

Epenthesis in liquid+consonant clusters in Scots

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1 Introduction

Epenthesis in certain liquid+consonant clusters is a well-known feature of varieties of modern Scots. Pronunciations such as [fɛ̃ləm] for *film*, [e:rəm] for *arm/airm*, [bɔrən] for *born*, and [kʌrəl] for *curl* will be familiar to anyone who has grown up or lived in Lowland Scotland. But although this feature has been subject to occasional comment by dialectologists and phonologists, it has never been studied in detail, so that basic facts about its linguistic characteristics and geographical distribution are unknown. Given the existence of similar patterns in some varieties of English in England and Ireland and the extensive epenthesis found in Scottish Gaelic and Irish, an understanding of epenthesis in Scots is crucial for determining the historical origins of the phenomenon, the extent to which contact with Gaelic has played a role in the formation of Scots phonology, and the kinds of linguistic factors which might lead to epenthesis of this sort. This paper attempts to fill some of the gaps in our knowledge of epenthesis in Scots by analysing in detail evidence for the phenomenon in the largest source of information on the phonology of Scots dialects in recent centuries: the unpublished data collected for the phonological part of the *Linguistic Survey of Scotland* (LSS), which forms the basis for the third published volume of the *Linguistic Atlas of Scotland* (LAS3; Mather and Speitel 1986). These unpublished data give us a unique insight into the geographical distribution of epenthesis in Scots and allow us to examine the individual clusters in which it occurs in detail. It will be seen from the analysis in this paper that the patterns of epenthesis captured in the unpublished LAS3 data agree in general terms with previous descriptions of the phenomenon but that they reveal a number of complex linguistic and geographical patterns which help us to understand the nature of epenthesis in the language. As such, this paper represents an important first step in the deeper understanding of this characteristic feature of Scots dialects.

This paper is organised as follows. In Section 2, I discuss previous descriptions of epenthesis in Scots, with some brief comments on its deeper history. In Section 3, I describe the nature of the data collected by the LSS and discuss the issue of ‘fieldworker isoglosses’ in the data, which have

previously been shown to have important effects (Maguire 2016). In Section 4, I present the results of my analysis of epenthesis in liquid+consonant clusters in the unpublished LAS3 data and, in Section 5, I discuss the implications of this study for our understanding of the phenomenon. Finally, key aspects of this research are briefly outlined in Section 6.

2 Epenthesis in Scots

The history of epenthesis in Scots has not yet been explored. Neither Johnston (1997a) nor Aitken and Macafee (2002) refer to the phenomenon in their detailed accounts of the phonological history of Older Scots. Thus the origins of epenthesis in Scots are largely unknown. There is, however, some evidence suggesting that epenthesis has been a feature of Scots phonology for many centuries. Epenthesis, as indicated by a separate vowel grapheme between the relevant consonants, is occasionally recorded in the substantial body of localised legal texts, mostly from the 15th century, that make up the *Linguistic Atlas of Older Scots* (LAOS, Williamson 2008). Thus, we find evidence in LAOS for epenthesis occasionally in /rm/ (in *firm*, *form* and *term*), only once in /rn/ (in *turn*), commonly in /rl/ in *earl*, though there are almost no others words in the corpus with this cluster, and usually in /rz/ (in *Thursday*, the only relevant word). It is not recorded in /ln/ (*kiln* is <kill> vel sim.), in /lm/ (there is almost no data for this sequence though, *realm* and *holm*, both subject to L-vocalisation, being the only relevant words that appear in the corpus), nor in other clusters, e.g. /rs/ (e.g. *horse*), /rθ/ (e.g. *north*), /rd/ (e.g. *word*), /rb/ (e.g. *disturb*), /rv/ (e.g. *serve*), /rk/ (e.g. *kirk*), /rf/ (e.g. *turf*).

Macafee and Ó Baoill (1997: 266) connect epenthesis in Scots to similar epentheses in English, where it has been a feature since at least the Middle English period and was still a feature of some dialects into the 19th century (Wright 1905: 206). Thus, in the *Corpus of Narrative Etymologies* (CoNE, Lass et al. 2013), the change ‘Sonorant cluster vowel epenthesis’ (SCVE) is assigned to the Old English and Middle English periods, and is recorded in words such as *arm* (e.g. <ARUM>) and *north* (e.g. <NORIT>). Assuming a connection between epenthesis in Old/Middle English and Older Scots, this means that the phenomenon is of long standing and wide distribution, and, as Macafee and Ó Baoill point out, it thus need have nothing to do with epenthesis in Gaelic, a possibility raised by other scholars (see immediately below) and an issue which I return to in Section 5.

Turning now to evidence in the modern period, epenthesis in certain liquid+consonant clusters is described by James Murray in the first linguistic description of a Scots dialect as follows:

R, being truly consonantal, has not the same gliding effect before consonants as in English. This is especially noticeable before L, and less so before M and N. The combination RL is quite hard; thus such words as *curl*, *dirl*, *world*, *earl*, are pronounced *cur'l*, *dyr'l*, *wor'lt*, *yer'l*, just as *cuddle*, *fiddle*, *waddle*, are *cud'l*, *fid'l*, *wad'l*, in English. The L is as much a distinct syllable in *cur'l*, *dir'l*, as it is in *squirrel*, *barrel*, *coral*. In *arm*, *harm*, *worm*, *barn*, *turn*, the same semivocal transition is heard, though less distinctly; but in districts towards the Celtic frontier, *arm*, *harm*, *term*, *warm*, *worm*, are distinctly *airem*, *hairem*, *terem*, *warem*, *wurem*.

(Murray 1873: 125)

Regarding the sequence /lm/ Murray (1873: 123) states that “When followed by M the latter has a syllabic effect, as *elm*, *helm*, *film*; pron. *ell'm*, *hell'm*, *fill'm*, where the m is as syllabic as in *solemn*, *rhythm*, or *Scotch boddum*”. He follows this with a note on the similarity of this epenthesis in /lm/ with the treatment of /l/+consonant clusters in Gaelic:

It is possible that this rolling of the L may be of Gaelic origin; in that language the combinations *lm*, *lb*, *lg*, *rm*, *rb*, *rg*, are pronounced as if with a short *ũ* between them, thus, *alm*, *calm*, *sgealb*, *bàlg*, *àrm*, *òrm*, *earb*, make *alum*, *calum*, *skellubp*, *bpalugk*, *arrum*, *orrum*, *errubp*.

(Murray 1873: 123)

In this account, Murray describes epenthesis in /rl/, /rm/, /rn/ and /lm/, i.e. in all clusters of /r/ and /l/ plus an admissible (according to the phonotactics of English and Scots) sonorant (/ln/, which Murray does not mention, was subject to a separate development, simplification to /l/, as in the example of *kiln* discussed above). Furthermore, Murray connects epenthesis in /rm/, /rn/ and /lm/ in Scots with epenthesis in these clusters in Gaelic (on which idea see the discussion in Section 5).

Subsequent descriptions of epenthesis in Scots largely agree with Murray's observations, though there are some differences. Although Wilson (1915) does not describe epenthesis in the Perthshire Scots dialect, he does record it in, for example, *arm/airm* (**errum**), *elm* (**ellum**), *hairm/harm* (**herrum**), *warm* (**waarrum**), *worm* (**wurum**). He does not, however, record epenthesis in /rn/ (e.g. *corn*) or /rl/ (e.g. *world*), perhaps not surprisingly given that his transcription is essentially phonemic (and orthographic, as

exemplified), nor does he record any epenthesis in the dialect of central Ayrshire (Wilson 1923) or in the Lothians or Fife (Wilson 1926), perhaps for the same reason.

Dieth (1932), in his important study of the Buchan dialect in northeast Scotland, discusses epenthesis in the dialect at some length (pp. 96-7, 100, 101). Although he does not refer to epenthesis in /lm/ (and includes no relevant words in his glossary), he records it in /rl/ (p. 101) in *hurl*, *pir*, *skirl*, *dirl*, *arles* and *carl*, in /rm/ (pp. 96-7) in *farm*, and in /rn/ (pp. 96-7) in *burn* ('stream'), *horn* and *corn*, though he does not transcribe the feature in the glossary. Dieth notes (p. 96) that in /rl/ epenthesis results in the /l/ being syllabic [l̩] rather than [ə]+[l], and that the same goes for /rm/ and /rn/ ([r̩m] and [r̩n]), though he describes the epenthesis in these two clusters as so subtle that he can't hear it, even though evidence he adduces from the rhymes and metre of local songs seems to require it. Compared with this, however, Dieth finds no evidence for epenthesis in the clusters /rg/, /rd/ and /rb/ (p. 100), and notes that epenthesis disappears when a syllabic suffix is added (*turn* [tʌrn̩. 1turning [tʌrn̩ɛn]). So although Dieth does record epenthesis in liquid+sonorant clusters in the Buchan dialect, his description suggests that if it is present in /rm/ and /rn/ it is very subtle indeed. Finally, Dieth notes similarity between epenthesis in /rn/ in Scots and Gaelic (p. 96), but does not discuss whether this similarity is the result of contact between the two languages.

Studies by two of Dieth's PhD students also describe epenthesis in dialects of Scots. Wettstein (1942: 16), in his study of the Berwickshire dialect, describes the same kind of epenthesis as Murray. He records [l̩m] for /lm/ in *elm*, *film*, and *helm*, and [r̩m] for /rm/ in *arm*, *farm*, *storm*, *term*, *warm* and *warmed*. As was the case in the Buchan dialect, Wettstein also records epenthesis in /rl/ (*curl*, *pearl*, *world*) and /rn/ (*barn*, *bairn*, *turn*, *turned*) with syllabic [l̩] and [r̩].¹ Zai (1942: 141) records epenthesis in the dialect of Morebattle in southern Scotland. He records it in /lm/ (*elm*), /rl/ (*arles*, *carl*, *dirl*), /rm/ (*barm*, *warm*, *worm*) and /rn/ (*shorn*, *torn*).² In all cases, Zai records [ə] as the epenthetic vowel (rather than a syllabic consonant).

Despite the widespread attestation of epenthesis in liquid+sonorant clusters, Johnston (1997b), in his detailed overview of the phonology of

¹ Wettstein also records epenthesis between diphthongs and /l/ and between various long vowels and /r/. These kinds of epenthesis (or breaking) are not considered in this paper.

² Like Wettstein, Zai also records epenthesis in a variety of other environments not considered in this paper.

modern Scots dialects, does not refer to the phenomenon. This is likely the result of Johnston's concentration on stressed vowel systems in Scots (he says almost nothing about unstressed vowels generally) and should not, therefore, be taken as an indication that epenthesis is not as widespread as the studies described above suggest.

The published record, then, of epenthesis in Scots is rather sparse, consisting as it does of information on a small number of words from a few widely scattered locations. Many questions remain concerning the nature of epenthesis in Scots. Is it true that only /lm/, /rm/, /rl/ and /rn/ clusters are subject to epenthesis, or does it occur in other clusters too? Is epenthesis found in all Scots dialects, or does it vary geographically? How similar is Scots epenthesis to epenthesis in Gaelic? Are the results of epenthesis in Scots the same or different than words which have two syllables (e.g. *barrel* and *barren*), and what might this tell us about the status of epenthesis in Scots? And is epenthesis only found in word-final position, or does it co-occur word-internally too? This paper attempts to answer these questions, at least in part, and, in so doing, to provide a crucial first step in understanding epenthesis in Scots. In order to do so, it analyses a substantial unpublished corpus of data on the phonetics and phonology of mid-20th century Scots dialects collected by the *Linguistic Survey of Scotland* for the *Linguistic Atlas of Scotland*.

3 The Linguistic Survey and Atlas of Scotland data

The third volume of the *Linguistic Atlas of Scotland* (Mather and Speitel 1986; LAS3) is our primary source of information on the phonology of mid-20th century traditional Scots dialects, and indeed is the most copious source of information that has ever been gathered on the phonology of Scots. The data for LAS3 were gathered in the 1950s, as part of the *Linguistic Survey of Scotland* (LSS), by researchers based at the University of Edinburgh, in 188 locations across Lowland Scotland, in north Northumberland in England, and in east Ulster in Ireland. Unlike the earlier, lexical components of the LSS, the survey which underpinned LAS3 used the direct questioning method. In essence, a single dialect speaker (typically an older, working-class member of the community) was sought out in each locality and was presented in an interview with a list of lexical items, most of which were everyday words in Standard English and Scots. The dialect informants were presented with the Standard English pronunciation of the word by the fieldworker and were asked to provide the equivalent pronunciation of this word in their own dialect (for example, the fieldworker might say 'stone' [ston] and get a response such as [sten]). As Mather and Speitel (1975: 14) put it, their survey made use of

“most Scots’ linguistic sophistication and awareness of their bilingualism” and the results were intended to reflect “a potential of dialect available in the early 1950s” in the localities surveyed.

The elicited pronunciations were transcribed on the spot by the fieldworker in (some version of) the International Phonetic Alphabet in notebooks specially designed for the LAS3 survey. A synthesis of these data was published as the third volume of the *Linguistic Atlas of Scotland* (LAS3) in the form of phonemic transcriptions (per phonological environment) of vowels, default consonant skeletons for each word with notes on aberrations from these for each locality, and a limited selection of notes on phonetic features of each dialect, especially those of consonants (see LAS3 and Maguire 2016 for further details). Unfortunately, details of unstressed vowels (in the few words which had them in the wordlist) and epenthesis in liquid+consonant clusters were not published in LAS3, given its concentration on stressed vowel phonemes.

In its published form, then, LAS3 is of no use for understanding the nature of liquid+consonant epenthesis in Scots. Thankfully the original fieldworkers’ notebooks from the survey are archived at the University of Edinburgh,³ and these notebooks contain full phonetic (i.e. not just phonemic, as in LAS3) transcriptions of the whole of each word (consonants, stressed vowels and unstressed vowels) in the wordlist. It is the data from these notebooks which is analysed in this paper.

The published LAS3 contains a wordlist of 786 mostly monosyllabic words, divided into 11 groups according to the following consonant type. In ‘Section 3’ (stressed vowel followed by /r/), the following 38 words appear which contain a sequence of /r/ + consonant:

- 309. *beard*, 318. *hoarse*, 325. *bairn*, 333. *firth*, 334. *bird*, 335. *word*, 336. *kirk*, 337. *kirn*, 338. *earth*, 339. *airt*, 340. *part*, 342. *dark*, 343. *heart*, 344. *Perth*, 345. *farm*, 346. *starve*, 350. *work* (sb.), 351. *hard*, 352. *barn*, 354. *harl*, 356. *gnarled*, 357. *darg*, 358. *sark*, 359. *warn*, 360. *corn*, 361. *port*, 364. *horse*, 365. *north*, 366. *Forth*, 367. *fourth*, 368. *world*, 371. *horn*, 372. *born*, 373. *storm*, 374. *worn*, 375. *sort*, 380. *turn*, 381. *work* (vb.)

Only one word in the LAS3 wordlist (Section 7) contains an /l/ + consonant cluster, 740. *elm*. As is described in Maguire (2016), the published LAS3 represents only a part of the wordlist used by the fieldworkers in the survey

³ Thanks to Cathlin Macaulay of the Celtic & Scottish Studies section of the School of Literatures, Languages and Cultures at the University of Edinburgh for access to these notebooks.

(at 982 words altogether, including a section designed to elicit unstressed vowels), but unfortunately only one further word with a liquid+consonant cluster (*morning*) appears in the extended unpublished part of the wordlist. This word is discussed separately in Section 4.6 and is not included in the main discussion of epenthesis in the LAS3 data. It will be seen that, except for *morning*, all of the words containing a liquid+consonant cluster are (epenthesis aside) monosyllabic with the cluster in word-final position. This means that although the LAS3 data are potentially useful for determining the extent to which epenthesis is present at particular locations, and in showing which word-final clusters epenthesis occurs in, the data is of only minimal use for determining other aspects of epenthesis in Scots that we might be interested in, specifically its presence or absence in word-internal position. Two other words of interest occur in the LAS3 wordlist, 353. *barren* and 355. *barrel*. A comparison of these two words with the originally monosyllabic words ending in the clusters /rn/ and /rl/ should reveal, at each location, whether the result of epenthesis is the same as the unstressed vowel found in originally disyllabic words and may, as a consequence, give us an insight into the extent to which epenthesis in Scots dialects is still a synchronic process. This aspect of the present investigation is reported in Section 4.7.

In Maguire (2016), I discussed the issue of ‘fieldworker isoglosses’ (Trudgill 1983) in the LAS3 data. The fieldworkers (there were 17 of them, though three provided the majority of the data) differed rather significantly in some of their transcription practices and this is especially problematic since they recorded data in different parts of the survey area. The result is that rather striking geographical differences are just as likely to reflect differences in transcription practices and fieldworker interpretation as any real linguistic difference. The good news is that, unlike the features analysed in Maguire (2016), there are, with the exception of one area, no major fieldworker effects when it comes to epenthesis. Thankfully, the two main fieldworkers (JYM and JSW), who differed significantly in their transcription of Pre-R Dentalisation and related features, appear to transcribe epenthesis in similar ways, although, as expected (see Maguire 2016), JYM includes occasional exceptions to epenthesis in his transcriptions whilst JSW never does. The over-all effect of these differences is minimal however.

The one area that does seem to show some effects of different fieldworkers' practices is northeast Scotland (particularly Aberdeenshire). In Banffshire, Aberdeenshire and Kincardineshire, seven fieldworkers were employed, and some of them (especially JYM) consistently recorded epenthesis whilst others did not do so as often (especially MG). Figure 1 shows the locations surveyed by JYM (red), MG (yellow), and other fieldworkers (grey). Given the fact that several of the locations which differ with respect to this feature are adjacent or close to each other, it may not be the case that the differences between them are the result of geography only, though it is also noteworthy that JYM surveyed locations around the periphery of this area, whilst the other fieldworkers mostly surveyed locations in its centre. This should be borne in mind in the presentation of my analysis of epenthesis in LAS3 in the rest of this paper, and the maps in the rest of this paper should be interpreted in light of Figure 1. This issue is discussed further in subsequent sections.

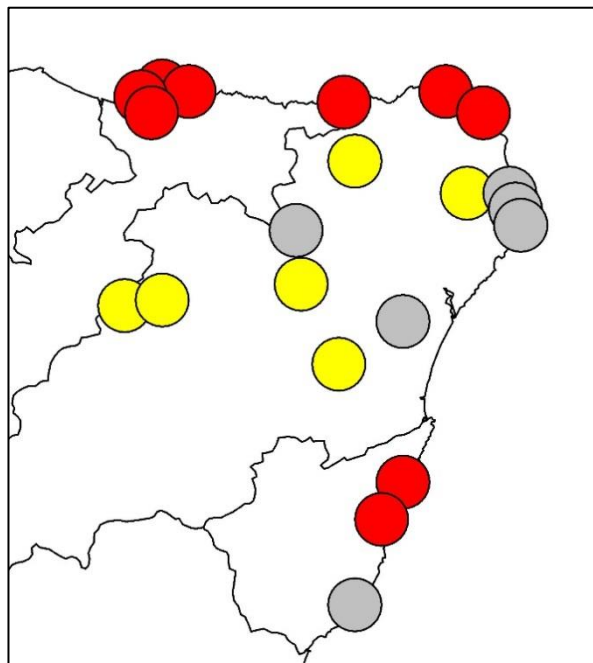


Figure 1 – LAS3 fieldworkers in northeast Scotland

In Section 4, I present the results of my analysis of epenthesis in the unpublished LSS data. For each location, the frequency of epenthesis in each sonorant+consonant cluster in the list of words given above was calculated. Epenthesis was recorded as present if a vowel intruded between the two consonants or if the second consonant was syllabic. No attempt was made to

distinguish between these two types (and other, intermediate cases such as [r̥m]), since the precise way in which epenthesis was transcribed varied within and between transcribers and appears not to have been meaningful. An indication of the range of pronunciations recorded for each cluster is given in Sections 4.1-4.4. The overall results are summarised in the graph in Figure 2, whilst the results for each cluster are given in map form.⁴ Since we are, in most cases, dealing with very small numbers of words per environment, the maps are typically colour coded to indicate one of three states at each location: a red circle indicates that epenthesis is always recorded in the relevant cluster at that location; a yellow circle indicates that epenthesis is sometimes recorded in the relevant cluster; and a grey circle indicates that epenthesis was not recorded in the location for the relevant cluster. A more fine-grained analysis is provided for the cluster /rn/, for which there are more tokens (see Section 4.4).

4 Results

Figure 2 gives the percentage frequency of epenthesis across all locations in each of the clusters for which words are given in the LAS wordlist. It is immediately apparent that epenthesis is almost entirely restricted to four clusters, /lm/, /rl/, /rm/ and /rn/, though it is found at low levels in /rd/, /rk/, /rt/ and, more noticeably, /rv/. It is also noteworthy that, across all locations, epenthesis is found at levels below 80% even for those clusters which have it the most. That is, epenthesis is not categorical in the dialects recorded in the LSS; the extent to which this represents variation within and between locations is examined further below. Sections 4.1 to 4.4 detail the patterns for the main epenthesis clusters, Section 4.5 examines epenthesis in other clusters, Section 4.6 examines the pronunciation of the word *morning*, and Section 4.7 compares the pronunciation of the unstressed vowel in *barrel* and *barren* to the epenthetic vowel in historically monosyllabic words.

⁴ The maps for this paper have been drawn using Alan Morton's DMAP program, <http://www.dmap.co.uk/>.

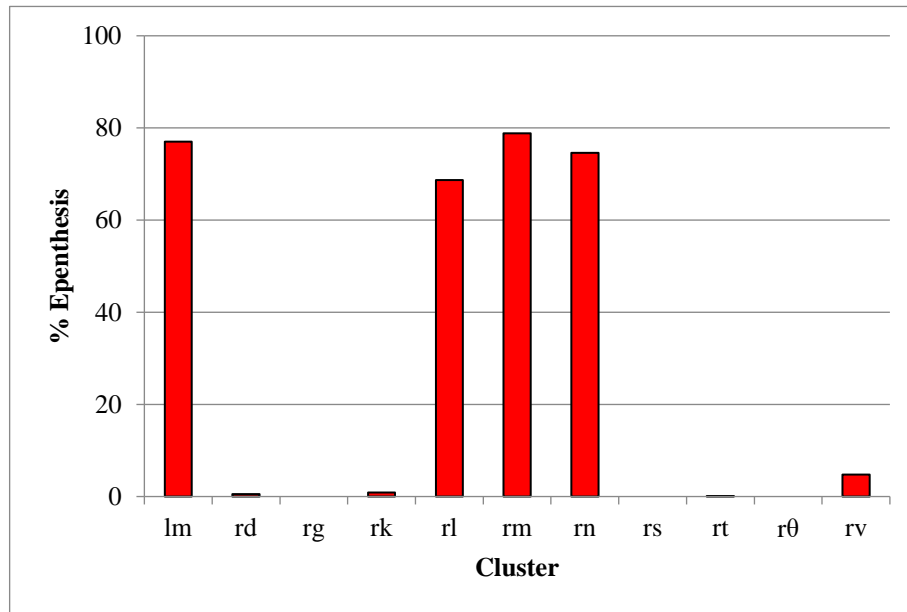


Figure 2 – Frequency of epenthesis in liquid+C clusters in the LAS3 unpublished data

4.1 Epenthesis in /lm/

Epenthesis in /lm/ is a well-known characteristic of varieties of English in Ireland (Hickey 2007: 116) and around Tyneside (Beal et al. 2012: 42). However, epenthesis in /lm/ was much more widespread in traditional dialects of English and Scots than this, and is recorded at the majority of locations in the unpublished LAS3 data. Only one word with /lm/ is included in the wordlist, *elm*, and epenthesis is recorded in this word in 144 of the 188 location surveyed. As Figure 3 shows, this makes /lm/ one of the four main epenthesising clusters in Scots, and indeed, at an overall level of 77.01%, it is the second commonest kind of epenthesis in the data. Epenthesis in /lm/ is usually recorded as [ə̃m], sometimes as [ɹ̃], occasionally as [ʔ̃m].

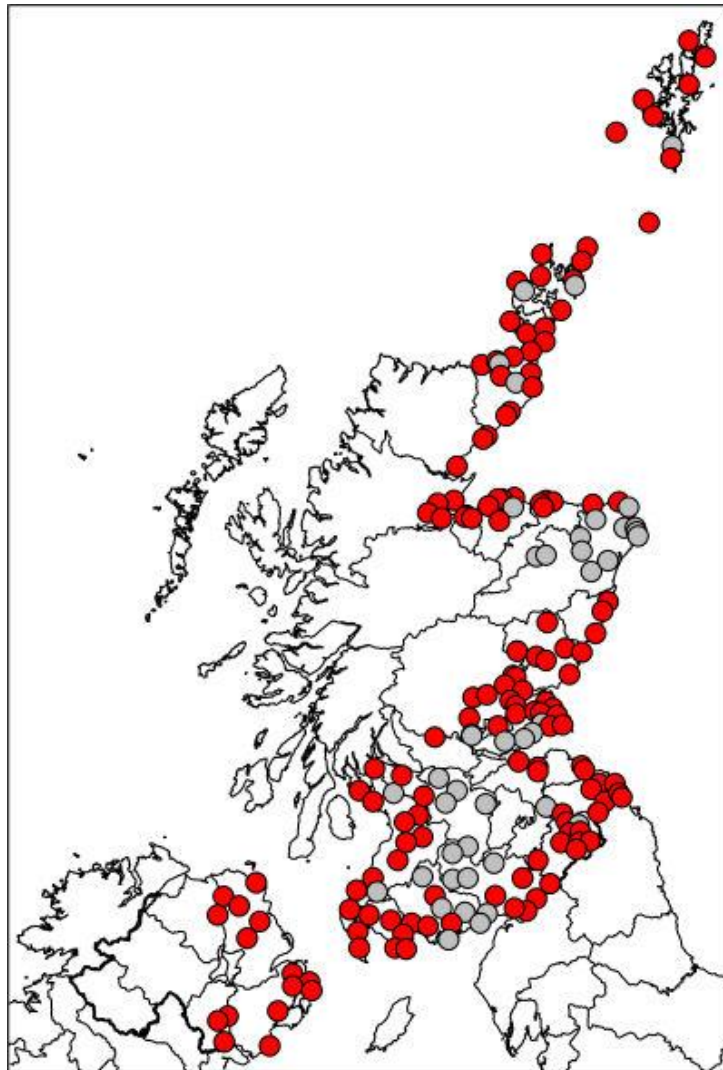


Figure 3 – The distribution of epenthesis in /lm/ (*elm*)

Although epenthesis in /lm/ is found across Scotland (and in Ulster and north Northumberland), there are two main areas where it isn't recorded. The first of these is Aberdeenshire (except for the northernmost location in the county). This is perhaps to be expected given Dieth's failure to mention epenthesis in this cluster in the Buchan dialect and his general comments about the subtle nature of epenthesis in the dialect (Dieth 1932: 96-7). However, it is notable that the locations with epenthesis in /lm/ are precisely those surveyed by JYM (see Figure 1), who records it in all but one of his locations in the area. None of the other fieldworkers in the area recorded epenthesis in /lm/, so it is possible that we are dealing here with fieldworker isoglosses rather than real

dialect differences, although a geographical effect cannot be ruled out given that the fieldworkers surveyed different areas. The second is a more diffuse area in the southern half of Scotland, stretching from Fife to Nithsdale. The differences in this zone do not appear to be the result of fieldworker isoglosses, however, since fieldworkers who didn't record epenthesis in /lm/ in some locations often did so elsewhere. For example, JSW recorded epenthesis in /lm/ in Bute, Renfrewshire, most of Ayrshire, Wigtownshire, west Kirkcudbrightshire and south-eastern Dumfriesshire, but not in Lanarkshire, east Kirkcudbrightshire and north-western Dumfriesshire. It seems likely, then, that epenthesis in /lm/ was not present in these dialects in the mid-20th century. As to why epenthesis is found in /lm/ in some dialects and not in others, an examination of the data collected by JSW in southwest Scotland appears to provide a clue. JSW carefully records whether or not /l/ is 'dark' (velarised) [ɫ] or 'clear' (usually neutral rather than palatal according to occasional notes in his fieldworker notebooks) [l]. When the frequency of epenthesis in *elm* is compared for locations recorded by JSW with clear and dark /l/, it can be seen (Table 1) that, although there is no absolute distinction, locations with clear /l/ almost always have epenthesis, whilst locations with dark /l/ are fairly evenly split between those with epenthesis and those without. The difference in frequency of epenthesis between [l] and [ɫ] is highly significant ($p = 0.0030$, Fisher's Exact Test).

	Epenthesis	No Epenthesis
[l]	15	1
[ɫ]	14	16

Table 1 – Epenthesis with clear and dark /l/ in JSW's data

A wider analysis of the relationship between epenthesis and the pronunciation of /l/ in the LAS3 unpublished data is desirable, though such a study is, unfortunately, hampered by rather different transcription practices with respect to this feature by the various fieldworkers and a failure on the part of several of them to record the exact realisation of /l/.

Nevertheless, this analysis of JSW's data is interesting since the pattern it reveals is in agreement with an explicit connection made between the pronunciation of /l/ and the presence of epenthesis in the /lm/ cluster in Tyneside English. Beal (2010: 20), in her discussion of Tyneside English, notes that /l/ is clear in all environments in the variety and that "Where /l/ is followed by a nasal /m/ or /n/ a vowel /ə/ is inserted between the two

consonants, as a clear /l/ followed immediately by /m/ or /n/ is very difficult to produce”. Whether clear /l/ in fact causes epenthesis in Scots (which would require us to assume clear /l/ historically across much of Lowland Scotland) or whether it simply protects epenthesis (for the reason suggested by Beal), so that epenthesis in /lm/ is more likely to survive in dialects which have developed clear /l/ in all positions, requires further investigation. In any case, epenthesis in the cluster /lm/ is a highly characteristic feature not only of Tyneside and Irish English, but also of Scots.

4.2 Epenthesis in /rm/

Epenthesis in /rm/, also reported in (traditional) Irish English varieties (Henry 1952), is also a characteristic of most Scots dialects as recorded in the LAS3 unpublished data (see Figure 4). Two words with /rm/ occur in the LAS3 wordlist, *farm* and *storm*, both of which are frequently recorded with epenthesis (in 76.33% and 81.38% of cases respectively). Epenthesis in /rm/ is usually recorded as [ɹ̩], not uncommonly as [əɹ̩], and occasionally as [ʔɹ̩]. Overall, epenthesis in /rm/ occurs at a rate of 78.86%, making it the most common form of epenthesis recorded in the LAS3 unpublished data.

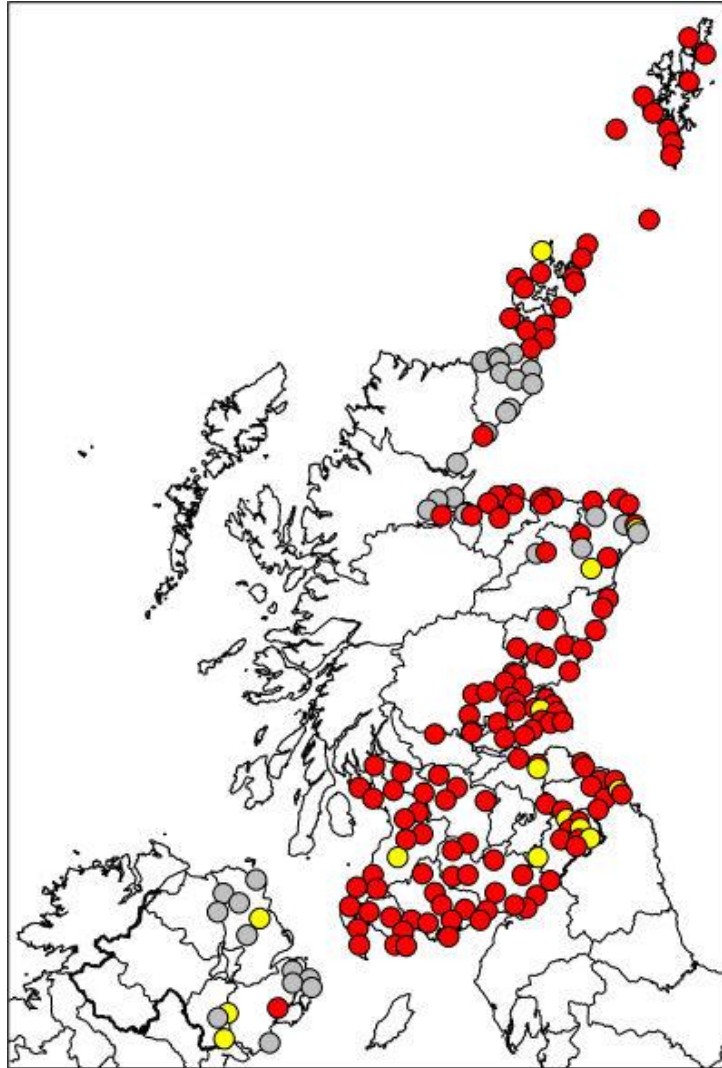


Figure 4 – The distribution of epenthesis in /rm/ (*farm, storm*)

Figure 4 reveals that although epenthesis in /rm/ occurs across Lowland Scotland (and in north Northumberland), it is only sparsely attested in east Ulster, and is absent from some locations in Aberdeenshire and from most locations in Caithness, Sutherland and Ross & Cromarty. The absence of epenthesis in /rm/ in Aberdeenshire is possibly due to its less obvious presence in the area as described in Dieth (1932), though it may also reflect fieldworker effects. Although the differences between fieldworkers for epenthesis in /rm/ are not as stark as they were in /lm/, JYM always records it as present in the locations he surveyed whilst the other fieldworkers sometimes do and sometimes do not. The low levels of epenthesis in

Caithness, the Highland fringe and in east Ulster is part of a more general pattern, seen also in Sections 4.3 and 4.4: although epenthesis does occur in /lm/ in these areas, epenthesis in /r/+C clusters is largely absent. It is noteworthy that east Ulster, Caithness and Highland fringe varieties are all characterised by approximant (often retroflex) /r/ in coda positions (Johnston 1997b: 511), whereas most other Scots dialects are not (as far as we can tell; the unpublished LAS3 data is rather unspecific about the exact pronunciation of /r/ at many locations – see Maguire 2016).

4.3 Epenthesis in /r/

Epenthesis in /r/ is the least frequently recorded of the four common epentheses in LAS3, at 68.71%. It is almost always recorded as [ɪ], occasionally as [əɪ] or [ɛɪ] (ignoring the precise pronunciation of the /l/, which has no discernible effect on the presence or absence of epenthesis). Three words with /r/ are included in the LAS3 wordlist, *gnarled*, *harl* and *world*, and they behave somewhat differently with respect to epenthesis. *harl* is the most likely to be recorded with epenthesis (84.34%), whilst *world* is least likely to be recorded with the feature (54.95%). *gnarled* is in between (68.00%), but is not recorded at all in many locations (63 out of 188).

Figure 5 shows that epenthesis in /r/ is recorded across the survey area with two main exceptions: east Ulster, and northern mainland Scotland (Caithness, Sutherland and Ross & Cromarty). The lack of epenthesis in these two areas is consistent with the patterns of epenthesis for the other /r/+sonorant clusters described in this paper, and it is likely that epenthesis in /r/ is also absent in these areas due to the predominance of approximant (usually retroflex) /r/ there (Johnston 1997b: 511). Epenthesis in /r/ is, unlike the other epentheses described in this paper, common in Aberdeenshire, with only one location in the county being recorded without it, though again JYM is the fieldworker who records it most consistently. A further pattern is apparent in Figure 5, which is not found for the other epenthesis clusters. Along most of the eastern edge of Scotland, epenthesis in /r/ is only recorded some of the time, whilst it is consistently recorded further west (and around the eastern end of the Scottish-English border). This is mostly due to the absence of epenthesis in *world*, as epenthesis is present in *harl* in most of these locations. The reasons for the different behaviour of these two words and the geographical pattern that this gives rise to require further investigation.

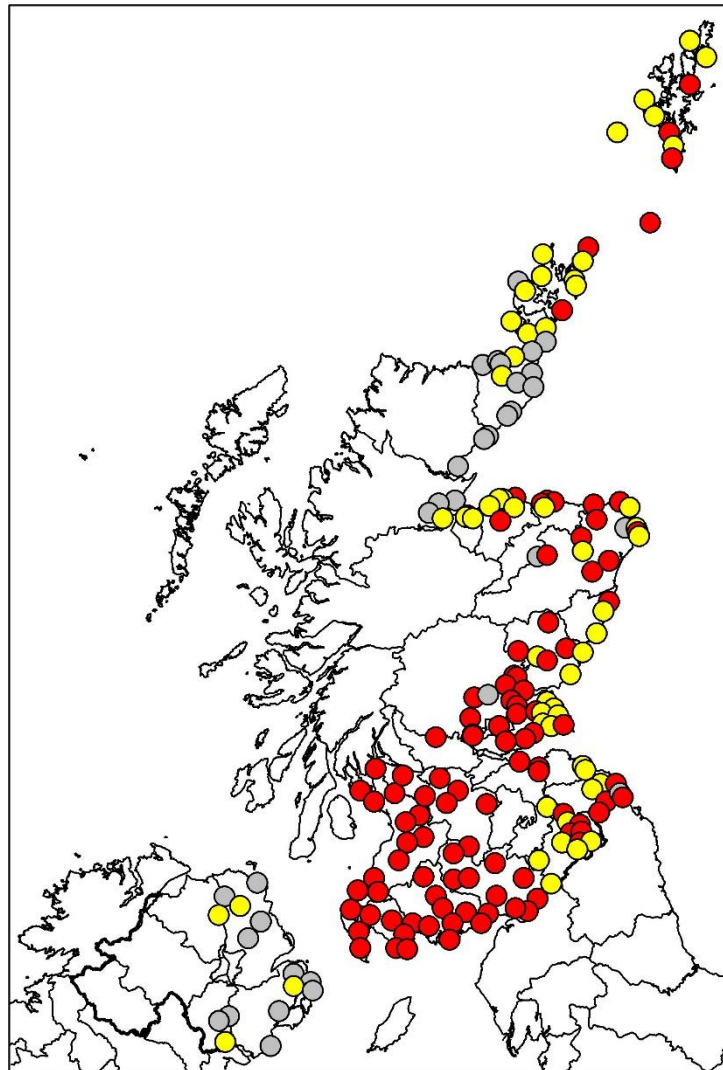
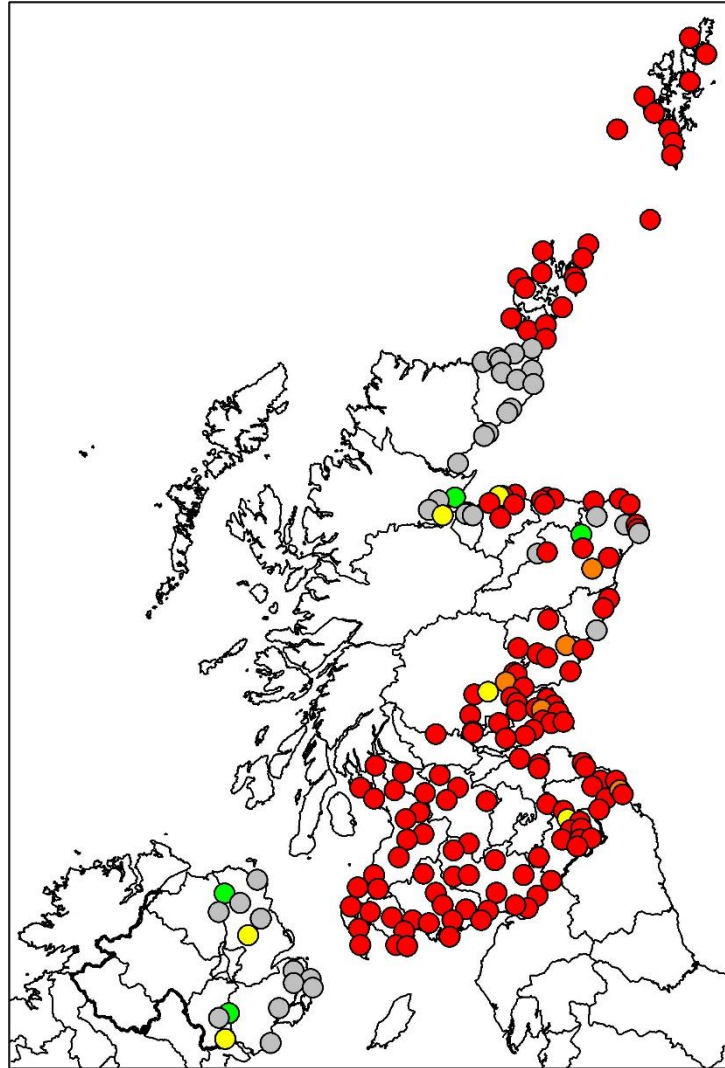


Figure 5 – The distribution of epenthesis in /r/ (*gnarled, harl, world*)

4.4 Epenthesis in /rn/

Epenthesis in /rn/ (usually as [ɹ̥n], sometimes as [əɹ̥n] and occasionally as [ʔn]) is the third most frequent of the four common epentheses recorded in LAS3, at a rate of 74.63%. But this is possibly a result of the higher number of words with the sequence recorded at each location (nine), so that inevitably more variation in the feature is captured compared to sequences only recorded in a couple of words. The nine words are: *bairn* (80.57%), *kirn* (68.33%), *barn* (75.53%), *warn* (74.47%), *corn* (73.14%), *horn* (77.66%), *born* (75.53%), *worn* (77.42%), *turn* (69.15%). Even though there is considerably more data for this cluster than the others, there is not enough to be sure whether the higher rate of epenthesis in *bairn* and the lower rates in *kirn* and *turn* are a

consequence of the preceding vowels in these words, perhaps with epenthesis favoured after (usually) long /e/ and disfavoured after (always) short /ĕ/ and /ʌ/.



**Figure 6 – The distribution of epenthesis in /rn/
(*bairn, kirn, barn, warn, corn, horn, born, worn, turn*)**

The larger number of words recorded with /rn/ allows for a more fine-grained analysis of the frequency with which epenthesis appears in this cluster at each location than for the other sequences described in this paper. In Figure 6, the frequency of epenthesis in /rn/ is represented as follows: red > 75% epenthesis; orange > 50% epenthesis; yellow > 25% epenthesis; green > 0% epenthesis; grey = no epenthesis. Figure 6 reveals a clear geographical pattern

in that, some low-level variation aside, epenthesis in /rn/ is consistently recorded across most of Lowland Scotland (and north Northumberland) except for the far north mainland (from Nairn to Caithness) and in parts of the northeast, especially in Aberdeenshire. Epenthesis in /rn/ is also uncommon in east Ulster. As discussed in previous sections, these three areas have consistently lower rates of epenthesis in most clusters, and the absence of epenthesis in the northern mainland and in east Ulster in /rn/ can again be attributed (in part at least) to the prevalence of approximant (typically retroflex) /r/ in these areas. Its absence in the northeast may be the result of lower levels and more subtle epenthesis in the area (as suggested by Dieth), and/or due to fieldworker differences; again JYM records epenthesis consistently in the locations he surveyed, whilst the other fieldworkers varied in the extent to which they recorded it at particular locations.

4.5 Epenthesis in other environments

No epenthesis was recorded at any location in the final clusters /rg/ (*darg*), /rs/ (*hoarse*, *horse*), and /rθ/ (*earth*, *firth*, *Forth*, *fourth*, *north*, *Perth*). In the cluster /rt/ (*airt*, *heart*, *part*, *port*, *sort*), epenthesis was only recorded once, in *port* at location 14.2 (Newburgh in Fife). The sequence /rk/ (*kirk*, *dark*, *work* (n.), *sark*, *work* (v.)) has rather more epenthesis, however, with the phenomenon recorded in eight tokens (at least once for each word), and this epenthesis in /rk/ is recorded in two specific areas: in south Shetland (locations 1.7, Oxna Isle; 1.8 Dunrossness; 1.9 Scousburgh); and in location 28.1 (Berwick-on-Tweed, Northumberland). Not surprisingly, given the preponderance of epenthesis in northern and coastal Northumberland (see, for example, the data in Rydland 1998), Berwick-on-Tweed and the other north Northumberland location, 28.2 (Spittal), were the only locations where epenthesis was recorded in /rd/ (in both locations in *bird* and *word*, but in neither in *beard* and *hard*). Finally, epenthesis in the cluster /rv/ (*starve*) is the most common of the minor epenthesises in the data, being recorded in nine locations scattered across Scotland: 1.3, 1.9, 5.4, 7.2, 7.3, 12.1, 21.1, 24.9, 29.5. However, neither this nor any of the other minor epenthesises is at all common and, although epenthesis in two clusters (/rk/ and /rd/) shows consistent geographical patterning, none of them can be considered to be particularly characteristic of the traditional Scots dialects of the mid-20th century.

4.6 *morning*

As was noted in Section 3, understanding the nature of epenthesis in Scots more fully depends upon us having data not only for liquid+sonorant clusters in word-final position, but also having data for the pronunciation of these clusters word-internally. As discussed, the LAS3 published wordlist only contains words with liquid+sonorant clusters in word-final position in stressed monomorphemic monosyllables, so that this information is not retrievable. In fact, in the extended wordlist contained in the unpublished data underlying LAS3 (see Section 3), there is only one word with a liquid+sonorant cluster which is of a different type: *morning*. It is noteworthy that no LAS3 location is recorded with epenthesis in this word, just as epenthesis is absent in words like *corner* in other published descriptions of Scots (see Section 2), suggesting that when an /rn/ cluster appears word-internally Scots epenthesis does not occur.

4.7 *barren and barrel*

Whilst the near lack of non-final liquid+sonorant clusters in the LAS3 means that the data cannot tell us a great deal about Scots epenthesis in this environment, two words that were included in the wordlist, *barren* and *barrel*, do give us some indication of the phonological status of epenthesis, at least in some varieties. If *barren* and *barrel*, which were historically disyllabic, differ in terms of the pronunciation of their second syllable from words such as *barn* and *harl*, this may suggest that epenthesis in words such as *barn* and *harl* is subphonemic, since the result of it is not the same as an unstressed phonological second syllable. If, however, the unstressed vowel in *barren* and *barrel* is the same as the epenthetic vowel in *barn* and *harl*, the opposite conclusion, that epenthesis has led in the past to the creation of two syllables phonemically, cannot be drawn. It could be, for example, that a synchronic process of epenthesis gives exactly the same result as historical unstressed vowels in disyllabic words. Or it might be the case that *barren* and *barrel* went through a stage /barn/ and /barl/ before subphonemic epenthesis developed, especially given the sporadic appearances across Lowland Scotland of [rn] and [rl] in these two lexical items. In other words, we can't tell without other kinds of evidence, unavailable in the LSS data, whether *barren* and *barrel* are phonemically /barn/, /barl/ or /barən/, /barəl/ if they have the same vowel as that which arises as the result of epenthesis in words such as *barn* and *harl*, and we similarly can't tell if *barn* and *harl* are phonemically /barn/, /harl/ or /barən/, /harəl/ if the epenthetic vowel is the same as the unstressed vowel in *barren* and *barrel*.

Given that the LSS materials only contains data for two words of this type, the conclusions that can be drawn from them must remain tentative. An examination of the data in fact reveals that in most locations surveyed, *barren* and *barrel* have the same sequences as *barn* and *harl* (typically [ɲ] and [ʃ], occasionally [əɲ]/[ʰɲ] and [əʃ]/[ʰʃ]). Figures 7 and 8 show locations where the pronunciation of *barren* and *barrel* differ from the pronunciations of words such as *barn* and *harl*; locations in red have a definite distinction, with the second syllable in *barren* and *barrel* containing an unreduced vowel (differing according to location, but including [a], [æ], [ɛ], [ɪ] and [ɜ]), whilst locations in yellow have [ə] in the second syllable of *barren* and *barrel* but a syllabic [ɲ] and [ʃ] in *barn* and *harl*.

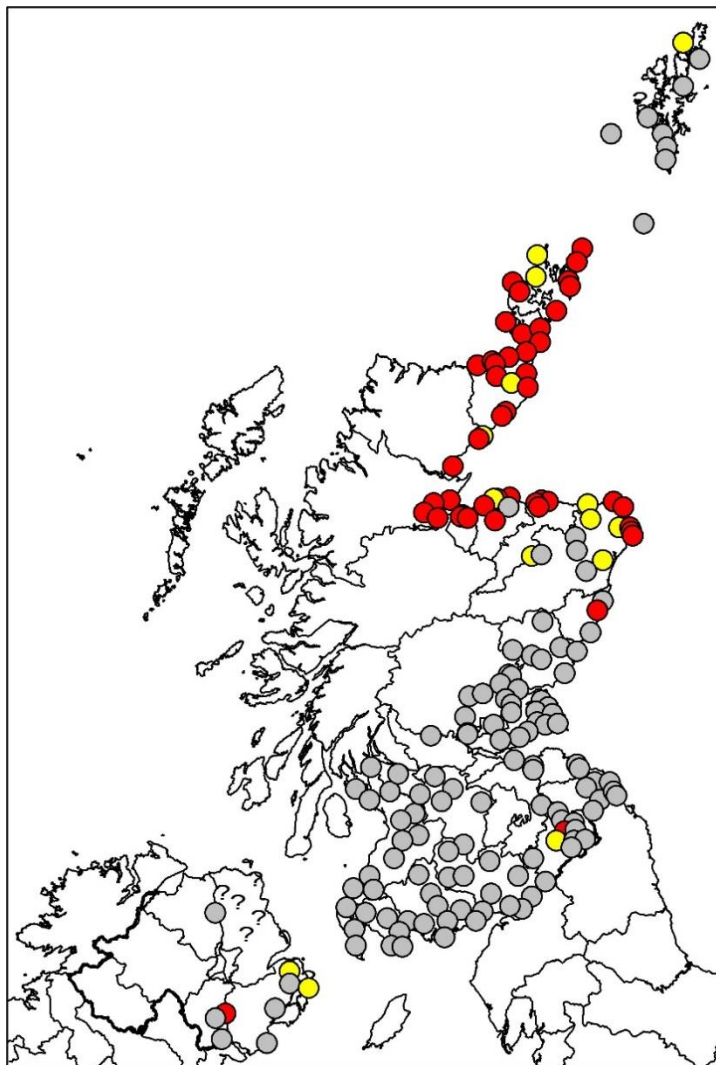


Figure 7 – Locations where *barren* is not pronounced the same as *barn*, etc.

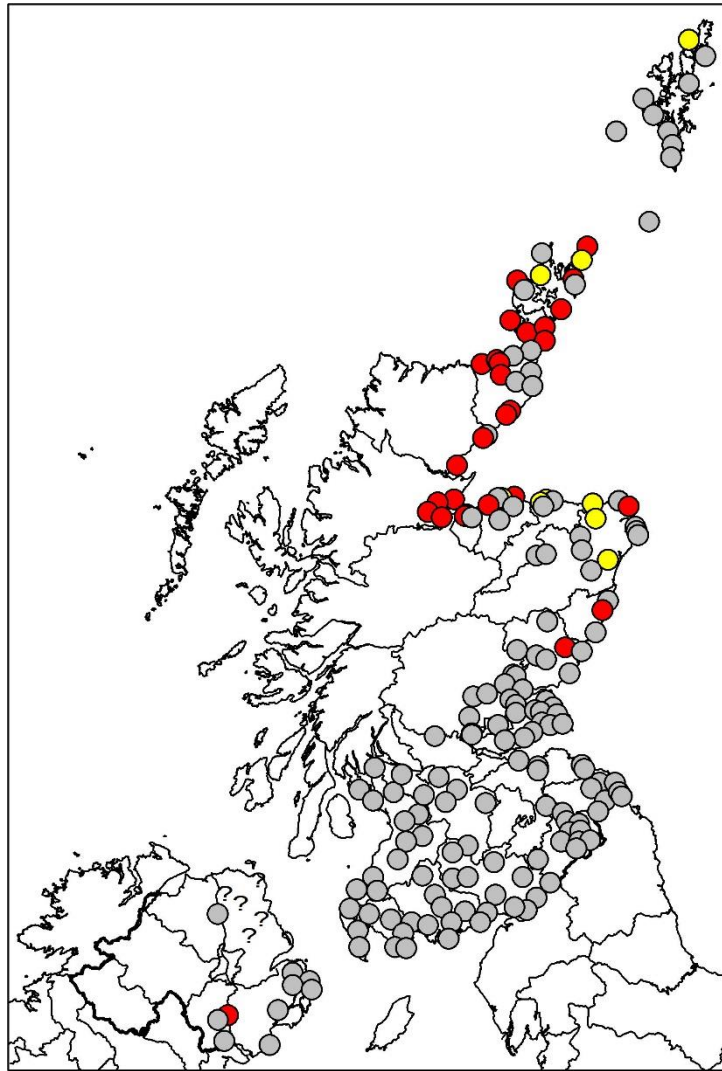


Figure 8 – Locations where *barrel* is not pronounced the same as *harl*, etc.

In both cases, locations which distinguish the two kinds of unstressed vowel cluster in Orkney (but not Shetland), and in northern and northeastern mainland Scotland. Elsewhere a distinction between the two types of unstressed vowel is rare. Given the arguments outlined at the start of this section, this means that in locations with no distinction between *barren* and *barrel* on the one hand, and *barn* and *harl* (etc.) on the other, we cannot tell from the LSS data alone whether epenthesis is a synchronic or diachronic process. In the other locations which have a distinction between the vowels in *barren* and *barrel* and the epenthetic vowel in *barn* and *harl* (etc.), however, we can suggest an obvious explanation for this difference: that

epenthesis is (still) a synchronic phenomenon, introducing a schwa [ə] vowel into certain clusters by rule, so that underlying forms such as /barn/ and /harl/ surface as [barən] and [harəl]. This [ə] contrasts with an underlying unstressed vowel in words such as *barren* and *barrel* (the precise vowel will depend on the location). In both cases (where *barren*, *barrel* = *barn*, *harl*, and where *barren*, *barrel* ≠ *barn*, *harl*), the situation is very different from that found in Gaelic, which is discussed further in Section 5.

5 Discussion

Epenthesis in liquid+consonant (especially liquid+sonorant) clusters has a long history in Scots, being recorded in the Older Scots period and having close parallels in Old and Middle English. Furthermore, it was a feature of most Scots dialects in the mid-20th century, from the far southwest and southeast to the far northern isles. Its extensive geographical distribution also speaks of its antiquity in the language. In the 20th century, epenthesis was essentially restricted to liquid+sonorant clusters (/lm/, /rm/, /rl/ and /rn/) in most dialects in Lowland Scotland (and north Northumberland). Epenthesis in other clusters was rare or non-existent, with only /rk/ and /rv/ being recorded in more than a couple of tokens. Despite the prevalence of liquid+sonorant epenthesis in these dialects, three areas had much lower rates, and some dialects in these areas were recorded with no epenthesis at all. These areas were the north mainland of Scotland (from Nairn and Ross & Cromarty to Caithness), the northeast of Scotland, especially Aberdeenshire, and, outside of Scotland, but (at least in part) within the wider Scots language area, East Ulster.

The epenthesis recorded in the northern mainland of Scotland and east Ulster was mainly in /lm/. In both of these areas, epenthesis in /r/+sonorant clusters is, however, usually absent. This is likely to be connected with the fact that in these two areas /r/ (at least in coda position) is typically realised as an approximant (often retroflex) rather than as a tap or trill as is the case in much of the rest of Scotland (though see below). Whether this is because epenthesis is disfavoured (so that it never developed or has been lost) after this kind of approximant /r/, or because epenthesis is favoured in clusters involving a tap/trill + sonorant is uncertain. Furthermore, other factors, such as contact with Gaelic (see further below) and English in both areas, complicate any explanation (indeed most dialects in Sutherland, Ross & Cromarty, and those outside of the Ulster Scots areas of Ulster are, comparatively speaking, relatively new dialects of English rather than traditional dialects of Scots). The same cannot be said for northeast Scotland,

although, as Maguire (2016) discusses, the precise pronunciation of /r/ across much of Lowland Scotland, as recorded in LAS3, remains something of a mystery, even if tap and trill realisations appear to have been common. Two possible explanations for the low levels of epenthesis recorded in this area have been identified in this paper. Firstly, it seems to be the case that, as is described in Dieth (1932), epenthesis was either absent or very subtle in nature in some parts of northeast Scotland, so that not all fieldworkers recorded it. Secondly, it is possible that the geographical distribution of the various fieldworkers employed by the LSS has had an effect, with some fieldworkers, especially JYM, recording epenthesis more consistently than others (though in most clusters the other fieldworkers record epenthesis some of the time). Getting to the bottom of this issue is complicated by the fact that JYM surveyed peripheral locations in northeast Scotland whilst the other fieldworkers surveyed locations in its centre, so that there could, in fact, be both fieldworker isoglosses and genuine dialect differences in the area.

Epenthesis in liquid+sonorant clusters in Scots is definitely found in final position in stressed monosyllables, but its presence in other environments is less certain. If the evidence from the LSS records of the pronunciation of *morning* are anything to go by, epenthesis is not found word-internally (or at least when a cluster falls across a syllable boundary). The likelihood of epenthesis in morpheme internal coda clusters (e.g. *Thursday*) and pre-inflectionally (e.g. *turning*, *filming*) remains unknown, and further research is required to determine its precise phonological conditioning. Investigating these issues should shed more light on the issue of whether epenthesis is a synchronic or diachronic process in modern Scots dialects. Although we cannot tell which of these is the case in dialects which have the same unstressed vowel in words such as *barren* and *barrel* on the one hand and in *barn* and *harl* on the other, the different unstressed vowel found in these two types of words in many northern Scots dialects (Figures 7 and 8) reveals that the epenthetic vowel has a different status than historical unstressed vowels and may well be the result of a synchronic process of epenthesis.

Potential connections between epenthesis in Scots and epenthesis in Gaelic have been touched on throughout this paper, and in what follows I investigate this issue in more detail. Essentially the question is whether epenthesis in Scots, in whole or in part, is due to contact with Gaelic, which has had epenthesis since the Old Irish period (Thurneysen 1946: 70-1). Examination of a number of features of Scots epenthesis suggests that it does not, in fact, have its origins in contact with Gaelic. Epenthesis in Scots occurs

in the liquid+sonorant clusters /lm/, /rm/, /rl/ and /rn/. If we compare these with the environments in which epenthesis occurs in Gaelic, it is clear that the two systems don't match particularly closely. Thus Gillies (2009) lists the following clusters as being subject to epenthesis in Gaelic (ignoring the distinction between palatal and non-palatal consonants in Gaelic, which does not affect whether epenthesis is possible):

- *rb, rg, rbh/rmh, rgh, rch, rm*
- *lb, lg, lbh/lmh, lgh, lch, lm*
- *nb, nbh/nmh, ngh, nch, nm*
- *mch, ms, mr, ml, mn*

Although some of these clusters don't exist in Scots (or English), several others which have epenthesis in Gaelic do not, or almost never, have it in Scots (e.g. /rb/ in, for example, *disturb*; /rg/ in, for example, *darg*; /rv/ in, for example, *starve*; /lb/ in, for example, *bulb*). So, although Scots and Gaelic share epenthesis in /lm/ and /rm/, they do not in /rl/ and /rn/. This, and the facts that epenthesis in Gaelic involves an 'echo' vowel of the full vowel before the consonant cluster and is present not just in word-final clusters but also word internally, suggests that epenthesis in the two languages is unlikely to be connected. Note that in cases of epenthesis, whether it be historical or synchronic, the epenthetic vowel in Scots is schwa (or a syllabic second consonant), never a full vowel, even though a full vowel is found in the unstressed syllable in historically disyllabic words in some northern Scots dialects (Section 4.7). In Scottish Gaelic, on the other hand, it is the epenthetic vowel which echoes the full vowel of the stressed syllable, contrasting with the schwa quality of underlying unstressed vowels.

Of course, the long history of epenthesis in Scots and its apparent connection with epenthesis in ancestor and sister languages (Old and Middle English) also counts against an explanation in contact with Gaelic. This paper reveals a remarkable uniformity in epenthesis in Scots dialects: it is not the case that Scots dialects in areas where we might expect contact with Gaelic to have been strongest (e.g. along the Highland Line, in southwest Scotland, or in Ulster) have more epenthesis, or epenthesis in more clusters than in other Scots dialects. Indeed, it is often the dialects which are most likely to have developed in a situation of contact with Gaelic varieties that have the least epenthesis. In both the Highland fringe (including parts of Caithness) and Ulster, epenthesis, other than in /lm/, is much less common than in other dialects. Given that internal linguistic factors (the quality of the /l/) have been identified as contributing to the presence or absence of epenthesis in /lm/ (see Section 4.1), and the presence of epenthesis in this cluster across many

English dialects too (see Orton and Dieth 1962-71, Q. IV.10.4 ‘elm’) the presence of epenthesis in this cluster in these apparently Gaelic-influenced dialects need not even be a result of contact, especially if (as is well known to be the case in Irish varieties) /l/ is clear in all environments. The ultimate conclusion is that epenthesis in Scots in all likelihood has nothing to do with epenthesis in Gaelic.

5 Conclusions

This paper set out to explore the unpublished data gathered by the LSS relating to epenthesis in Scots. The analysis revealed key linguistic and geographical features of the phenomenon and, in so doing, it has expanded the available information on epenthesis in Scots considerably. Epenthesis in Scots is essentially restricted to the possible liquid+sonorant sequences in the language, /lm/, /rm/ /rl/ and /rn/, a pattern which is consistent across the survey area. Although a few locations have occasional epenthesis in other clusters, no dialect of Scots departs from the general epenthesis pattern, though some dialects in Ulster, in northeast Scotland and along the Highland fringe have much less epenthesis than other dialects. It is clear from the analysis of epenthesis in Scots in this paper that it has no particular connection with epenthesis in Gaelic, even though the two languages have been close neighbours for almost 1,500 years, and the origins of epenthesis in Scots must be sought elsewhere, in its Old and early Middle English origins and in internal linguistic factors (such as the pronunciation of /l/).

This paper not only provides a detailed analysis of epenthesis but also demonstrates once again the importance of the *Linguistic Survey of Scotland*, both its published materials and the unpublished data these depend on (for further illustrations of the value of these data, see Maguire 2012, 2015 and 2016). There is much still to be discovered about the historical and synchronic phonology of Scots dialects, and the LSS data will play a key role in that exploration. But it is also clear from the analysis in this paper that the LSS materials can only form a starting point, albeit an important and substantial one, for such investigations, given the limited amount of data recorded at each location, the concentration of the survey on monomorphemic, often monosyllabic words, and issues with fieldworker isoglosses that complicate our understanding of the distributions of linguistic features. It is hoped that this paper will thus provide a solid foundation for further research on epenthesis in Scots and related varieties.

References

- Aitken, A. J. & Caroline Macafee. 2002. *The Older Scots Vowels*. Edinburgh: Scottish Text Society.
- Beal, Joan. 2010. *An Introduction to Regional Englishes*. Edinburgh: Edinburgh University Press.
- Beal, Joan, Lourdes Burbano-Elizondo and Carmen Llamas. 2012. *Urban north-eastern English: Tyneside to Teeside*. Edinburgh: Edinburgh University Press.
- Dieth, Eugen. 1932. *A Grammar of the Buchan dialect*. Cambridge: Heffer.
- Gillies, William. 2009. Scottish Gaelic. In Martin Ball & Nicole Müller (eds.) *The Celtic languages*, 230-304. London & New York: Routledge.
- Henry, Patrick Leo. 1952. *An Anglo-Irish dialect of north Roscommon*. Zurich: Aschmann & Scheller.
- Hickey, Raymond. 2007. *Irish English: History and present-day forms*. Cambridge: Cambridge University Press.
- Johnston, Paul. 1997a. Older Scots phonology and its regional variation. In Charles Jones (ed.), *The Edinburgh history of the Scots language*, 47–111. Edinburgh: Edinburgh University Press.
- Johnston, Paul. 1997b. Regional variation. In Charles Jones (ed.), *The Edinburgh history of the Scots language*, 433–513. Edinburgh: Edinburgh University Press.
- Lass, Roger, Margaret Laing, Rhona Alcorn & Keith Williamson 2013. CoNE: A Corpus of Narrative Etymologies from Proto-Old English to Early Middle English and accompanying Corpus of Changes. Edinburgh: The University of Edinburgh.
- Macafee, Caroline & Colm Ó Baoill. 1997. Why Scots is not a Celtic language. In Hildegard Tristram (ed.), *The Celtic Englishes*, 245–86. Heidelberg: Winter.
- Maguire, Warren. 2012. English and Scots in Scotland. In Raymond Hickey (ed.) *Areal Features of the Anglophone World*, 53–77. Berlin/Boston: Mouton de Gruyter.
- Maguire, Warren. 2015. The north above the North: Scotland and Northern English. In Raymond Hickey (ed.) *Researching Northern English*, 437–57. Amsterdam: John Benjamins.
- Maguire, Warren. 2016. Pre-R Dentalisation in Scotland. *English Language and Linguistics*, 20.2, 315–339.
- Mather, James & Hans Speitel. 1986. *The linguistic atlas of Scotland, Scots section, vol. 3*. London: Croom Helm.

- Murray, James. 1873. *The dialect of the southern counties of Scotland*. London: The Philological Society.
- Orton, Harold & Eugen Dieth (eds.). 1962–71. *Survey of English Dialects (B): The Basic Material*. Leeds: Arnold & Son.
- Rydland, Kurt. 1998. *The Orton Corpus: a dictionary of Northumbrian pronunciation, 1928-1939*. Oslo: Novus Press.
- Thurneysen, Rudolf. 1946. *A Grammar of Old Irish*. Revised, edited and translated by D. A. Binchy & Osborn Bergin. Dublin: Dublin Institute for Advanced Studies.
- Trudgill, Peter. 1983. *On dialect: Social and geographical perspectives*. New York: New York University Press.
- Wettstein, Paul. 1942. *The phonology of a Berwickshire dialect*. Bienne: Schüler.
- Williamson, Keith. 2008. LAOS: A Linguistic Atlas of Older Scots, Phase 1: 1380-1500. <http://www.lel.ed.ac.uk/ihd/laos1/laos1.html>.
- Wilson, James. 1915. *Lowland Scotch as spoken in the Strathearn district of Perthshire*. London, Edinburgh, Glasgow, New York, Toronto, Melbourne and Bombay: Oxford University Press.
- Wilson, James. 1923. *The dialect of Robert Burns as spoken in central Ayrshire*. London, Edinburgh, Glasgow, New York, Toronto, Melbourne and Bombay: Oxford University Press.
- Wilson, James. 1926. *The dialects of central Scotland*. Oxford: Oxford University Press.
- Wright, Joseph. 1905. *The English dialect grammar*. Oxford, London, Edinburgh, Glasgow, New York & Toronto: Henry Frowde.
- Zai, Rudolf. 1942. *The phonology of the Morebattle dialect*. Lucerne: Raeber.