABOVE

Lincoln Cathedral Chapter Library 91 (A.5.2). The hand of Robert Thornton. ca. 1430–50. This Linguistic Profile has been made (for illustrative purposes only) from Thornton's copy of Richard Rolle's *The Nature of the Bee* (*de natura Apis*) on fol. 194r-v. It was made from the transcript given above, which was itself made from the Thornton MS facsimile. The linguistic usage in Thornton's texts shows signs of some dialectal mixture with forms from his various exemplars. His language was not therefore mapped in *LALME*. This small LP of a short extract is, however, usable to illustrate the principles of the fit-technique.

Item number	Item	Forms
1	THE	y <sup>e</sup> ((the))
4	SHE	scho
5	HER	hyr, hire
6	IT	it
7	THEY	yay (thay) ((yey))
8	THEM	thaym (yam) ((yaym, tham))
9	THEIR	thaire, yaire, yeire, theyre
10	SUCH	Swylke
11	WHICH	y <sup>e</sup> -wylke
13	MANY	many
15	ANY	any
16	MUCH	mekill
17	ARE	are ((ere))
19	IS	es
23-30	SHOULD pl	sulde
24	WILL sg	will
24-30	WILL pl	will
25-30	WOULD pl	wolde
26	TO prep +C	till, to
26-30	TO prep +V	till
28	FROM	fra
33	IF	yf, if
34	AS	as, als
36	AGAINST	agaynes
44	WH-	wh-, w-
46	NOT	noghte
48	OE, ON ā ('a', 'o')	a ((o, aa))
49	WORLD	worlde
51-20	WORK inf	wyrke
52	THERE	thare
53	WHERE	whare-

54-30	MIGHT pl	moghte
56	WHEN	when
57	Sb pl	-es (-s) ((-ys, -e3))
58	Pres part	-ande, -and
59	Vbl sb	-ynge, -yng
61	Pres 3sg	-es (-ys)
61-20	Pres 3sg, V+	-s (-es)
62	Pres pl	-es ((-e, -)) (pers pron non-adjacent)
62	Pres pl	-e (-) (Nthn Pres Tense Rule, pers pron adjacent)
65	Weak ppl	-ede, -yde
66	Str ppl	-en
74	AIR	ayere
75	ALL	all
83	AWAY	awaye
99	BUSY adj	[cf. besynes]
100	BUT	bot
103-30	CALLED ppl	callede
105-22	CAN pl	kan, kane
106	CAST vb	cast-
119	EARTH	erthe
123	EITHER..OR	owthyre.. or, outhire..or
129	FAR	ferre
134	FIGHT pres	feght-, fyghte
136	FILTH	fylthe
145	FOWL	fowle
145-20	FOWLS	fowheles
146	FRIEND	frend- [cf. frenchype]
155	GOOD	gude, gud
160-40	HAS 3sg	has
160-50	HAVE pl	has; Nthn Pres Tense Rule hafe
164	HEAVEN	heuen
171	HIM	hym
175	HOLY	haly
179-30	KIND sb	kynd-
190	LIFE	lyfe
191	LITTLE	lytill
196	LOVE sb	lufe
196-20	LOVE vb	lufe, luf
199-10	MAY 1/3sg	may
199-20	MAY pl	may
212	NEVER	neuer

218	NOW	nowe
220	ONE adj	Ane
221	OR	or
222	OTHER	othere, othire, othyre, <i>oyer</i>
222-20	ANOTHER	Anothire, a-nothire
225	OUT	owte
228	POOR	poure
229	PRAY vb	<i>pray-</i>
235-21	SAYS 3sg	sais
238-20	SELVES	selfe
242	SIN sb	syn
246	SOME	some
249-20	SOULS	saules
267	THREE	three
267-20	THIRD	thyrde
275	TWO	twa
279	WAY	waye
281	WELL adv	wele
293	WITH	w <sup>t</sup>
304	-ALD	-ald
306	-AND	-and
317	-LY	-ly
318	-NESS	-nes
319	-SHIP	-chype
322	K for c	k